‘Patches of the endless forest’.

Monuments, landscape and remote perception in the Early Neolithic of southern Britain.

Volume 2: Case studies, Discussion and Appendices

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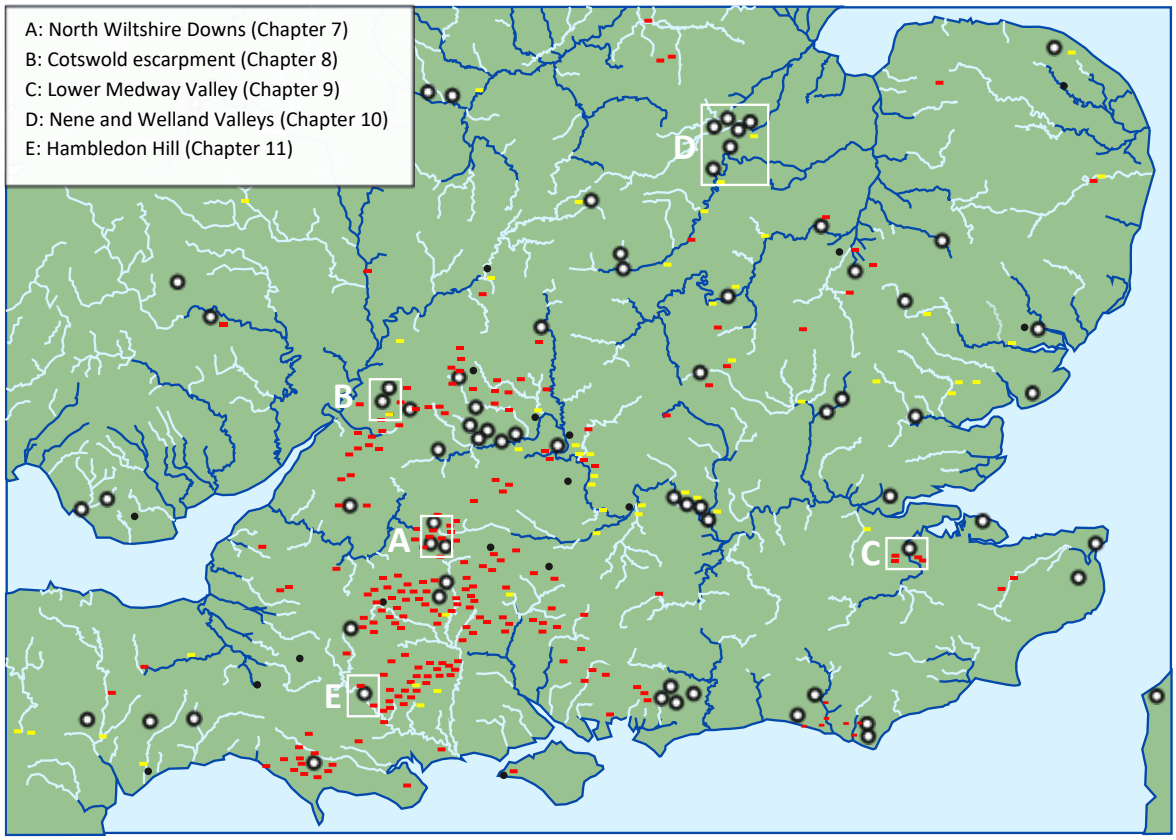

The locations of the five study areas considered in Volume 2. Areas framed in white correspond to the main lidar-based maps in each case study. The symbols are the same as those used in Figures 1.2 and 4.2.

The low earthworks defining the eastern side of Barkhale causewayed enclosure, West Sussex, picked out in mid-September by different herb species. The mixed plantation in the background, which covers the steep downland slope to the south, completely screens out potential views across the coastal plain to the sea.

Synopsis of Part 2 of Volume 1

Part 2 re-established that Early Neolithic landscapes were largely, but variably, forested, a situation which inevitably challenges, but does not necessarily invalidate, long-held suppositions that monuments were meant to be viewed from afar. Many trees stood 25-30m tall, so opportunities for long-distance views were rare. Beneath the canopy, however, phototropism and browsing by wild ungulates ensured that short-range visibility was often possible: 75-150m in summer and sometimes four times that distance in winter.

Wind was a more significant factor than wildfire in creating natural clearings. The death, through disease, of clusters of elms *c*.3,770 BC may have sometimes broken the canopy enough for wind to make further inroads. Autumn gales would create clearings comparable in size and shape to causewayed enclosures. Valley floors, where the ground was often saturated by beaver ponds, along with the crests of slopes, were most vulnerable to wind-blows. Without human involvement, clearings might grow back fully within *c.*60 years, although their exposed edges would remain vulnerable to further wind-damage until the peripheral trees strengthened themselves. Wherever humans did intervene, initially probably by repeatedly burning fallen debris over the course of several years, the patch would become accessible enough to wild ungulates and domesticates to retard or prevent regeneration altogether, eventually causing a herb layer to form. Gradually, browsing and regrowth around the forest edge would produce a 'natural hedge', partially screening views from the forest into the relatively bright clearing and preventing altogether views from the clearing back into the relative darkness beneath the canopy. By the start of the Neolithic, then, there were large numbers of small patches of largely unforested land, and some much larger patches, especially at higher altitudes.

Following navigable watercourses progressively further inland, Neolithic immigrants occupied the most favourable pre-existing clearings and started to cultivate cereals in small plots, probably initially keeping small herds close to 'home bases'. Selective felling of slim oaks and coppicing of hazels to obtain building materials would increase the size of pre-existing clearings. As long as herds remained very small, they could be grazed year-round within these clearings and in the surrounding forest. As population levels and livestock numbers increased, it became necessary to move livestock away from the 'home base' to free up more land to grow cereals and hay without risking them being damaged or destroyed through unmanaged grazing. People therefore sought out other natural clearings, which, over time, offered increasingly large quantities of rough grazing and browsing through the summer months. The possibility of meeting representatives of other communities and thus of sharing tasks, including watching over herds and producing cheese that could be consumed when milk ran short in winter, would encourage people to head for places and times fixed through customary practice. In such places, prolonged and repeated browsing by livestock, especially when concentrated to reduce predation, was probably the key factor in expanding clearings, but taking decades or centuries to

Highland cattle – an ancient breed – eating hay in late April in a former managed oak woodland near the causewayed enclosure at Chalk Hill, Kent. Note the poaching and lack of understory vegetation.

make serious impacts. In the shorter term, deliberate felling and/or ring-barking might play a part and regenerating stumps would offer low-level browse until a herb layer became established. Harvesting of branches as fodder, near the places where livestock over-wintered, probably played the most significant role in expanding clearings close to home bases. In high-canopy woodland, this could be achieved most straightforwardly by felling young trees, leaving standing those species not favoured by livestock, including oak and beech. Veteran trees of larger girth, though rare in the competitive environment of extensive forest, could be ring-barked to allow greater light penetration and then left upright to die, their skeletons potentially standing for generations.

In such small clearings, communal monuments – first long barrows, then causewayed enclosures – were eventually built. Initially, enclosures perhaps encompassed the footprint of existing clearings, but as these were expanded, new circuits were built to enclose larger areas. To reach these places, people and their herds followed watercourses as far as possible, as unmistakeable routes that allowed livestock to drink at will. Except on very steep gradients, even minor streams flowed through relatively open corridors created by beavers, where abundant low, tender growth in turn attracted browsing by wild ungulates. On valley floors, such corridors might connect intermittent wider clearings. Livestock moving along streams would exaggerate the natural openness of the corridors. Where watercourses ran approximately straight for far enough, these corridors might afford views towards distant monuments. Where monuments occupied clearings alongside watercourses, the extent of the clearing might be gradually revealed as people approached. Yet it is unlikely that monuments on upland eminences would themselves be visible until the clearing was considerably expanded. Rather, it was initially the 'notch' in the canopy, left by absent trees, which created a distinctive landmark on the skyline. Where enclosures were used only for a few decades, views of these places probably never developed further. This, then, is how affordances for remote perception arose in theory: it remains to explore how individual monuments were experienced in practice.

The case studies in Chapters 7-11 have been chosen to illustrate both idiosyncrasies and commonalities in the ways that monuments in different landscape settings were remotely perceived. The balance of emphasis between causewayed enclosures and long barrows differs in each study. The three 'classic' causewayed enclosures and nearby long barrows on the North Wiltshire Downs (Chapter 7) collectively gave rise to, and still epitomize, the traditional hypothesis of remote visual perception. Chapter 8 explores how this hypothesis plays out along the Cotswolds escarpment - arguably the most extreme topographic context occupied by causewayed enclosures and long barrows, and therefore an acid test. Chapter 9 deals with the monuments of the lower Medway valley, which cannot be termed 'riparian' yet conspicuously avoid the highest ground. Chapter 10 turns to the low-lying landscapes of East Anglia where the hypothesis seems, *prima facie*, most vulnerable. Finally, Chapter 11 returns to chalk downland, to examine the well-dated complex of monuments on Hambledon Hill, Dorset, which raises other questions.

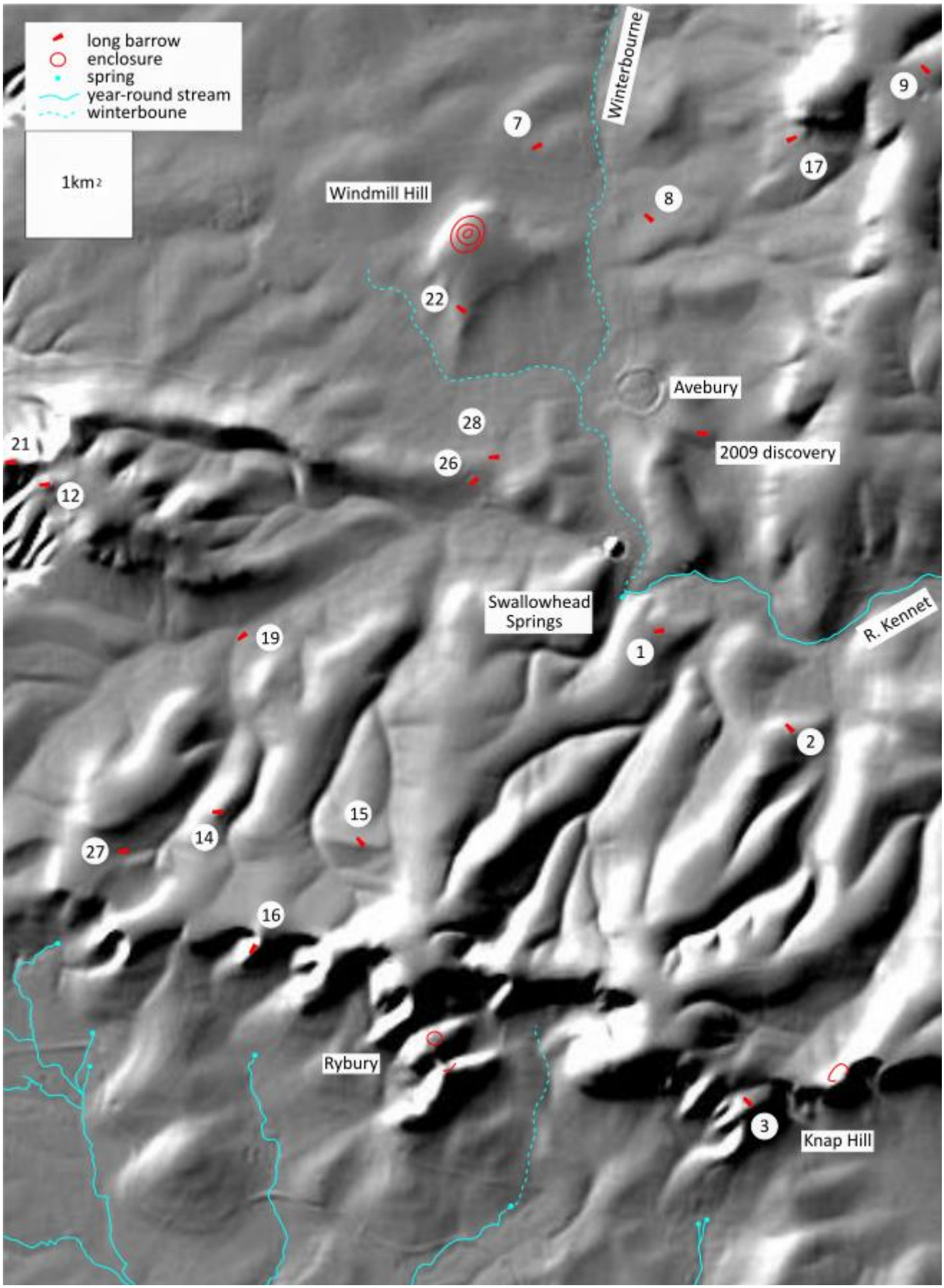

Figure 7.1: Key sites on the North Wiltshire Downs discussed in Chapter 7. For numbered long barrows, refer to Table 7.1. *n.b.* some long barrows to the east and west of this concentration have been omitted due to lack of space.

7. Monuments, settlements and pastures on the North Wiltshire Downs: deconstructing the paradigm of remote visual perception

…the lower grounds covered by forests and morass, by very few open glades. The grass lands were to be found in the uplands, and especially on the dry chalk downs…

- William Boyd-Dawkins (1921, 256)

7.1 Introduction

The causewayed enclosure on Windmill Hill – Piggott's 'type-site' – has seen prolonged and intensive discussion of remote perception (Smith 1971, 92; McOmish in David *et al*. 1999, 16), while its near neighbours, Knap Hill and Rybury, sited on the escarpment edge overlooking the Pewsey Vale, have also been closely involved in the development of the hypothesis. Their survival as earthworks, a condition now known to be atypical, made them front-runners in the initial small corpus around which early interpretations were built (Curwen 1930). The same is true of the cluster of *c.*26 long barrows on the intervening downland, which include West Kennet (Piggott 1962), arguably the best-known Neolithic funerary monument. When Windmill Hill was under investigation in the 1920s, it remained universally agreed that the lowlands were densely forested and the chalk downlands open grassland (*e.g.* Boyd-Dawkins 1921, 256). The long gestation of ideas about views that have coalesced around these sites has made the eventual hypothesis of oriented remote perception extraordinarily resilient, both to theoretical developments and to the discovery of new sites in very different topographic settings (Chapter 2). Explicitly or implicitly, therefore, the constellation of ideas derived from the study of these sites has framed thinking about Early Neolithic monuments throughout Britain.

By re-examining these influential monuments that are supposedly well understood and representative, this chapter will demonstrate that even these 'classic' sites are, in some respects, under-researched and idiosyncratic. I previously characterized the Windmill Hill enclosure as a 'lowland-oriented' site and its neighbours at Rybury and Knap Hill as 'upland-oriented' (Oswald *et al*. 2001, figs. 5.24; 5.25; see Figures 1.7a & 1.8a). This crude distinction has been accepted (Whittle, Bayliss & Healy 2011, 61; 97; 102), but the more nuanced field observations presented here highlight traits shared by all three, as well as differences. Like Knap Hill and Rybury, long barrows like Adam's Grave, which today command huge vistas across the Pewsey Vale, are particularly susceptible to discussions of remote visibility. To avoid over-emphasizing their qualities, this chapter concludes with a brief consideration of other local long barrows.

Figure 7.2a: GIS viewshed of Windmill Hill (Batchelor 1999; David *et al*. 1999, fig. 11), problematic both because it does not use the 'times seen' algorithm (*i.e.* it is crudely binary) and because the chosen (single) viewpoint was the summit of the hill, not the inner circuit, which is centred *c.*70m to the north-west and *c.*4m lower. Compare with Figure 7.5a, which addresses these issues.

7.2b: Line drawing transcribed from photographs (David *et al*. 1999, fig. 12). More helpful in some ways, this also shows the view from the summit and lends distant features more clarity than they really have.

7.2c: Josh Pollard's reconstruction drawing, adopting a semi-bird's-eye viewpoint (Whittle & Pollard 1999, fig. 227). This was obviously impossible to attain in the Neolithic and renders visible features that are actually obscured by the topography (*e.g.* Horslip long barrow). Reproduced by permission of Josh Pollard.

7.2 Windmill Hill and its environs

7.2.1 The monument, its setting, and temporal change

None of the graphical methods previously employed to depict the viewshed from the enclosure on Windmill Hill is entirely successful (Figure 7.2). The hilltop, rather than the actual circuits, has repeatedly served as the viewpoint, reflecting deeply ingrained assumptions about the importance of summits. Similarly, written descriptions have emphasised the panoramic qualities of the hill (Whittle & Pollard 1999, 383). Yet all three almost-concentric circuits 'tilt' north-north-westwards, so that the hilltop screens off much of the view south-eastwards and hides the inner circuit from that direction. The three circuits were probably built in the sequence inner: outer: middle, over the span of one or two generations (Whittle, Bayliss & Healy 2011, 91-2). This new chronology undermines aspects of previous interpretations of the monument[1] and adds a fourth dimension which previous discussions of visibility have not considered.

The 'flat country' (Whittle 1994, 3) to the north-west, towards which the circuits tilt, is a slightly undulating plateau only 10-20m lower than the summit of Windmill Hill. Between them lies a lower saddle between two stream valleys: the Winterbourne on the east and a diminutive tributary on the west (Figure 7.1). Beyond the saddle, the near horizon, formed by the first rise in the plateau, lies *c.*1.7km from the enclosure, close enough for sounds and even smells to carry. From the highest point of the interior of the inner circuit, and the actual summit, more distant views of the plateau are just possible where trees are absent on the near horizon, in favourable weather. But here the GIS-derived viewshed benefits from 'ground-truthing', for it is unlikely that this distant terrain, which the topography renders only dimly and partially visible even in the absence of extensive forest, could be visually linked to the enclosure. The stronger visual connection is with the saddle and its environs, much closer to the enclosure.

In this setting, high-canopy forest would be dominated by lime, ash, elm, oak, with occasional beech, and an understory of hazel, hawthorn, field maple and yew (Bennett 1989). Many of these species are attested at or near Windmill Hill by excavated charcoals (Dimbleby 1965; Cartwright 1999; M.J. Allen 2005; Allen & Davis 2009), but lime and elm are strikingly absent, perhaps because they were selectively preserved for browsing and/or for winter fodder, or because they both make notoriously poor firewood. Potentially, a glade on the isolated hilltop was initially created by wind, then adopted opportunistically. A mixed deciduous plantation on the north-western flank of the hill and GIS modelling demonstrate equally effectively that it would be necessary to clear even patchy woodland well beyond the outermost circuit for people in the inner circuit to see beyond the edge of the clearing itself (Whittle & Pollard 1999, 383; Figure 7.3a/b).

[1] Including my own interpretation (Oswald *et al.* 2001, fig. 4.26), but with hindsight I should have inferred the new sequence from the plans of the circuits alone.

Figure 7.3a: View north-westwards from the line of the outer circuit of the Windmill Hill enclosure, in early March. Note that even without foliage, the relatively small trees (mainly oak) in Windmill Hill Plantation obscure even the opposing slopes, which are the most readily visible part of the surrounding landscape.

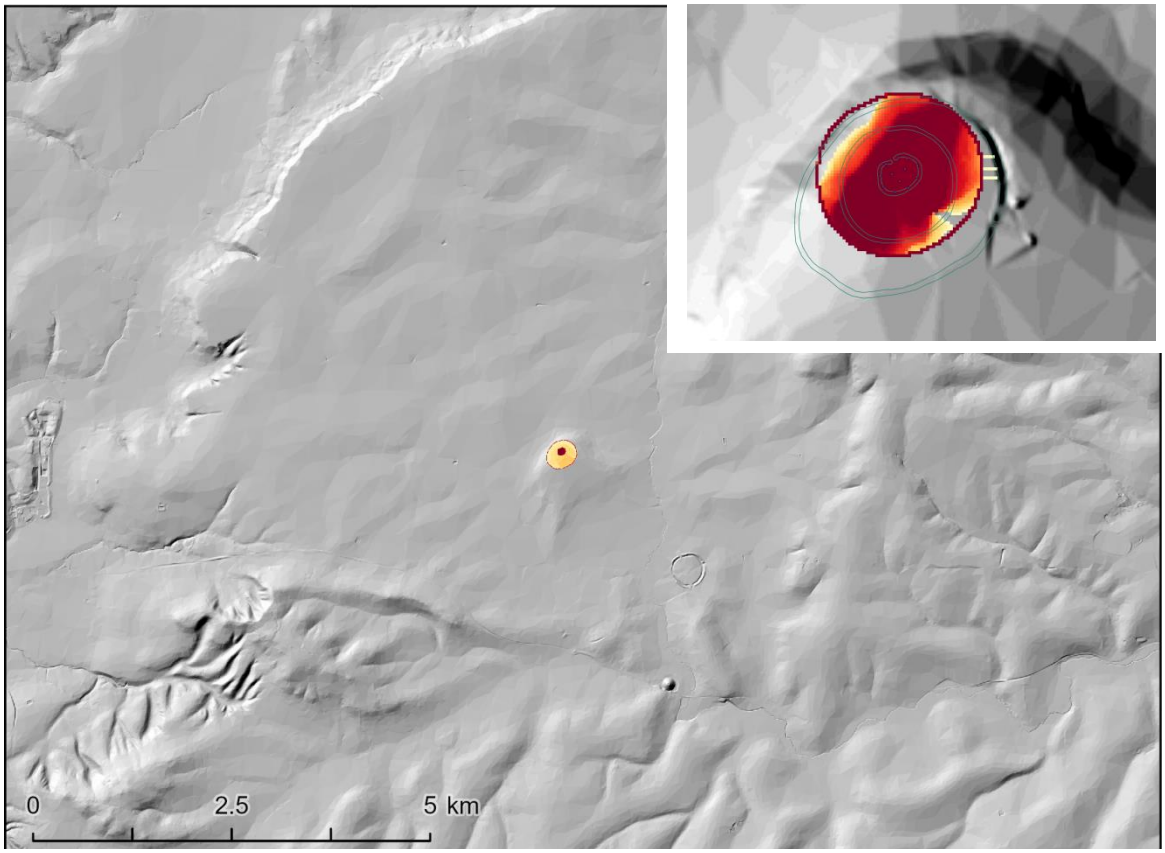

Figure 7.3b: Cumulative viewsheds afforded to a 1.6m-tall person from Windmill Hill's inner (red) and outer (yellow) circuits, if 25m-high forest was cleared to 10m beyond each perimeter. Even with this relatively low forest, it was impossible to see beyond the edge of even the larger clearing, even from the highest point of the hill. Inset: even if the clearing extended 250m from the inner circuit, the perimeter would be invisible to people approaching the north-west entrance until they were well inside the clearing.

Regrettably, the negligible environmental evidence recovered from the earliest (inner) circuit reveals almost nothing about the contemporary surroundings. Charcoal from all the circuits is dominated by oak and hazel, species which were conceivably used to make hurdles[2] surmounting the banks (Cartwright 1999, 160). These materials were potentially gathered some way from the enclosure, however, so the charcoal may not indicate either the character or the proximity of the forest.

However, environmental evidence from the buried soil beneath the outer circuit's bank, probably built a few years or decades later (Whittle, Bayliss & Healy 2011, 91), suggests that its environs were only partly forested and that people had cleared vegetation using fire (Fishpool 1999). The middle circuit, constructed one or two generations later, was probably planned and executed in fairly open conditions to achieve such near-perfect circularity[3]. As noted in Chapter 5, there is a mismatch between the temporal imprecision and spatial specificity of the environmental picture, and the more precise dating now available for the circuits. The environmental evidence could reflect regeneration of scrub after a relatively extensive initial clearance predating or associated with the construction of the inner circuit.Or the earliest circuit may echo the footprint of a small clearing, and the relative openness attested *c.*140m away could reflect the impact of expanding browsing and/or deliberate clearance over perhaps decades following construction of the earliest circuit. Indeed, this expansion perhaps prompted construction of the outer circuit, the approximate circle echoing the perimeter of the expanded clearing. Or, since the buried soil was only sampled on the south-east side of the circuit, perhaps environmental conditions *c.*330m away on the opposite side of the summit differed greatly.

To support the contention that the monument commanded reciprocal views with the surrounding landscape, Pollard's reconstruction drawing shows broad, open corridors radiating from the enclosure (Whittle & Pollard 1999, fig. 227). Linear clearances[4] are not impossible, given the tendency for livestock to follow the same path for years and to browse on the hoof, but tree canopies will eventually span corridors even 20m wide (see Chapter 5). A clearing that encompassed the inner circuit tightly, approached by narrow cattle trails, would conceal the earthworks from afar. Perhaps an isolated spot within a patch of forest was chosen to conceal the enclosure (Fishpool 1999, 132). It is even unlikely that the banks of freshly-dug chalk were visually striking at close range as often claimed (*e.g.* Whittle *et al*. 1999, 347), for tip-lines within the surviving bank of the outer circuit suggest that the chalk was dumped behind a turf revetment (Whittle 1977b, 338).

[2] Excavation revealed no other evidence for the use of timber in the bank that presumably accompanied the inner circuit of ditch. Based on the charcoal alone, it would be unwise to speculate about how many oak trees may have been felled, or hazels coppiced.

[3] With hindsight, this observation should have informed the sequence I proposed previously based on the plan of the site alone (Oswald *et al.* 2001, fig. 4.26).

[4] Although it may be compatible with the linear clearings that presumably framed cursus monuments.

Figure 7.4a: View south-eastwards towards Windmill Hill from 0.9km away, in early March. Note how even the relatively short trees in Windmill Hill Plantation would prevent views from to and from the enclosure, if the plantation extended further along the slope. The visual effect of a cleared notch on the horizon is demonstrated by the opening that afforded the viewpoint for Figure 7.3a.

Figure 7.4b: View north-north-eastwards along the un-named winterbourne to the west of Windmill Hill, with the hilltop in the background 1.2km away, photographed in early March. Horslip long barrow stood 300m to the north-east of the viewpoint; note that even the leafless, outgrown hawthorn hedge obscures much of the skyline in this direction, so for the monument to be visible from the valley floor, the clearing would have to include the viewpoint itself.

In summary, a clearing much larger than the eventual outer circuit would be necessary for anyone standing at the highest point of the interior of the inner circuit, or even on the actual summit, to see beyond the confines of the clearing itself (Figure 7.4a). A clearing encompassing the inner circuit, however, with a minimum area of *c.*0.7ha, would inevitably create a distinctive 'notch' on the horizon, at least when seen from a restricted arc to the north-west, assuming clearings there large enough to afford vantage points (Figure 7.5). The construction of the more massive outermost circuit would potentially make the perimeter and/or the notch visible from the south for the first time, as well as allowing more distant views out. The labour involved in constructing the earthwork perhaps implies a significant increase in the local population in the years or decades that had passed since the construction of the inner circuit. If the wider landscape had become more intensively farmed and extensively cleared, the potential for remote visual perception must have changed accordingly.

7.2.2 Movement around Windmill Hill and nearby long barrows

The main (or only) entrance in the inner circuit faces north-north-west, suggesting that the final approach to the initial enclosure was from the direction of the area it overlooked, via the saddle. The gradient on that side of the hill is steeper, but not enough to deter humans or livestock. Perhaps the entrance was oriented towards the saddle because it facilitates access to the valley-floors on either side, both of which could be grazed. Today, both small streams are 'winterbournes' (*i.e.* seasonal) as far as Swallowhead Springs, *c.*4km to the south (J.G. Evans *et al*. 1993, 142). A number of indicators, however, suggest that the flow was more reliable further upstream in the Neolithic (Whitehead *et al*. 2013; D. Field *et al*. 2013, 223). Winterbournes primarily reflect low summer water-tables on chalk downlands, but the situation would be accentuated in the Early Neolithic by the reduction in precipitation reaching the ground caused by extensive tree-cover (Tudge 2005, 381-2). Yet historic records indicate, counterintuitively, that the Kennet only dried up in late autumn/early winter (B. Cameron, quoted in Whitehead *et al*. 2013, 173-4), when livestock require least water (see Chapter 6) and herders are unlikely to visit remote pastures. This would overcome one of the disadvantages of the enclosure's location as perceived by the excavators (Whittle & Pollard 1999, 383).

The valley floor of the Winterbourne was *c.*1.6m lower than today and therefore somewhat narrower (Evans *et al*. 1993, fig. 6; Figure 7.6). Its tributary, which remains unsampled, was probably similar (Figure 7.4b). Beaver[5] dams may explain the puzzling paludification which preceded extensive woodland clearance on the valley floor of the Winterbourne (*ibid*., 160). Although it remains uncertain whether the water flow was adequate for beavers year-round north of Swallowhead Springs (Campbell & Robinson 2013, 181), ponds might sometimes last through summer, even if the winterbourne did not flow, offering both extensive wetland grazing and year-round drinking for livestock.

[5] Remains were found at West Kennet, *c.*3km downstream (Piggott 1962, 49; Edwards & Horne 1997, 123).

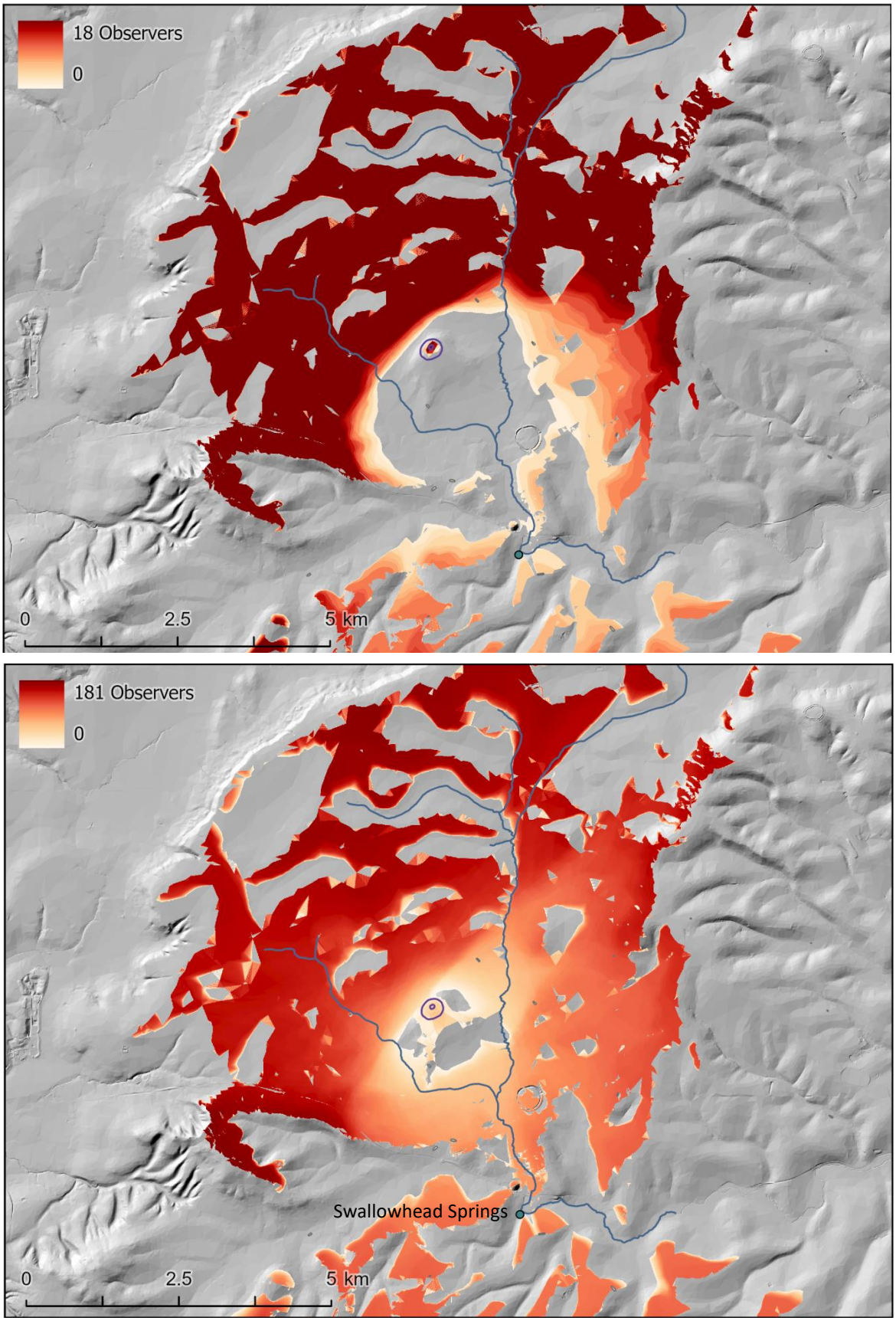

Figure 7.5: Cumulative viewsheds afforded to a person 1.6m tall from within the original inner circuit on Windmill Hill (above), compared to the later outer circuit (below), which encloses the actual summit. In contrast to Figure 7.3b, this routine assumes a total absence of forest in both cases, to illustrate how the expansion of the enclosure potentially afforded intervisibility with more of the land to the south-east.

Uncultivated dryland pasture existed elsewhere on the valley floor (J.G. Evans *et al.* 1993, 160-2). The gentle slopes overlooking the reliable, year-round stretch of the watercourse were conceivably more deforested and more intensively settled/cultivated (*ibid*., 142; D. Field *et al*. 2013, 223). Yet, as noted above, this whole area is screened from the earliest enclosure on Windmill Hill, and *vice versa*, by the summit itself. This would be compounded if the southern slopes of the hill were forested.

Construction of the outer circuit also apparently involved a change in orientation, since the only convincing entrance evident in both earthwork and magnetometric survey faces east-south-east (McOmish 1999, 14; fig. 15). Rather than just differential preservation, the more massive bank flanking this supposed entrance[6] may result from deliberate enlargement of the earthwork to create a more impressive 'frontal façade', for earthwork survey suggests a slighter, earlier phase of the bank (*ibid*.). People were, therefore, approaching the site from the south-east, effectively reversing the earlier pattern, perhaps because this approach was more direct and the 'least cost path'. Access arrangements perhaps changed again when the middle circuit was added. Both earthwork and magnetometric survey point to an unusually broad causeway in the ditch – perhaps a principal entrance – facing north-north-west, an orientation which could work straightforwardly with the entrance into the inner circuit (assuming this was still significant). Both survey techniques also suggest an abrupt inward curve in the ditch on the opposite side of the circuit, perhaps representing a classic in-turned entrance. This has not previously attracted comment, probably because this sector is largely masked by a round barrow[7]. An opposed entrance here was potentially usable, slightly more awkwardly, with the supposed entrance in the outer circuit, whilst also reflecting the concern with geometry evident in the almost perfectly circular plan of the circuit.

At least three long barrows (Horslip, Millbarrow and Shelving Stones) lie within 2km of the enclosure; the last two could potentially be seen – just – from the eastern side of the inner circuit itself (Whittle & Pollard 1999, 383; N. Crane 2016, 90; Figure 7.5). Although construction of the inner circuit on Windmill Hill appears early amongst local monuments (Whittle *et al.* 2011, 109), this atypical sequence relies on a small dated sample of the *c.*25 local long barrows, including Horslip and Millbarrow (Ashbee *et al*. 1979, 209; Whittle 1994). More long barrows may await recognition (*e.g.* Grady 2010), for neither the soils nor post-Neolithic land-use west of Winterbourne Monkton facilitate aerial prospection (M. Barber pers. comm.). Those areas where historic arable farming was most intensive are perhaps also those likely to be cultivated and settled in the Neolithic, yet these areas have seen less research than areas where earthworks survive (Field *et al*. 2013, 224-5).

[6] Although the stretch to the south has mostly been levelled by medieval and later ploughing.

[7] Winterbourne Monkton 2, presumably Early Bronze Age. If this observation is correct, the nearly-perfectly circular circuit with opposed entrances might represent a new kind of monument with parallels to, for example, the earliest phase of Stonehenge or the Flagstones enclosure in Dorset.

Figure 7.6: View north-westwards from the course of the Winterbourne towards Windmill Hill, 1.3km away from the perimeter of the inner circuit, in early March.

Horslip long barrow (22), 0.9km away on the southern slopes of Windmill Hill, is the only one of the dated sample which may pre-date the enclosure, but its dating is imprecise (Whittle, Bayliss & Healy 2011, 105). This barrow, like the rest of the area to the south and south-east of Windmill Hill, is hidden from the inner circuit, and *vice versa*, by the hilltop itself, and perhaps by forest, although sounds are audible. Environmental evidence from the barrow suggests, first, that its environs were not totally forested before construction began; second, that the land had gradually become grassland; third, that while an area near the barrow eventually regenerated to hazel scrub and woodland, the monument itself remained under grass (Ashbee *et al*. 1979, 277-8). Occasional grazing must explain the lack of regeneration (Campbell & Robinson 2013, 180-1). The extent of the clearing is uncertain, but even a notch created by construction of the earliest enclosure could not be visible from here. Rather, the position and alignment of the barrow suggest that it was intended to be seen in profile from the valley of the Winterbourne's minor tributary. The evidence for arable nearby cultivation, and therefore settlement, is questionable. Therefore, the monument seems designed to be seen by herders grazing their livestock alongside the watercourse and in the clearing that hosted the barrow, or moving along the valley, some distance from their normal place of abode. The faunal assemblage from the barrow contained equal proportions of cattle, sheep/goat and pig (Evans *et al*. 1979, 225), perhaps all brought there to feed.

Millbarrow (7), *c.*1km north-east of Windmill Hill, was a two-phase monument *c.*65m long[8], whose deep ditches suggest that it stood several metres high in both phases. It was probably (at 68%) originally constructed 225-415 years after the middle (latest) circuit on Windmill Hill: towards the end of, or even somewhat after, the main use of the site (Whittle, Bayliss & Healy 2011, 105). The topographic placement and orientation of the barrow suggest it was not designed to be viewed from the enclosure (Figure 7.7a), although it was perhaps visible from the hilltop in the increasingly open landscape. Rather, it seems designed to be seen in profile from a dry valley to its north-east, which opens into the valley of the Winterbourne, or conceivably from the gentle slopes on the opposite side of that watercourse. It is difficult to avoid the observation that such areas were favourable for settlement and mixed farming, hinting that the burial monument was built by an individual small community living within the viewshed.

Whittle (1994, fig. 1) is justifiably cautious about Shelving Stones (8) and, based on a 19th-century field-name, Marshall (2016) suggests a location *c.*400m south of that given for the sarsen chamber by Barker (1985, 16). Lidar (Leary *et al*. 2013, foldout 1E) shows pre-medieval field boundaries throughout the locality, implying that some trace of the barrow could remain visible, and extreme processing of the data reveals a 100m-long rectangular

[8] No geophysical survey was carried out by Whittle and aerial survey proved ineffective due to the dominant soil type (M. Barber pers. comm.), so antiquarian records of its size still stand. While Whittle's distribution map suggests an east–west orientation, his excavation plan orients it *c.*60 degrees.

Figure 7.7a: View south-westwards from the site of Millbarrow (7) towards Windmill Hill, 1.0km away from the perimeter of the inner circuit, in mid-September. Note the impact of the intervening plantation.

Figure 7.7b: View westwards from the most plausible site of Shelving Stones long barrow (8) towards Windmill Hill, 1.6km away from the perimeter of the inner circuit, in mid-September. To the right, even the mature poplars along the course of the Winterbourne would screen the top of Windmill Hill.

mound flanked by ditches only 100m east of Barker's spot[9]. Its *c.*80-degree orientation differs from the surrounding field system. No potential candidates are visible in the field indicated by Marshall, but a mound in the next field to the east (centred at SU 1079 7141), with a similar orientation, would dominate a dry valley snaking down to the Winterbourne. Overlooked by Windmill Hill and 1.6km away across the valley, the long barrow (in either location) could be intervisible with the causewayed enclosure, tree cover permitting (N. Crane 2016, 90; Figure 7.7b). Then again, neither the placement of the barrow in relation to the undulating topography, nor its orientation, clearly references the enclosure. It is equally plausible that this monument, like the Horslip barrow, was designed to be seen by people in, or passing through, the valley of the Winterbourne. Higher ground to the north, east and south would restrict this viewshed to a fairly narrow arc, regardless of tree cover.

A 30m-long[10] oval mound at the foot of the steep escarpment of Monkton Down (17), 3.0km to the east-north-east of Windmill Hill, has been cautiously accepted as a possible long barrow (Barker 1985, 20; Whittle 1994, fig. 1; Kinnes, unpublished notes). Straddling the 200m contour, it stands slightly higher than the summit of Windmill Hill. It was therefore potentially visible, assuming a relatively open landscape. Here, it is treated with considerable scepticism.

To summarize, in its original form, the causewayed enclosure was screened from the more settled landscape to the south-east, and from the nearby Horslip barrow, certainly by the topography and perhaps by forest. In the opposite direction, however, it was potentially intervisible with a sheltered saddle with ready access to watercourses – plausibly interpreted as expanses of pasture. The principal entrance was also oriented in this direction. Broadly to the north-east of Windmill Hill, two (perhaps three) long barrows were potentially intervisible with the causewayed enclosure, but there is no indication that they were deliberately placed to achieve this. Indeed, they were perhaps not even in contemporary use. Rather, these seem to relate to more localised areas, perhaps representing patches where small communities dwelled and/or pastured livestock. In due course, a dramatic expansion of the enclosure and an increase in the size of the earthworks, coupled with the clearance of more woodland from the wider landscape, resulted in the site being visible, at least potentially, from the hitherto hidden zone to the south, where settlement and arable farming were perhaps well established.

[9] I am grateful to Mark Byrne for his help in distinguishing these very slight earthworks in the lidar data. The one closest to the location given by Barker appears more plausible and so is depicted in Figure 7.12.

[10] The length of 30m, derived from the records made by the OS Archaeology Division, is *c.*10m longer than Barker states (1985, 20). The OS (according to the Pastscape record for SU 17 SW 45), however, was doubtful about its date and function, citing a lack of convincing evidence either in the form of the earthwork or from the antiquarian excavations. The siting of the mound at the foot of a steep escarpment potentially finds parallels in Kent's Medway valley (see Chapter 9), but its alignment across the contours is shared by only one certain long barrow in North Wiltshire – Kitchen Barrow – and if the sarsens at the higher south-western end of the mound represent an orthostatic façade, it is unique in not facing broadly eastward.

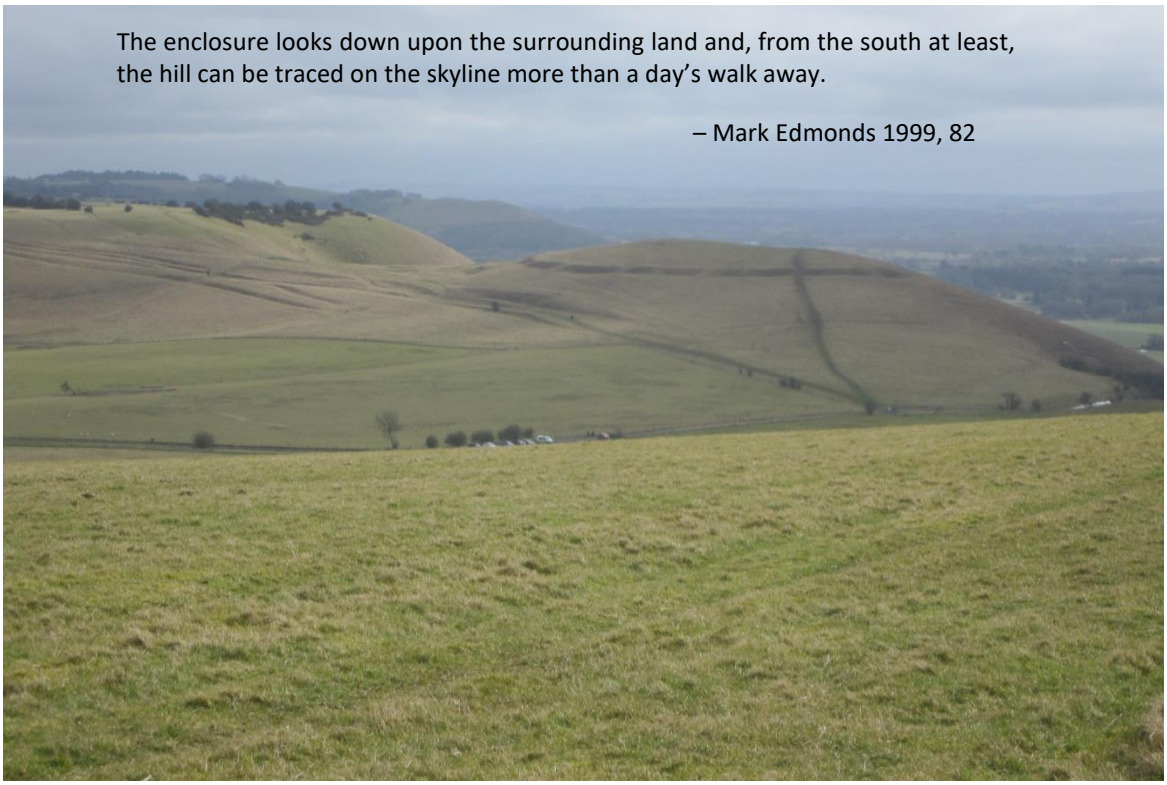

Figure 7.8a: View from Walker's Hill, 400m north-west of Adam's Grave, looking eastwards along the Wiltshire Downs escarpment, with the north-facing earthworks of Knap Hill causewayed enclosure clearly visible 1.0km away. The Pewsey Vale, beyond, is made indistinct by early March mist.

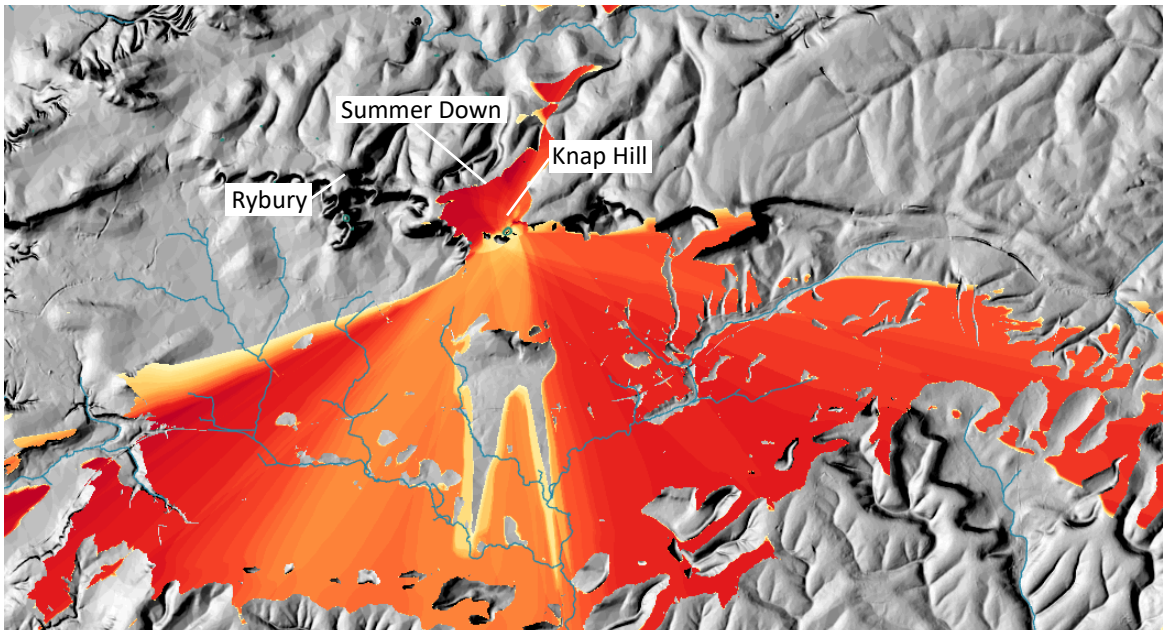

Figure 7.8b: Viewshed from Knap Hill, illustrating the southward vista normally commented on (which assumes forest to be absent, as here), compared to the view over Summer Down. This area is cumulatively more visible and would require a more localised clearing. The eye-level of the viewer is 1.6m high.

7.3 Knap Hill and Rybury

The binary pattern at Windmill Hill is also detectable at Knap Hill and Rybury, less than an hour's walk from each other. If settlements needed fresh water, the gentle slopes around the spring-line along the northern edge of the Pewsey Vale would be attractive (Figure 7.1). The Vale has seen too little investigation to provide definite evidence[11], but chance discoveries of Neolithic axes are widespread (Field 2006, 109). Two long barrows, Adam's Grave (3) and Kitchen Barrow (16), were built on spurs projecting into the Vale, apparently to make them more visible, as noted by Thurnam (1869, 171-2; see Chapter 2.2), who excavated Adam's Grave in 1860. Yet, as at Windmill Hill, the earthworks of both enclosures are screened from this hospitable zone by their placement in relation to the landforms that they occupy. Whilst conspicuous when seen from higher downland to the north (Oswald *et al*. 2001, 5.25-8), they are equally visible from intervening natural hollows, which, like the saddle overlooked by Windmill Hill, perhaps provided relatively contained and sheltered pastures, far enough from cultivated plots along the springline.

The absence of earthworks along the southern side of Knap Hill manifests the enclosure's northward orientation (Figure 7.8a/b). Magnetometry and earthwork survey found no evidence for a built perimeter there, prompting the unconvincing suggestion that work was abandoned (Connah 1965, 22; note 9, p.23). It seems more likely that the unusually massive perimeter, with its unusually pronounced and evenly spaced causeways, was designed to be seen from Summer Down, a dry valley also overlooked by Adam's Grave. The most plausible candidate for an entrance also faces north-west, marked by a broader causeway between slightly inflected lengths of bank. Excavation suggests that the enclosure was used for feasting *etc*., but there is little level ground in the interior to host such activities easily. The 'idealised' form of the perimeter lends it a 'cenotaphic' quality, hinting that architectural display was paramount. Tip-lines within the bank, however, suggest that it had a turf frontal revetment (Whittle 1977b, 338), so the 'gleaming white chalk' epithet is again inappropriate. The late date of the enclosure - two centuries after Windmill Hill, as activity there was in decline (Whittle, Bayliss & Healy 2011, 99-101) – is relevant, suggesting that symbolic aspects of the monument form had come to the fore.

The 65m-long profile of Adam's Grave dominates the western skyline of Summer Down, this aspect arguably more impressive than the front of the mound, which is presented towards the Vale. The profile is visible from the west, but the mound lies slightly nearer the eastern side of Walkers Hill, suggesting that this was the more important aspect. Both monuments were thus meant to be seen from Summer Down, more than from the Vale. If forest formed the backdrop to the barrow, it would be hidden from the west.

[11] The theory that two large sarsens under the floor of the Saxon church next to the springs at Alton Priors, plus a *c.*1,700-year-old yew in the graveyard, might indicate the presence of an underlying Neolithic monument, is untested (https://izi.travel/en/d839-all-saints-alton-priors/en#f958-sarson-stones/en).

Figure 7.9a: View south-eastwards from the centre of Summer Down towards Knap Hill, 0.8km away, in early March. The coniferous shelter belt shows the potential impact of any surviving patches of forest on remote views. The 'dew pond' in the foreground, defunct by the 1880s and eventually used for dumping ploughed-up sarsens, was a short-lived solution to the lack of natural water sources on the downland.

Figure 7.9b: View north-eastwards from the stream that issues from the springs at Alton Priors, looking towards Knap Hill and Adam's Grave, 1.8km and 1.3km away respectively, in early March. The name Alton, first recorded in AD 825, denotes a farmstead by a stream (Skelton 2009, 1). The springs were arguably the primary source of the Avon (Ben Robinson in BBC 2013). Note that the mature trees that nearly obscure the monuments are 130m and 145m away, indicating the scale of clearing that a home base would need to occupy to gain views of the distant monuments.

Covering *c.*250ha, Summer Down could host up to 500 grazing cattle, the species that dominates the faunal assemblage from Knap Hill (Connah 1965, 3). Today, the land is used exclusively as sheep pasture due to the lack of water on the high ground, and there is no reason to think the hydrology differed 6,000 years ago (Figure 7.9a). Consequently, cattle would need to be taken down to the springs daily, a round-trip of *c.*80 minutes (Figure 7.9b). Several coombes and spurs offer relatively easy ways up the escarpment, leading into dry valleys that ultimately reach the Kennet valley. Numerous well-developed hollow ways converge on Summer Down, suggesting that this was a particularly important route across the escarpment. Two round barrows in the dry valley apparently relate to the trackways[12], pointing to their longevity.

The molluscan evidence from Knap Hill leaves considerable uncertainty about the character of the local vegetation: 'fairly dry, open grassland, scrub or woodland' (B.W. Sparks in Connah 1965, 19-20). Extensive, mature forest within the natural hollow would conceal both monuments, but since regeneration began around the time that the enclosure was abandoned, it follows that the tree cover had previously been reduced, by deliberate clearance and/or by grazing and browsing. A mixture of light scrub and grassland would certainly allow both monuments to visually dominate this area. Late Mesolithic activity on Golden Ball Hill, immediately to the north-east (Whittle, Bayliss & Healy 2011, 97 and refs.) hints that vegetation cover along the top of the escarpment was perhaps patchy long before the construction of the Early Neolithic monuments, perhaps due to wind damage along this particularly vulnerable crest. On the steep slopes of the escarpment itself, it is reasonable to assume that mature forest could survive throughout the Neolithic, although some was evidently clear by the time 'Celtic' fields were established along the lower slopes.

Edmonds' (1999, 82) suggestion that Knap Hill can be picked out from far to the south requires qualification. Bare of vegetation as the Downs are today, it is difficult to distinguish individual elements of the escarpment from more than a few kilometres, even knowing exactly where to look. If, however, the downland and its escarpment were largely forested, clearance of the domed summits of Knap Hill and Walkers Hill, whether by wind-blow or deliberate means, would create conspicuous notches. The presence of forest on the escarpment may also account for the absence of a built southern perimeter. The projected extent of the clearing that contained the enclosure would be 15-20m lower than the summit. Even if trees standing on the escarpment did not grow to reach their maximal heights, therefore, their tops would still screen the summit and, certainly, the level followed by the earthworks themselves. For the hill to assume the appearance of a 'tonsure', far more extensive clearance would be required. Yet a notch more than 200m broad and up to 20m lower than the rest of the skyline would stand out for up to 30km, if there were clearings that afforded suitable viewpoints (Figure 7.8b).

[12] My field survey identified a hollow way at SU08056524 running under the 5th- or 6th-century Wansdyke.

Figure 7.10a: View westwards from Milk Hill towards Rybury, 2.2km away, across the natural embayment overlooked by the causewayed enclosure. Not that at this point in early March, the winterbourne whose source lies near the centre of the embayment was flowing quite strongly.

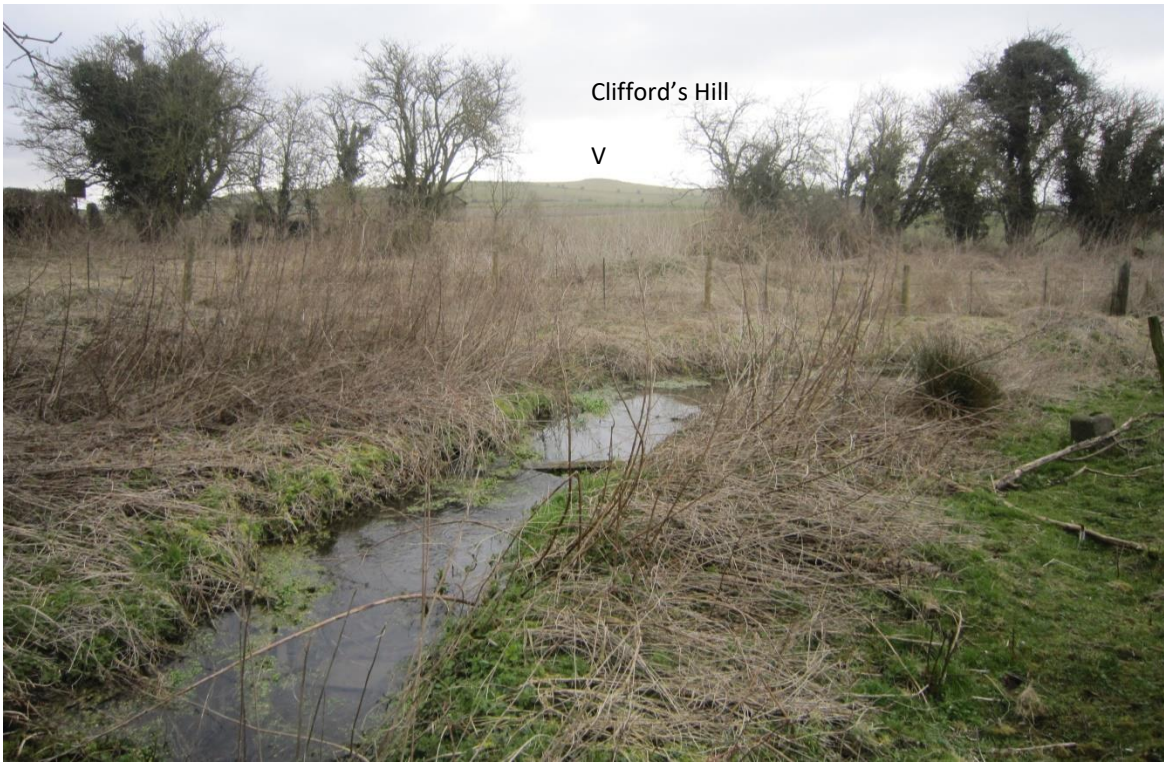

Figure 7.10b: View north-north-eastwards from the stream that issues from the spring at Stanton St Bernard, looking towards the outwork on Cliffords Hill, 1.4km away, in early March. Even eroded and grassed over, the earthwork is clearly visible from this distance.

Rybury is emphatically overlooked by the Downs, including the escarpment's highest point, Tan Hill, whose summit stands 50m above the enclosure. As at Knap Hill, the actual earthworks of the enclosure appear to be oriented towards this high ground and away from the Vale, despite the latter being favourable for settlement and cultivation (Oswald *et al*. 2001, 99-102). It is, however, necessary to refine these earlier observations. The projecting peninsula is certainly striking from above, but its unusual form is harder to discern from ground-level in the Vale. Closer at hand, the enclosure tilts towards a deep embayment in the escarpment, its base extending over *c.*60ha. Lidar and field observation suggest that a winterbourne once originated within this natural bowl (Figure 7.10a), hinting that the area could support well-watered riparian vegetation. As at Windmill Hill and Knap Hill, if this land was deforested through grazing or other means, people within the enclosure would command a clear, and reciprocated, view over the whole hollow. On the other hand, it is doubtful, if the steep southern side of the peninsular remained forested, whether anyone looking southwards from the enclosure could see far, or clearly, beyond the clearing that contained the monument. Seen from the Vale, the notch created by the clearing was probably far more conspicuous than the landform, as at Knap Hill.

The unusual short stretch of causewayed earthwork on Clifford's Hill, 220m south-east of the Rybury enclosure, has attracted little comment before[13], but potentially offers important new insights. Like the 'cross-ridge dykes' at Hambledon Hill, the isolated earthwork seems to control access via a long spur that offers a relatively easy approach to the main enclosure (Curwen 1930, 40; Oswald *et al*. 2001, 65). However, the bank accompanying the causewayed ditch appears continuous: a short but impassable barrier. An alternative interpretation, then, is that the outwork was designed to signal the existence of the enclosure, which remains invisible throughout the ascent of the spur. This signal seems to be directed towards a sector of the landscape from which the supposed notch coinciding with the main enclosure was hidden by Clifford's Hill, namely the environs of the springs in Stanton St. Bernard and Alton Priors, 20-40 minutes' walk away (Figure 7.10b). From here, the outwork can certainly be discerned today, eroded and grassed-over though it is, but for this to have been the case in the Early Neolithic, we must assume the existence of sizeable clearings around the springs and a clearing extending at least *c*.150m downslope from the outwork. Given the narrowness of the spur and the likelihood that it served as an approach to Rybury, a cleared corridor akin to those envisaged by Pollard at Windmill Hill is not implausible. But such a corridor would need to be very broad to allow the whole earthwork to be seen, so it is again perhaps more plausible that it was the notch created by the clearing that hosted the outwork, rather than the outwork itself, that was visible from the springline; the outwork itself would only be visible at short range.

[13] Partly because it has never been excavated; though its causewayed form indicates it to be broadly contemporary with the main causewayed enclosure (Bonney 1964), it has not been more precisely dated.

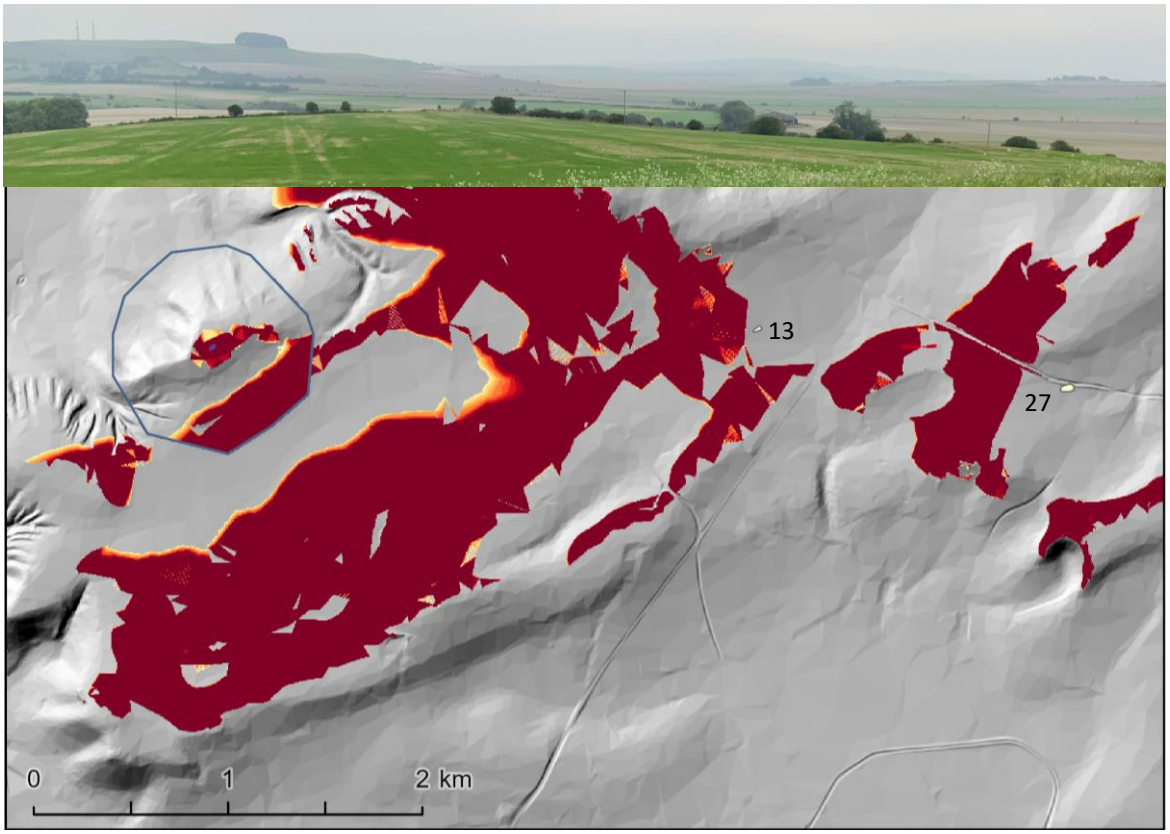

Figure 7.11a: Cumulative viewshed from the long barrow on King's Play Down (23), assuming 25m-high forest cleared to 500m around the monument. Though only 100m from the lip of a steep north-west facing escarpment, the barrow's viewshed clearly relates to the broad valley to its south-east (inset view).

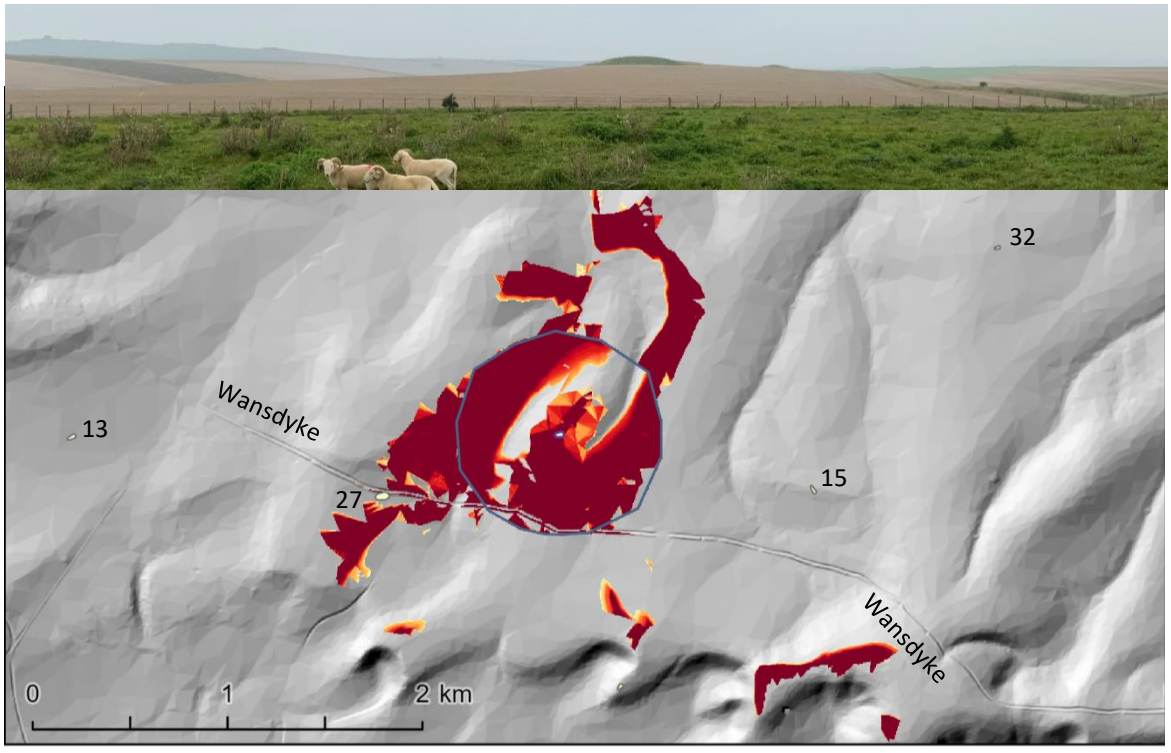

Figure 7.11b: Cumulative viewshed from the 4m-high long barrow on Easton Down (14), assuming 25m-high forest cleared to 500m around the monument. Its careful placement (inset) affords intervisibility with the dry valleys on both sides of the spur that it occupies. The barrow on Roughridge Hill (27) would be intervisible with (14), but the bank of the Wansdyke overlies the barrow, distorting the terrain model.

7.4 Long barrows away from the enclosures

All the barrows in this region occupy fundamentally chalk geology, but it is unlikely that they were designed with object/background contrast in mind. Some were reveted by kerbs of dull grey sarsens, others by wooden panels (Barker 1985). At Beckhampton Road, the mound included deposits of darker brick-earth and coombe rock, compromising the anticipated radiance of the monument (Ashbee *et al*. 1979, 234). Even where chalk was the sole construction material, from a remote viewpoint, mounds built in expanses of grassland would stand out less clearly than places where forest afforded a dark backdrop. Although turf-stripping for construction might leave patches of dark soil that would accentuate object/background contrast for a few years, there is no evidence that the builders set out to achieve such visual impact, nor that they perceived the chalk as anything more than the standard local material.

Whittle *et al.* (1993, 231) distinguish between barrows close to a well-watered 'core' between Avebury and East Kennet (2) and more 'peripheral' examples, like Easton Down (14). More reliable water-flows in the current winterbournes and/or beaver ponds might extend this core as far north as Windmill Hill and the Horslip barrow, as proposed above. The fairly regular spacing of barrows perhaps indicates the existence of relatively static small communities (Field *et al*. 2013, 227-9). Some of the peripheral examples, including Easton Down, seem to relate to specific dry valleys that penetrate the downland, either from the north or south, hinting that people moved periodically into this massif. All the monuments are within an hour's walk of the nearest natural water supply, allowing herders to move cattle away from cultivated areas on a daily round-trip. Barker (1985, 35) discerned no pattern in the topographic siting of the barrows in this region. Yet his comment that the barrow on King's Play Down (23) is not conspicuously sited (*ibid*., 22), implies a tacit assumption that the monuments should occupy such positions (Figure 7.11a). Although there is clearly variation, most do occupy locally prominent landforms, but usually commanding directed viewsheds rather than panoramas. Easton Down, which occupies the top of a spur, is exceptional, but its siting visually dominates the valley floors on either side (Figure 7.11b). Barker (*ibid*., 34) notes the broadly eastward orientation of the mounds; Figure 7.12 hints at both solar and lunar alignments, with many of the shorter (possibly later?) barrows closer to due east. These orientations were usually achieved without topographic awkwardness, almost all the monuments being constructed along the contours. It follows that topographic affordances were used carefully and selectively. Like the enclosures, most barrows occupy false crests rather than the highest points of the landforms they occupy; in forested settings, the clearings they occupied would therefore stand out as notches, recalling the settings of the enclosures.

Most of the funerary monuments excavated to date occupy relatively gentle, low-lying slopes, from which forest had long been cleared. Horslip has already been discussed. At Beckhampton Road, grazing probably lasted several centuries before the barrow was built, establishing an expanse of turf that contributed to the monument (Ashbee *et al*.

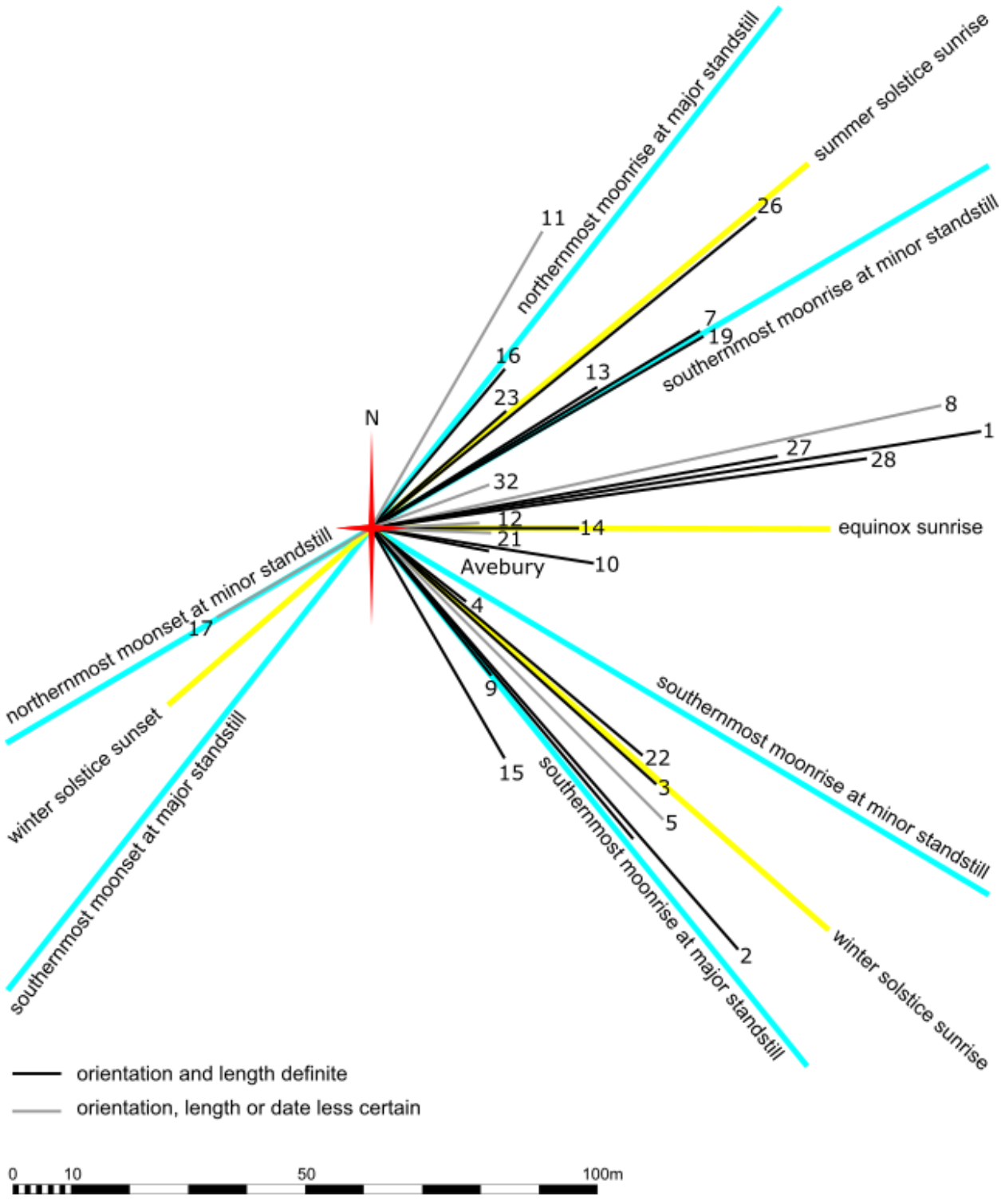

Figure 7.12: Orientation of all long barrows on the North Wiltshire Downs in relation to cardinal solar and lunar directions. Reference numbers relate to Table 7.1. Orientations are mostly based on the OS Archaeology Division's earthwork surveys at 1:2,500 scale. Note that the most obvious outlier, Monkton Down (17), is not certainly a long barrow. Its orientation is inferred from the presence of large sarsens at the south-west end, rather than any appreciable change in the dimensions of the mound.

Number and name (after Barker 1985)	**NGR** (12-figure refs. = better fix)	**Orient.** (0° = N, cardinal directions = uncertain)	**Ht.** (m)	**Build date** (cal BC, 95%)
1. West Kennet	SU 10460 67740	80°	3.7	
2. East Kennet	SU 11627 66846	140°	6.5	
3. Adam's Grave	SU 11234 63392	130°	6.5	
4. Manton Down	SU 1478 7135	130°	>2	
5. Devil's Den	SU 1520 6965	SE		
6. Temple Bottom (?Bronze Age)	SU 1486 7251	?E		
7. Millbarrow	SU 09429 72208	60°	>2	3,500-3,135
8. Shelving Stone	SU 10477 71559	80°		
9. Old Chapel	SU 1290 7290	140°		
10. West Woods	SU 15683 65627	100°		
11. Avebury Down	SU 11699 70029	30°	>2	
12. Oldbury Hill	SU 04690 69312	90°		
13. Shepherd's Shore	SU 03870 66084	60°	?2.5	
14. Easton Down	SU 06374 66094	90°	4.1	3,600-3,360
15. Horton Down	SU 07676 65807	150°	?2.5	
16. Kitchen Barrow	SU 06683 64799	40°	3.2	
17. Monkton Down	SU 11636 72299	?240°		
19. Beckhampton Road	SU 06656 67733	50°	2.1	
21. Calne Without	SU 04463 69326	90°		
22. Horslip	SU 08606 70496	130°	?3	4,350-3,650
23. King's Play Down	SU 01064 65991	50°		
26. Longstones	SU 08700 69145	50°	6.5	
27. Roughridge Hill	SU 05465 65776	80°	3.0	
28. South Street	SU 09003 69276	80°	?3	3,565-3,105
32. Beckhampton Plantation (discounted)	SU 0900 6715	?ENE		
Avebury (EH 2009 discovery)	SU 10777 89517	100°		

Table 7.1: Revised gazetteer of long barrows on the North Wiltshire Downs. Examples dismissed by Barker are not included.

Figure 7.13: View eastwards in early March towards Milk Hill, looking across the mouth of the Rybury 'embayment'. Note the multiple trackways left by the small number of beef steers grazing the slopes around Rybury. In the middle distance, the line of the winterbourne whose source lies somewhere within the embayment can be discerned. Adam's Grave, 2.9km away, is prominent, but it is suggested above that the mound's slight bias towards to east of the hilltop suggests that it was primarily meant to be seen from the opposite side. Indeed, the monument may have been obscured by forest on the escarpment, but the notch on the skyline created by the clearing it occupied may have been equally eye-catching.

1979, 240-1; 280-1). Open grassland also preceded Millbarrow (Harris & Evans in Whittle 1994, 31). At Shepherd's Shore, the depth of turf stacked in the first constructional phase, even after millennia of compression, was 0.6m thick (Barker 1985, 19), implying a sizeable expanse of surrounding grassland. At South Street, grassland had recovered after ploughing before the monument was constructed (Ashbee *et al*. 1979). Even high on the summit of Easton Down, forest had been cleared, apparently involving burning, cultivation had taken place and grassland was being grazed before the barrow was built (Rouse & Evans in Whittle *et al.* 1993, 211-17). These clearings, though of indeterminate size, were potentially more visible than the monuments they encompassed.

7.5 Conclusions

This first case study has focused on three 'classic' upland causewayed enclosures often thought to exemplify the visual qualities of the entire monument class, or to embody a 'gold standard' to which builders working in less striking terrain aspired. In each case, the modern visitor's gaze is drawn to sweeping views across expanses of lowland, explaining why the hypothesis of oriented remote perception has remained so persistent. My own attempt to refine understandings of viewsheds continued to over-emphasize distant views (Oswald *et al*. 2001, 99-102). Yet remote perception does not, and did not, operate identically even within this small sample.

Windmill Hill has been central to discussions of remote visual perception for over a century, but arguments about the relationship of enclosures to settlements, vectors of movement and the environment are easier to formulate for Knap Hill and Rybury. There, despite the paucity of excavated evidence, particular locales near springs and small watercourses flowing into the Pewsey Vale are obviously favourable to settlement, cultivation and year-round livestock husbandry. The partial circuit of Knap Hill and the unexcavated outwork on Clifford's Hill offer unusual clues to how remote visual perception operated. Historic patterns of movement across the escarpment show that the topography must have influenced the routes that Early Neolithic people and their livestock used when moving between Vale and downland (Figure 7.13). Figure 7.14 expresses these observations schematically, building in the locational factors and area estimates noted in previous chapters. Admittedly a snapshot frozen in time, the heuristic illustration aims to encourage more dynamic thinking about where clearings most likely existed and how remote visual perception of monuments would change as people followed particular trails. Similar representations conclude the next case studies.

The limited evidence from excavations at the monuments lacks both spatial and temporal nuance, but the exploration of forest mechanics in Chapter 5 allows some conjecture. All the landforms occupied by the monuments on the escarpment edge are particularly vulnerable to wind-blows, implying that clearings would develop naturally, before the Neolithic. Forest on the escarpment probably survived into later prehistory. Only sheep could graze such steep slopes comfortably, taking centuries to make serious impacts on

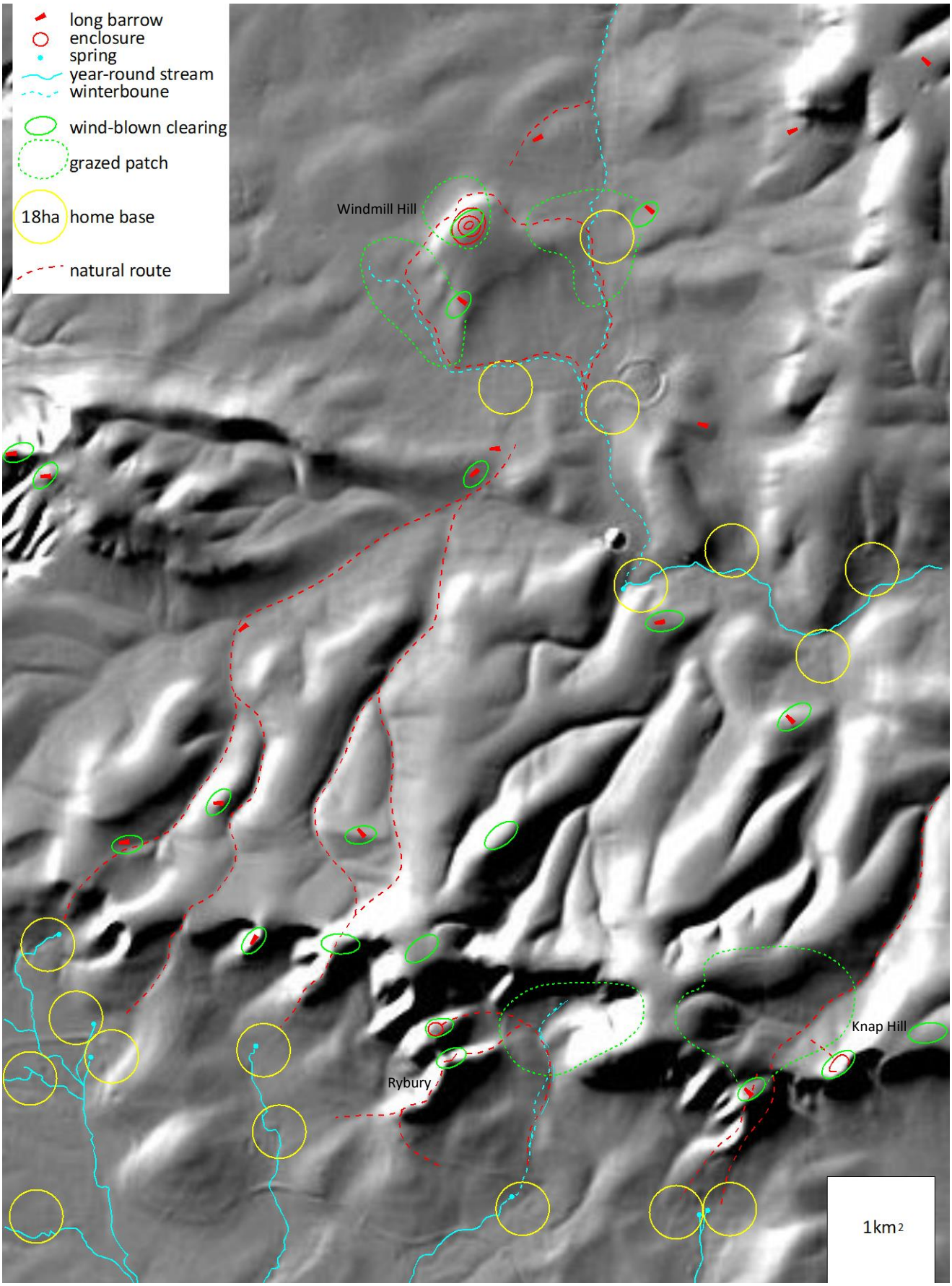

Figure 7.14: Schematic reconstruction of the North Wiltshire Downs in the Early Neolithic. The size and distribution of the different areas is obviously speculative, but reflects locational influences discussed in this and earlier chapters, as well as the potential viewsheds calculated in Figures 7.5 and 7.8b. For the identity of individual long barrows, see Figure 7.1.

the forest. Even if clearance extended well downslope of the monuments, the tops of trees growing lower down the escarpment would block both views out over the Vale, as well as reciprocal views of the monuments and the landforms they occupied, certainly in summer. The notches resulting from the absence of trees, however, would be eye-catching landmarks tens of kilometres away in a largely forested landscape. Such notches would also be visible from the springline, only a few kilometres away, even if home base clearings were quite small, due to the steeply-angled sight-lines. Neither Adam's Grave nor the equally ostentatious earthworks on Knap Hill would be visible during the ascent of the escarpment, increasing the revelatory impact when the relatively open dry valley between them was eventually reached.

Sheep and/or cattle, brought here to avoid cultivated plots, would expand natural clearings in the generations or centuries before the monuments were built, eventually producing the sort of mixed environment suggested by the evidence from Knap Hill. Perhaps grazing extended far beyond Summer Down, but this locale would be convenient for making daily trips to watercourses at the foot of the escarpment. The embayment overlooked by Rybury differs in that the surrounding slopes are uncomfortably steep for cattle, while the hollow potentially encapsulated a small watercourse that would produce a different vegetative environment. If relatively clear patches were eventually created within these hollows, the design and placement of the monuments would ensure that they were visible to herders moving within their habitual summer taskscapes. In many respects, the setting of the enclosures matches Barker and Webley's (1978; see Figure 4.4c) schematic depiction of landscape.

Despite the wealth of excavated data from Windmill Hill, the 'mute agency of landscape' is less apparent. The area around Swallowhead Springs is an obviously favourable locale for settlement and cultivation, but if the minor watercourses flanking Windmill Hill were once more reliable, there are other candidates. Apart from the streams themselves, likely routes through the landscape are difficult to discern. Equally, there are no topographic pointers to where forest might exist. Windmill Hill does, however, highlight the issue of diachronic change more clearly than the other two enclosures. Until the redating of the monument (Whittle, Bayliss & Healy 2011), it was often described as a unit, with stable visual qualities. Dissecting it into phases spread over 1-2 generations implies a composite of projects, each taking place in changed environmental conditions and producing a monument with distinct visual qualities. While the earliest circuit probably lay within a small clearing hidden from Swallowhead Springs, the outer circuit occupied a far larger clearing that potentially allowed remote views and made the monument itself visible from afar. This development apparently coincided with a change in the direction of final approach. Yet even though the interval between the two phases has been refined to a few decades or even years, this is still ample time for some of the mechanisms of change discussed in Chapter 5 to transform the environment and its potential for remote visual perception. This thesis will return to the issue of diachronic change in Chapter 11.

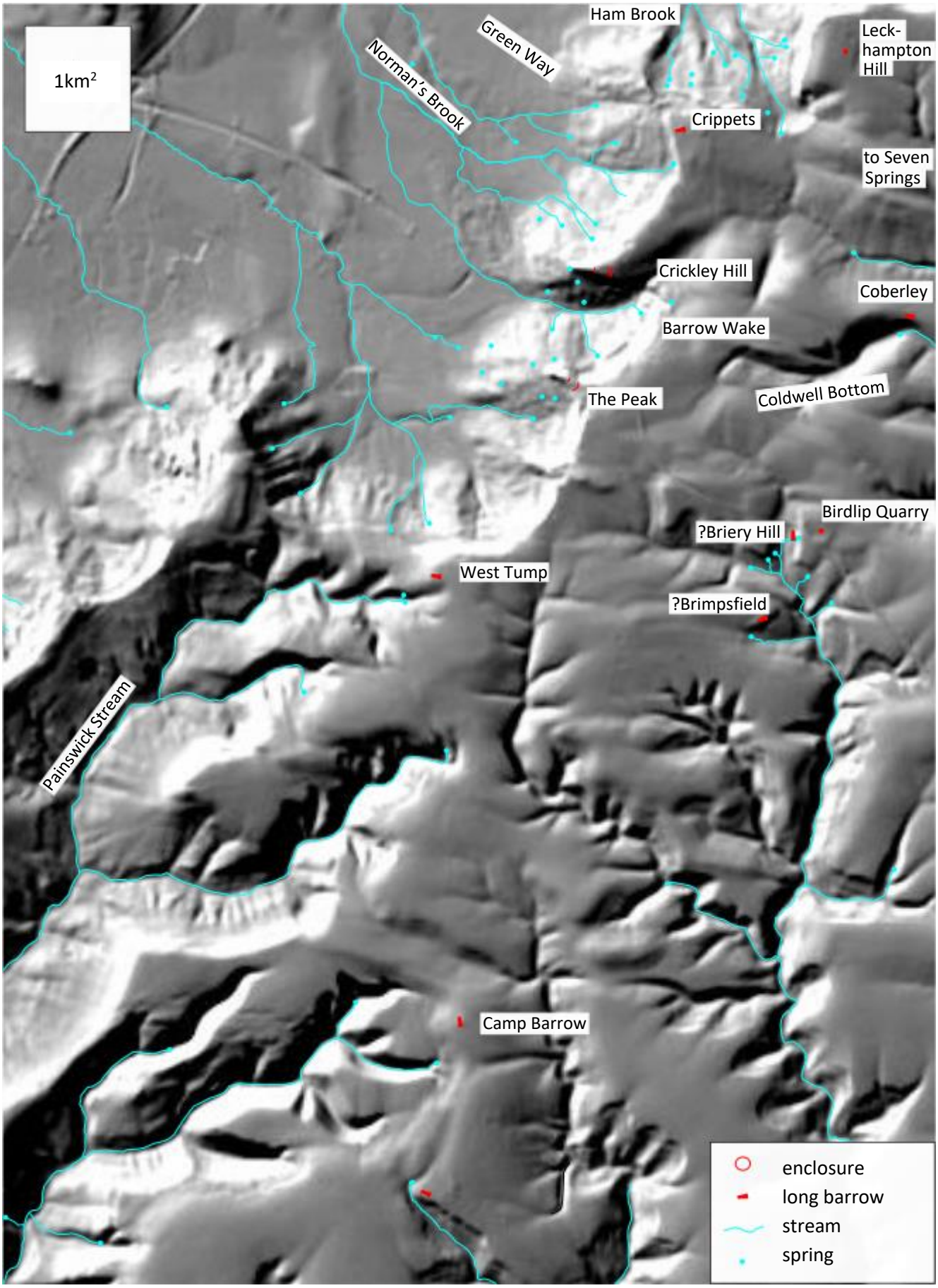

Figure 8.1: Key sites on the Cotswold escarpment discussed in Chapter 8.

8. Pathways, access and interactions: the Cotswolds escarpment, Gloucestershire

It's easy to see how if you controlled this view, you controlled this landscape.
- Neil Oliver (2011, BBC4 *A History of Ancient Britain*), talking about Crickley Hill.

8.1 Introduction

This case study focuses on a sub-set of the Cotswolds monuments: the causewayed enclosures at Crickley Hill and The Peak; plus two nearby long barrows: Crippets Barrow and West Tump (Figure 8.1). All four occupy the edge of a steep - in places sheer - limestone escarpment overlooking the Severn Vale. Here, even more than on the chalk Downs, we might expect natural topography to shape routes, access to the monuments and affordances for remote perception. Crippets Barrow is undated but, given the wider pattern in Britain, was probably - like West Tump (built in 3,820-3,645 cal BC) built before the enclosures, where construction began in 3,660-3,615 cal BC and in 3,605-3,570 cal BC respectively (Dixon *et al*. 2011; all dates at 68% probability). The radiocarbon spans, however, allow all the monuments to be built within a few years of each other and to be in contemporary use. Consequently, these sites, which are close in space and time, represent both an extreme test for remote visual perception and an opportunity to explore how remote perception was involved in social interactions. This landscape, particularly the escarpment itself, is also more heavily wooded today than the downlands, bringing into sharp focus the objections to remote visual perception.

8.2 The monuments and their topographic settings

8.2.1 The causewayed enclosures on Crickley Hill and The Peak

Crickley denotes, in Anglo-Saxon, a hill that makes a strong visual impression (Gelling 1994, 7). The Peak, in some respects a more striking landform, is one of the highest points on the Cotswold escarpment. The excavators of each site, therefore, emphasise intervisibility with the Severn Vale (Dixon 1988, 86; Dixon *et al*. 2011, 465; Darvill 2011b, 142; see also Durkin 2022, fig. 11.3). There, like the Pewsey Vale, fertile clay-based soils are well-served by springs and small streams, making the area hospitable for farming communities. We might, therefore, see this as a settled zone, from which transhumant herders moved onto the Cotswold plateau, but, again like the Pewsey Vale, definite settlement evidence is lacking. Some clay used to make pots found at The Peak was obtained from sources in the Vale (Darvill 2011b, 158), but most came from east of the escarpment, a reminder that transhumance was not the only reason for movement.

Predictably, settlement evidence on the Cotswold plateau is also sparse. If people occupied the narrow valley floors for easy access to water, identification of concentrations of activity, perhaps highly localised, would be hampered both by current pastoral land-

Figure 8.2a: View from Crickley Hill looking north-west across the Severn Vale towards the Malvern Hills. Photographed in mid-September sun.

Figure 8.2b: View of The Peak from 1.0km to the west, photographed in mid-September drizzle.

Use and by past colluvial deposition, as well as the dearth of prospection. However, fieldwalking in advance of the expansion of Birdlip Quarry recovered a predominantly Early Neolithic flint scatter (Snashall 2002, 61-2). This site, on high ground overlooking springs at Briery Hill[1], indicates that activity was not confined to the valley floors. Yet near Brimpsfield[2], in an apparently equally favourable location overlooking springs on the opposite side of the coomb, an assemblage (admittedly selectively collected and poorly located) is dominated by Late Neolithic and Bronze Age material (ibid, 67-8). This underlines that Early Neolithic places were scattered and isolated, their distribution perhaps reflecting the distribution of pre-existing forest clearings. But it is impossible, on the evidence currently available, to build strong arguments about the origins and destinations of movement across the escarpment.

So the question of intervisibility between the escarpment edge and the Vale requires cautious scrutiny. If the promontories were sufficiently clear of trees, they would afford broad views westward over the Severn Vale and beyond, as often noted (Figure 8.2a). Seen 'straight on' from more than *c.*4km to the west, however, neither landform is easy to pick out from the general mass of the escarpment (Dixon *et al*. 2011, 465). Only nearby Leckhampton Hill is conspicuous, because it stands 10-15m above the plateau; this hill was also used in the Early Neolithic, but not monumentalized (Snashall 2002, 62-3). While The Peak is more prominent from the lower-lying land to its west (Figure 8.2b), it is primarily from the sides, whence they can be seen in profile, that all these spurs are most distinctive. This limited visual 'reach' suggests that even this distinctive topography was insufficient in its own right to turn the sites into conspicuous landmarks. It is therefore critical to understand the potential effects of forest clearance, as discussed Section 8.4.

Yet the 'bones of the landscape' (to quote Tilley) have been changed greatly by erosion and landslips, which were probably active during the Early Neolithic (Firman 1994, 21-2). Quarrying in historic times has affected Crickley Hill, but the impact has been more severe at The Peak, where c.30% of the area of the enclosure is missing (Darvill 2011b, 141 & fig. 4B). As a result, the excavators remain cautious as to whether the enclosing earthworks formed complete circuits or whether they terminated at the edges of the promontories, in the manner of cross-ridge dykes. This uncertainty obviously has an important bearing on whether the architectural elements themselves would be visually prominent from the sides of the promontories, which, as noted above, are the most striking aspects of the raw landforms. The most recently published plan of Crickley Hill (Dixon *et al*. 2011, fig. 9.2)

[1] A long barrow mapped by the OS (1884) near the springs was dismissed in the 1930s as 'probably natural' (O'Neil & Grinsell 1960, 73). Later fieldwork concluded that 'The siting is wrong' (Gloucestershire HER, no. 3747): a moot point, since, while its N-S orientation is unusual, its alignment along the contours mid-way down a slope recalls Coberley. Regrettably, I could not gain access and lidar is inconclusive.

[2] The dedication of Brimpsfield Church to St Michael and All Angels may indicate the existence of a prehistoric earthwork and in this context it may be significant that the church appears to be cut into a mound (more than normal graveyard build-up) of approximately the right proportions for a long barrow.

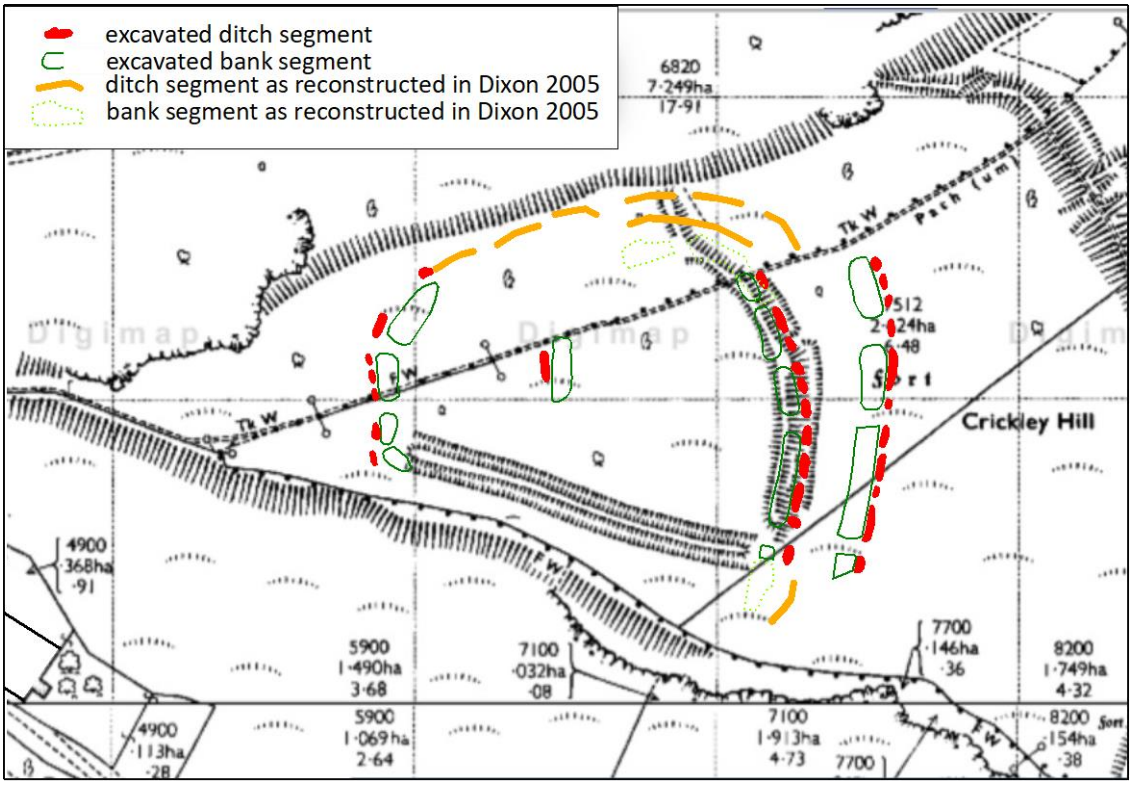

Figure 8.3a: Plan of Phase 1b of the causewayed enclosure on Crickley Hill, highlighting selected discrepancies between the earthworks as surveyed for the OS by Martin Fletcher in 1973, the segments later excavated, and the interpretative plan eventually published (Dixon 2005). Based on an extract from Ordnance Survey 1:2,500 scale map sheet SO 9100 1600/9200 1600, published 1974.

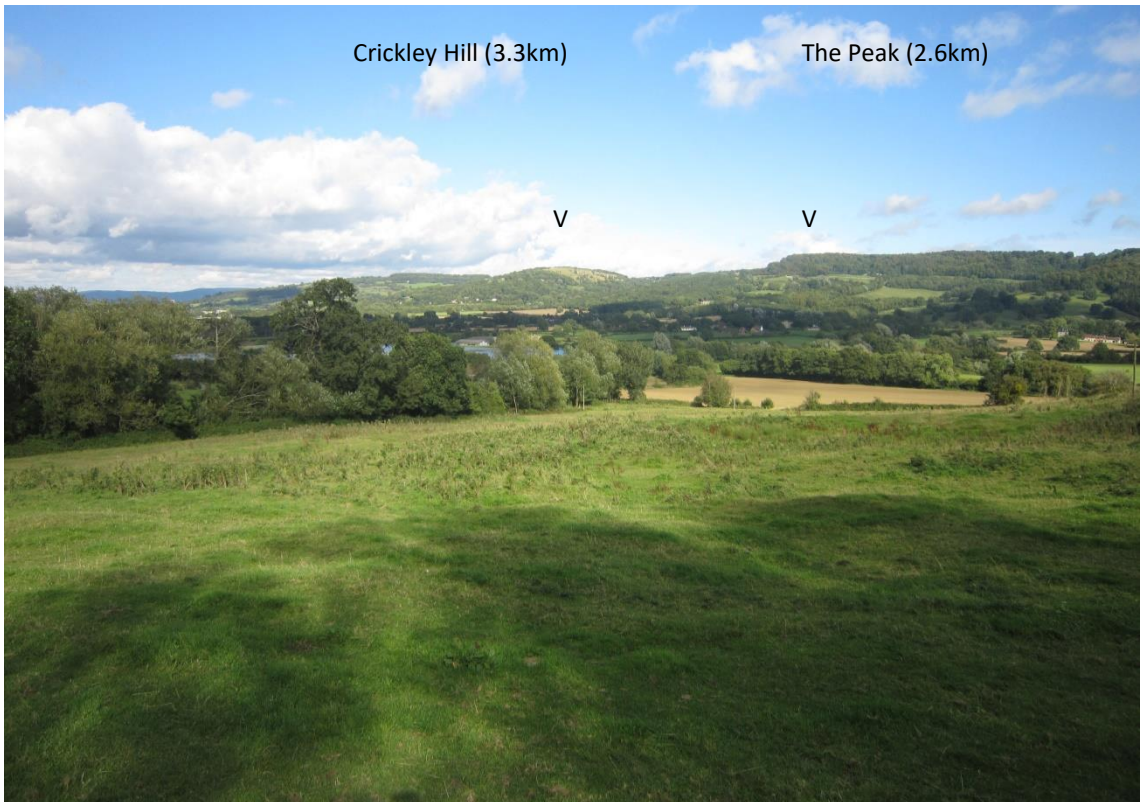

Figure 8.3b: View in mid-September of Crickley Hill and The Peak from the west-south-west, highlighting the visual impact of forest clearance. Note the size and gradient of the clearing that affords the view.

depicts the circuits as complete on the north side of the spur, inviting the inference that earthworks may have existed on the south side too, prior to erosion and quarrying, but this plan is unreliable[3]. Reverting as closely as possible to the original field evidence leaves the theory that the circuits continued across the north side of the spur more open to question (Figure 8.3a). For example, earthwork survey undertaken before most of the Neolithic earthworks were removed by excavation proved, where the earthworks were excavated subsequently, to reflect the sub-surface remains very closely (OS 1974). The OS surveyor[4] judged that the northern end of the inner circuit turned towards the escarpment, its line suggesting that the earthwork (or possibly just one phase of it[5]) acted like a cross-ridge dyke in relation to the promontory; but this area was not excavated subsequently, so this possibility was left untested. The southern ends of all the earthworks were undoubtedly damaged by quarrying, but this area was also left largely unexcavated and no definite evidence was found to indicate whether or not the earthwork turned before the cliff-edge. Similarly, at The Peak, the excavator (Darvill 2011b, 144-6) suggests that both earthworks may have turned within the area lost to quarrying on the south, so as to mirror the open C-shape suggested at Crickley Hill. This reconstruction is not implausible, but too much ground has been lost to allow certainty: the earthworks possibly terminated at the edges of the promontory. The excavator's reconstruction appears to be influenced by his conviction that the two enclosures faced each other, as complementary components of a single complex (*ibid*., 196). My own field observation[6] suggests that on the north side, the more massive outer earthwork turns sharply just before the quarry edge and then ends (*contra* Oswald *et al*. 2001, fig. 4.14), implying both that relatively little ground has been lost and, perhaps, that there was no earthwork along this side of the promontory. The absence of upstanding barriers could facilitate intervisibility between the interiors of the two sites (Darvill 2011b, 196). In that scenario, however, the remote visual impact of the enclosures from north and south would depend on the topography, and forest clearance, rather than architecture (Figure 8.3b).

[3] Though the plan derives ultimately from the accurate, large-scale plans made during the excavations, this version is based on a schematic drawing made for publication at a small scale in *Current Archaeology* (Dixon 2005). Due to its intended purpose, it was inaccurately digitized and speculative in places.

[4] Martin Fletcher, who made the survey at 1:2,500 scale in May 1972 (Heritage Gateway entry). No large-scale analytical earthwork survey was undertaken immediately before the excavations and the 1m- interval resolution employed for the contour survey, which was commissioned from non-archaeological commercial surveyors (P. Dixon pers. comm.), is too low to allow recognition of slight earthworks from the paper records. Lidar survey has been undertaken subsequently, but this has primarily recorded the replica earthworks put back after the excavations. Historic aerial photography is slightly more helpful.

[5] Retrospective interpretation of the stratigraphy, which in the absence of the original earthworks must be based on the OS survey, is unsafe. However, the plan-form of the bank and slight ditch recorded by Fletcher suggests one earthwork deviating from the curve followed by another (Figure 8.3a). The more prominent earthwork is likely to be the latest, so it is perhaps the final, near-continuous perimeter that was represented as deviating from the curving line. Arguably this cross-ridge design is a more defensible arrangement, consistent with Dixon's interpretation of the near-continuous barrier.

[6] Although I visited the enclosure in the late 1990s, I was not involved in the detailed survey and did not approach the resulting plan as critically as I did during the course of this thesis.

Figure 8.4a: View of the distal end of Crippets Barrow from 30m to the west. Historic OS maps show that the mound had been planted with pines by the 1880s, making it a more eye-catching from the west, at a time when the escarpment, a stone's throw to the west, did not support a plantation as it does today.

Figure 8.4b: View of The Peak from the south side of Crickley Hill, looking across the intervening stream valley. Photographed in mid-September, the foliage on the relatively small trees alongside the stream totally conceals a dual carriageway, indicating the extent of clearance required to allow views of people and livestock following the natural route across the escarpment.

8.2.2 The long barrows

In contrast, landscape taphonomy has scarcely touched the topographic settings of the nearby burial mounds. The orientations of Crippets Barrow and West Tump (80° and 100° respectively) conform to the broadly easterly regional and national trend (Darvill 2004, fig. 37). As on the North Wiltshire Downs, this does not cause any marked conflict with the topography, but in contrast to Adam's Grave and Kitchen Barrow, Crippets Barrow presents its lower distal end towards the escarpment (Figure 8.4a), while West Tump presents its long profile. Both barrows would 'command truly extraordinary views' (*ibid*., 92), were it not for the current extent of the nearby woodland, described in the next section. In each case, however, it is striking that both barrows (like many others) are set back by some tens of metres from the brink of the escarpment, making the monuments themselves invisible both from the steep slope and from the land at the foot of the escarpment. The expression 'false crest', which is often applied to the siting of long barrows, does not describe this preference accurately or fully. It could be inferred that the placement of each monument was designed to make it visible only from further into the Vale; or that remote visual perception either of, or from, the monument itself was not of primary importance. Both inferences again highlight the need to understand the potential effects of forest clearance.

8.3 Pathways through the landscape

Movement is a key issue for all of these monuments. The excavators of the causewayed enclosures talk in abstract terms about people crossing the escarpment from east and west to gather at the enclosures, a pattern of movement evidenced most clearly by the clay sources used for the pots found at the sites (Darvill 2011b, 158; 168; see also Snashall 2002, 67). Yet there has been no explicit discussion of which particular routes were used or how these related to the monuments. The possibilities are not infinite, because long stretches of the escarpment are steep enough to deter movement of cattle and even people[7]. The western perimeters of both causewayed enclosures were effectively defined by such slopes, even prior to the impacts of post-medieval quarrying, implying that people (and their livestock) could not approach the monuments from that direction[8]. Similarly, the main scarp slope immediately west of each long barrow is extremely steep, corresponding to the observation that the placement of the monuments would make them invisible from the scarp slope itself.

The minor streams that flow from the escarpment spring-line towards the Severn would afford convenient routes for herding livestock. Many of the deeply-incised coombs on the eastern dip-slope also hold streams conducive to both settlement and movement. Like Knap Hill, both causewayed enclosures overlook a natural route (Figure 8.4b) across

[7] To the south of The Peak, the engineers who built Ermine Street were forced to construct a series of switch-backs and to carve a deep cutting to negotiate the severe gradient.

[8] Curiously, this makes no discernible difference to Durkin's (2022, fig. 11.3) GIS 'cost-distance' model.

Figure 8.5a: The distal (western) end of Coberley long barrow, seen from just above the floor of Coldwell Bottom, 0.6km to the west. This glimpse shows that the coomb bottom would need to largely clear of trees to afford distant views of the monument, though the notch created by a clearing might be conspicuous.

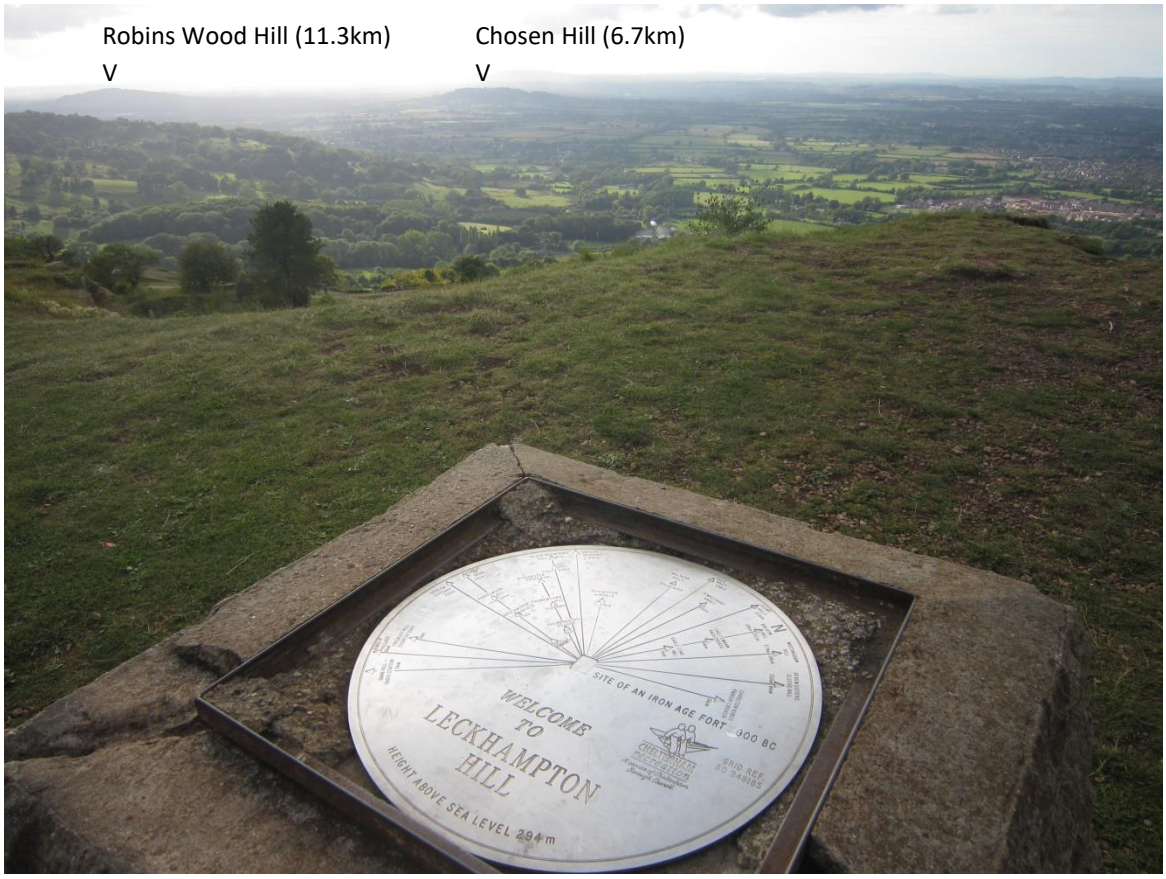

Figure 8.5b: View in mid-September looking westwards from Leckhampton Hill, the site of intensive Early Neolithic activity – possibly settlement. A possible long barrow occupies the summit of Robins Wood Hill.

the escarpment: the intervening valley[9] followed by a small but reliable tributary of Norman's Brook, fed by two springs. From its head, it is *c.*15 minutes' walk over the high ground to the head of Coldwell Bottom, a coomb which contains one of the three main sources of River Churn, or a little further to Nettleton, where springs feed an un-named tributary of the Frome. The valley between Crickley Hill and The Peak thus offers a 'least cost path' across the escarpment and access to the easiest routes over the watershed. On the northern side of Coldwell Bottom, *c.*30 minutes' walk further east, Coberley long barrow is eastward-oriented and sited (again) just on the south side of the crest of the spur that it occupies, as though intended to overlook that valley. Here too, however, the barrow is set back by *c.*30m from the crest of the slope, making it invisible from the immediately adjacent stretch of the valley floor, even though that is considerably broader here, coinciding with the source of the stream. The barrow can be seen, however, at least in today's relatively open environment, from the valley bottom further west and east, suggesting that it was meant to be seen as people moved along this natural route, rather than from a settled community in a specific place (Figure 8.5a).

Similarly, West Tump lies only 150m north of the head of another valley, which contains the sources of the Painswick Stream and affords a gentle way to the escarpment top, a route followed by dozens of ancient hollow ways. The observation that the long barrow appears to be sited to be seen from the south therefore assumes more local significance. From the head of this coomb, it is only *c.*20 minutes' walk to springs at Climperwell, the source of another stream which flows down a deeply-incised coomb to reach the River Frome. Three lithic assemblages recovered from the high ground *c.*2km south of West Tump are dominated by Late Neolithic and Bronze Age material (Snashall 2002, 69-70), the absence of earlier material more consistent with movement than lingering.

Likewise, to the north of Crippets Barrow, a valley penetrating the escarpment offers another 'least cost path' across the topographic barrier. The valley head, near which the Ham and Hatherley Brooks rise, eventually reaches the crest *c.*12 minutes' walk east of the barrow. North of the head of the valley stands Leckhampton Hill, already noted as a site of intensive Early Neolithic activity and perhaps settlement (Snashall 2002, 62-3; Figure 8.5b). A saddle *c.*1.2km wide separates the head of the valley from Seven Springs, the main source of the Churn. It is tempting to see the tomb as mirroring a settlement on Leckhampton Hill across the intervening re-entrant, but in this instance, the apparent southerly orientation of the short-medium range viewshed of the monument does not relate to either the settlement or the proposed route across the escarpment. In the light of this, it is worth considering other viable routes[10]. Only 5 minutes' walk from the

[9] Now followed – not coincidentally – by the A417 road, which was upgraded to a turnpike in 1698. Darvill (2011b, 196) mentions this valley, without specifying what he believes its significance to be.

[10] A medieval (or earlier) droveway known as the Green Way, which follows a minor natural indentation in the slope, reaches the crest only 130m north of the barrow, but this option too suffers from the objection that the monument appears to be designed to be seen from the opposite direction.

Figure 8.6a: View in mid-September of Crippets long barrow from 400m to the south, the area from where the visual impact of the monument is greatest. Note that the front of the mound (to the right) has been disturbed and spread; the gradual slope upwards from its distal end presumably originally continued.

Figure 8.6b: View of Camp Barrow from 100m to the west. While the profile of the mound is impressively skylined when seen from this direction, it presents itself similarly to the east, and is equally eye-catching, due to its unusual location precisely on the summit of this gentle rise. Its 170° orientation is unusual.

barrow lies the main source of Norman's Brook, whose valley, though steeper than those of the Ham and Hatherley Brooks, affords an easier way than the main escarpment. This too is connected by a saddle *c.*900m wide to another main source of the River Churn. In this case, Darvill's (2004, 197) suggestion that each barrow might relate to a nearby settlement is difficult to sustain, because fieldwalking in the environs produced very low densities of Early Neolithic material (Snashall 2002, 63-4).

Having examined potential 'trunk routes' across the escarpment, how would people (and livestock) make their final approaches to the clearings that hosted these sites? For the enclosures, the answer seems straightforward: given the exceptionally steep slopes on the other sides, they could only approach from the east, under normal circumstances. The eastern origin of the well-known attack on Crickley Hill supports this inference. For the long barrows, each appears to be sited carefully in relation to both the brink of the main escarpment and the spine of a slighter ridge on the top of the plateau: each avoids the highest ground in favour of a point slightly downslope. In terms of the topography alone, then, the monuments are associated with the main escarpment edge, while the potential middle-distance viewsheds are simultaneously limited to a restricted arc, in this case to the south of each monument (Figure 8.6a). This may indicate the direction from which people usually viewed the monument, perhaps an expanse of grazing land, and/or made their final approach.

If the exception proves the rule, Camp Barrow (North)[11] deviates from the norm both in its almost southerly orientation (170^{o}) and in almost occupying a true summit (Figure 8.6b). Immediately to the west, the upper end of the valley of the Dillay Brook forks, affording equally gentle gradients both north and south of the hill occupied by the barrow. To the east, the ground falls steadily into the valley of the Holy Brook, which flows south to join the Frome. In this instance, the atypical siting and orientation seem to be intended to make the monument's profile visible from both natural routes from the west, as well as the valley beyond. Similarly, antiquarian descriptions suggest that a long barrow once stood on the very summit of Robins Wood Hill[12], an eye-catching outlying knoll. This anomaly too can be interpreted in terms of the builders' intention to make the monument visible from multiple directions in the surrounding Vale, where small farming settlements and connecting pathways were perhaps numerous.

[11] Based on my own field observations of the two mounds in this location, only the more securely identified, Camp Barrow (North), is accepted as *bona fide*.

[12] Darvill (2004) omits this site, possibly because O'Neil and Grinsell (1960, 114) suggested that the 'three immense stones' were the remains of a historically attested beacon. However, the discovery of a stone axe and flint tools including two leaf-shaped arrowheads on the summit could support the antiquarian interpretation. The coincidence of beacon sites and prehistoric mounds is not uncommon, but the use of megaliths to construct beacons would be unparalleled. The summit is so heavily disturbed by quarrying that confidence is impossible without excavation, but my rapid field survey identified hints of a mutilated, long mound with a broadly easterly orientation, stratigraphically earlier than the quarrying.

Figure 8.7a: View towards Crickley Hill from Barrow Wake, 900m to the south-south-east, highlighting the visual impact of woodland clearance, though the trees surrounding the grassland are not large.

Figure 8.7b: View of Crickley Hill from Peak Camp, demonstrating the need for an open vantage point.

8.4 Monuments and forest clearings

8.4.1 Early Neolithic forest and current woodland

Despite both excavators' interest in remote perception, the character of the contemporary environment and its potential implications have remain under-explored[13]. The escarpment is often termed an ecotone (*e.g.* Snashall 2002, 14; Darvill 2011a, 64; 2011b, 142), but palaeoenvironmental evidence suggests that forest cover spanned the topographic divide, extending from the Severn right onto the Cotswold plateau (A.G. Brown 2009, 36-7; *contra* Darvill 2011, 60). Samples are consistently dominated by lime, oak, elm and hazel (in order of frequency). One difficulty with this generalized picture is that, with the exception of the Severn foreshore (Bell 2007), excavations of monuments provide most of the evidence for the wider environment.

While it requires an imaginative leap to re-forest the chalk downland discussed in Chapter 7, the Cotswold escarpment remains heavily wooded. Beech and ash dominate today's woodland, with some hazel and hawthorn. On Crickley Hill, species-rich grassland reaches beyond the Iron Age rampart and well down both sides of the promontory. As posited for the Early Neolithic, the baldness of the promontory against the backdrop of the wooded escarpment makes it more identifiable from afar than the topography alone (Figure 8.7a). This offers a striking contrast with The Peak, which is entirely covered in mature beech (primarily) plantation. Since the sides of the promontory are also wooded, the crowns of mature trees growing well down slope allow only occasional glimpses out, at least while in full leaf (Figure 8.7b). Beech is the tallest species present in Neolithic forest, so an area extending well beyond the enclosures would have to be clear to afford opportunities for remote views. Crippets Barrow is separated from the ancient semi-natural woodland on the escarpment by a 40m-wide plantation of mature pines (mostly)[14], which effectively screens out all views across the Severn Vale, illustrating how even narrow belts of woodland can dramatically affect viewsheds. The clearing in Buckle Wood, a beech plantation[15] which surrounds West Tump, is scarcely larger than the mound (Figure 8.8a). Although pollen diagrams suggest that beech was not a major component of Early Neolithic forest in the wider region, the species was probably more common on the escarpment[16]. This is potentially significant, because beech woods are relatively open at ground level, allowing even tightly enfolded monuments like West Tump to be seen at distances of up to 250m (Figure 8.8b), as well as allowing clearer transmission of sound.

[13] Before developer-funded archaeology, little relevant palaeoenvironmental evidence was available (Darvill 1984, 83-4). The subject still receives short shrift (*e.g.* Snashall 2002, 14; Darvill 2004; 2011a).

[14] Historic OS maps show that the original trees were planted in the final decade of the 19th century and that the belt was originally more than twice as wide, entirely encapsulating the long barrow.

[15] Buckle Wood has been common pasture since at least the 14th century (Herbert 1981) and currently comprises beeches (primarily), apparently planted in the early 20th century.

[16] English Nature's (2012) assertion that beechwoods on the escarpment represent fragments of 'wildwood' is speculative, but the 'buck' element in the name of this and other local woods prove that they existed in Saxon times and it is difficult to argue for a wholesale change in their character before that.

Figure 8.8a: View of the front end of West Tump from the south-east in mid-September, following scrub clearance 38 months earlier.

Figure 8.8b: View of West Tump from 50m to the north-north-east, illustrating how the illumination of the forest floor created by a clearing in the canopy can be conspicuous in the relative darkness. This effect was still visible 200m away, but at that distance, photographs did not adequately capture the reality.

8.4.2 The causewayed enclosures

Scarp-edge promontories such as Crickley Hill and The Peak are particularly vulnerable to damage by wind-blows, with prevailing south-westerly gales inevitably funnelled, and thus amplified, by the south-west/north-east orientation of the Severn Valley. The same applies to eminences close to the escarpment edge, such as those occupied by many of the nearby long barrows. Around the precipitous edges of the promontories, a natural 'domino effect', akin to deliberate 'windrow felling', could push the limits of clearings well down the sides of promontories (especially the northern sides, assuming the dominance of south-westerly gales). Even without deliberate felling, therefore, the locations of the monuments might afford opportunities for remote visual perception, perhaps long before the Neolithic (Dixon *et al*. 2011, 458).

At Crickley Hill, Mesolithic activity, including the construction of perhaps five circular huts, predated the causewayed enclosure by at least three centuries (Snashall 2002, 58; Snashall in Darvill 2011b, 173; Dixon *et al*. 2011, 453). This passage of time is probably sufficient for the physical remains of any non-earthwork structures to be entirely overlooked by the Neolithic builders (*ibid.*, 458), but the Mesolithic legacy of forest clearance would remain clear. The presence of Late Mesolithic hazelnut shells could indicate that the promontories were sufficiently clear to allow nuts to form and ripen, but nuts could, of course, be imported. Detailed palaeoenvironmental analyses remain unpublished, but the persistence of clearings could explain Snashall's (2002, 71) observation that sites of intensive Late Mesolithic activity on the Cotswolds tend to translate into Early Neolithic sites. Localized losses of mature trees, whether natural or deliberate, especially if followed up by deliberate burning, would certainly be detectable for several centuries. Perhaps the clearings even remained entirely open grassland, making them obvious targets for Early Neolithic herders.

At The Peak, the only plant remains in the primary silt of the outer ditch were sedges (*Carex* sp.) (Housley 2011), implying that the enclosure occupied an existing clearing with rough grassland, presumably maintained by grazing livestock and/or wild ungulates. The presence of a hare bone in a recut of the ditch at the western end of the promontory (Hambleton 2011, table 16) might also point to the presence of quite extensive grassland, if the animal was not imported as food. No snail analysis was undertaken. The very low density of Late Mesolithic material does not suggest that the promontory saw prolonged or intensive activity (Snashall 2011, 172-6), so the clearing may not long predate the enclosure. Superficially, the radiocarbon dates suggest that the enclosure post-dates Crickley Hill, but since the inner earthwork was not excavated, it is possible that the forest was first cleared when that was built. The small assemblage of charcoal recovered comprised 75% oak, with (in decreasing quantities) hazel, cherry and beech (Costen in Darvill 2011b, 187). This selection is unlikely to straightforwardly represent the character of the surrounding forest and was interpreted as branches collected for firewood. However, like lime and elm, which are notable by their absence,

Figure 8.9a: View in mid-September from the floor of the valley to the south of Crickley Hill, looking east-north-eastwards towards the side of the causewayed enclosure, 800m away. Despite the breadth of the corridor cleared of woodland for the A417 and the relatively short trees in the intervening managed woodland, ascending the escarpment beside the stream here affords only rare glimpses of the hilltop.

Figure 8.9b: A broad path through the managed beech woodland south of Crickley Hill in mid-September, illustrating that even small trees will overhang a gap so that views out are impossible.

cherry makes poor firewood, while beech, an excellent firewood which was potentially widespread locally, is barely attested. It seems more likely, especially since regeneration was detected in the plant remains (Housley 2011), that the cherry and hazel, both colonizing species, represent the clearance of scrub regenerating in the clearing, while oak may be overrepresented due to its use in constructing the enclosure.

As noted above, it is doubtful whether earthworks existed along the sides of either promontory. If they did, even low scrub within the intervening valley would screen them from the view of people following the 'least cost path' alongside the stream (Figure 8.9a). Could the actual clearings, as absences of forest, be detected, even if only intermittently? Unless a very broad corridor on the valley bottom was clear, mature trees or even scrub on the lower valley sides would still define the skyline. Unlike the slow-moving watercourses that cross the Vale, this steep upper stretch of the stream would not attract beavers, making it less likely that there any such broad, open corridor existed. Livestock browsing on the hoof might clear or lower the riparian vegetation, perhaps gradually over the course of several generations, but even so, they would have to browse well up the valley sides to clear a sufficiently broad corridor. Equally, while people looking down from the edges of the promontories would be able to make out the line of the stream, a narrow trail alongside would be largely overhung by trees (Figure 8.9b), making hearing more useful. As with the long barrows, it seems likely that the absence of vegetation at the enclosures might turn their sites into distinctive landmarks, even if the monuments themselves could not be seen, but that neither the monuments nor the clearings were visible from the middle distance.

8.4.3 The long barrows

The general pattern from excavated Cotswold long barrows consistently suggests that they occupied small, pre-existing clearings, which had different land-use histories and were in different states when the monuments were begun. At Hetty Pegler's Tump, lime dominated the largely forested landscape, but there was some hazel scrub (Scaife 2015, table 3; 37). The hazel was perhaps recolonizing or fringing a small patch of grassland (presumably maintained by grazing), attested to by the removal of turf to build the barrow (French in A. Barber & Mudd 2015, 34). This scenario would echo the sequence at Hazleton North long barrow, where lime-dominated forest was cleared to create a clearing in which several brief episodes of cultivation took place (Macphail 1990, 225) before hazel scrub regenerated, this species dominating both pollen and charcoal samples (Scaife 1990; Straker 1990, 215). The original clearance perhaps occurred in the Late Mesolithic, when the clearing hosted a temporary camp (Saville 1990, 13-14). At Nympsfield, shade-loving species dominated the limited molluscan assemblage both before and after construction, but charcoals indicated hazel and blackthorn as well as mature forest (Keepax (Ed.) 1979). The absence of a buried soil perhaps indicates turf stripping for construction, and two seeds of a grassland herb were noted, again suggesting a clearing, fringed by scrub.

Figure 8.10: A grassy herb layer forming in a glade near West Tump long barrow, in mid-September.

Just as in North Wiltshire, the exposed topographic settings suggest that many clearings initially result from wind-blows, and were then, in some cases, deliberately maintained from the Late Mesolithic onwards. As ever, scale is a critical issue: clearings were probably larger than the 'moth-hole' at West Tump, and certainly changed over time. But because the monuments were set back from the escarpment edge, unless the clearings were very extensive, the mounds would almost inevitably be visible only from a restricted arc of the more distant parts of the Vale (if the clearing reached as far as the scarp edge at all). Conversely, although people could move away from the barrows to afford themselves broader views over the Vale, the view from the monument itself would be framed by surrounding forest.

8.5 Conclusions

Much of this case study reinforces conclusions arising from the preceding chapter, concerning likely locales for settlement, natural routes across a topographic barrier, and the critical visual importance of forest clearings. Isobel Smith (RCHME 1979, xi) believed that both enclosures and long barrows were sited to command distant views and/or to be remotely visible from adjacent lowlands. Close scrutiny of the sites on the Cotswold escarpment, however, amplifies the doubts expressed in Chapter 7, namely that trees growing further down the steep slopes would screen much of what is today the most obvious view in both directions; and, therefore, that clearings were more conspicuous landmarks than the built monuments they (sometimes) hosted. Despite the abrupt topography of the escarpment, to which all the principal monuments discussed here relate somehow, promontories like Crickley Hill and The Peak would only become conspicuous from most of the Severn Vale when local tree cover was removed. Similarly, long barrows, all set back from the brink of the escarpment, would afford – at most – restricted views across the plain for people standing at the mounds, or even on top of them: the broadest possible views out are afforded from the very brink. Despite this, the notch on the horizon resulting from any clearing that extended to the brink would be highly conspicuous, and this represents an important revision of Darvill's (2004, 211) conclusion that long barrows did not signal their presence in the wider landscape in any way. His suggestion that people would 'stumble upon' monuments surely underestimates the intimate knowledge of the landscape accrued over generations. If rituals within the enclosures involved large fires (Dixon 1988, 86), the resulting glow was presumably visible by night even if the clearings were small. But the diminutive glimmers of everyday cooking fires would not be visible throughout northern Gloucestershire (*ibid*.), unless clearings extended well beyond the perimeters of the enclosures. In other words, the clearings that eventually hosted monuments were themselves landmarks, with histories of use and management, long before the actual monuments were built.

Since, like the North Wiltshire Downs escarpment, the Cotswold escarpment presents a serious barrier to the movement of people and livestock, it has again been possible to

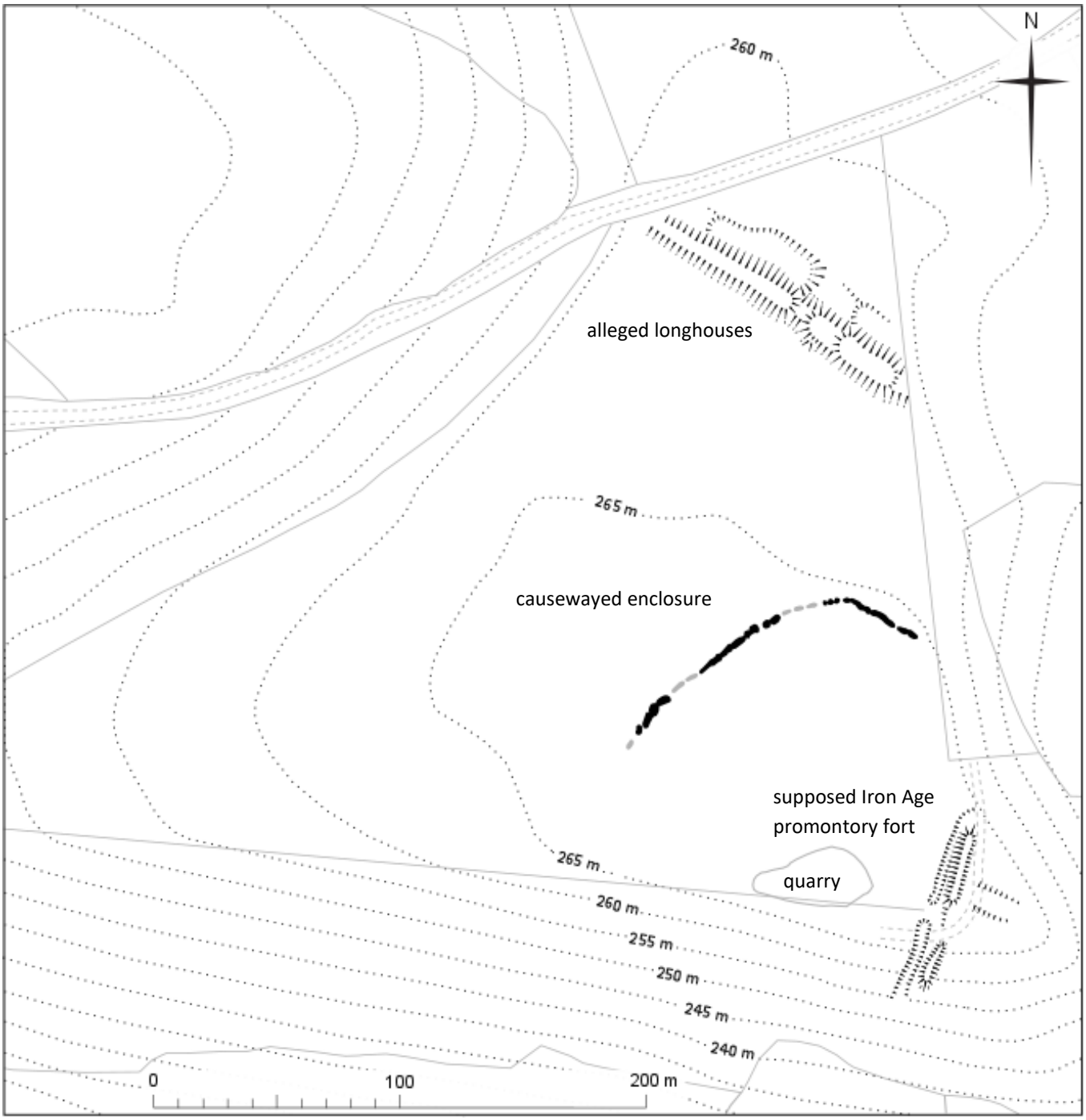

Figure 8.11: My 1996 earthwork survey of Dorstone Hill, Herefordshire, showing the earthwork spanning the neck of the promontory (previously unpublished). Points of comparison between the topographic setting and form of the surviving earthwork here and the enclosure at Crickley Hill cast doubt on the excavators interpretation of the Dorstone earthwork. The low bank was ultimately interpreted by its excavators as the collapsed remains of a series of end-to-end longhouses (Thomas & Ray 2020). The burnt timbers may actually represent the timber box-frame of a rampart fronted by a drystone wall, comparable to the relatively straight and defensible second phase cross-ridge earthwork at Crickley Hill, as noted initially by its excavators (Ray & Thomas 2012). The chronological relationship of this earthwork to the more conventional causewayed enclosure, revealed by geophysical survey, to the alleged longhouses has not yet been published, but its form and location recall the length of ditch apparently within the Crickley enclosure, whose place in the constructional sequence remains unresolved. The possibility that the supposed Iron Age promontory fort is actually Neolithic (RCHME unpublished 1996a, 5) has not yet been tested by excavation. An earlier survey (Kay 1967, fig. 1) over-emphasised the scarping of the natural slope around the sides of the spur, making it appear more like a conventional hillfort, but the earthwork is slighter than most Iron Age ramparts and similar to the certain Neolithic earthwork in other respects. Redrawn at 1:2,500 scale after RCHME unpublished 1996a, with Thomas & Ray's geophysical survey superimposed.

identify ‘least-cost paths’, which people and their livestock would almost inevitably have to follow. Both causewayed enclosures overlook one such route, the valley of a stream that would allow livestock to drink on the hoof. Many long barrows in the region overlook comparable stream valleys, although Crippets Barrow is an exception. Relating viewsheds to movement along these natural pathways suggests that none of the monuments would remain in view throughout the journey. Rather, the clearings (but not the actual monuments) might be visible at the outset from distant clearings in the Severn Valley, but from relatively close-by even the clearings could be glimpsed only rarely. Even after decades of browsing on the hoof, the steep topography and lack of other agents of environmental change would allow only narrow passages through the forest, or even ‘tunnels’ completely overhung by trees, rather than corridors broad enough to afford remote views. From these ‘middle distance’ sections of the route, the sounds and smells of livestock and human activity, transmitted relatively clearly from the openings in the woodland, were probably important components of remote perception. As on the downland escarpments, final approaches to the clearings occupied by the enclosures were proscribed by the topography, making the eventual emergence into the clearing from forest paths a visual revelation. Although the direction of final approaches to long barrows is seldom so obvious, the monuments seem carefully placed in relation to the slighter topographic changes of the plateau to restrict close-range visibility. The situation is similar on the dip slope of the Cotswolds, where long barrows that initially seem deliberately sited to overlook stream valleys are actually hidden from the stretches of the valley closest to them, because they are set back from the break of slope. In today’s more open landscape, these examples are visible from stretches of the same valleys, including the valley floors, from medium and long distances. Yet more extensive forest within the valleys would make the barrows themselves invisible, leaving only the clearings to signal their positions.

Most of the observations discussed so far have reinforced the conclusions reached in Chapter 7 without developing them much further, although the emphasis has shifted somewhat towards the transmission of smell and sound. A clearer difference with this case study, however, is the opportunity to consider the role(s) played by remote perception in interactions between communities. While Knap Hill and Rybury are only an hour’s walk apart, they were not intervisible and were perhaps not in use at the same time. It is therefore easier to consider them individually, as separate places to which different communities were tethered. In contrast, the causewayed enclosures on Crickley Hill and The Peak are only a kilometre apart, similar in size and design, and were probably in contemporary use. Darvill (2011b, 198) argues that the same community may have built both enclosures, but does not elaborate on what circumstances may

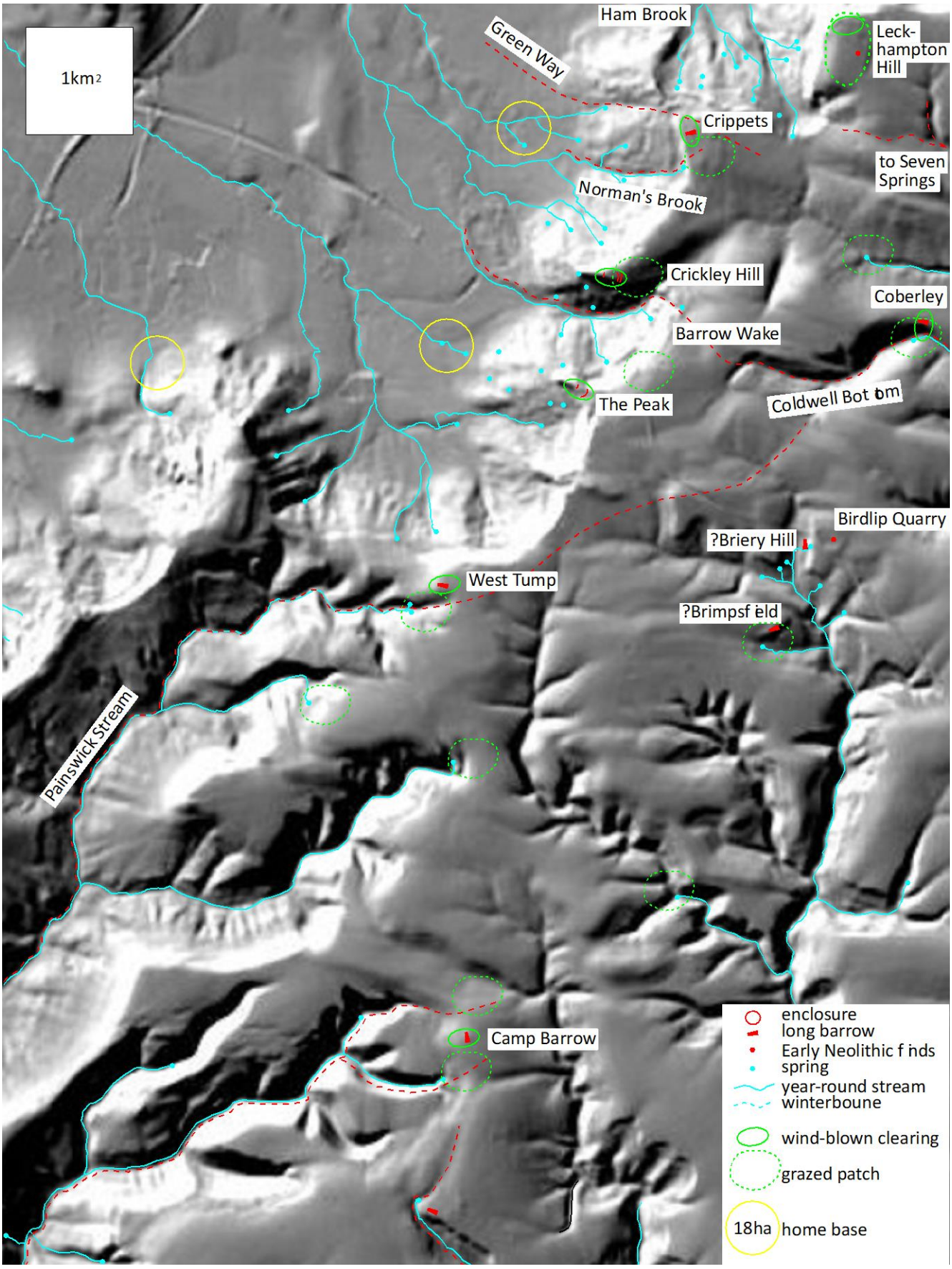

Figure 8.12: Schematic reconstruction of the Cotswold escarpment in the Early Neolithic.

have led to the need for this duplication[17]. Chapter 4 highlighted the conventional interpretation of causewayed enclosures as inter-communal gathering places, while Chapter 6 emphasised the values of cooperation in livestock husbandry, and the proximity of two separate enclosures seems at odds with these observations. It is tempting, therefore, to infer an independent or even adversarial relationship between the communities that built and used the enclosures (Dixon *et al*. 2011, 461-5). If both promontories were largely clear of trees and the clearings extended well down the steep sides, the interior of each enclosure would be visible from the other, even if artificial barriers, such as palisades or hedges, extended beyond the cross-ridge earthworks. In calm conditions, sounds would carry clearly between the two sites (Darvill 2011b, 196), the lack of woodland on the promontories enhancing sound transmission by reducing the effects of reverberation and increased attenuation. If grazed intensively, the short vegetation on the ground angled towards the other site would act like a 'sound mirror', projecting more effectively. Cattle, sheep, dogs and percussive noises would be easily audible. Loud human voices can be heard at distances of up to 2km and, with some effort and favourable conditions, individual words can be understood at just over 1km (https://physics.stackexchange.com/questions/415409/how-far-can-a-shout-travel), so some degree of direct intercommunication would be possible. If the whistled languages used by herders in historic times (see Chapter 2) were employed, inter-site communication was potentially routine. Coupled with the inference that people and livestock following the intervening valley were perhaps more audible than visible, the totality of the perceptive experience comes to the fore. This is, perhaps, a surprising outcome given that it was the potentially exaggerated visual affordances created by the extreme topography of the limestone escarpment that prompted this case study.

Without further excavation at The Peak, discussion of inter-communal relations here relies heavily on underlying impressions of the character of Early Neolithic society at large. The well-known attack on Crickley Hill underlines that the conventional image of cooperative and generally peaceful relations between small communities who enjoyed fair-like annual gatherings is not the full picture (Figure 8.11). Separate communities dispersed across the broad Severn Vale, each perhaps comprising a scatter of individual farmsteads, might be united primarily by a shared need to find the best route up onto the high ground of the plateau. In this instance, being able to keep a wary eye on each other – and perhaps more importantly an ear – across a broad valley that divided two relatively secure promontories, could be important facets of remote perception.

[17] On the other hand, Darvill's (2011a, 96) observation that each enclosure was only intervisible with its nearest long barrow, seemingly influenced by Renfrew's (1976) model, seems to point to independent territorial units and communities. Yet there is good reason to doubt that the tombs themselves were visible from the enclosures, so a more fractured model of society may be more appropriate.

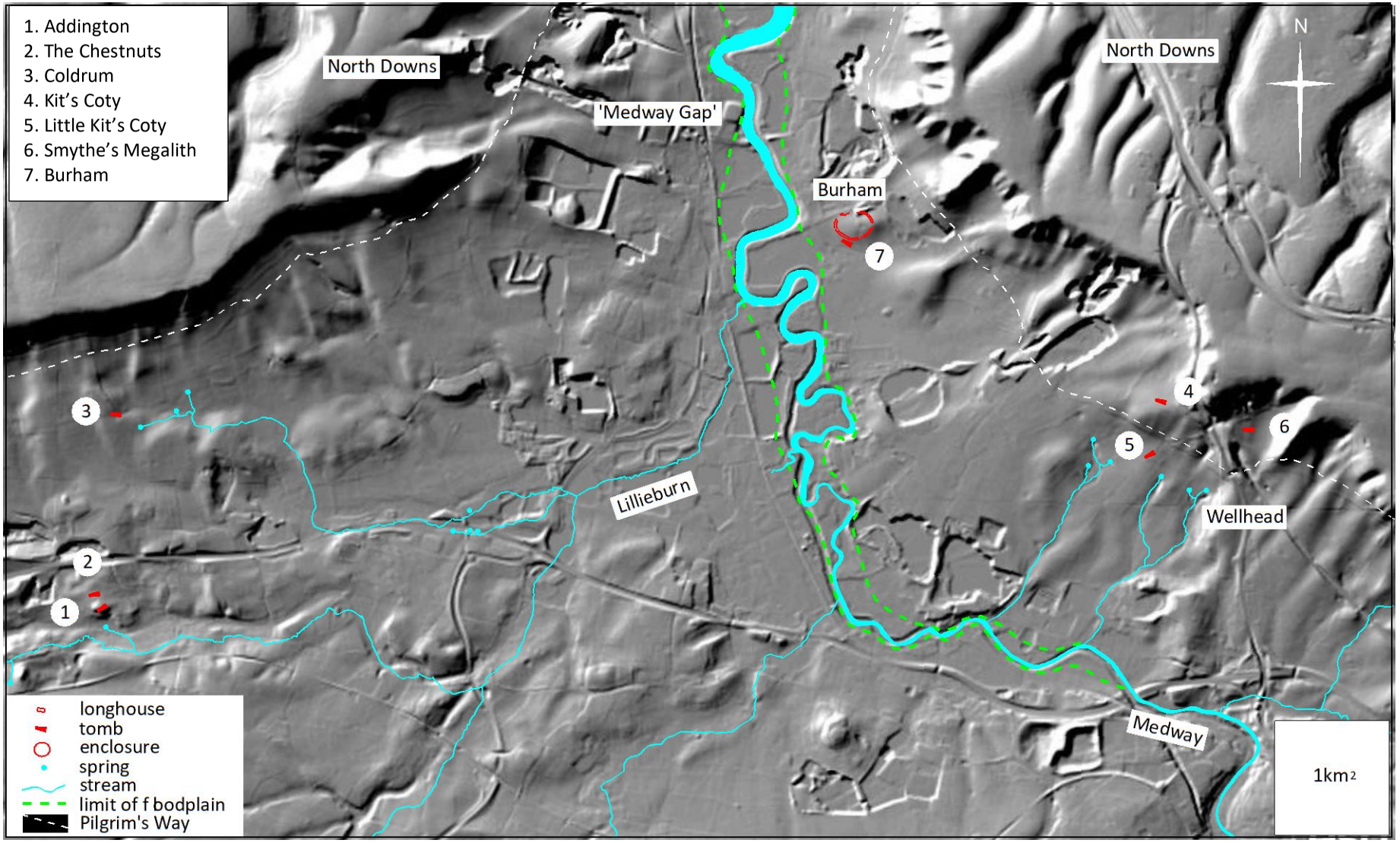

Figure 9.1: Key sites in the Lower Medway Valley discussed in Chapter 9. Lidar is used to depict the topographic background with considerable reservations, since it highlights the impacts of modern industry and transport to a much greater degree than in the previous study areas.

9. Rivers, streams and springs: monuments and settlement in the lower Medway Valley, Kent.

[The enclosures] are hardly intervisible, being sited back-to-back and looking out to the Thames and the Swale and its hinterlands respectively, with clearly separate viewsheds.
- Mike Allen *et al*. (2008, 308-9), discussing Kingsborough, Isle of Sheppey, Kent.

9.1 Introduction: 'The great highway into Kent'

While access to the monuments in earlier case studies was necessarily on foot, the settings of Neolithic settlements and monuments in the valley of the River Medway relate primarily to access afforded by the river (Castleden 2014, 131-2; Figure 9.1). Ward-Perkins (1940, 168-9) justifiably calls the Medway 'the great highway into Kent from the north'. Not only is it navigable by boat for at least[1] 70km south-west of its confluence with the Thames, but the broad 'Medway Gap' also offers an important overland passage through the North Downs. The valleys of the Great Stour to the east and the Darenth to the west, which afford similar access, were also foci for Early Neolithic activity, suggesting that early settlers – predictably – followed rivers into the interior (Champion 2007, fig. 4.6; Jessup 1930, 58). All three valleys, however, were already extensively, and in places intensively, used in the Late Mesolithic (Scott 2004, 9), so it is important not to envisage Neolithic settlers entering a place-less and path-less wilderness.

As sea level has risen by 4.5-5.5m[2] over the past 6,000 years, alluvium has infilled the lower Medway valley floor to a corresponding depth (Thornhill 1974, 92-4; Bayliss *et al*. 2011, fig. 7.2), undoubtedly concealing evidence for Late Mesolithic and Early Neolithic activity on the river margins. Consequently, while the precise course and form of the Early Neolithic river is uncertain, it is likely to have been less meandering and more stable[3], yet still navigable. Historically[4], it was tidal for *c.*49km from its mouth, to a point *c.*28km inland as the crow flies. While this distance would be greatly reduced by the lower sea level of the Early Neolithic, boats could move swiftly on the ebb and flow along the lower reaches of the river, passing all the Early Neolithic sites.

[1] Today, it is navigable for *c.*60km, as far as Penshurst, but it would be possible for smaller craft to reach Hartfield in East Sussex, *c.*12km further upstream. The nearby placename Summerford indicates that even here, it was too deep to cross when in spate, at least by the Middle Ages.
[2] Earlier calculations of up to 13.5m (J.H. Evans 1954, 126-7), accepted by Ashbee (2005, 93) are excessive.
[3] Thornhill's (1974, 94) picture of a number of relatively narrow, interlaced, non-tidal channels appears contrived to support his subsequent arguments; a single channel is equally plausible.
[4] According to 19th-century OS maps made prior to the installation of locks.

Figure 9.2a: Horseshoe Reach: a loop in the River Medway, south-west of Burham causewayed enclosure.

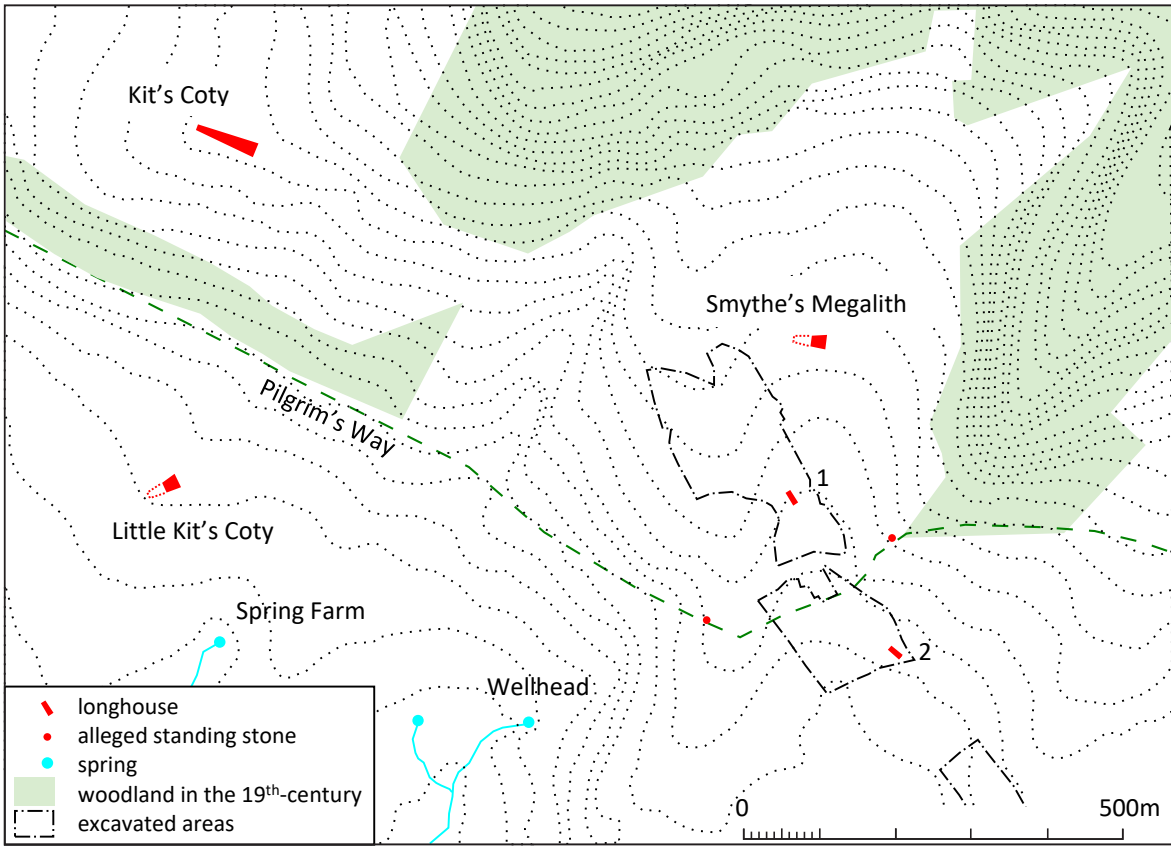

Figure 9.2b: The setting of the two longhouses at White Horse Stone and nearby monuments in relation to the topography and nearby springs, at 1:10,000 scale (based partly on information in Barclay *et al*. (2006)). Longhouse 1 was better preserved. Smythe's Megalith was not definitely a tomb, and the two White Horse Stones are excluded, being extremely dubious. Traditional contours are more effective than lidar in depicting the natural landforms, due to the degree of modern quarrying *etc*. The extent of woodland in the late 19th century illustrates how forest may have clothed the steeper slopes in the Early Neolithic.

While the river was a thoroughfare for north – south travel, it was also something of a barrier to east – west movement (*contra* Thornhill 1974, 74), perhaps explaining the two distinct clusters of monuments on either side of its channel. Significantly, the lowest fording point in Roman and later times was probably near Holborough or Snodland (Hasted 1798, 464; Belloc 1904, map; Margary 1952, 49; Thornhill 1974, 95-100; Nicolson 1998, 6), both within 600m of the Burham causewayed enclosure. At Snodland, and also just south of nearby Horseshoe Reach (Figure 9.2a), the river has been successfully waded at low tide in modern times, via a hard-packed pebbly conglomerate on the river bed (Thornhill 1974, 99; Bright 2010, 15). The ford at Aylesford, *c.*2.8km south-west of Kit's Coty and Smythe's Megalith, utilizes a similar geological deposit and was well-established by the early medieval period. The lower course of the river has probably changed sufficiently over the past 6,000 years that these observations cannot offer a very reliable guide to Early Neolithic circumstances, but it is suggestive that stone axes were found in the river at Aylesford (Jessup 1930, 57).

9.2 The White Horse Stone longhouses

Two longhouses 240m apart near White Horse Stone, the better-preserved built in 4,065-3,940 cal. BC (at 68% probability) and the other broadly contemporary, are perhaps the earliest Neolithic structures in Britain (Barclay *et al*. 2006, 45-7; Hayden 2008; Bayliss *et al*. 2011, 379-81; Booth *et al*. 2011). The longevity of the better-preserved building (195-430 years, at 68% probability) suggests that they were still in use when the nearby tombs were built. The longhouses were built in an area of light Mesolithic activity, although the environment may have been modified (Barclay *et al*. 2006, 24). Molluscan evidence suggests that the environs were dominated by forest, yet quite diverse in character, with some mature, but not necessarily dense, forest and also limited areas of ungrazed or lightly grazed grassland (*ibid*., 18; 25-6), perhaps reminiscent of Vera's 'wood pasture'. This soil type and topography would typically support forest dominated by lime, oak and ash, while the sunny, sheltered aspect with good drainage would allow trees to attain their maximum heights. Tree species detected as charcoal included oak, ash, alder, hazel and *Maloideae* (*ibid*., 26), the alder more likely to be brought from lower-lying, damper ground and the hazel and especially *Maloideae* (apple, pear or hawthorn) indicative of relatively open conditions. Both cattle and sheep were present in the tiny faunal assemblage recovered from the better-preserved building (*ibid*., 40), confirming the existence of open patches. Several pieces of pine (*ibid*., Table 5), a species which does not enjoy calcareous soils, were probably imported (as kindling?) from a more acidic soil[5], the nearest overlying the narrow band of Folkestone Beds extending south-eastwards from Aylesford. A few cereal grains and a poppy seed point to arable cultivation nearby (*ibid*., 40), perhaps within the clearing(s) surrounding the longhouses. The environment

[5] The presence of pine (which is not discussed in the report) may indicate the continued existence of a deep forest soil, in which the species could survive, but it is more likely to be imported, given that lime-loving ash was also present.

Figure 9.3a: The current 'issue' at Wellhead, with Connington Pumping Station in the background, photographed in mid-March. Prior to the construction of the pumping station in the early 1930s, the stream was fed by two springs issuing from adjacent deeply-eroded depressions, c.100m further north.

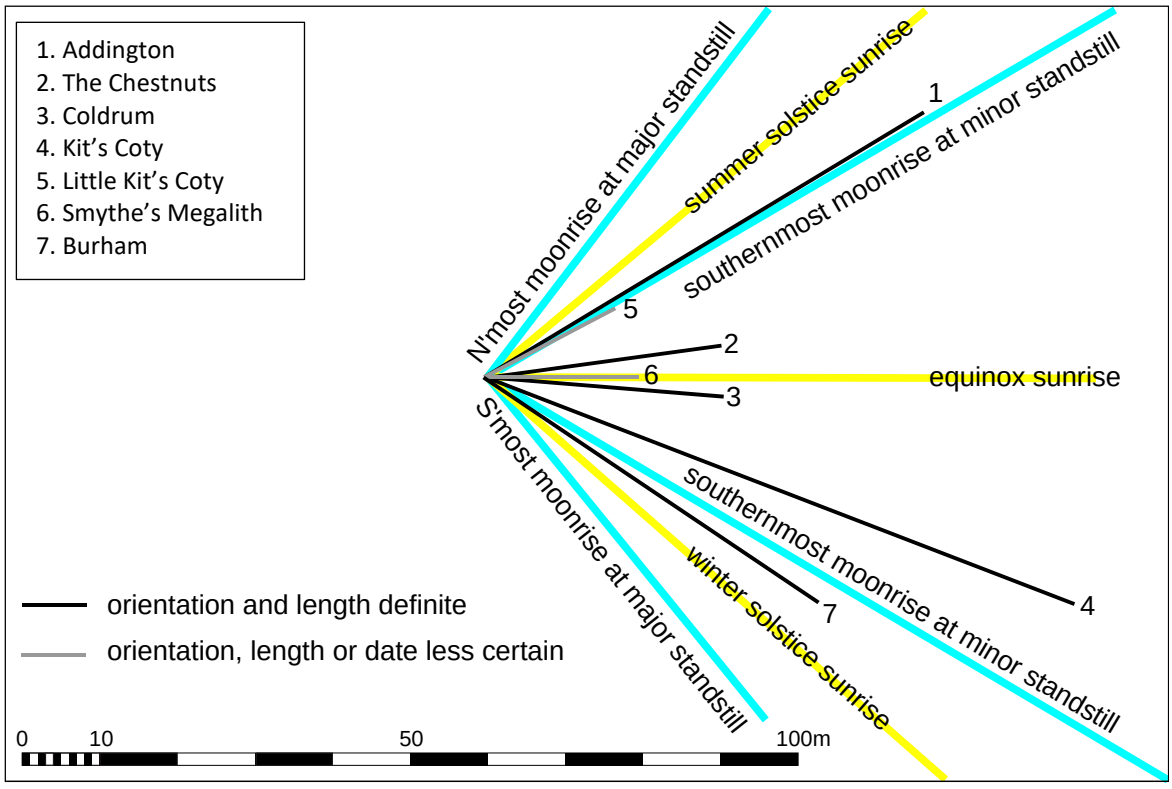

Figure 9.3b: Orientation of the Medway tombs in relation to cardinal solar and lunar directions.

presumably experienced considerable change during the long lifetime of the building, including through the procurement of construction materials. The largest of the structural posts were slim, at *c.*31cm (*ibid*., 32), and therefore easy to source nearby.

The topographic settings of the longhouses, on elevated ground *c.*600m from the reliable spring at Wellhead (Figure 9.3a), recall Piggott's (1954, 92) prediction about where dwellings would eventually be found. Hayden (2008, 7) ultimately interprets the better-preserved building as a 'quotidian' dwelling, pointing out that its longevity is consistent with medieval timber-framed buildings and that the sparse, fragmentary finds assemblage actually argues for routine cleaning, implying occupation. Fetching water from the Wellhead springs would require a round-trip of 15-20 minutes, but perhaps run-off from the roof was collected in troughs beneath the eaves. The breadth of the 17.5m-long building[6] suggests that its gable stood 5-6m high, creating a monumental visual impact. Given the numerous taphonomic factors involved[7], further dwellings conceivably occupied similar locations overlooking Wellhead or other nearby springs[8]. Lying within 2km of the Medway, relatively open conditions along the valleys of the tributary stream perhaps made these large buildings just as eye-catching to waterborne travellers as the tombs upslope.

9.3 The Medway megalithic tombs

Sceptical reappraisal of the widespread assumption that all the 'Medway megaliths' represent tombs may be overdue, since some, including Coldrum North and the Coffin Stone, remain doubtful (*e.g.* Champion 2007, 77; Garwood 2012, 2). All the definite tombs share a generally easterly orientation (Figure 9.3b), and two basic types have been distinguished: D-shaped mounds with megalithic kerbs[9] and façades, and long barrows with megalithic chambers (J.H. Evans 1951). The former type has no exact parallels[10] in Britain or continental Europe (*ibid*., 78; J. Alexander 1961, 14-17; Holgate 1981, 225-7). It is debatable, therefore, whether precedents for their locational preferences should be looked for. One of these, Coldrum, is the only tomb in this area to be dated accurately (Wysocki *et al*. 2013, 73), with the first phase of activity starting in 3960–3880 cal. BC and lasting up to 140 years (at 68% probability). The morphological similarities between this

[6] The less well-preserved building was probably similar in size, but the evidence precludes certainty.

[7] Given that the post-holes of the longhouse were not detectable through aerial prospection or geophysical survey, that the protection of overlying colluvium assisted the survival of the better-preserved longhouse, and that no large-scale excavation has taken place elsewhere on the cultivated valley sides locally, the potential for undiscovered buildings is high. At nearby Halling, on the valley side just above the eventual floodplain, nearly 2m of colluvial deposits covered an Early Neolithic burial (Oakley *et al*. 1968), emphasising that not all development-led archaeology would necessarily reveal the relevant levels.

[8] Numerous springs rise at the junction of the chalk with the underlying Gault Clay (see Figure 9.1).

[9] The term 'kerb' is here used in preference to 'peristalith', used by other scholars (*e.g.* Garwood 2012, 2)

[10] Indeed, it remains unproven that some of the sites, including Coldrum North, Smythe's Megalith and the Coffin Stone, were genuinely tombs (*e.g.* Champion 2007, 77; Garwood 2012, 2). Previous scholars have tended towards over-credulity, but I have adopted a more sceptical position here.

Figure 9.4a: Looking east across the remains of the burial monument at Coldrum, at the start of August. Photograph by Nathalie Cohen and reproduced with her permission.

Figure 9.4b: The burial chamber known as Kit's Coty, photographed in mid-December from the south-west (the opposite direction to the view in Figure 2.1a). As today, the steep slope to the east was probably densely forested in the Early Neolithic, potentially forming a dark backdrop to the chalk mound, but precluding the possibility of a smaller clearing creating a notch on the horizon when seen from the river (though not from the south-western sector). The low winter sun just picks out the ploughed down remains of the 75m-long chalk mound that once extended north-westward from the megalithic chamber.

tomb[11] (Figure 9.4a), and both The Chestnuts and Little Kit's Coty (J.H. Evans 1951, fig. 2B; J. Alexander 1961, 13) suggest that these monuments may be close in date. J.H. Evans (1951, 81) argues, on weak typological grounds, that this type may be later than the long barrows. Excavations at Kit's Coty, however, indicate that the mound was lengthened in at least two phases and perhaps incorporated an original monument comparable to the D-shaped kerbed tombs (Garwood 2012, 2). The same could be true of the Addington long barrow, which also incorporates numerous megaliths, mostly as a kerb. Although interpreted as territorial or ancestral symbols that were 'prominent… in the landscape' (Holgate 1981, 230; Champion 2007, 80), the massive unworked sarsens in the kerbs were already heavily weathered when erected, so would impress more by their size at close range than by their brightness at a distance. As in Wessex, sarsen was the only durable building stone available, so visual qualities may be less important[12]. For the tombs at Addington, including the supposed long barrow, the megalithic kerb also retained the bodies of the mounds, comprising thin turves and sandy soil (Garwood 2012, 2) – hardly presenting the much-vaunted brightness of freshly-quarried chalk. However, assuming a moderate covering of material over the megalithic chambers, all the tombs stood at least 3.5m high (Ashbee 2005, 110-2), so were undeniably monumental symbols at some level. Only Clinch (1904, 21) pondered where these symbols might be directed, while later academics have focused on typologies.

All the known tombs, like Burham causewayed enclosure, occupy land-forms *c.*100m below the tops of the Downs. This contrasts strikingly with monuments on the North Wiltshire Downs and South Downs, and with the two enclosures at Kingsborough on the Isle of Sheppey, 28km away. Assuming extensive tree cover, even those on locally prominent spurs would have forested backdrops. Consequently, they could not command panoramic vistas, nor would their clearings be visible as notches from lower ground, except perhaps from the foot of the spurs themselves (Figure 9.4b). Seen from the tops of the Downs, the clearings would be conspicuous, but there is little evidence that the highest ground was much utilized. Kit's Coty, Little Kit's Coty and the tomb supposedly[13] represented by Smythe's Megalith all lie within 800m of the Wellhead springs. Their topographic settings suggest that they were intended to be perceived from that general direction. Smythe's Megalith lay only 100m from the White Horse Stone longhouses and directly upslope of the western one, so a chalk mound would be visible even if trees still occupied the intervening space (*contra* Barclay *et al*. 2006, 62), certainly in winter. Unlike the other tombs, Smythe's Megalith stood half-way up a coomb whose steep sides

[11] Julian Thomas (2013, 332) describes it as a 'long cairn', but it is D-shaped rather than long, and constructed primarily of quarried chalk, rather than gathered stones.

[12] Sarsen erratics were perhaps seen as exotic rarities in the chalkland, but these megalithic structures were not inspired by nearby natural formations (*contra* Cummings & Richards 2021).

[13] It is uncertain whether Smythe's Megalith (also called Warren Farm), now lost, was part of a megalithic chamber, especially in view of its anomalous topographic setting. The Coffin Stone, long interpreted as part of a megalithic chamber, was no more than – if anything – a monolith (Garwood 2012, 2).

Figure 9.5: The middle reach of a minor tributary of the Medway, probably once called the Lillieburn, 800m east-south-east of the Addington tombs, photographed in mid-December. In the later 19th century, the watercourse was a winterbourne (or 'nailbourne' in Kent dialect), but today it flows reliably. This stretch, lined by Black alders, retains a slightly sinuous course that can have changed little since the Early Neolithic, though its banks have been reveted.

bracketed its viewshed into a narrow sector of the landscape, including the excavated longhouses (see Figure 9.2b). On the other hand, the intervening topography would screen the view of Kit's Coty and Little Kit's Coty from the excavated longhouses and their immediate (cultivated?) environs, suggesting that perceptual relationships between specific houses and tombs were carefully contrived. As noted above, longhouses conceivably occupied other landforms overlooking Wellhead, perhaps commanding views of other tombs, or of the clearings they occupied. Yet if the occupants of the known longhouses routinely visited the springs, gathered firewood from sandier soils nearby, and drove livestock further afield, it is questionable whether simple intervisibility between tomb and house would be of paramount importance, or indeed relevant at all. In other words, remote perception of monuments, and indeed of the monumentally constructed dwellings, operated in the context of local patterns of movement, which were multi-scalar in space and time.

Coldrum and both Addington tombs lie near the Lillieburn[14] (Figure 9.5), a minor tributary of the Medway, which flowed erratically[15] in the 19th century (Fielding 1893, 2). Though not navigable, its course would inevitably encourage animals and humans to develop a waterside trail linking the environs of the monuments with the main river, conceivably in the Mesolithic. Coldrum occupies the eastern edge of a low chalk spur projecting from the foot of the main North Downs escarpment (Figure 9.6a), so that the top of the spur (plus a higher spur just to the west) blocks westward views. It thus recalls the siting of Kit's Coty and the probable long barrow adjoining the Burham causewayed enclosure, whose viewsheds also seem to have been deliberately restricted by their topographic settings. Projecting into the Medway Gap, these land-forms would be vulnerable to wind-blows funnelled by the topography, hinting that the builders of the tombs utilized long-established natural clearings. Yet the careful placement of the tombs in relation to the topography, on what were probably the edges of the supposed clearings, suggests that it was the monument itself, rather than a landmark created by the gap in the forest canopy, which was intended to be seen.

Coldrum differs from Kit's Coty and most other long barrows, however, in that rather than complementing the land-form with its long profile, it was built perpendicular to the contours[16]. Consequently, its 18m-wide façade rears above the 4m-high natural scarp of

[14] Though un-named today, it is probable that the stream was known by the Middle Ages as Lillieburn, since a village of that name lies next to the stream. Leybourne, another village which lies next to the stream, is a corruption of the personal name of the medieval lord and therefore unconnected.

[15] The Gypsey Race in East Yorkshire, a stream of similar size and nature on the chalk Wolds, may have held similar significance for the builders of the first phase of the Duggleby Howe tomb, probably in the mid-36th century BC and a winterbourne may have influenced the siting of several long barrows near Wilsden, Wiltshire (Gibson *et al*. 2011, 38-9; Bowden *et al.* 2015, 64).

[16] Another exception in Kent is Juliberrie's Grave, overlooking the Stour.

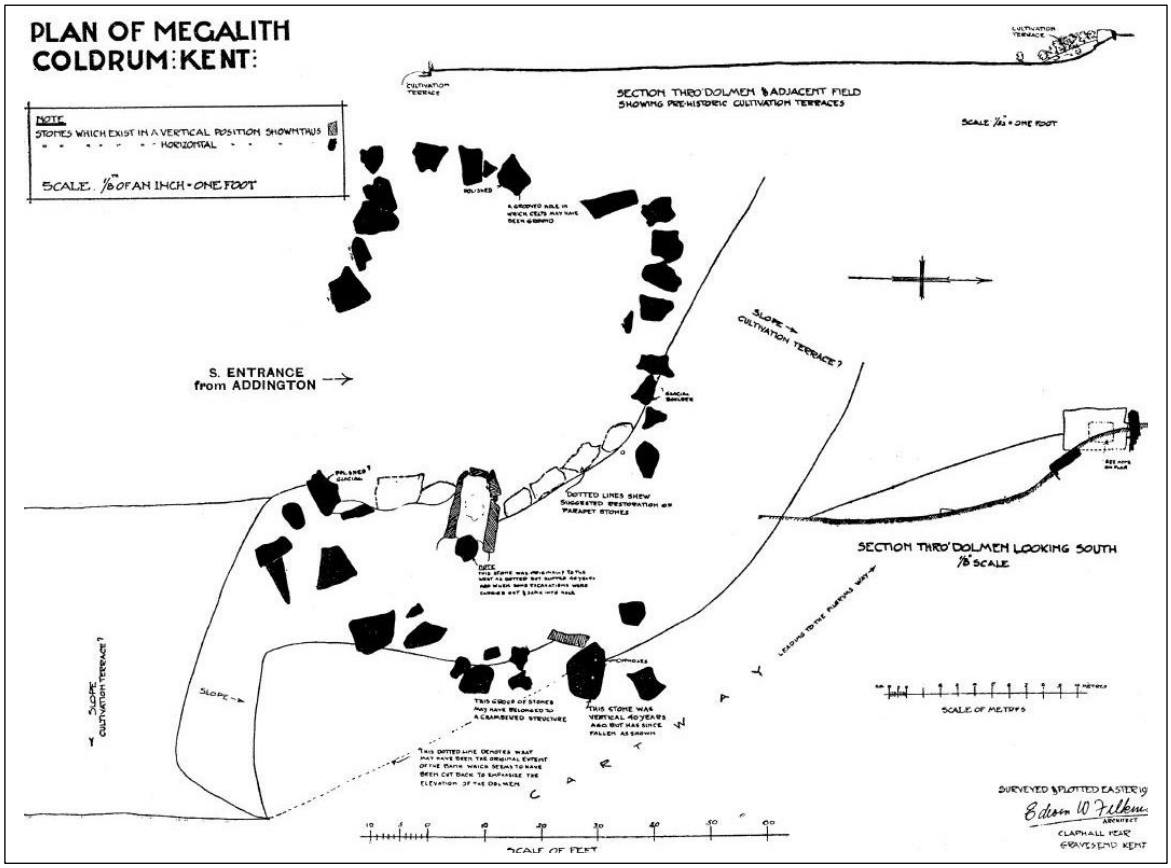

Figure 9.6a: Plan of Coldrum, illustrating the alleged prehistoric cultivation terrace supposedly appropriated by the monument (from F.J. Bennett 1913). This erroneous early interpretation of a natural scarp (distorted by later activities) has been accepted by many subsequent scholars.

Figure 9.6b: The natural scarp occupied by the eastern (front) of the monument has been both damaged and made more prominent by the formation of a negative lynchet and later trackway, and chalk quarrying.

the spur[17], enhancing its visual impact, particularly seen from below and to the east (Figure 9.6b). A clearing on the gently-sloping top of the chalk spur would silhouette the monumental façade against the skyline from short range. The anomalous form and siting of the monument are potentially relevant in the context of its very early date (Wysocki *et al*. 2013, 73). Though its easterly orientation conforms to local and wider trends (Figure 9.3b), it also faces towards the comparably early longhouses at White Horse Stone 10km away (more precisely than towards Kit's Coty, as proposed by Clinch (1904, 21). Yet remote perception, whether from this far or much closer, would obviously depend heavily on the tree cover at the time.

In contrast to the clearly easterly aspect of Coldrum, the two neighbouring tombs at Addington, 1.6km to the south, occupy the western periphery of a spur that is topographically rather indistinct; they would thus be visible in profile from the west, but not especially prominent. That these three monuments, *c.*20 minutes' walk apart, have different viewsheds recalls the two neighbouring causewayed enclosures at Kingsborough, where the excavators inferred that they related to different communities (Allen *et al*. 2008, 308-9; Figure 9.7a). In choosing sites for the Addington monuments, the builders ignored several higher and more eye-catching knolls on both sides of the Lillieburn, including the 10m-higher knoll occupied by St. Margaret's Church[18], only 220m to the south. This suggests that the builders intended the monuments to be perceived from relatively short-range, perhaps from an established route or area of activity. This impression is reinforced by the dense and extensive concentration of Late Mesolithic material around The Chestnuts (J. Alexander 1961, 2-5; R. Bygrave, landowner, pers. comm.), perhaps implying that both monuments were built in an established clearing whose limits coincided approximately with the top of the low spur. The knoll occupied by St. Margaret's is more vulnerable to wind-blows, so the clearing perhaps encompassed

[17] The natural scarp was further accentuated, first by the development of a negative lynchet along the edge of the spur, then by the formation of a slight hollow way, probably of medieval origin, along the foot of the lynchet. According to 19th century observers, post-medieval chalk quarrying altered the scarp more dramatically by undermining the frontal façade of sarsens, so that they collapsed down the slope (Jessop 1863, quoted in Ashbee 1998, 4; Payne 1893, quoted in Bennett 1913, 76), or this may result from destruction by 14th-century Christian zealots (Ashbee 1998, 18). Natural chalk dissolution and erosion of the side of the hollow way perhaps also contributed to the slippage (Bennett 1913, 85). On the other hand, Bennett's proposal that the monument was built on top of a well-developed positive lynchet is unconvincing, although the suggestion has been accepted and elaborated by later scholars (P.J. Fowler 1977, 35-69; Ashbee 1998, 1; 11 & fig. 1; 2005, 111; Champion 2007, 74). Not only is the unquarried part of the slope in keeping morphologically with a natural chalk scarp (J.H. Evans 1951, 70-1), but the development of a lynchet of such size prior to the construction of a monument which is itself early is almost inconceivable in the light of the dates established for the onset of arable agriculture elsewhere. It would appear, however, that any level ground in front of the megalithic façade would have been very restricted, raising questions (which have not been addressed by previous studies) about how access was gained when the monument was re-opened and reworked, which occurred on more than one occasion.

[18] The extant church, which is 11th-century in origin, and its graveyard may conceivably have destroyed Mesolithic and/or Neolithic deposits on the summit of the knoll, but if there had been any significant earthwork, the church would probably be dedicated to St Michael (as at Brimpsfield in Chapter 8).

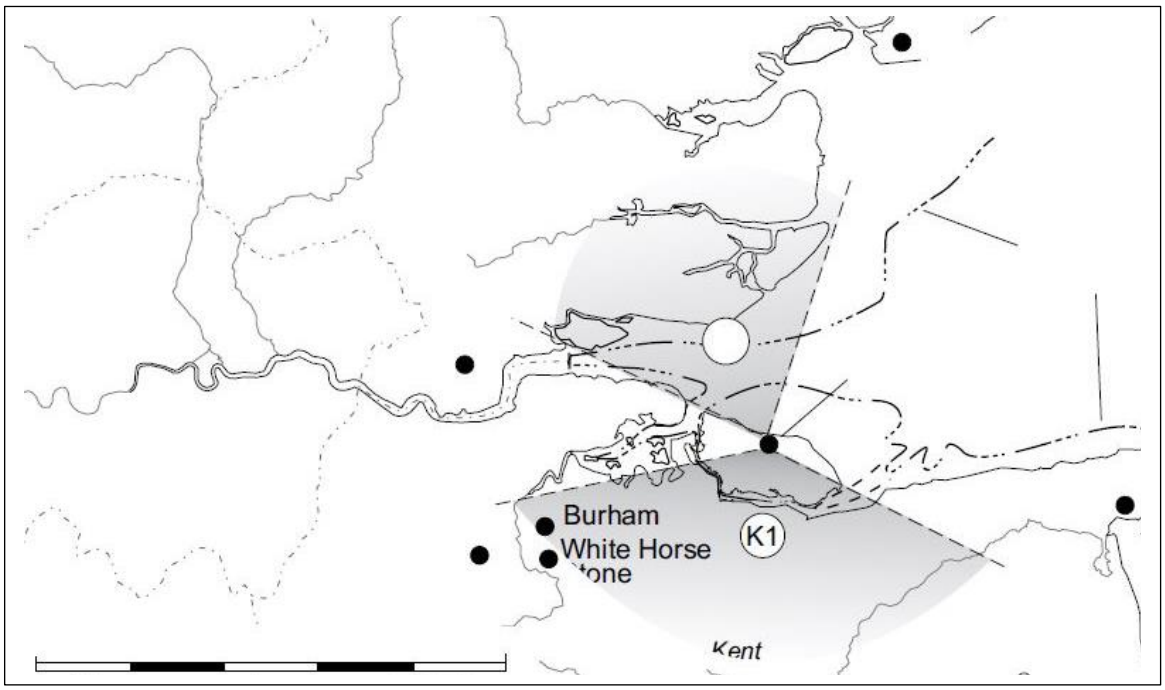

Figure 9.7a: The opposing viewsheds of the causewayed enclosures at Kingsborough, on the Isle of Sheppey, Kent (from M.J. Allen *et al*. 2008, fig. 17).

Figure 9.7b: Part of the sarsen kerb at the north-eastern end of Addington long barrow, photographed in mid-December, highlighting the potential impact of surrounding forest. Three pieces of small flint debitage of broadly Mesolithic character were noted in the root-plate of the wind-blown beech tree.

this eminence, especially since Mesolithic material occurs at its foot (J. Alexander 1961, 3). The natural vegetation on the spur, assuming there was any left intact by the Early Neolithic, was probably very different from the environs of the other sites under discussion here. The indistinctness of the landform results from its 'soft' geology, which comprises sands of the Folkestone Beds. The upper stratum of this formation, a fine white sand *c.*10cm deep, contained most of the *in situ* Mesolithic material found at The Chestnuts (*ibid*., 2-5), indicating that the topsoil was very thin and sandy[19]. Such conditions would favour a heathland flora, with pine and birch probably forming a larger component of the forest, at the expense of oak, ash and elm, with gorse and possibly heather growing at lower levels. These species, which all burn easily, would facilitate clearance by fire, which perhaps accounts for the intensity and extent of the Mesolithic activity here. The use of turves in Addington long barrow (Garwood 2012, 2) indicates that a herb layer was established, at least in places, by the time of the monument's construction (Figure 9.7b).

Equally suggestively, all the tombs west of the Medway overlook springs which are sources of tributaries of the Lillieburn. This recalls the locations of the longhouses at White Horse Stone, hinting that the tombs were sited in relation to nearby dwellings. Like the Lillieburn itself, these minor watercourses would offer ideal habitats for beaver, although the restricted topography of the tributary valleys means that riparian clearings would be narrower than any along the Lillieburn itself. The two Addington tombs originally[20] lay 210m east of a small, spring-fed pond, which flowed southwards into the Lillieburn. Similarly, Coldrum lies 480m west of a spring, so the eastward orientation of the monument could relate to a 'home base' near the spring. The stream flows broadly eastwards at first, coinciding with a long finger of Head surface geology. This mixture of clays, sands and gravels would influence the character of the vegetation, even without supposing the impacts of beaver. These factors perhaps created the sort of corridor of lower vegetation that would afford views of the monument to people making their way along the watercourse from the Medway. On the final approach, the monument would be silhouetted against the sky exposed by the clearing to its west, despite lacking topographic prominence. If broad enough, the open corridor could even afford reciprocal views with distant Kit's Coty, as Clinch (1904, 21) proposed.

[19] The coincidence of Late Mesolithic and Early Neolithic material on thin, sandy soils on elevated parts of the Greensand Ridge, perhaps indicating continued or repeated use of forest clearings, is attested at Oldbury hillfort and on two separate high-points within Knole Park, respectively 7km and 12km to the west-south-west (Oswald & Haselgrove 2016, 4; Oswald & Henson 2016; Oswald 2019, 14-15).

[20] According to 19th-century OS maps made before the expansion of nearby aggregate quarries, which interfered with the natural hydrology and forced the canalization of local watercourses.

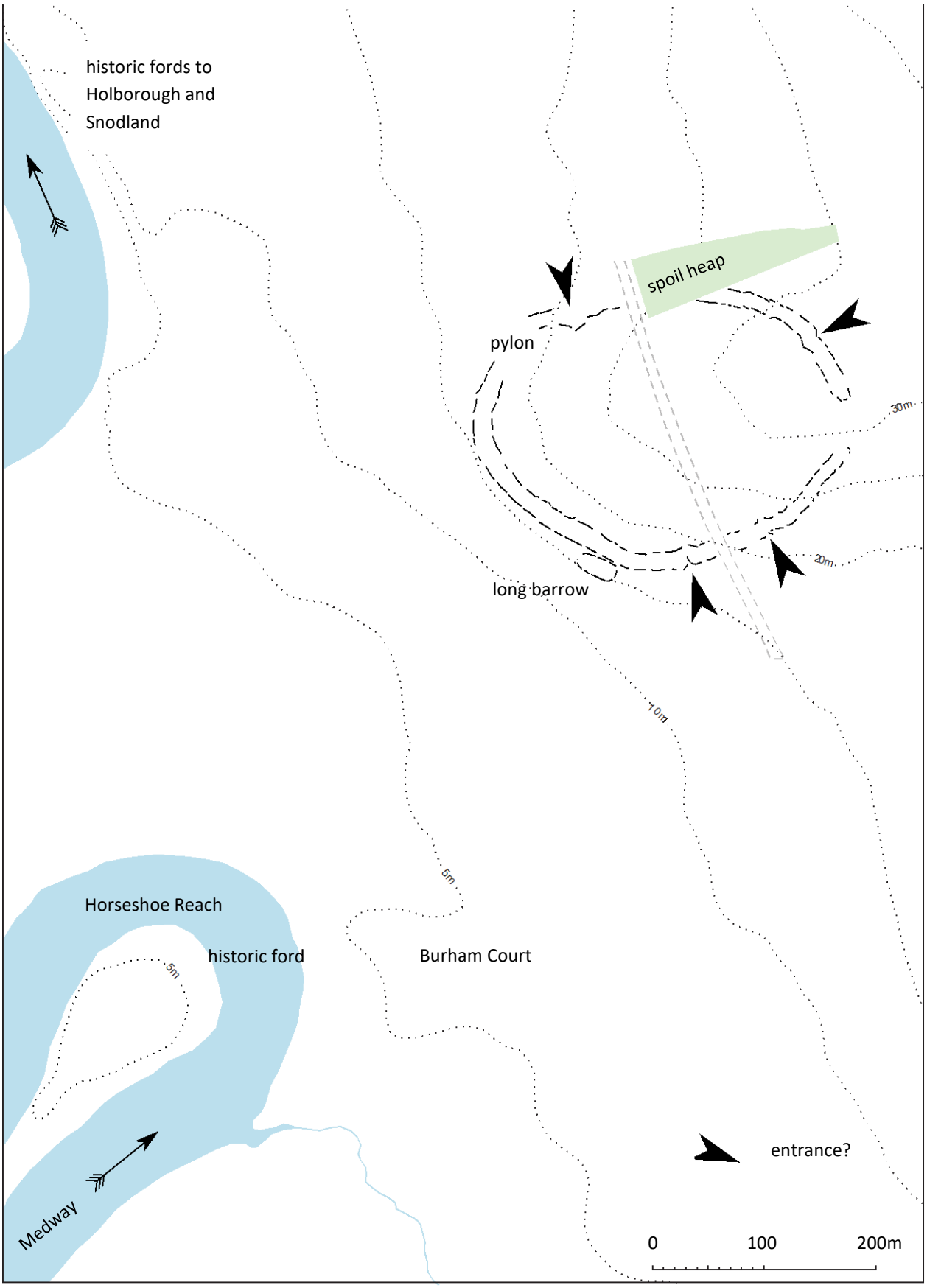

Figure 9.8: The setting of Burham causewayed enclosure at 1:5,000 scale (based on Carolyn Dyer 1997, and a magnetometry survey supplied by Paul Garwood). The surrounding area is so heavily disturbed by post-medieval chalk quarrying *etc*. that contours depict the natural terrain more effectively than lidar.

9.4 The causewayed enclosure at Burham

The plough-levelled double-ditched causewayed enclosure at Burham[21] has a large internal area of *c.*5ha (estimating the position and size of internal banks). With an 800m-long perimeter apparently built in a single event, the scale of the earthworks, in both volume and extent, implies the marshalling of a workforce far beyond the capacity of the longhouses at White Horse Stone. Like all the Early Neolithic sites in the Medway Valley, except Smythe's Megalith, it occupies a low spur projecting from the foot of the North Downs: a 'valley-side' location (Oswald *et al*. 2001, 96-7; Figure 9.8). Seen from the river, the long east – west axis of the oval perimeter would be foreshortened, increasing the impression of circularity. It might be assumed that the newly-constructed barrier was conspicuous, but the chalk was probably concealed by a post-and-panel revetment (Paul Garwood, pers. comm.). Nevertheless, the architecture self-evidently made an impressive statement. The tilt across the contours towards the river suggests that the builders wanted to signal the community's importance to waterborne travellers, perhaps reflecting the river's role as a link within the region and beyond, including the Continent.

Yet the spur occupied by the enclosure is not the most prominent local landform: the next spur to the south-east is more sharply-defined and nearly 20m higher. This eminence, potentially a rewarding place for future archaeological prospection, would impede views southwards from the causewayed enclosure, and would prevent intervisibility with the settled environs of Wellhead, *c.*4km to the south-east. The lithic assemblage from the enclosure includes a concentration of Late Mesolithic material (Scott 2004, 9; Healy 2008, 7), which may explain why this 'lesser' spur was chosen. As with the enclosures at Ramsgate and Kingsborough, and the Addington tombs (Hammond 2007, 361; Scaife in Allen *et al*. 2008, 269-74), the builders apparently selected pre-existing clearings in preference to prominent landforms. The area of the enclosure may reflect the size of the contemporary clearing, but the construction of one or more substantial timber barriers accompanying the chalk banks would involve the felling of numerous young oaks, which would presumably enlarge the pre-existing clearing. Anomalous deflections in the generally regular plan of the circuit hint that a few large trees - alive or dead – were still standing close to the perimeter and, by inference, perhaps in the interior too. Mesolithic activity apparently ceased centuries before the enclosure was constructed, probably in the early-37th century BC (Garwood 2012, 2), but the clearing was perhaps maintained throughout by grazing and browsing. The existence of a long barrow pre-dating the

[21] Magnetometry survey suggests a gap, too broad to be a typical entrance, on the east-north-east side of the enclosure (Garwood 2012, 3), but this may be misleading, since the geophysical responses, like the cropmarks, become weaker towards this sector. Weekes' (2007, 8) suggestion of a second causewayed enclosure immediately downslope from the proven one, despite the scepticism of the air photo interpreter (Carolyn Dyer 1997b, 8), is disproved by magnetometry, which shows that the parallel ditches are actually continuous, probably a late Iron Age or Romano-British trackway (Garwood 2012, fig. on p. 3).

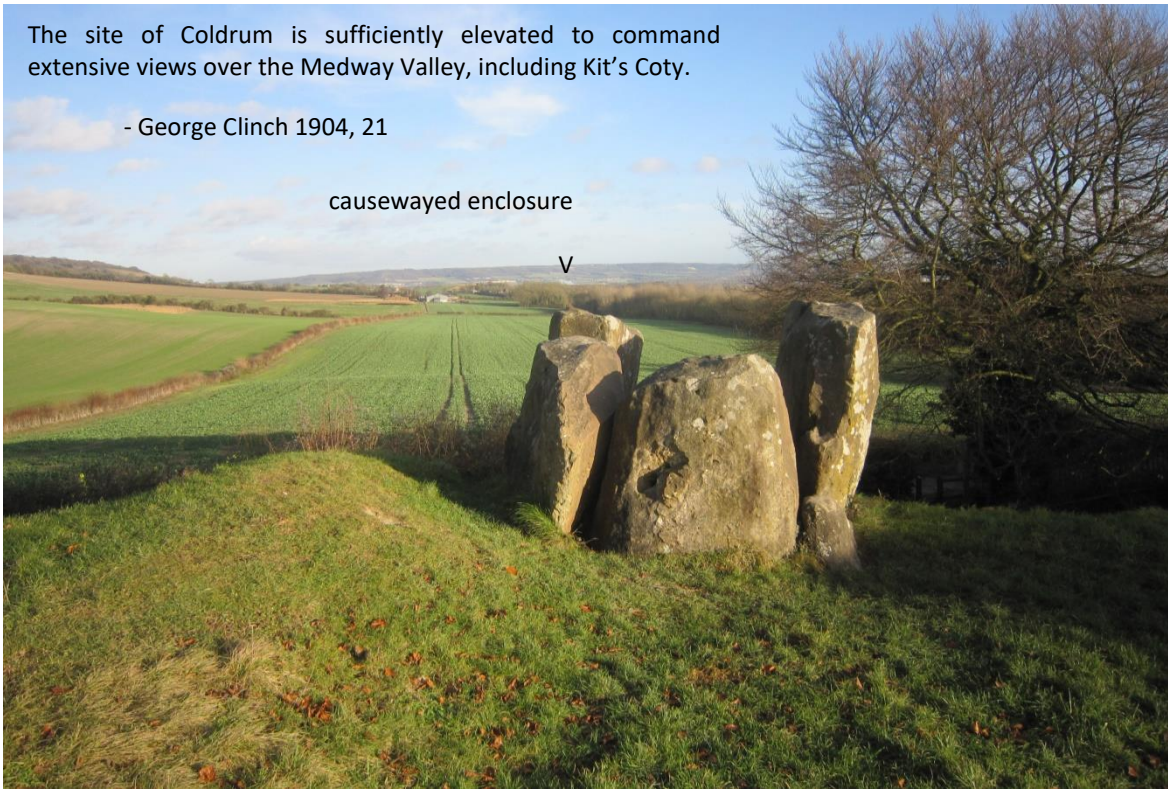

Figure 9.9a: The view from Coldrum across the Medway valley towards Burham causewayed enclosure, 6.6km away, photographed in mid-December. This illustrates the potential for distant views above a canopy of smaller trees following the intervening corridor of Head surface geology.

Figure 9.9b: View from the historic ford near Snodland church, 1.2km to the west-south-west of Burham causewayed enclosure, photographed in mid-December. The image is framed to exclude most of the modern industrial buildings, though the 19th-century chalk quarries are still prominent.

enclosure[22] potentially narrows the apparent chronological gap in the use of the clearing. In short, the causewayed enclosure seems to have occupied an established clearing with a long, perhaps punctuated, history. The barrow was apparently designed to be perceived in profile from downslope to the south-west, *i.e.* the Medway or its banks, where the environment was perhaps relatively open due to beaver and/or human activity (Figure 9.9a/b). An apparently suitable settlement locale is the slight eminence occupied by Burham Court, only 100m away, which lies close to the river yet above potential floods, so perhaps the monument simultaneously related to an individual dwelling.

If causewayed enclosures served (amongst other things) as foci for transhumant grazing and dairying, where might the grazing lands have lain? The previous case studies have presented a conventional arrangement in which people lived on low ground near springs and took their livestock to higher ground for the summer. In the lower Medway, the settlement part of this equation holds good, but it is doubtful whether the high ground was used for grazing. While sheep could tolerate the gradient of the escarpment, it probably remained forested, leaving a forested backdrop to the enclosure. The tops of the Downs, being capped with Clay-with-Flints, were also probably forested, though wind-blows would open gaps on exposed summits. To reach the tops would take *c.*1 hour via some of the coombs, but the gradients are still relatively severe. Probably with a high proportion of beech (Jessup 1930, 60), this forest would suit foraging pigs, but produce little browse, since beech eradicates understories. Alternatively, the enclosure overlooks the eastern bank of the Medway from a distance of 250-900m (allowing for potential channel migration). The river margins, perhaps comprising meadows and tidal marshlands, were therefore closer to the enclosure than the tops of the Downs and more easily accessible, so grazing and browsing might be concentrated there. If the Mesolithic clearing that hosted the enclosure was initially separate from any semi-natural clearings along the river, the two open areas might eventually coalesce through intensive browsing. If, as appears likely, the river was fordable nearby in the Early Neolithic, herders could also drive cattle to the far bank, the times of their crossings governed by the tides. In this scenario, herders could induce greater thirst, and consequently increased milk yields, by grazing cows on halophytic vegetation (partly), without needing to drive livestock arduously across the escarpment.

From where might transhumant herders be bringing their livestock? The Pilgrims' Way, which runs along the foot of the Downs escarpment 500m upslope from the causewayed enclosure, together with a lower trackway following the spring-line and a 'ridgeway', are

[22] The south-west side of the enclosure abuts the long barrow, whose form was revealed most clearly by geophysical survey (Garwood 2012, 3). Although unexcavated, the chronological relationship is evident from a pronounced and anomalous angle in the course of both causewayed enclosure circuits just to the east of the long barrow, indicating that the perimeter followed, and probably partly recut, the northern ditch of the barrow, forcing an adjustment in the curvature of the enclosure. This inferred sequence is consistent with the regional and national chronologies established for tombs (Whittle *et al*. 2011).

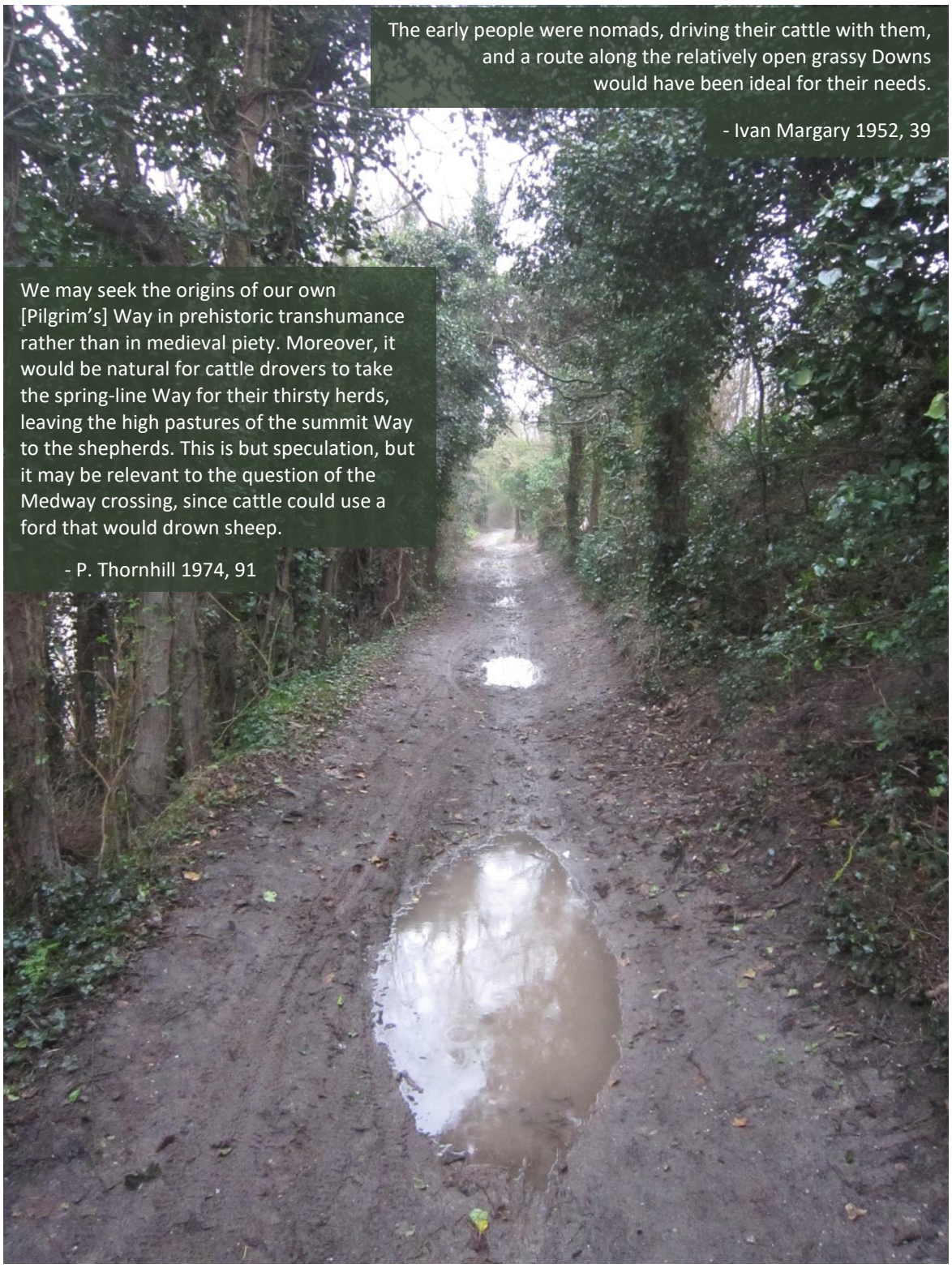

Figure 9.10: A stretch of The Pilgrim's Way just upslope from Kit's Coty, photographed in early March.

accepted by some reputable scholars as being of Neolithic origin (*e.g.* Belloc 1904; Margary 1952, 39; Thornhill 1974, 91; Rackham 1994, 118; Bright 2010). Most allude to the proximity of the route to Coldrum and Kit's Coty (Figure 9.10), betraying, to varying degrees, similar assumptions to those that underpinned *The Old Straight Track*. Though conceivably prehistoric, it is unwise to back-project such trackways to the Early Neolithic, nor is such long distance travel necessarily relevant to Neolithic transhumance (*contra* Thornhill 1974, 91). The fords nearby, via which the ancient trackways probably crossed the river, could be negotiated by cattle, but not sheep (Thornhill 1974, 91). Nevertheless, it was argued in Chapter 4 that sheep were more likely than cattle to be kept near the 'home base' year-round, so this restriction might not be a major impediment to the use of the enclosure by communities on both sides of the river, including those who built the Lillieburn monuments, less than 2 hours' walk to the west.

The enclosure appears to lack any river-facing entrance. There are, however, one or two typical, narrow inflected entrances on its south-south-east side, suggesting that people generally approached along the valley-side or perhaps the river bank. Therefore, the dispersed community living around the Wellhead spring, *c.*4km to the south, perhaps built and used the enclosure. This distance, taking only 1-2 hours to walk with livestock, would still separate animals from cultivated areas/hay meadows and, perhaps equally importantly, the dairying community from their home base. Even if deforested, the intervening higher spur would block direct intervisibility and probably, assuming much of the intervening land was forested, muffle sound transmission. Approaching from the south, passing over the higher spur would briefly reveal the enclosure, or perhaps the clearing in which it stood. From this distance of *c.*700m, if not before, the sounds of livestock, dogs, tree-felling and flint-working could be heard. Alternatively, a riverside route would also pass through relatively open country. In either scenario, the last climb towards the entrances would reveal the perimeter in profile on the near horizon. By this point, voices and smells would convey further information to people approaching.

9.5 Conclusions

Eastern Kent saw the earliest Neolithic settlement and monument construction in Britain; hospitable areas either directly accessible from easy landing places, such as Chalk Hill, Ramsgate (P. Clark *et al.* 2019), or reached via navigable rivers like the Medway, were probably at the very forefront. The conventional model of lowland-dwellers moving their livestock to higher ground for the summer seems to hold good for the previous case studies, but these regions were settled well after the first immigrations. Wind-blown clearings undoubtedly existed on the tops of the North Downs and hunter-gatherers perhaps enhanced some of these glades to attract deer. Yet the distribution of Early Neolithic flintwork gives no hint that the immigrants embraced these opportunities; instead, their taskscapes clung to the lower chalk promontories overlooking the tidal river which had carried them to this region. Here, Late Mesolithic activity and wind damage played important roles in affording hospitable places to settle and farm. This suggests

Figure 9.11: Pagan votive offerings in a 'wish tree' at Coldrum.

more opportunist, adaptive behaviour than generally ascribed to the Early Neolithic – arguably predictable qualities in this landscape where immigrants first landed. This, in turn, underlines that the reaction of early Neolithic communities to landscape and environment was spatially and temporally specific, not simply a uniform drive to clear forest and cultivate, as often assumed.

The corollary is that it is difficult to argue that monuments were sited with the intention of creating the very remote impacts traditionally attached to – *inter alia* - Adam's Grave, Crippets Barrow or Combe Hill causewayed enclosure. Whilst I have argued that, in any case, forest clearance probably played a more important role than the monuments themselves in creating that kind of very distant visual impact, the clearings that hosted the Lower Medway monuments would only produce notches on the horizon at shorter ranges, when the monuments themselves were already visible. The apparent division of the Medway megalithic tombs into distinct eastern and western clusters has often been noted (*e.g.* Ashbee 2004, 10; Champion 2007, fig. 4.6), but when considered as individual sites, their viewsheds suggest even more localised catchments. With the exception of Smythe's Megalith, all the monuments occupy well-drained eminences overlooking springs, consistent with the locations that Piggott (1954, 51-2) suspected would be favoured for 'home bases'. The strong indications that they lay within fairly extensive clearings used in the Late Mesolithic hints that longhouses and tombs were made intervisible. In short, patterns of remote visual perception were relatively short-range, over distances that would make sound and smell almost as important.

Burham causewayed enclosure, on the other hand, relates more clearly to the river. Its scale is excessive if it served simply as a corral, for it could contain an improbable 5,000 cattle. The apparent concentration of pits in the eastern half of the interior may indicate sub-division of the space, as proposed at Etton (Pryor 1998b, 65), but even this reduced area does not account for its size. It is more likely that the enclosure was designed to make a statement to waterborne travellers. Although the introduction played down similarities between the river's present and ancient courses, the spur occupied by the enclosure has probably always forced the channel to bend, so that boat passengers were afforded a prolonged view of the enclosure as they circumnavigated it. There is a strong likelihood that riparian trails afforded similar views, while people fording the river (sometimes with cattle) would be overlooked by the enclosure. There are hints that the (main) community which used the enclosure approached along the riverbank from the south. Therefore, while it may seem to require special pleading that it could be linked with two longhouses discovered - effectively by accident - *c.*4km away, there is actually some evidence that this was the case, even if the two excavated longhouses represent fragments of a larger dispersed settlement. The unexcavated long barrow, which appears to predate the enclosure, presented its doubtless impressive long profile to river traffic in the same way. It is tempting to interpret it as a monument to the pioneers who first voyaged up 'the great highway into Kent'.

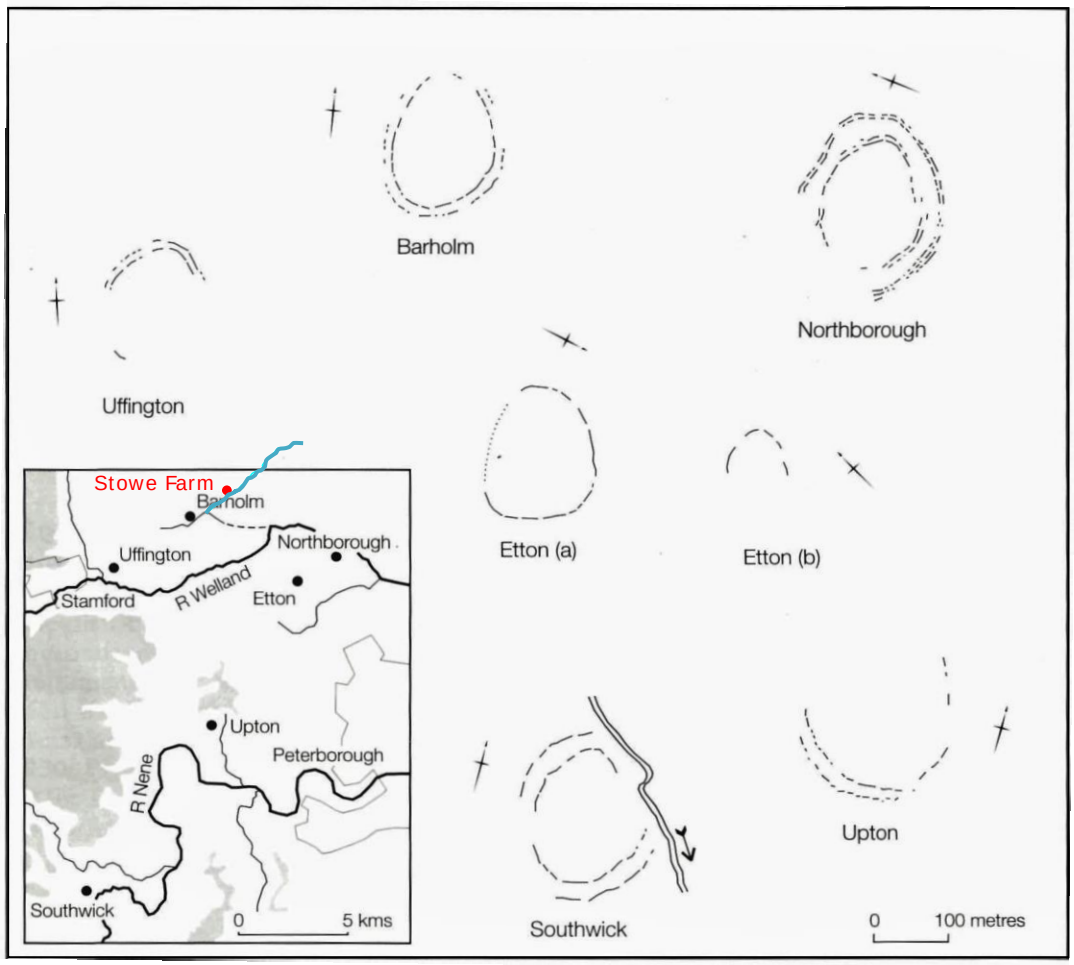

Figure 10.1a: The cluster of causewayed enclosures in the valleys of the Rivers Nene and Welland, which are the prime focus of Chapter 10 (from Oswald *et al*. 2001, fig. 6.3). The inset plan highlights fresh analysis of the likely natural course of the minor watercourse that flows past the Barholm enclosure: it no longer seems to be a direct tributary of the Welland. This revised course would carry it past the alleged settlement at Stowe Farm (see Figure 10.16b).

Figure 10.1b: The River Nene near the causewayed enclosure at Upton, Peterborough.

Chapter 10. Flat-lands: experiencing the monuments of the Nene and Welland valleys (Northamptonshire, Lincolnshire and Cambridgeshire)

In our broad, flat fenland landscapes, we have glimpsed ancestry, ideology & aspiration.
- Francis Pryor (2019, 105)

10.1 Introduction

Of the cluster of six or seven enclosures in the Nene and Welland valleys, all but Etton are known primarily as cropmarks. Their similar plans may indicate a common blueprint and/or use by one community (Oswald *et al*. 2001, 109-10; Figure 10.1a). This homogeneity is less clear in the topographic settings of the enclosures: three occupy gently rolling countryside in the middle valleys; four the fen-edge of the lower Welland, with little topographic variation. People's perceptual encounters with the fen-edge enclosures would differ greatly from those upstream (and from those discussed in Chapters 7-9). In the lower Welland, at Northborough and Etton A and at unexcavated sites of Etton B and Barholm, there are no hills nearby to afford opportunities for remote visual perception of gaps in the forest, let alone of the actual monuments. We must infer, therefore, that either local vegetation was even lower than wet woodland (carr), or that remote visual perception is irrelevant. As in the lower Medway, travel by boat was probably commonplace, constraining the viewpoints of those encountering monuments (Figure 10.1b). Having previously discussed this cluster as a group, I shall begin by studying them individually, starting with the sites in the middle reaches of the rivers, which may stand for other rolling terrain, like the middle Thames Valley.

10.2 Causewayed enclosures in the middle Nene and Welland valleys: Upton, Uffington and Southwick

The Upton enclosure occupies the south-east side of an outlying limestone eminence, the last ground over 50m before the Nene reaches the fen-edge. The setting is typical: just below the crest of a slope; close to, but not at, the tip of a spur; overlooking a tiny, but reliable, tributary of the Nene (Figure 10.2a). The circuit does not encompass the top of the spur, but a clearing around the enclosure could create a notch on the horizon when seen from *c.*800m away. Such a clearing perhaps included the stream or the plateau beyond, land respectively *c.*20m and 10m lower. If so, the monument could be visible from a settled or grazed area within the clearing. The topography allows little leeway for the course of the stream to migrate to any significant degree, but its original source was probably a spring closer to the enclosure[1].

[1] The stream now issues from a well 600m from the enclosure, linked to the natural course by an artificial channel. On Figure 10.2a, the position of the natural spring is estimated, based on the topography.

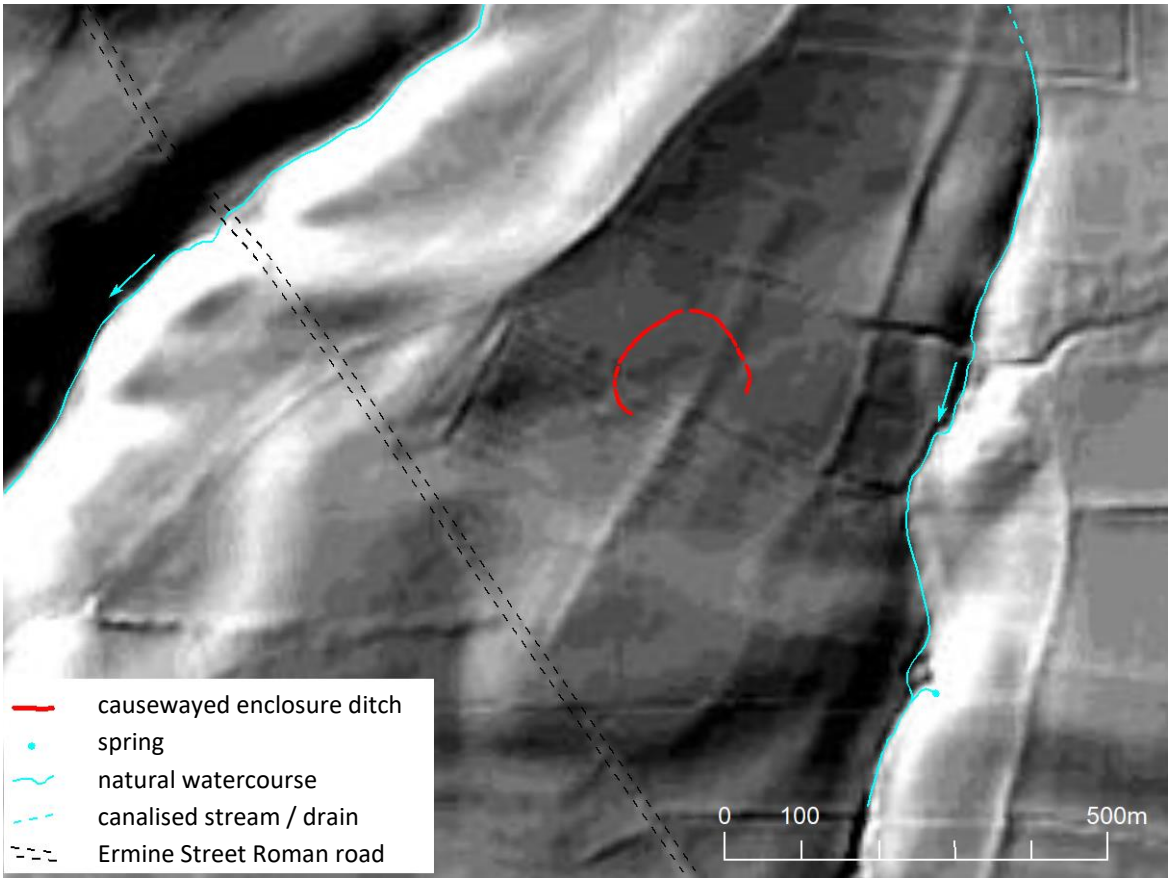

Figure 10.2a: The topographic setting of the causewayed enclosure at Upton, Peterborough.

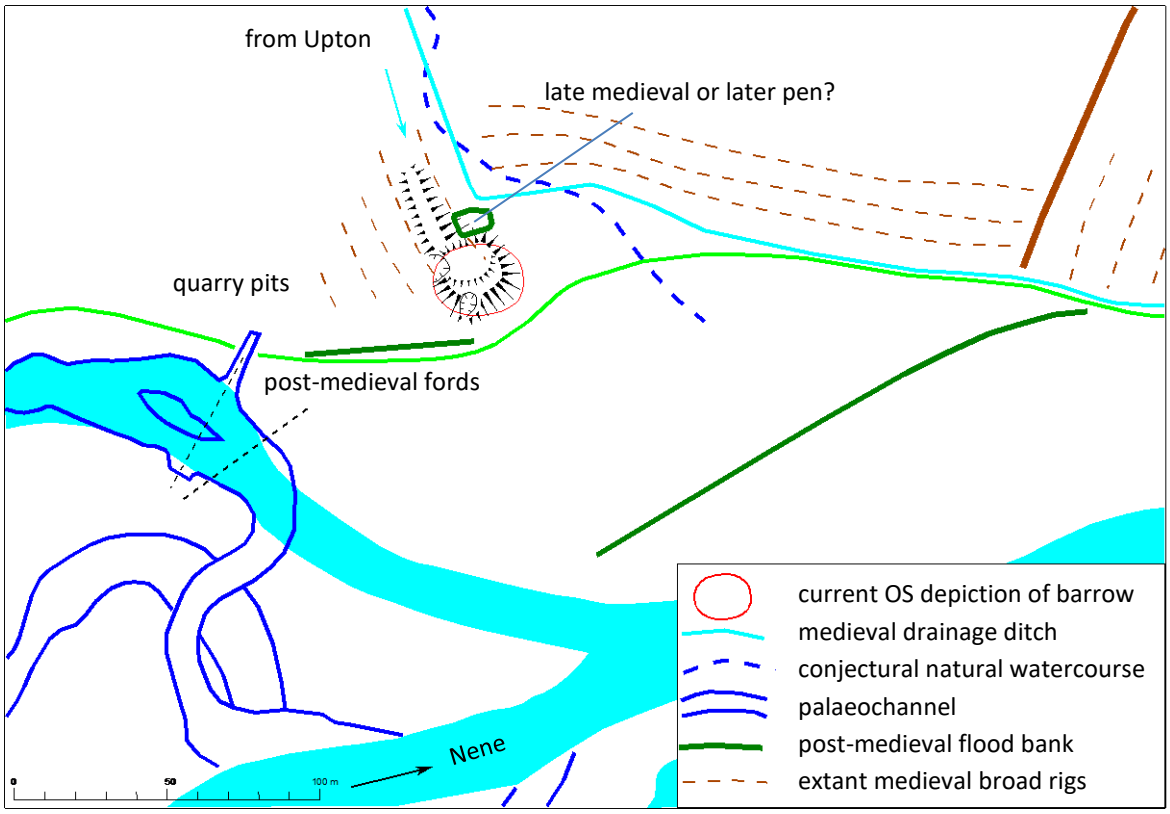

Figure 10.2b: A possible Early Neolithic barrow at the confluence of the Nene and the Upton stream. Plan based on lidar, historic OS maps and my analytical field survey of the mound at 1:1,000 scale. The earthwork could represent a long barrow distorted by medieval ploughing, a round barrow, or some other feature.

My previous plan of the site (*ibid*., fig. 6.3, inset) over-emphasised the potential link with the watercourse to the east by omitting another minor tributary to the north-west, on the opposite side of the spur. A clearing only a little larger than the enclosure could create a notch equally visible from the neighbouring valley. In either scenario, it seems reasonable to suggest that the community that constructed the enclosure perhaps dwelt, for at least some of the year, within *c.*2km of the enclosure and within sight and hearing of the clearing that it occupied, if not within sight of the monument itself.

The enclosure perhaps also related to pasture or settlement by the Nene, 2.7km (*c.*40 minutes' walk) to the south. The river now meanders within a floodplain 200-350m wide, recalling the floodplains near the other enclosures. It was once tidal almost to this point (https://waterways.org.uk/waterways/discover-the-waterways/river-nene), but the Early Neolithic tide probably reached less far[2]. The locations of Roman features excavated nearby and the limits of medieval ploughing show that the width of the floodplain has barely changed in historic times. At the point where the tributary meets the floodplain[3], the river was fordable in the 19th century. The Ordnance Survey has interpreted a mound overlooking the confluence as a *tumulus*[4]. It might represent a plough-deformed long barrow, facing south-east towards the river, or a smaller oval mound oriented north-eastwards, surmounting an artificial platform (Figure 10.2b). An Early Neolithic oval barrow of similar size occupies a comparable setting on the opposite bank of the river at Orton Meadows, *c*.8km downstream[5] (Mackreth *et al*. 2021). Both monuments conceivably overlooked junctions between an arterial route along (or alongside) the river and droveways following tributaries to isolated clearings, perhaps long used as pasture.

Like Upton, the enclosure at Uffington occupies a gentle slope, its higher side *c.*6m below the tip of a low ridge that overlooks the confluence, 500m to the south-west, of the Welland and the smaller (but also navigable) River Gwash (Figure 10.3a). At first glance, the location appears undistinguished. Lidar, however, reveals that the enclosure overlooks a narrow, shallow tributary valley, apparently containing a canalised stream[6], probably fed by a spring close to the enclosure. Three more springs emerge at the foot of the slope, immediately above the floodplain. In limestone landscapes, such minor streams can virtually disappear underground as a result of agriculture, or even merely the disturbance that would result from forest clearance. Fragments of limestone litter the ploughsoil near the enclosure, indicating that ditch-digging penetrated the underlying geology. The limestone, well-suited to walling, was perhaps used to construct a

[2] How much less is debateable: in 1921, a pair of 4m-long whales were excavated from a pre-Roman palaeochannel 17km to the east (Garrod 1924, cited in G. Fowler 1934, 30).
[3] At the south-west corner of Normangate (referring to Ermine Street, which passes through the field).
[4] The mound is centred at TL 1125 9770. Recent OS field investigators have been cautious as to whether it is a *tumulus*, but have depicted a more regular earthwork than the 1885 map (Heritage Gateway record).
[5] That is, as the river flows, rather than as the crow flies.
[6] Specifically, a boundary ditch that follows an anomalously irregular line along the centre of the valley.

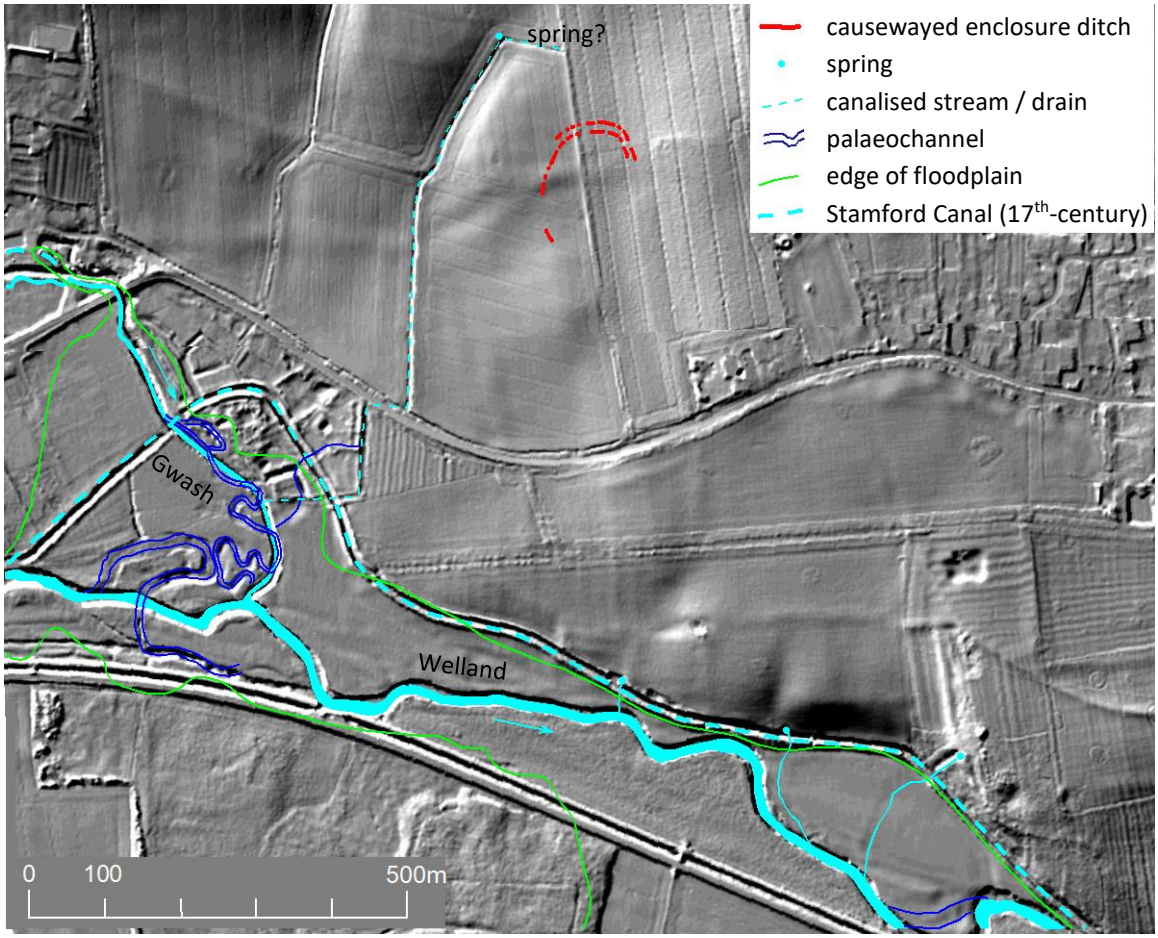

Figure 10.3a: The topographic setting of the causewayed enclosure at Uffington, Lincolnshire.

Figure 10.3b: The limestone walls of the enclosure at Champ-Durand in the Vendée of south-west France. Inset left: a Barnack limestone wall, showing the colour difference between fresh and weathered stone.

perimeter with a distinctive appearance, but its yellowish tinge and tendency to weather rapidly make a less pronounced contrast than fresh chalk (Figure 10.3b). Although the enclosure sits more than 10m below the highest ground to the north, seen from the river confluence, *c.*14m lower, or from the tributary valley, its background is a slight eminence at the tip of the low ridge. Approached from this specific direction, therefore, a woodland clearing could create a conspicuous notch.

Alternatively, on the opposite bank of the Welland, the ground rises to *c.*25m higher than the site of the enclosure, raising the possibility that a clearing there afforded views across the valley, of the clearing or the monument itself, *c*.3km away. The cropmarks there are clear (https://historicengland.maps.arcgis.com/apps/webappviewer), but the density of ring ditches and later prehistoric settlement would make recognition of Early Neolithic settlement very difficult. The edge of the Welland's floodplain[7] lies *c.*600m south of the enclosure, the confluence of the two rivers coinciding with it abruptly broadening to *c.*500m wide. This hints at an expanse prone to seasonal flooding, where instability caused by beaver activity in prehistory could cause channel migration and braiding. Palaeochannels, detectable on lidar and mapped in the 19th century, testify to repeated, dramatic migration in historic times. Research in the Thames valley, however, indicates that later prehistoric alluviation gives a misleading impression of the Neolithic environment. The 'floodplain' there was normally 'dry and accessible', and did not support unusually lush riparian vegetation (T. Allen *et al*. 1997, 118; Barclay *et al*. 2003a, 65). Yet if the banks of the Welland offered extensive grazing – whether wet or dry pasture - that might elucidate the location of the enclosure, since its immediate setting reveals little. Indeed, if the clearing occupied by the enclosure was contiguous with an expanse of pasture, people moving within the floodplain or along the river, perhaps disembarking at the confluence, would potentially able to see the monument itself.

Superficially, the Southwick enclosure's conspicuous avoidance of higher ground nearby[8] seems an unusual choice of setting (Figure 10.4). It sits at the foot of a spur, almost on the alluviated valley floor of a small, non-navigable tributary of the Nene. A second stream just to the south effectively confines the enclosure within a confluence, as at Abingdon in Oxfordshire. The enclosure sits near the mouth of the convergence with the main valley, only 1.9m higher than the current level of the Nene, but still *c.*600m from its present channel. As at Uffington, this side valley coincides with an abrupt broadening in the main valley floor, to *c.*1km wide, again suggesting the potential for an expanse of natural meadow. The tributary alongside the enclosure, unlike the Nene, has little leeway to migrate and the proximity of the enclosure's perimeter implies that its channel was

[7] The historic limits of the floodplain are defined on the north by the 17th-century Stamford Canal and on the south by the limit of medieval arable lands.

[8] *E.g.* the broad spur *c.*1km to the south-west (comparable to Broadwell, Oxfordshire, or Kedington, Suffolk), whose highest point is *c*.45m higher than the site actually chosen. The identification of a possible mortuary enclosure immediately to the north-west of the causewayed enclosure is, too speculative.

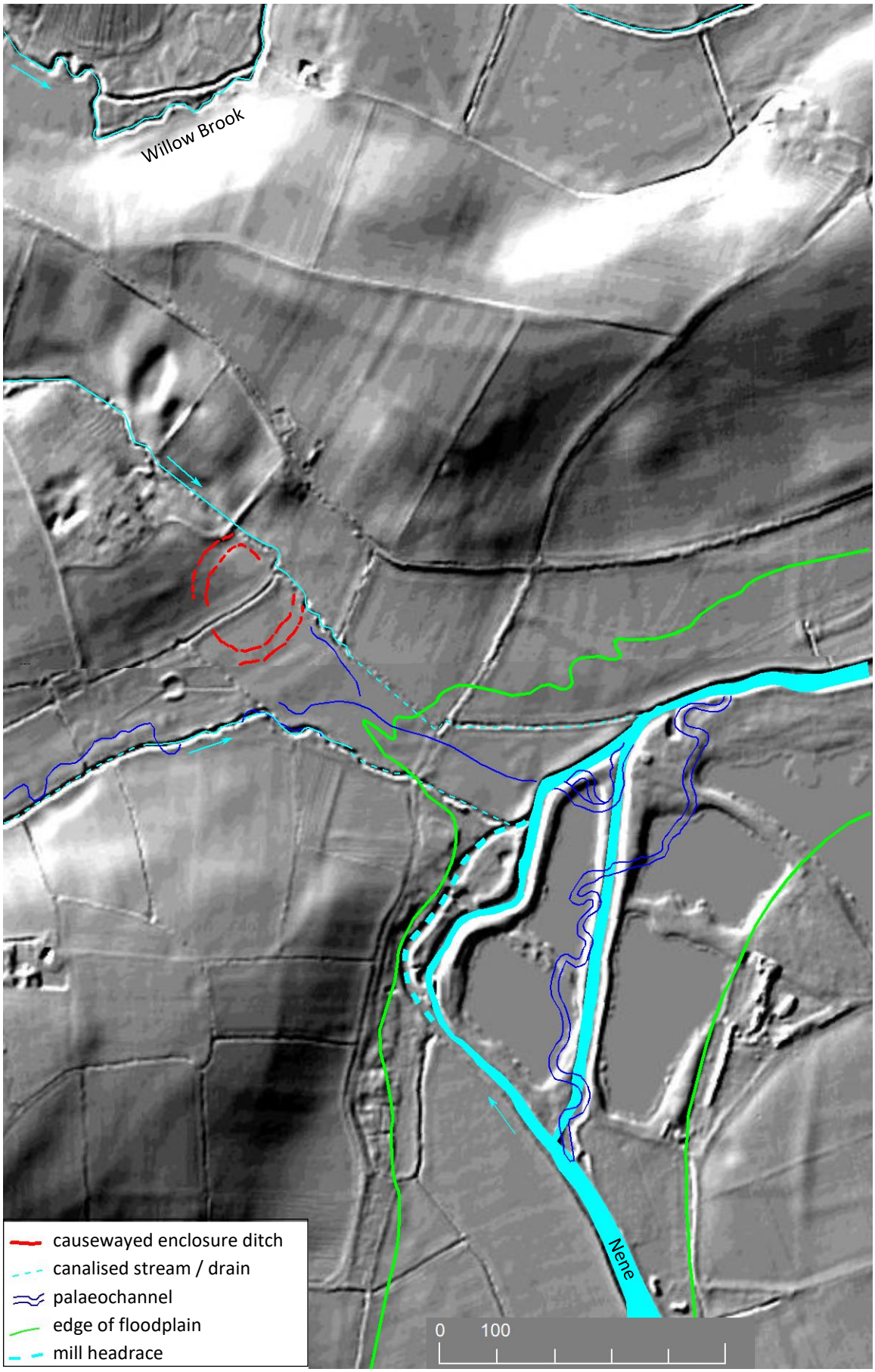

Figure 10.4: The topographic setting of the causewayed enclosure at Southwick, Northamptonshire.

stable[9]. The confined, low-lying setting means that neither the monument, nor the clearing in which it stood, could be visually prominent in the wider landscape. If grassland on the valley-floor merged with the clearing occupied by the enclosure, however, there was perhaps significant intervisibility in that direction, as at both sites discussed above.

The character of the vegetation on the relatively well-drained limestone soils at Upton and Uffington, and immediately upslope from the enclosure at Southwick, was probably very similar to that described on the chalky soils of South Wiltshire and Kent's North Downs, comprising a mixture of broad-leafed species, perhaps dominated by small-leafed lime. The likely presence near all three enclosures of expanses of riparian pasture is perhaps the common factor shared by all the enclosures discussed in this chapter.

10.3 The topographic settings of causewayed enclosures in the lower Welland valley: Barholm, Etton A and B, and Northborough

The causewayed enclosure at Barholm, at *c.*12m AOD, occupies a virtually level river terrace formed by gravel drift deposits. The outstanding clarity of the cropmarks (Oswald *et al*. 2001, fig. 3.6) shows that there has been negligible alluviation, indicating that this was a 'dryland' setting in the Early Neolithic. It lies *c.*1 km east of the low, undulating limestone hills occupied by the Uffington enclosure. The hilltops, where they come closest to the enclosure, are up to 13m higher. This height advantage – being half the mature height of many deciduous species – is insufficient for people on the hilltops to gain views of the clearing within which the enclosure stood, let alone of the actual monument, unless there were long open corridors through the woodland.

Although the enclosure lies *c*.5km west of the fen-edge, the fenland being subject to the most intensive post-medieval drainage, most of the nearby watercourses have been canalised. This includes The Beck, a minor stream to the south of the enclosure, which, cropmarks suggest, once ran within 100m of the outer ditch circuit. These changes, together with later gravel extraction, hamper the attempt to reconstruct local microtopography and drainage patterns. The layer of alluvium beyond the gravel terrace reduces the effectiveness of lidar and historic mapping in understanding the situation in the Neolithic. However, close examination of these sources and aerial photographs suggests that the stream continued north-eastward, perhaps joining the navigable River Glen (*contra* Oswald *et al*. 2001, fig. 6.3). This course would also carry it within 60m of the alleged Early Neolithic settlement at Stowe Farm (see Chapter 10.6).

[9] That said, on the north-east side of the enclosure, a plausible explanation for an anomalous dog-leg in the line of the stream is that the watercourse was originally intended to complete the enclosure's outer ditch circuit, but that at some point it broke through into the inner ditch. A similar scenario, with the watercourse completing part of the outer circuit, is valid at Staines in Middlesex, and the eventual intrusion of the watercourse at Etton A. Such abrupt migrations often occur during flood events, and can be easily detected where medieval and later earthworks, such as pond bays and mill dams, are involved.

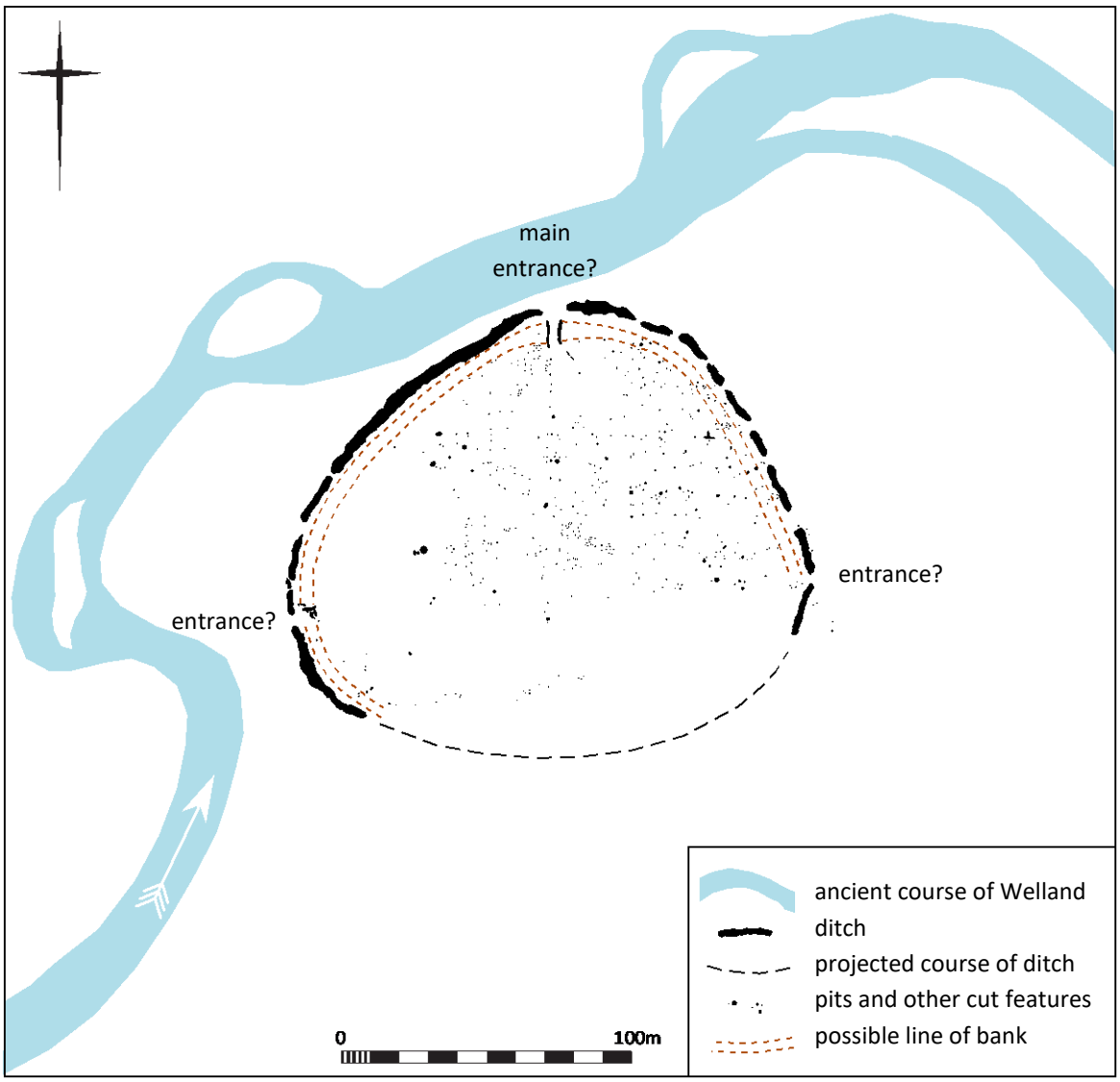

Figure 10.5a: The relationship of Etton causewayed enclosure to the ancient course of the Welland.

Figure 10.5b: The River Seine near the causewayed enclosure at Noyen-sur-Seine, in early October.

Etton A causewayed enclosure, at 7.5m AOD, occupied the northern tip of a low knoll circumvented by a loop of the ancient Welland[10] (Figure 10.5a). Its interior was dry, but its north-western perimeter ran so close to the water's edge that groundwater and increasingly frequent seasonal floods[11] eventually flooded part of the ditch. Perhaps for this reason, this stretch comprised a much longer ditch segment[12], in places indistinguishable from the adjacent watercourse (Pryor 1998a, 27). The decision to site the enclosure next to the river must represent a calculated choice, since the ground on the opposite bank is appreciably (*c*.2m) higher only 1km to the north-west (*ibid.,* 351). Pryor's (*ibid.*, 364) argument that the builders intentionally set out to create a waterlogged ditch is unconvincing. The claim that the enclosure would flood after every downpour (*ibid.*, 360) overlooks the potential, at the time of the enclosure's construction if not later, for forest in the catchment upstream to retard run-off, making dramatic changes in the river level rare. The decision to locate the enclosure against the river more plausibly reflects initial confidence in the constancy of its level (see Footnote 9), and/or dry conditions when building began. It can therefore be argued (*contra* Pryor 1998a, 364) that the whole ditch circuit was initially constructed and treated in the same way, and that its primary function was to obtain material for an upstanding barrier, whose character is discussed in Section 10.6. Yet there was emphatically no concern to select high ground in order to achieve visual prominence: the relationship was implicitly with the river.

The ancient Welland was navigable: 29-45m wide and up to 1.3m deep (French *et al*. 1992, 173). It was anastomosed, however, comprising a network of cross-connecting channels (Makaske 2001). The most securely identified entrance into the enclosure was broad and faced north, directly onto the river (as did a less securely identified west-facing entrance), suggesting the importance of access to the water and/or to fords. Fording a chest-deep river was presumably unappealing for humans in winter, supporting the case for summer use. Cattle, especially cows with calves, would also be reluctant to cross unless forced to, so the river would stop them straying in either direction. Travel by boat would afford the clearest views of the enclosure, particularly on the final approach and perhaps for more than 3km both upstream and down, because of the way the knoll projects across the line of the river (Figure 10.5b).

The ground at Etton B, *c.*800m to the south, is only slightly higher than Etton A, placing the two enclosures within the same floodplain (Figure 10.6). Etton B also probably overlooked a minor watercourse, approximately followed by the South Drain (French 1998, 5). This would mean that Etton A effectively occupied an isthmus only 200-400m wide, bounded on the south by a small stream. Beaver activity could transform such a watercourse into an expanse of 'tiny islands and rivulets' (Pryor 2003, 172).

[10] Pryor (2003, 172) later preferred to interpret this as a more-or-less dry relict channel.
[11] This flooding was probably caused by expanding forest clearance upstream (French *et al*. 2005, 3-4).
[12] Termed 'Section 5' by the excavators.

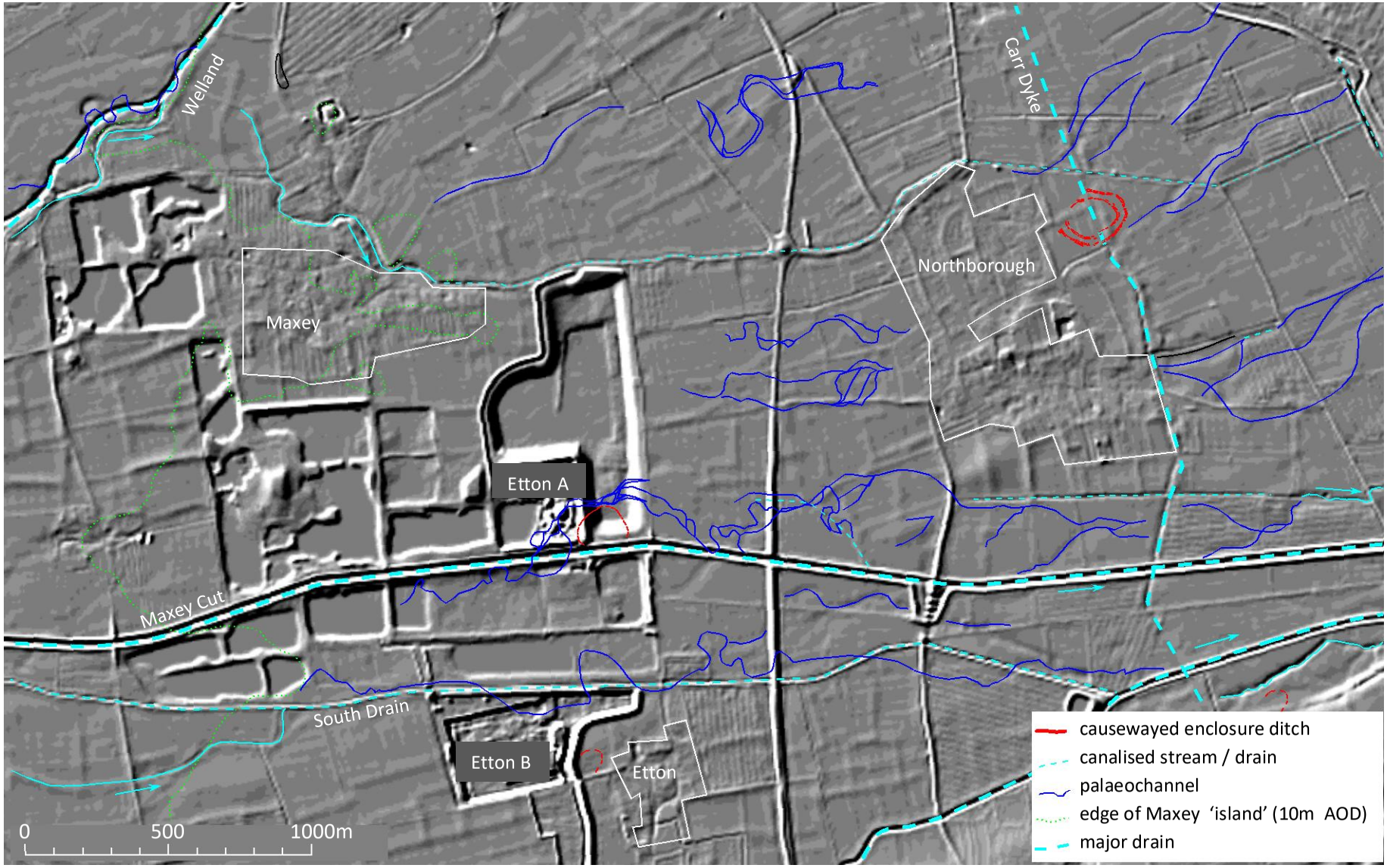

Figure 10.6: The topographic settings of the causewayed enclosures at Etton and Northborough. Palaeochannels redrawn after French 1998, fig. 5, with additions from from historic maps, lidar and aerial photography. Lidar demonstrates the extent to which drainage and gravel extraction have transformed the topography.

Recalling the setting of Etton A, the Northborough enclosure lies at 6m AOD, on the southern edge of a 900m-wide gravel isthmus between two eastward-flowing watercourses (French *et al*. 1992, fig. 16.2). Neither has been investigated, but both have sinuous courses comparable to others known to be Early Neolithic (*ibid.*, 172-3). Yet the two watercourses apparently differed: the northern potentially navigable, with a single, broad, meandering channel; the southern, which the causewayed enclosure seems to have directly overlooked, anastamosed and potentially difficult to navigate. The western side of the enclosure is masked by alluvium, suggesting that, like Etton A, it lay on a projecting spur enclosed by a river-loop, with its perimeter close enough to the water's edge to be affected by increases in ground water and seasonal flooding. Here too, a possible entrance faced the water's edge (Wessex Archaeology 2005, 17).

10.4 The environmental settings of the causewayed enclosures in the lower Welland valley.

The term 'fen-edge' conjures images of tangled, low-growing carr dominated by water-loving species (Figure 10.7a). In boggy ground, trees seldom achieve their maximum heights, but given the slight topographic variation, even bushes would restrict viewsheds to the limits of clearings. Even where conditions for carr are ideal, however, a patchwork usually develops naturally, trees covering only 30-70% of the overall area (Sussex Wildlife Trust 2013). This is far higher than the 15% proposed for the pre-Neolithic Somerset Levels (Farrell *et al.* 2020, 289), but still more open than most high ground.

No environmental evidence was recovered from the putative Early Neolithic features at Stowe Farm, 1.4km north-east of Barholm (Hatton 2019, 82). The environs of the enclosure, being relatively dry, presumably supported typical broad-leafed forest at the outset of the Neolithic, increasingly punctuated by patches of rough pasture as the trees receded (*ibid*., 40-45). Lying *c*.5km from the fen-edge, the enclosure did not occupy a well-defined ecotone, but with dry and wet grassland, carr and high-canopy broad-leafed woodland nearby, it probably lay within an hour's walk of diverse ecological zones. Minor streams would potentially be modified by beavers, creating irregular, changing expanses of wetland, where trees were scarce and often cropped as low as the river-edge rushes.

Environmental samples from Etton A point to increasingly frequent flooding, leaving water standing in the north-western ditch. The macrofossils (Nye & Scaife 1998) include species adapted to standing/slow-moving water, or very damp ground[13] (Figure 10.7b). The presence of water chickweed *(Myosoton aquaticum*), which prefers full sun, implies that the clearing extended beyond the enclosure ditch. Marsh thistle *(Cirsium palustre*) suggests arable land nearby. Pollen preservation in the ditches was poor, but reinforced the wetland picture inferred from the macrofossils (Scaife 1998). The pollen samples were

[13] Including large numbers of water crowfoots *(Ranunculus* subgenus *Batrachium*) and pondweed (*Potamogeton* sp), the latter a favourite food of both waterfowl and beavers.

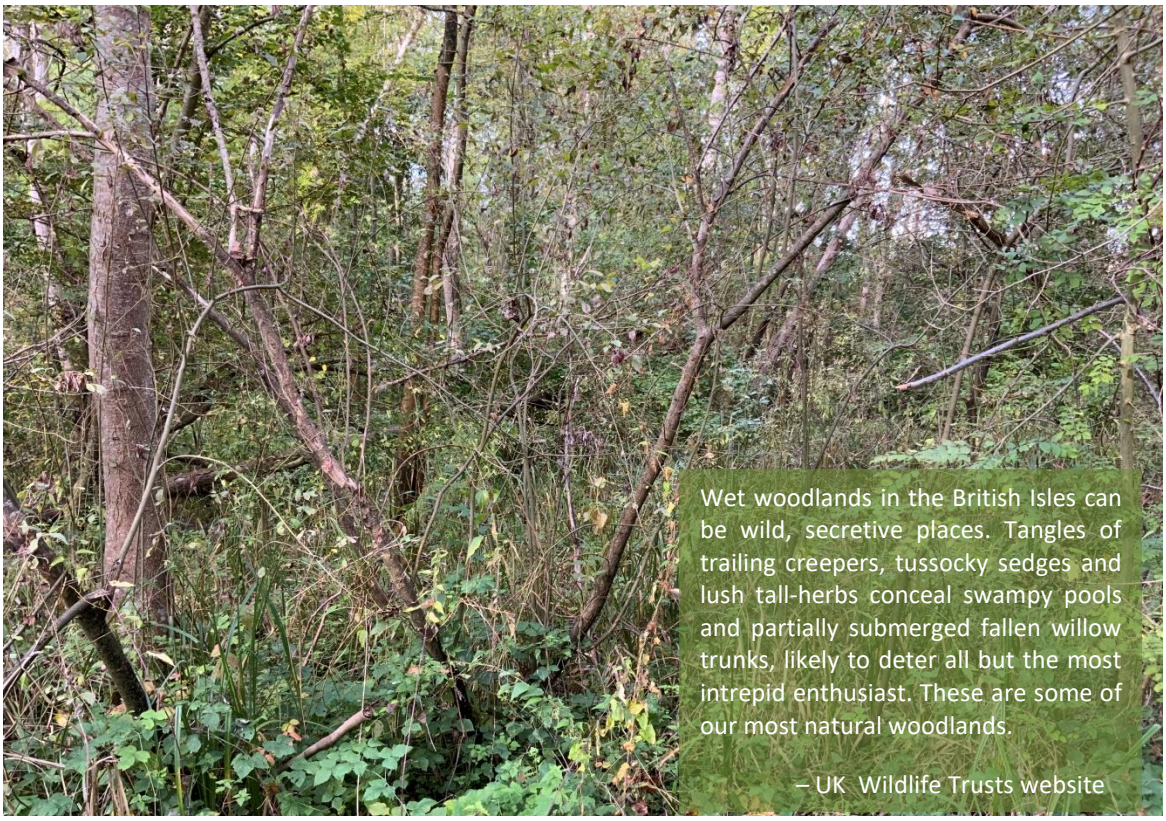

Figure 10.7a: Typical carr on the margins of the River Seine, near the causewayed enclosure at Noyen-sur-Seine in the Ile de France region, photographed in early October.

Figure 10.7b: Wetland vegetation, dominated by wild iris (*Iris pseudacorus*) and meadowsweet (*Filipendula ulmaria*), with an alder sapling in the foreground. Accounts online indicate that wild iris is not poisonous to sheep and goats, contrary to common belief. Photographed near Hambledon Hill in mid-May.

dominated (78%) by sedges (*Cyperaceae*); these, plus bulrushes (*Typha angustifolia*) and cat-tails (*Typha latiflolia*), would attract domesticated and wild ungulates. Better-preserved pollen records *c.*7km away paint a similar picture (Scaife 1993). The molluscan evidence recovered from Etton A was considered unreliable, but gives a similar impression of rough grassland near a rushy water's edge (French 1998). The insect sample included 35% terrestrial *Coleoptera*, 17% of which was scarabaeoid dung beetles, which usually feed on the dung of domesticated herbivores (Robinson 1998). The low proportion (5%) of terrestrial *Coleoptera* reliant on wood suggests that trees were scarce and/or lay some distance away. The scatter of dryland trees in the wider area evidently included oak and ash (Nye & Scaife 1998, 298). Later research suggests a somewhat higher proportion (9%) of forest species, highlighting the presence of *Colydium elongatum*, a beetle associated only with old trees, whether living or dead (Robinson 2005). Yet the presence of *Scarabaeidae* and *Elateridae*, that feed on the roots of grassland herbs, and *Phyllopertha horticola* and *Agrypnus murinus,* whose larvae live in well-aerated grassland soils, suggest that the environment away from the watercourses largely comprised fairly dry grassland, in which scattered veteran trees or hulks were perhaps the residue of cleared forest.

At Etton A, the environmental picture based on Armour-Chelu's (1998) faunal analysis can be refined. The presence of an otter bone – a species which shuns human contact - suggests that parts of the river bank were not regularly frequented. The preferred habitats of all the terrestrial wild animals – red deer, aurochs, roe deer, fox, wild boar and wolf[14] – all probably carried to the enclosure, suggest a patchwork of forest, scrub and open grassland. The assemblage of domesticates, dominated by cattle but with significant proportions of sheep and pigs, suggests a similar picture.

Waterlogged wood sheds light on the environment (Taylor 1998). Some of this grew in the ditch itself; the possibility that more was washed in was discounted (Pryor *et al*. 1985, 283). Taylor (1998, 127) debates whether the 30 coppice stools in the waterlogged ditch (*i.e.* where preservation was best, so a minimum) were the product of deliberate planting or natural growth. Most were probably willows[15] cut after a few years (Taylor 1998, 141). Growing in a thin band along the ditch, their light foliage would barely impede the visibility of any upstanding elements of the perimeter (see Section 10.6).

[14] One of the foxes was represented by its decapitated head. A deliberately deposited horse skull could not be accurately dated but is probably Late Neolithic or Early Bronze Age (Armour-Chelu 1998, 282-3).

[15] The conservation process made species identification impossible (M. Taylor pers. comm.) It is worth reconsidering the case for coppicing. The conclusion that rods were deliberately cut and used is secure, but it does not follow that the stools in the ditch were planted; rather, the irregular distribution seems more consistent with natural origins. Nor is it certain that the rods were cut for use in structures or artefacts (*contra* Taylor 1998, 158). Since they were cut in late summer/early autumn 'when the leaves would still have been green' (*ibid*., 159), rising sap would make them too brittle to bend. However, this would be the normal time of year for harvesting branch fodder, including willow. Would branch fodder be required, if the water margin afforded year-round grazing? Perhaps the 'home-base' was far enough from the wetlands to make it impractical to drive livestock there daily in winter conditions.

Figure 10.8a: Riparian grassland, now ungrazed and re-naturalizing, near the causewayed enclosure at Carvin, Pas-de-Calais, on the north bank of the navigable River Deûle. Photographed in early October.

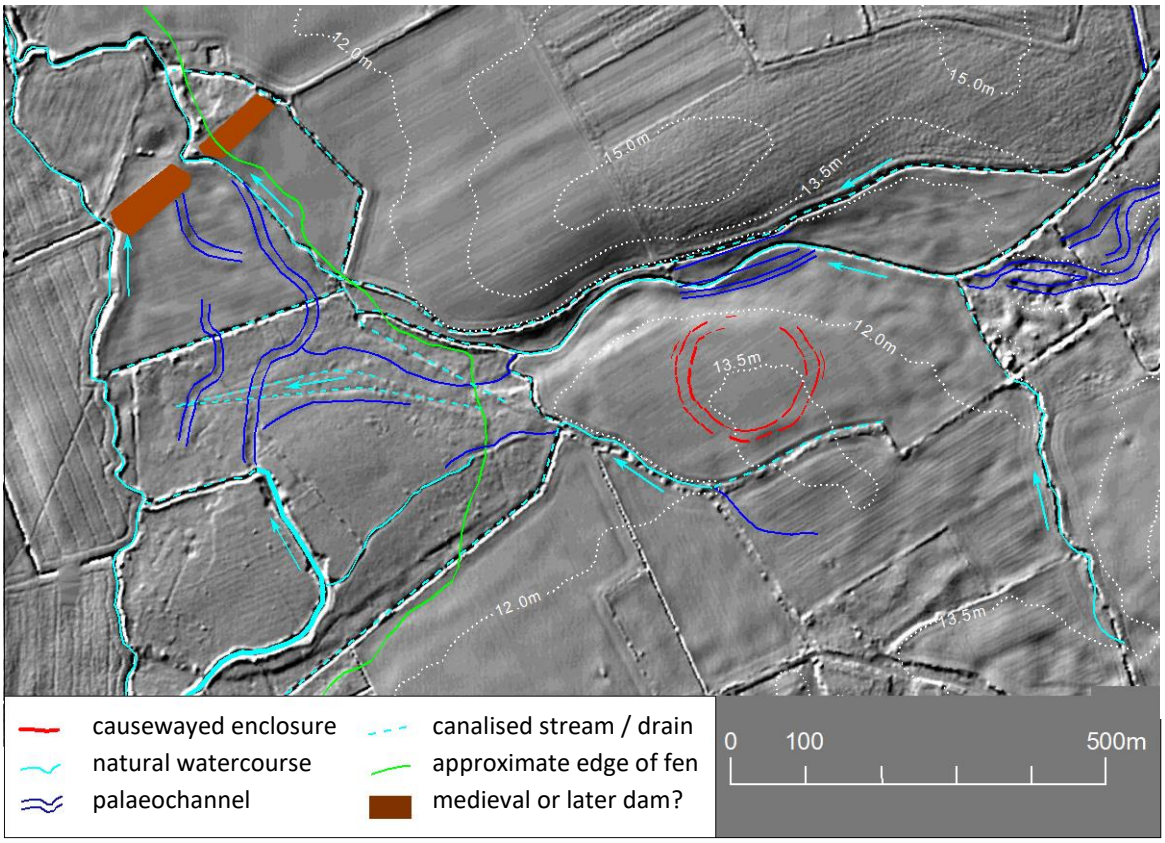

Figure 10.8b: The topographic setting of the causewayed enclosure at Great Wilbraham, Cambridgeshire. Contours generated from the lidar data are used to pick out the slightly higher ground to the north.

The scarce evidence from the small-scale excavations at Northborough allows limited environmental reconstruction, but local dryland was probably open, with rough pasture and maybe some arable (Wessex Archaeology 2005, 14). Chronological nuance perhaps refines this crude picture. The minor irregularities and deflections evident in the line of the outer circuit could reflect the avoidance of standing trees or stumps (Oswald *et al*. 2001, 60). The greater regularity of the inner circuit[16] suggests that it was built in an open spaces, hinting at a later origin than the outer circuit. This reduction in area[17] might represent a reaction to the increased risk of flooding (like Etton A), evidenced here by silt deposits masking the western side of the enclosure. The presence of a sloe stone (*Prunus spinosa*) and hazel nuts are rather unhelpful, because while both species need relatively open conditions in order to fruit, they also tolerate both dry and moist ground, and could be imported from some distance. If they grew close to the enclosure, however, it may be significant that they come from secondary recuts of the outer enclosure ditch, while the cereal grain comes from a tertiary fill of the inner, in both cases hinting that the clearing expanded over time. In summary, while the water margin adjacent to the enclosure was relatively open from the outset, with vegetation dominated by sedges and tall herbs, high-canopy, deciduous forest may initially have overshadowed the other sides of the circuit.

10.5 Great Wilbraham and Haddenham, Cambridgeshire

It is helpful to consider two other excavated sites on a comparable water margin. At Great Wilbraham, lidar, together with fresh analysis of boreholes dug during the 1976 excavations, allows improved understanding of the topographic setting of the enclosure and the local drainage pattern (Boreham in C. Evans *et al*. 2006; compare Figure 10.8b with Oswald *et al*. 2001, fig. 4.7). In the Neolithic, the enclosure overlooked the two channels of the Little Wilbraham River, one on each side of the present partially-canalised channel. The more northerly of these was supposedly much broader than the current topography would suggest, up to 35m wide and up to *c*.1.5m deep. Such dimensions are difficult to reconcile, however, with the modest flow from the (admittedly strong) springs at Wilbraham Temple, 1.8km to the east. This surprisingly large watercourse flowed out of a shallow lake, whose approximate extents are still detectable in the current surface drainage network. This lake was only *c*.300m wide and not much deeper than the Little Wilbraham River itself, probably with broad, rushy margins (Evans *et al*. 2006, 154). Thus the dry ground occupied by the enclosure, like the sites in the Nene and Welland valleys, lay within a stone's throw of extensive pasture in at least one direction. As at Etton A, molluscan evidence points to the enclosure occupying a dry rise within an unusually large expanse of lush grassland, with emphatically no evidence for mature forest nearby,

[16] As at Windmill Hill (see Chapter 7). The radiocarbon determinations from Northborough could support a similar scenario, because the dates from the outer circuit, at face value a few decades later than those from the inner, relate to a recut and therefore represent a *terminus ante quem* (Healy *et al*. 2011, 327-9).

[17] Successive reductions in area would seem a reasonable interpretation of the complex plan of the causewayed enclosure overlooking the River Cam at Great Shelford, 22km to the south (Small 2017, fig. 5).

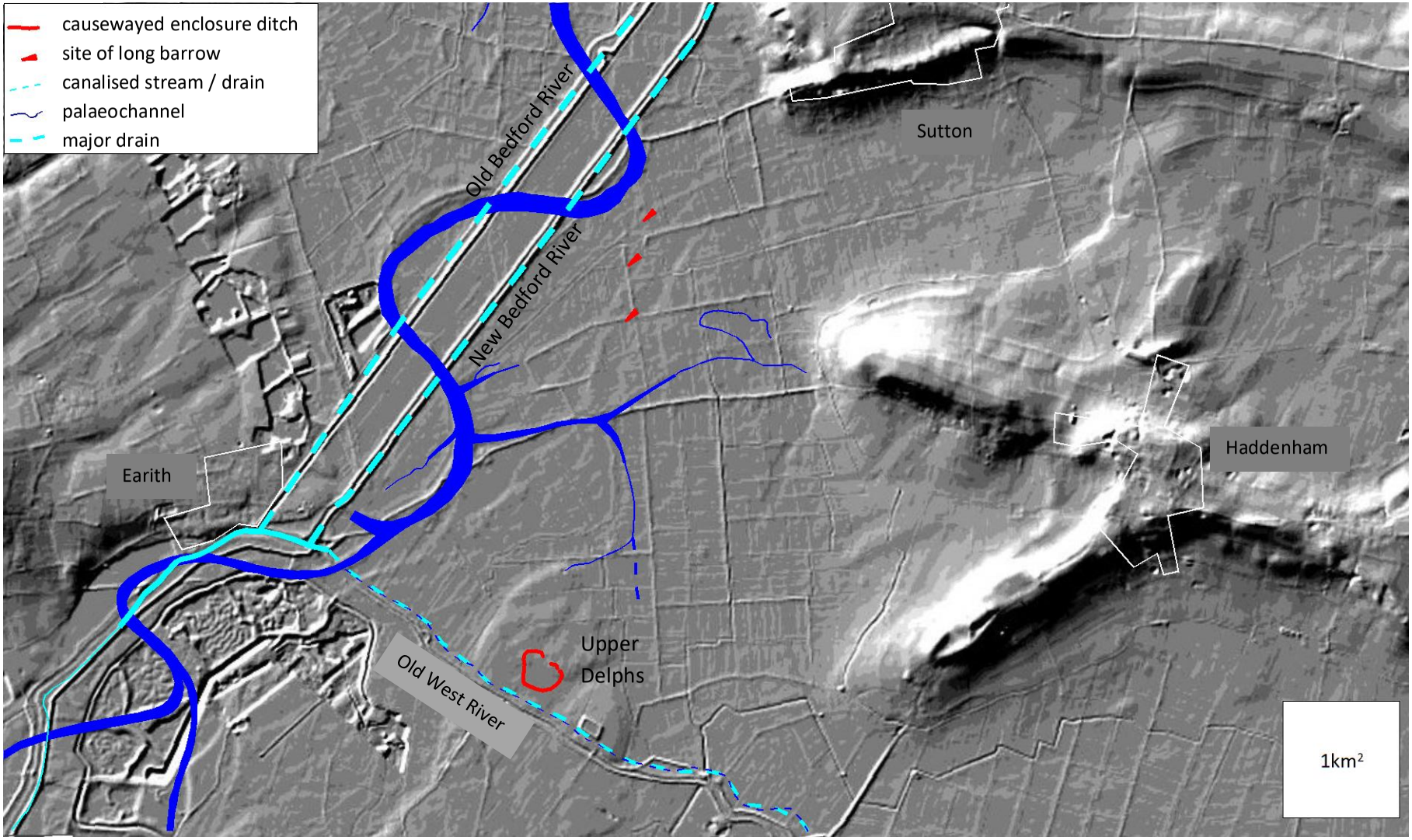

Figure 10.9: The topographic setting of the Early Neolithic monuments at Haddenham, Cambridgeshire.

but perhaps a little light scrub or occasional stands of trees (J.G. Evans in *ibid*., 141-3). No pollen contemporary with the enclosure's use was recovered, but the general picture was dominated by riparian species (Boreham in *ibid*., 147-9). The near-circular plan of the enclosure confirms that its perimeter was constructed on ground already free of trees and stumps.

Recalling the setting of Etton A, the enclosure's slight tilt across the contours effectively oriented it towards appreciably higher ground immediately beyond the lost stream. The site's original excavator[18] reportedly suspected contemporary settlement hereabouts (C. Evans *et al*. 2006, 153). Thus, as at both Upton and Uffington, an associated 'home base' conceivably occupied relatively high ground on the opposite bank of the watercourse overlooked by the enclosure. Perhaps the fordable watercourses bounded areas reserved for summer grazing, whilst also affording water for cattle.

The excavated enclosure on the Upper Delphs, Haddenham, occupied a low rise whose highest points stood *c*.2.5m above the 'levels' that encompassed it on the west, north and east (Evans & Hodder 2006, figs. 1.1; 4.1; 4.5). Tellingly, its builders disregarded ground *c.*30m higher only 3.5km to the east (Figure 10.9). The rise lay 1.5km east of the contemporary River Ouse, perhaps circumvented on the north-east by a minor (non-navigable) tributary stream. To the south, it seems that another extinct westward-flowing tributary of the Ouse was eventually superseded by what is now an eastward-flowing tributary of the Cam, known as the Old West River, though the exact situation in prehistory is uncertain (G. Fowler 1934; Seale 1980, fig.1, Evans & Hodder 2006, 3). The 'valley' of this watercourse isolated the Upper Delphs from the rest of a low, northward projecting spur. Foulmire 'island', a less extensive rise overlooking the Ouse 3km north of the causewayed enclosure, was occupied by two or three long barrows, one of which was excavated. Owing to their proximity to the Ouse and its tributaries, these sites perched on the fringes of riparian grazing, like most of the sites discussed above.

As at Etton and Northborough, the sites also had access to dry pastures. This land had once supported mixed deciduous forest, but clearance began soon after 4,460-3,990 cal BC (at 95% confidence), leading to a more open landscape dominated by (76%) herbaceous taxa (Peglar 2006, 28-9)[19]. Peglar implies that people were preparing arable fields, but the more dramatic drop in the proportion of lime in what forest survived – from 68% to only 16% - suggests that a need for leaf fodder may have been of equal or greater importance, perhaps combined with preferential browsing of lime's sweet leaves. Soil micromorphology at the excavated long barrow confirms that cultivation was brief and limited in extent, with grassland dominant locally (French 2006). Furthermore, while Late

[18] D.L. Clarke also believed, however, the usual place of abode for the herders who used the enclosure was on the chalk hills, less than 5km to the east and/or south.

[19] The pollen core from which this picture derives was obtained 1.2km from the excavated long barrow (4.2km from the enclosure) and, since it comes from a palaeochannel, may reflect a wider catchment.

Figure 10.10: Oaks planted in the 1780s on the Muncaster Estate, Cumbria, photographed in late February. Planted in thousands, the trees grew rapidly, becoming tall, slim and branchless, like Neolithic forest trees.

Mesolithic activity in the environs of the monuments was light and dispersed (Middleton 2006, 225), an unusually dense lithic scatter was found at the southern edge of Foulmire 'island', between the enclosure and the long barrows (Evans & Hodder 2006, 63-5). This reminds us that, notwithstanding the excavators' emphasis on 'broader landscape factors' (*ibid.*, 364), Late Mesolithic communities potentially created or maintained clearings that attracted Neolithic herders. Although not well dated, the enclosure was probably built at least 160 years after the major episode of clearance (in 3,832 -2,932 cal. BC (at 95% confidence); Healy *et al*. 2011, 276-7) and so was built, once again, in an environment where remote perception was possible, despite the slight topographic variation.

The excavated long barrow was probably built within a generation of 3,600 cal. BC (Healy *et al*. 2011, 290-1), so, while it is uncertain that it was built before the enclosure, it too stood in a relatively open landscape. The extensive use of turves to construct the mound reflects this (Evans & Hodder 2006, 74). A few of the tall, straight, branchless oaks that numerically dominated the surviving patches of forest were used to create a 'megaxylic' chamber (Daniel 1950; Morgan 2006; Darrah 2006). The largest trees are estimated at *c*.200 and 300-400 years old (Morgan 2006, 115). This is less than 'middle-aged' for oaks, so perhaps they were not the venerated veterans that the excavators repeatedly claim, but simply a few of many trees of suitable size and quality (Figure 10.10). Even the oldest probably germinated after the major clearance episode mentioned above and grew within a remnant of high-canopy forest, which presumably lay fairly near the monument. Despite the earlier extensive clearance, then, views to and from the monument were probably not panoramic.

Yet the monument was evidently designed to be visually impressive. As excavated, the mound stood 1.1m high at its north-east end, but the entire earthwork was potentially compressed by *c*.50% (Evans & Hodder 2006, 138), putting its original height in line with many chalk examples. Its surface was coated with pale gravels dug from the surrounding ditch, so that when seen from the sides, it would have presented a strong contrast – for a few years – with the surrounding expanse of dark soil left by the stripping of thick turves over *c*.3,750 m^2 (*ibid.*, 194). Similarly, its forecourt was floored with gravels, complementing the façade of vertical posts when approached from the front.

Scepticism that any bank accompanied the causewayed ditch (*e.g. ibid.*, 275; 281-2), led the excavators to focus on the visual impact of the palisade, a structure actually built long after the original enclosure was abandoned (Healy *et al*. 2011, 276)[20]. It follows that there was, after all, a bank, which survived to influence the line of the palisade. Iron Age ploughing eventually erased the bank (Evans & Hodder 2006, 250), but perhaps also

[20] The construction date of 2300 1680 cal. BC (at 95% probability) shows that the circuit was redefined, concurrent with the use of Grooved Ware on site (Evans & Hodder 2006, 329), making sense of the spatial relationship between the ditch and palisade (*ibid.*, 274-5). The palisade comprised posts 30cm diameter, implying - conservatively - the use of 450 tall (?oak) trees or coppiced trunks (*ibid.*269-75; 317-8).

Figure 10.11a: Photograph taken experimentally after dusk in mid-September, looking from the site of the long barrows on Foulmire 'island' towards the spur of higher ground occupied by the village of Haddenham. Note how the willow tree in the middle distance would completely mask the distant horizon.

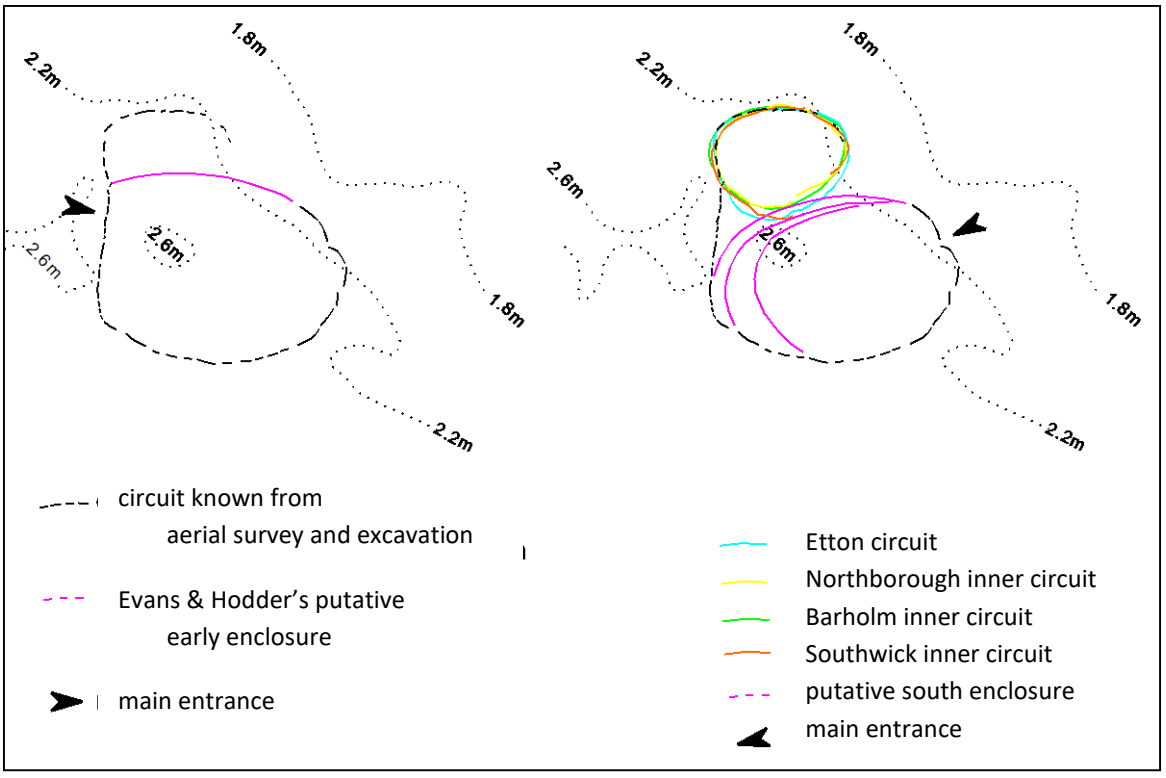

Figure 10.11b: Alternative interpretations of the development of Haddenham causewayed enclosure.

masked the effects of earlier ploughing[21]. Each linear metre of ditch generated 4-6m^3 of spoil[22], so the construction of a bank seems more likely than spreading the upcast 'in an unstructured manner' on every side (*ibid.*, 282; Pryor 2019, 96)[23]. The excavators inferred from the lack of asymmetric ditch fills that no bank existed, but perhaps the spoil was retained by a turf wall. Turf existed locally and was presumably stripped prior to digging the ditch. In this scenario, the bank could reach *c*.2m high, commensurate with the depth of the ditch. Such an earthwork, surmounting the 2.5m-high natural rise, would be visually impressive.

The theory that the enclosure had a straight 'façade', spanning the highest part of the rise, with a central main entrance oriented towards the navigable Ouse (*ibid.*, 319; 332), is appealing in some respects. This may, however, represent an overly static conception of the enclosure, at odds with the contention that it was the product of an ongoing project (*e.g. ibid.*, 243; 331). Its large size (enclosing *c.*9.6 ha) and cardioid plan-form, which bears little discernible relationship to the subtle topographic variation, are certainly unusual in national terms. The excavators perceptively considered the possibility that these characteristics might result from changes enacted before the original design was completed (*ibid.*, 337; fig. 5.46). Taking their direction of thought further, anomalous misalignments in the course of the ditch suggest other possible scenarios, including that two separate enclosures were begun and later linked by the straight, western earthwork (Figure 10.11b). The more northerly potentially had a plan and size strikingly similar to the enclosures in the Nene and Welland valleys, while the more southerly perhaps had a larger but equally typical oval plan, encompassing one of the high-points of the natural rise. Given the general variability in the form of the ditch segments, and the evidence for repeated recutting, it might be overoptimistic to look for clear differences between these putative constructional phases. Nevertheless, the excavators noted fundamental differences in the character of the south-western and western ditch segments (*ibid.*, 321), the former being part of the putative southern enclosure and the latter part of the 'linking' stretch.

Rejection of the west-facing entrance marked by in-turns in the palisade forces us to consider other candidates (Oswald *et al*. 2001, fig 4.11; Evans & Hodder 2006, fig. 5.41). Of these, the most convincing is the north-east facing opening into the putative southern enclosure, flanked by typical inward-curving ditch segments. An entrance here would lend

[21] For example, contemporary with the HAD VIII enclosure, which lay within the causewayed enclosure.

[22] My own calculations, based on the excavated dimensions, suggest a volume up to 50% greater than the excavators' estimate (Evans & Hodder 2006, 316).

[23] The excavators' prolonged reflection (Evans & Hodder 2006, 241-7) reveals an urge to look for, and consequently find, novel, idiosyncratic qualities, when more traditional or normative interpretations might be appropriate. For example, the Early Neolithic ditch, when it was eventually identified, proved typical in terms of size and profile of what could be anticipated based on other excavated enclosures (*ibid.* 2006, 245), but the excavators initially countenanced a ditch that would be anomalous in form and finds, rather than query the excavation method's ability to deal with the ground conditions.

Figure 10.12: View eastward along the River Deûle adjacent to the causewayed enclosure at Carvin, Pas-de-Calais, in early October. Here, unlike Haddenham, the palisade within the double-ditch circuit is undoubtedly contemporary with the earthworks and the excavators identified at least ten potential entrances, with at least three oriented towards the river, suggesting the use of water transport (Monchablon *et al.* 2011). A minor tributary probably joined the main river from the north (left of photo) in the middle distance, a locational preference seen at many riverside causewayed enclosures in Britain.

the putative southern enclosure an orientation close to that of the long barrows at Foulmire (*ibid.*, 356). It would also relate the enclosure more closely to the nearest major Early Neolithic flint scatter (*ibid.*, 356), to the upper reaches of the minor tributary stream on the north-east edge of the Upper Delphs, and to the significantly higher ground occupied by Haddenham village, thus recalling the locations of several of the enclosures already discussed. The hypothesis that the enclosure underwent major design changes implies that different entrances were used in different phases, rather than being a temporally stable 'permeable barrier' (*ibid.*, 337). Yet, approached from the stream to the south-east, or seen from the much higher spurs a few kilometres away, the enclosure's setting, tilting slightly down toward the entrance from an eminence just included within the circuit, seems to share some of the locational tropes noted at causewayed enclosures in upland settings.

Returning to the long barrows, a series of low eminences extending approximately north – south, parallel to the Ouse, potentially created a natural corridor of movement (*ibid.*, 348-51; 353-6). While entirely possible (especially given the 'reorientation' of the causewayed enclosure proposed above), this seems to draw on the arguably outdated concept of 'ridgeways', at odds with the repeated observation that the eminences were rises in a plain, not islands in marshland (*e.g. ibid.*, 353). In other words, people were conceivably moving along diverse paths that bore little or no relationship to the higher ground. That said, minor streams that the excavators suggest could be easily crossed (*ibid.*, 353) might be transformed into more serious obstacles by beavers.

In contrast, the Ouse itself afforded a relatively prescribed route for travel, certainly by boat - which, surprisingly, the excavators mention only briefly (*ibid.*, 361). As at Upton, the causewayed enclosure lay near the historical upper limit of tidal influence, facilitating travel upstream. For people moving overland, too, the river presented a barrier that would force pathways to echo its course, as the excavators imply in drawing parallels with riverside cursus monuments. The observation that the north-easterly orientation of the two or three long barrows is not 'particularly sympathetic with the immediate landscape' (*ibid.*, 356) is questionable: all the barrows lie on the western edge of the low eminences they occupy, thus presenting their visually striking long profiles towards the river, only 200m away at its closest. The builders' disregard for 30m-higher spurs less than 4km to the south-east also suggests the importance of the river. Like the Medway, its significance may stem from association with longer-distance travel (Figure 10.12), beyond the daily and/or seasonal movements of livestock; and with travellers from afar, including, perhaps, the pioneering ancestors commemorated by the barrows themselves. Yet the orientation of the barrows would simultaneously present their landward profiles towards the higher spurs (Figure 10.11a), which have seen negligible archaeological research.

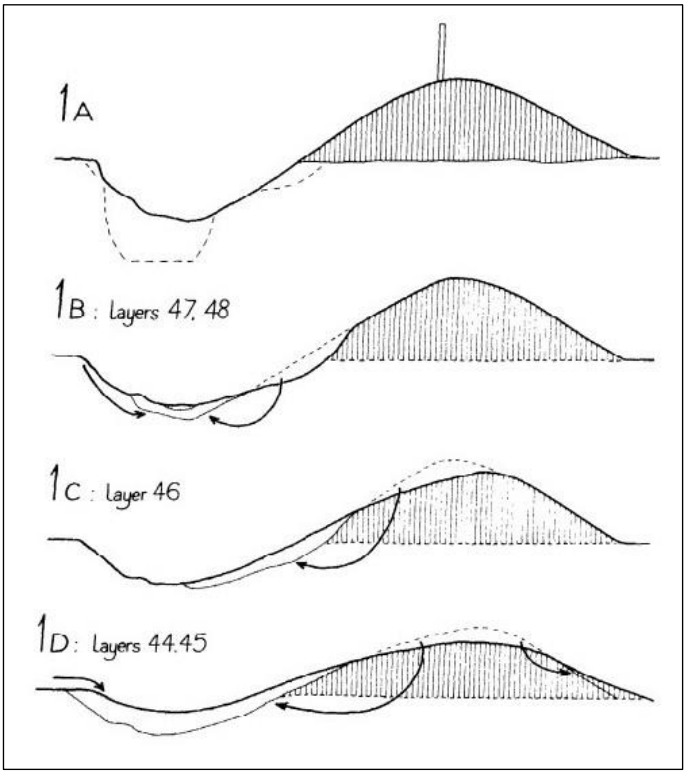

Figure 10.13a: Reconstruction of the initial gradual reduction by weathering and erosion of the bank of the inner circuit of the causewayed enclosure at Abingdon, Oxfordshire (from Avery 1982, fig. 9). No trace of the actual bank survived, so this process and the form of the upstanding barrier are entirely inferred from the character of the asymmetric ditch fills. Similar asymmetry in the ditch fills was looked for at both Etton A and Haddenham enclosures, but not detected.

Figure 10.13b: An observation tower overlooking marshland in the Drwęca Bagienna Valley, central Poland. Photo: Bumer1, Wikimedia Commons.

10.6 Conclusions

Evans (1988a, 133-4) doubts that a perimeter bank existed at Etton A. No pattern of post-holes was recognized behind the ditch, leading Pryor (1998, 365) to propose that ornamental planting enhanced the enclosure's visual impact. In the context of the landscape's slight topography, these arguments raise serious questions about whether the perimeter made any visual statement, even close-up. The hypothesis that there was no bank is challenged by the preservation – in places - of a palaeosoil behind the ditch, protected by 'upcast' (Pryor *et al*. 1985, 283; 288). The substantial passage-gateway that accompanied the north-facing entrance was set *c*.3m behind the associated causeway across the ditch and was puzzlingly narrower than the causeway (Pryor 1998a, 98-9). Both observations suggest the existence of some form of barrier abutting the sides of the gate structure (Figure 10.5a). The spoil from the ditch would be wet if the ground was saturated, so a bank would begin to subside immediately, unless it was retained by a turf wall, thus leaving no detectable sub-surface features. If there was a timber superstructure, posts might be set into the bank itself, without penetrating the underlying ground. Such uprights would be stable enough to support a wattle superstructure. Alternatively, the discovery of angled sticks may indicate the existence of an impenetrable 'laid' hedge (Taylor 1998, 147), a possibility rarely considered in discussions of causewayed enclosures. This would have implications for the visibility of the monument, since a hedge, perhaps surmounting a turf-faced bank, would present weaker visual background/object contrast with the enclosure's surroundings.

In short, despite the good preservation in Etton's ditch, the character of any upstanding elements of the perimeter remains unclear; the evidence for a bank at Haddenham is equally indirect. This uncertainty hampers discussion of the visual qualities of the enclosures and consequently the nature of people's sensory encounter. The definite presence of banks at all enclosures where earthworks survive represents one compelling argument for the existence of banks[24] at the low-lying sites (Oswald *et al*. 2001, 43; Figure 10.13a). Ironically, the situation at the unexcavated enclosures discussed above is simpler, because there is no evidence to challenge the assumption that banks did exist.

Etton's passage-gateway is relevant here. The foundation slots, 40cm wide and 55cm deep, indicate large timbers, perhaps unworked trunks (Pryor 1998a, 98-9). Apart from observing that this structure was 'very striking' (*ibid.*, 379), the excavators do not speculate about its appearance, beyond rejecting it as a burial monument (*ibid*., 99). At Sarup, in Denmark, comparable traces were interpreted as palisades and fences (N. Andersen 1997). Yet such substantial timbers could clearly stand several metres high, supporting, for example, an excarnation platform or look-out (Figure 10.13b). Such a structure would completely shift the basis for discussion of remote sensory perception.

[24] Assuming a bank did exist at Etton, some of the pits within the circuit would underlie it; the eastward continuation of the pits outside the ditch could also prompt the inference that they predate the enclosure.

Figure 10.14a: Cattle browsing willows as they drink from the River Ouse, on a hot day in early September.

Figure 10.14b: The confluence of the Nene and its minor tributary whose source lies nears the Upton causewayed enclosure, photographed in mid-May. The tributary now flows along a ditch in the hedgeline. Note the veteran pollarded willows, historically managed to produce withies for basketry.

The excavators proposed that Etton's interior comprised halves reserved for humans and livestock[25]. But the bisecting boundary is probably Iron Age (C. Evans 2000, 451), and Iron Age activity probably distorted the distribution of Neolithic artefacts (Pollard 2021, 19-20). The increased phosphate levels within the enclosure, however, coupled with the high proportion of dung beetles in the terrestrial *Coleoptera* samples, must indicate that livestock were kept there sometimes (Pryor 1998a, 355). The abundance of nettles (*Urtica dioica*) could reflect human activity and/or various forms of surface disturbance, but their growth often reflects the presence of cattle. At least five neo-natal cattle bones, including three calves that died at birth (Armour-Chelu 1998, 276), imply the presence of cows in spring. Analysis of the waterlogged wood suggests that people, with or without herds, were also present in late summer (Taylor 1998, 159), perhaps gathering winter fodder. If the feasting debris identified resulted from an autumn cull (Pryor 1998a, 361), both people and livestock were presumably present then. Green algae (*Chara*) oospores were found in the ditch, though this species will not tolerate high levels of nitrogen or phosphates, which are both produced by animal dung[26] (Kunikane *et al*. 1984). This suggests that livestock were present intermittently, or perhaps only penned there overnight; both observations consistent with the enclosures playing a role in transhumance (Figure 10.14a).

The enclosures considered in this chapter display a fairly strong pattern of locational preference. There is no markedly higher ground near Etton or Northborough, but the builders of all the other low-lying enclosures chose to disregard much higher ground within a few kilometres. The enclosures at Etton A and B, Northborough and Southwick all sat on the limits of seasonal wetlands: land that was low enough to flood in winter, but high enough that floodwaters did not linger long into spring. All the other enclosures lay near the lush margins of major rivers and/or minor tributary streams (Figure 10.14b), where beavers could transform narrow riparian corridors into broad wetland expanses. Pryor (1998, 355) argues that cattle would normally be grazed on higher, drier ground[27], but in later periods wetland pasture was a valued seasonal resource, including in the Fens (Oosthuizen 2017, 4). Browsing ungulates, both wild and domesticated, would keep vegetation low. There is little evidence that these 'water margins' were like the dense, impenetrable carr described above. In ecological terms, these were the richest settings occupied by any causewayed enclosures.

[25] Following the model of Etton, phosphate sampling at Northborough was designed to detect an east/west dichotomy, which was duly found (Wessex Archaeology 2005, 15). It would be unwise to place much weight on this conclusion, given that the disparity in phosphate levels only reflects the levels along a single transect, and that the model on which the sampling strategy was based may itself be flawed.

[26] The observation may also support the existence of a perimeter bank, which could have prevented run-off from reaching the ditch where the green algae grew.

[27] Cattle are more prone than sheep to foot-rot, caused by standing for long periods in boggy ground.

Figure 10.15a: View northwards from the floodplain of the Welland towards the low ridge occupied by the Uffington causewayed enclosure. The bank planted with willows in the middle distance marks the side of the 17th-century Stamford Canal, and the edge of the floodplain. The tallest tree is a broad-leafed lime, a close relative of the small-leafed limes that dominated Early Neolithic forest. Photographed in early May.

Figure 10.15b: The Welland, just downstream from its confluence with the Gwash, photographed in early May. Until the construction of the Stamford Canal in the 1660s, the river remained one of the town's most important transport arteries.

Slight differences in elevation would greatly affect the character of the vegetation. In some cases, drier ground supported expanses of rough grassland, established long before the monuments were built. Across these expanses of wet and dry pasture, therefore, remote intervisibility was, after all, a genuine possibility. Uffington, perched a little higher up a valley side, perhaps occupied a clearing that extended down to the nearby floodplain, affording a similar degree of intervisibility (Figure 10.15a).

At all these sites except Barholm, the nearby river was probably navigable, so the enclosures would be visible to people travelling by boat. In terms of remote sensory encounters, therefore, different forms of mobility were at play, with different motivations, giving rise to different temporal rhythms. Local herders approached overland from multiple directions, not only along familiar paths leading from supposed 'home bases', but also from scattered wet or dry pastures and forest browse. Throughout the summer, herders watching their grazing livestock would be aware of the enclosures' perimeters across the expanses of sedges and beaver-cropped tree-stools. Meanwhile, people making their way by boat, whether riverside dwellers or travellers from further afield, would have different sensory experiences (Figure 10.15b). They perhaps glimpsed the enclosures from several kilometres away, along the relatively open corridor of the watercourse; but seated in dugouts, riparian vegetation would limit distant views, so that the sounds and smells of the enclosures were perceptible long before the monuments were, eventually, visually revealed. Conceivably, even the tiny streams overlooked by the enclosures at Barholm and Upton ran through broad corridors of low-growing vegetation, so that people walking alongside the watercourses would be afforded similar remote views. Other paths followed the banks of major watercourses, perhaps serving as long-distance routes. Perhaps construction of the Maxey and Etton cursuses in the Middle Neolithic monumentalised such routes (Oswald *et al*. 2001, fig 8.2). The different modes and patterns of mobility imply different scales and qualities of community.

It is unlikely that any of the enclosures had panoramic viewsheds. On slightly higher, drier ground, the backdrop was probably typical broad-leafed woodland. The extents of the clearings when the enclosures were built varied from site to site. The environmental picture at Etton, Northborough and Haddenham lacks chronological nuance, but all these clearings were ultimately large enough to encompass some wet and dry grassland, plus arable land. Leaving detail aside, the eventual clearing at Northborough lay only *c.*1.8km from Etton's similarly extensive clearing. The 2004 investigation of the Northborough enclosure concluded that if the landscape was moderately open, the enclosures could have overlapping viewsheds (Stewart Ainsworth pers. comm.[28]). The intervening ground mostly comprised wetland pasture, subject to year-round grazing by wild ruminants and seasonal grazing by domesticates. Although activity at Etton A began 25-140 years (at 68%

[28] Pryor instigated the investigations by Channel 4's *Time Team*; Ainsworth used compass bearings to plot the limits of viewsheds, but his findings did not reach the written report (Wessex Archaeology 2005).

Figure 10.16a: The site of causewayed enclosure near Barholm, Lincolnshire, photographed in mid-May. The hedge is a reminder that in such level terrain, even low vegetation could completely obscure a monument.

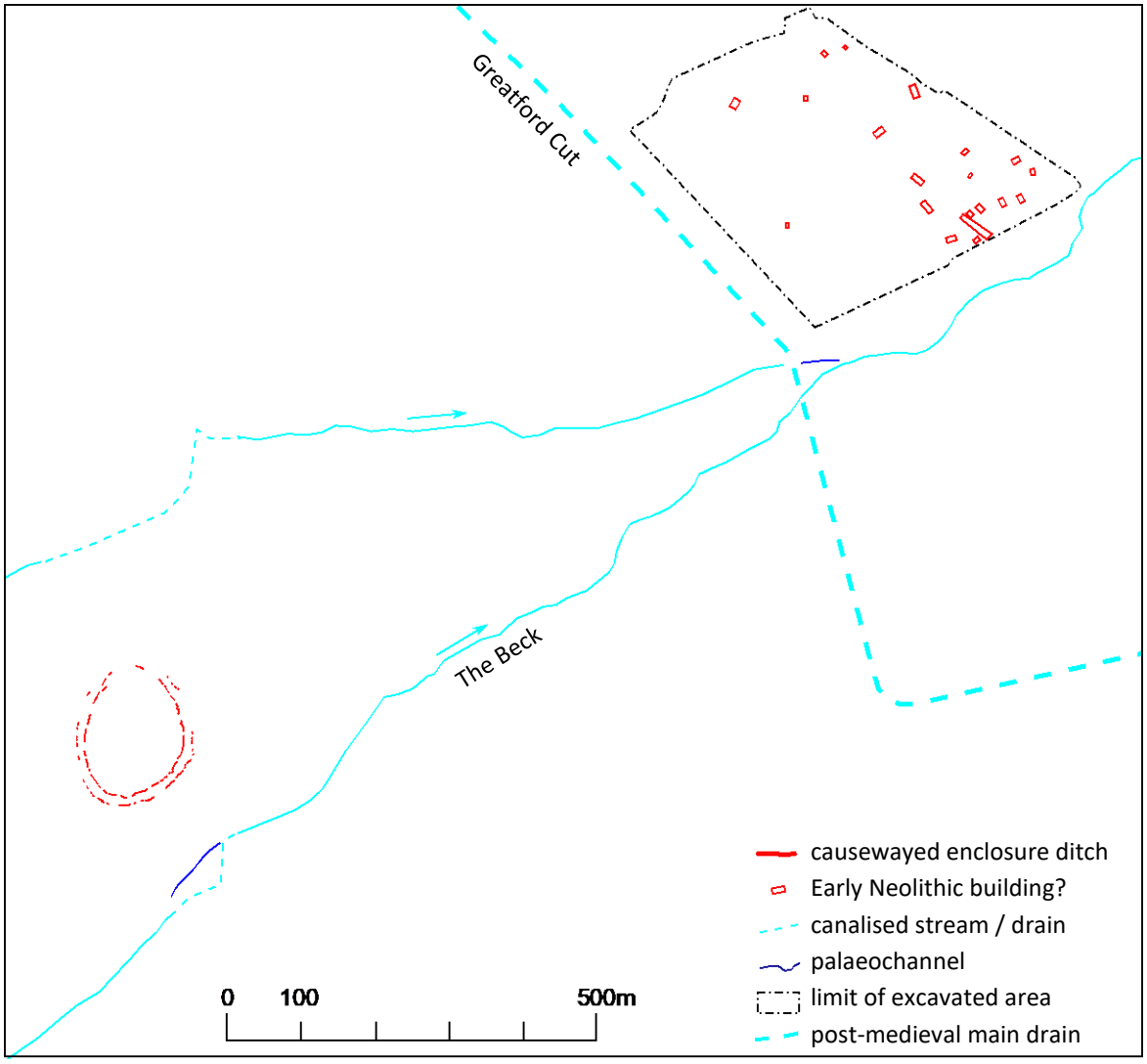

Figure 10.16b: The alleged Early Neolithic settlement at Stowe Farm, in relation to the Barholm causewayed enclosure (excavated evidence after Hatton 2019, fig. 13; enclosure after Oswald *et al*. 2001, fig. 3.6).

probability) before Northborough, activity at the former lasted 265-500 years longer (Healy *et al*. 2011, 331). This means that Etton A remained in use throughout the period when Northborough was built, used and eventually abandoned (up to 115 years later, at 68% probability). In other words, during the overlap in their use, the two enclosures were perhaps intervisible; even if trees blocked views, many sounds would carry clearly.

Turning to the question of 'home bases', if the riverward orientation of Etton's gateway also indicates the direction from which people approached by land, they potentially dwelt on Maxey 'island', only 1km northward. Being *c.*2m higher, that land is better suited to cultivation (Pryor 1998a, 320-1). Roof-tops were perhaps visible from the enclosure and the adjacent pastures, unimpeded by the low vegetation flanking the broad river channel. Even if the enclosure did not have a particularly strong visual signature, sounds and smells would carry over such short distances, sounds perhaps reflected by the still surface of the shallow river. The later settlement of Maxey will inevitably have compromised any traces of Early Neolithic settlement.

At Stowe Farm, 1.4km north-east of the Barholm enclosure, excavation revealed clusters of post-holes interpreted as at least 21 rectangular structures, including around six similar in size and plan to examples of Early Neolithic post-built dwellings and one larger longhouse-like structure 24m x 8m (Figure 10.16a/b; Hatton 2019). The interpretation of these remains as an Early Neolithic settlement, however, seems impossible to reconcile with the absence of associated domestic refuse or pits, including diagnostic lithic debris.

Even the large area investigated at Haddenham and the earlier Fenland Survey (Hall & Coles 1994) offer little firm basis for discussion of settlement in the wider landscape (Evans & Hodder 2006, 228-33). The low-density traces of activity within the study area (*ibid*. 2006, 357) are consistent with pastoral mobility, but give no clear indication of where people were 'dwelling', nor the extents of any 'territory', nor the majority of the overland routes they followed. The excavators propose that territories might have extended *c.*12.5km from monuments (*ibid*. 2006, fig. 6.11; 357-61), or 3-4 hours' walk with a herd. Since the closest causewayed enclosure to Haddenham lies near Landbeach, only 11km away (Oswald *et al*. 2001, 150), this radial model appears no better than Renfrew's (1973) Thiessen polygons. Nevertheless, the localised scale of landscape exploitation they envisage sits comfortably with the findings of this thesis.

This case study shows that even in the context of the slight topographic variation of the fen-edges, remote visual perception can be justifiably considered. Indeed, the picture that emerges at each individual enclosure is of a monument carefully located so as to be intervisible with an expanse of seasonal pasture, and key local routes (in this case rivers), like the 'classic' upland sites discussed in Chapter 7. In other words, we are seeing variations around a common theme.

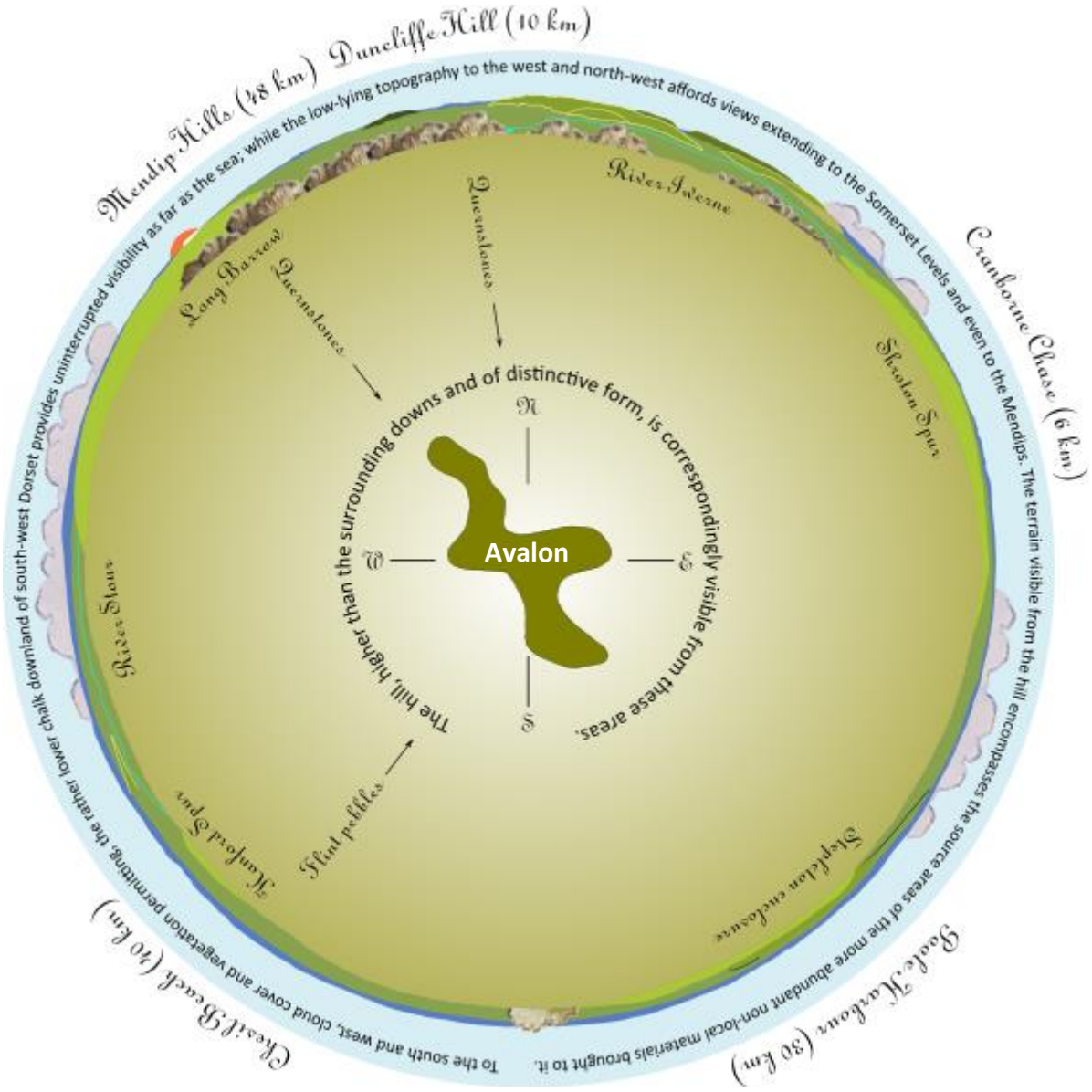

Figure 11.1a: Representation of the panoramic view from the top of the domed central summit of Hambledon Hill, inspired by the remarkable bird's-eye view painted by Heywood Sumner in 1912, and incorporating abridged quotes from Frances Healy (2004, 31) and Roger Mercer (2008b, 764; 767).

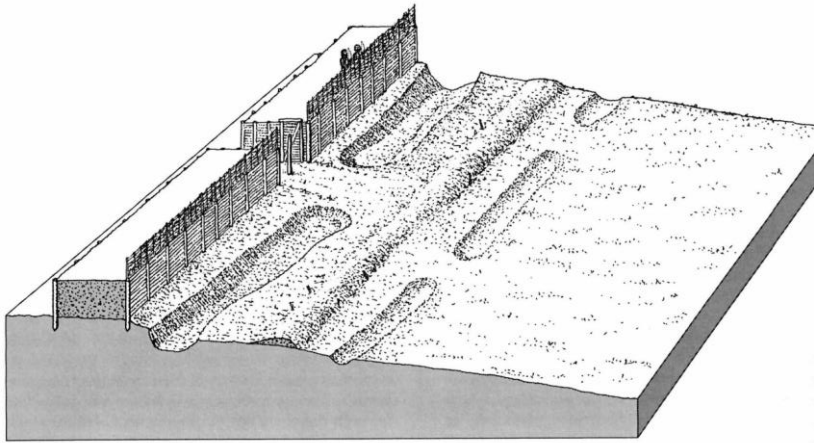

Figure 11.1b:
Roger Mercer's (1985) reconstruction of the 'box rampart' and gateway of the Inner Stepleton Outwork. A far cry from 'gleaming white chalk', the barrier would nonetheless be visually impressive. Appendix 13.2 reviews Mercer's calculations of the structure's requirements for oak and hazel.

11. Monuments in time: Hambledon Hill, Dorset

The terrain visible from the hill encompasses the source areas of the more abundant non-local materials brought to it. What if this is the terrain to which the complex was most closely related?

- Frances Healy (2004, 31)

11.1 Introduction

Previous chapters explored how topography, the vegetative environment and patterns of everyday human activity interacted to shape remote perception of monuments. This case study returns to the kind of chalk downland introduced in Chapter 1. The questions remain similar, but Hambledon Hill is different in several ways from the sites discussed previously. First, the hilltop hosts an unparalleled concentration of Early Neolithic earthworks, including one large and one 'standard-sized' causewayed enclosure, one large and one 'short' long barrow, and a series of cross-dykes, linked by linear earthworks encompassing *c*.50ha. Apart from the larger (northern) long barrow, most of these were excavated to some degree by Roger Mercer in the 1970s and 1980s (Mercer & Healy 2008a; b). These investigations allowed the development of the complex to be dated with exceptional precision (Healy *et al*. 2011, 111-57; see Section 11.2).

The perimeter of the Main Causewayed Enclosure (hereafter MCE[1]) is atypical, for it crowns the domed central summit like a 'contour hillfort'. Yet Bradley's (2019, 68) comment that the site was 'reused as a hillfort' is misleading, for the choice of location for the hillfort highlights the different priorities of the Neolithic builders. The Iron Age builders emphatically avoided the relatively accessible central summit, whether because they preferred the (arguably) greater defensibility of the steep-sided northern spur, or for less pragmatic reasons. Previous investigators have commented on the panoramic views afforded by the central summit (Figure 11.1a), in contrast to the apparently deliberately directed viewsheds discussed in Chapters 7-10. Healy (2004, 31) equates this 'broad vista' with a 'territory' exploited by the builders. Isotopic analysis of a sample of the human remains from the hilltop broadly supports this, showing that most (all those who had not died violently) had lived within *c.*30km (Neil *et al*. 2018, 196). However, while use of the hilltop spanned 320–350 years (at 68% probability: Healy *et al*. 2011, 145), molluscan analysis was unable to detect evidence for any significant reduction in tree cover over that period (Allen & Bell 2008), raising the possibility that the complex remained wrapped in forest throughout its use. Two key questions, then, concern the MCE's anomalous relationship to the topography, and the possibility that tree cover negated affordances for remote visual perception.

[1] This acronym and the other names used here to denote earthworks are those used by the excavators.

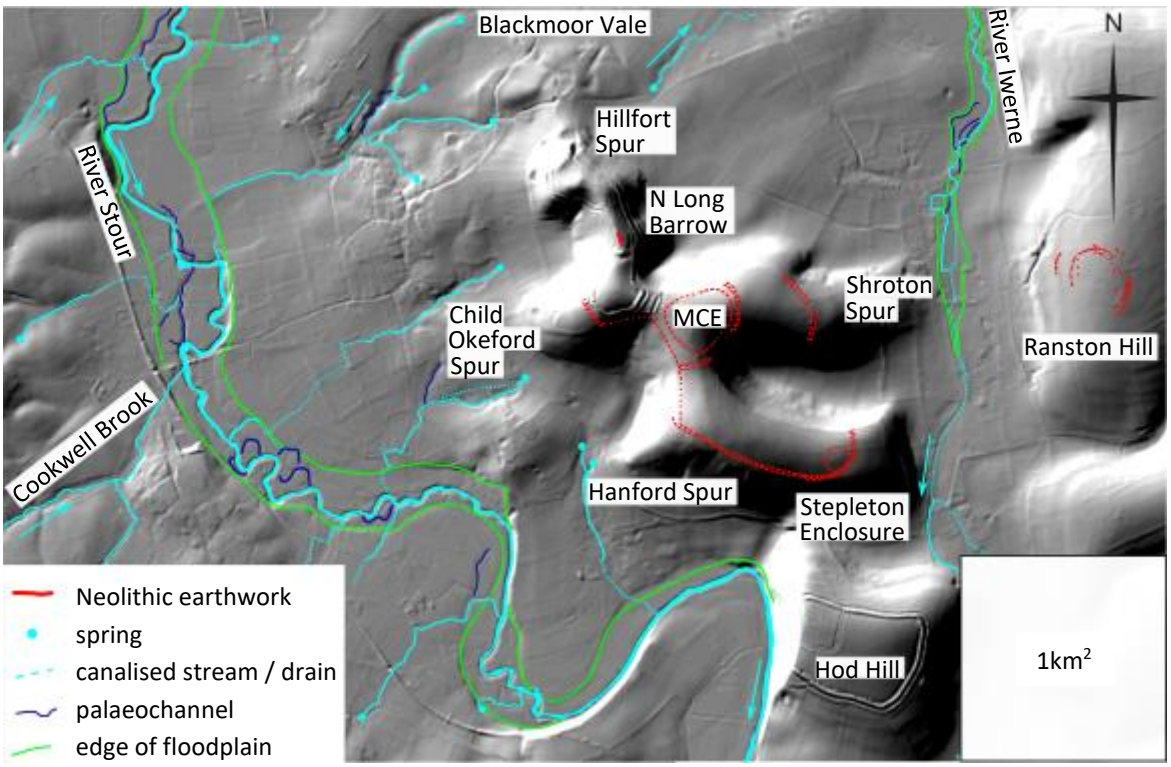

Figure 11.2a: Key features and places discussed in Chapter 11.

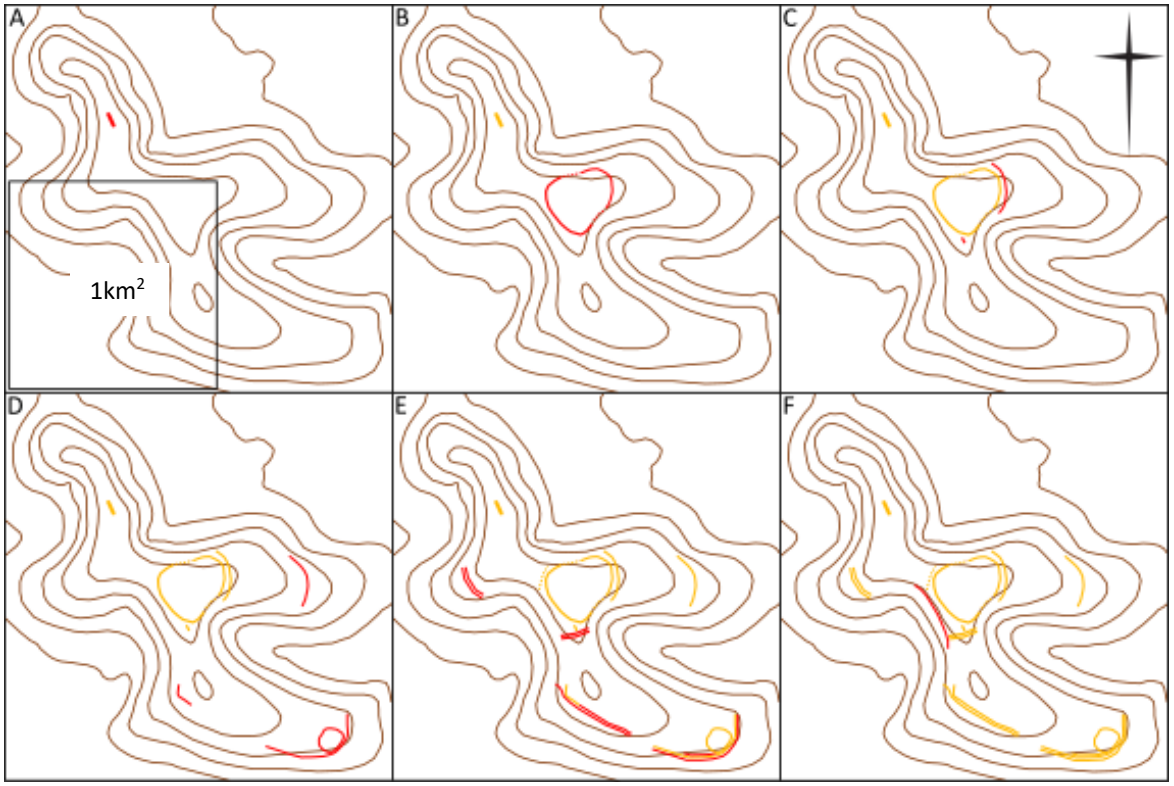

Figure 11.2b: The Early Neolithic construction sequence on the hilltop (redrawn after Mercer & Healy 2008, fig. 1.9), with additions and amendments. The North Long Barrow is here treated as probably the earliest development, based on the pattern established nationally. The unexcavated Relict Spur Outwork is regarded by Mercer as an extension of the late Western Outwork, but is probably earlier, on the evidence of its similarity to the other cross-dykes. New works are shown in red, existing in orange.

Another question relates to the original form of the barriers now represented by vestigial earthworks. Mercer (2008a) deduced the existence of a visually imposing structure similar to an Iron Age 'box rampart' (Figure 11.1b), which has been widely cited (*e.g.* Bradley 2009). His reconstruction requires huge numbers of oak posts and hazel rods, which implies that the act of building the enclosures (and linear boundaries) might be instrumental in creating the clearing(s) that they occupied, and thus the potential for visual affordances. My investigation of this hypothesis demonstrated that the hilltop would not yield sufficient materials, but also that the design Mercer envisages could not function. It is doubtful whether the 'box rampart' extended far beyond the gateway in the Inner Stepleton Outwork, where the supporting evidence remains more credible. Elsewhere, it seems likely that turf stripped from the line of the perimeter was used to build a head-height wall to revet the spoil from the ditch, perhaps surmounted by 'breastwork' made of hurdle panels: arguably a less striking structure. The existence of turf on the hilltop is moot (see Section 11.3), but when my line of enquiry proved a dead end, it was relegated to Appendix 4.

Finally, we will return to the viewsheds of individual monuments. The larger long barrow has featured little in discussions of the site, because it has not seen modern excavation[2]. Though not unique, its unusual setting offers a way into thinking about the motivations of the builders of the whole complex in terms of remote visual perception.

11.2 Summary of the findings of the excavations

The application of Bayesian modelling to the radiocarbon dates from the excavations is amongst the most important outcomes of the project, allowing the chronological sequence to be understood with unprecedented precision (Figure 11.2a/b). In summary, the long barrow on the hillfort spur remains undated, but is presumed to be potentially the earliest component of the complex. The MCE was probably the next earthwork to be constructed, in the 3,650s or 3,640s, remaining in use for 300-335 years (both at 68%), *i.e.* throughout the Neolithic use of the hill. Modelling could not distinguish whether the shorter South long barrow was built before or after the MCE, but its location, which would be anomalous if unrelated to the MCE, should indicate that it is later, if only by 10-15 years at 68% probability (RCHME 1996b, 31; Healy *et al*. 2011, 136). Similarly, although the Inner East Cross-dyke could be contemporary with the MCE, or even earlier, according to the modelling, its relationship in plan suggests it to be an addition. The Stepleton enclosure was probably constructed 10-60 years after the MCE, remaining in use for 195-250 years (both at 68%); the Middle Stepleton Outwork and Shroton Spur Outwork were begun around the same time. The imposing Inner Stepleton Outwork was perhaps abandoned incomplete. The South Cross-dyke was probably built, along with some of the other outworks, in the mid- to late-36th century BC, 75-100 years after the MCE (at 68% probability). This more precisely dated sequence complicates my

[2] The placement of three undocumented trenches suggests a relatively 'scientific method', suggestive of the later 18th or earlier 19th centuries. Whittle (1977b, 339) misinterprets these as natural slippages.

Figure 11.3a: View eastwards across the medieval water-meadows in the broad floodplain of the River Stour, from a point 2.3km west of the hillfort spur, in mid-May. The pond in the foreground, which existed by the mid-19th century, is a modified palaeochannel. Note how much the distant belt of trees conceals.

Figure 11.3b: In mid-May, lush vegetation conceals one of the many springs to the west of the hillfort spur.

earlier idea that the outworks could be understood as parts of concentric circuits, interrupted by the steep-sided coombs (Oswald *et al*. 2001, 67). It remains possible, however, that the Inner Shroton Outwork, the Middle Stepleton Outwork and the imprecisely dated (because unexcavated) Relict Spur Outwork were built together to define an outer perimeter. Finally, in the second half of the 34th century BC, the Western Outwork was built along the crest of the escarpment and the Stepleton/Hanford Outworks were extended northwards. This might imply the threat of attack in changing 'political' circumstances (Mercer & Healy 2008, 768). In total, this unusually nuanced picture of the site's chronology offers a scale against which change can be measured.

And, apart from the eventual adoption of a defensive strategy, lack of change. For despite the demonstration of the longevity of activity, and episodic modifications of both the overall form of the complex and the individual earthwork components, the various contributors to the final report paint a remarkably static picture of what went on there (Bell *et al*. 2008, 423; Legge 2008, 548-9; Mercer 2008, 760; see Section 11.3). There is, then, a clear tension between the evidence for change and the evidence for stability, potentially with important consequences for remote perception.

In sum, Mercer and Healy's interpretation of the function(s) of the site interweaves many strands present in Smith's (1971) vision: episodic gatherings; feasting; ritual deposition; treatment of the dead. The emphasis on defensive capabilities evident in early reports colours[3] the final synthesis (Mercer 1985; 2008, 760-1). Over the lifetime of the project, however, subtle shifts occurred. For example, the final synthesis presents the various practices around death and burial as part of a wider suite of ritualized acts, contrasting with earlier depictions of the enclosure as primarily a place reserved for excarnation and burial (*e.g.* Mercer 1980, 63). The emphasis on seasonal use has become more pronounced, due particularly to faunal analyses (Legge 2008, 552-6).

11.3 The character of the environment in the environs of the hill

The views afforded from, and towards, the earthworks on Hambledon Hill depend on tree cover (Healy 2004, 31). The hilltop was rarely visited in the Late Mesolithic (Healy *et al*. 2011, 148), so mixed deciduous forest presumably remained largely unmodified by humans when Neolithic activity began. Indeed, intact forest probably clothed the steep slopes around the massif right up until the Chalcolithic (Bell *et al*. 2008, 424; Allen & Bell 2008, 449; Figure 11.3a/b). Although forest soils would mitigate the geochemical changes produced by the underlying chalk, the soil on the high ground was probably still alkaline. Consequently, forest would be dominated by lime, ash, cherry and hornbeam[4], the first two species being particularly palatable to cattle. Oak would not thrive, preferring the heavier clays of the valley floors. Any natural clearings would be colonised by *Maloideae* (apple, pear, hawthorn) and field maple.

[3] In this, we may suspect that Mercer – like others before him – was influenced by his military experience.

[4] That said, bones of pine marten and red squirrel suggest the presence of some pine (Legge 2008, 538).

Figure 11.4: View westwards from the diminutive River Iwerne, 1.9km to the east of Hambledon Hill, in mid-May. The central domed summit is visible, but note how the mature trees in the middle distance (beeches to the right, horse chestnuts to the left) obscure much of the horizon, including the North Long Barrow.

No environmental data are available for the wider environs of the hill. To the west, later prehistoric colluviation and alluviation produced a floodplain up to 400m wide along the navigable Stour. In the Early Neolithic, the river channel was probably narrower and more stable, but still within a low-growing riparian corridor like those described in earlier Chapters. Though less extensive, the ecology would resemble the semi-artificial water-meadows that have existed there since medieval times. To the east, the valley of the Iwerne undoubtedly experienced similar changes (Figure 11.4). This much smaller watercourse could also be easily modified by beavers, whose proximity is confirmed by faunal remains on the hilltop (Legge 2008, 566[5]), potentially creating a corridor of low-growing vegetation. Patches of rushes (*Juncus effusus*) indicate damp ground near the river, possibly representing ancient ponds or marshland. Otherwise, it is assumed that at the outset of the Neolithic, much of the rest of the landscape was clothed in typical mixed deciduous forest, the favourable conditions encouraging full-height growth.

The plan of each enclosure could offer a proxy indicator of the footprint of a forest clearing. The irregular oval of the Stepleton enclosure suggests that its perimeter echoed the limits of a small clearing, whether of natural origin or created deliberately. At first glance, the sub-triangular plan of the MCE, unlike the near-perfect circle of the middle circuit on Windmill Hill, seems to offer little support for the idea that the builders were working on a blank canvas afforded by a large, pre-existing clearing. Yet there is an unmistakeable intent to the smooth line chosen for the perimeter of the MCE, which follows the crests of the coombs on the north-east and south-east of the summit and bends more sharply to cross the necks of the three radiating spurs. The execution of such a design in dense forest would be – to say the least – a remarkable achievement. It seems more plausible, therefore, that there was a pre-existing clearing, of uncertain size and shape, but large enough to allow people at least to visualize the eventual line of the perimeter. At face value, it seems unlikely that wind damage would create a clearing that neatly encompassed the whole of the domed summit. So was the hypothetical clearing created gradually by a combination of natural factors, deliberate clearance and browsing, or was it made *de novo* specifically to host the enclosure? The same hypothesis may be applied to the later outworks. If, as proposed above, the Inner Shroton Outwork, the Middle Stepleton Outwork and the Relict Spur Outwork were indeed built approximately contemporaneously to define an all-encompassing perimeter, did they mark the limits of an area whose vegetational character had become distinct over the course of the 10-60 years since the MCE had been constructed? This patch, covering *c*.50ha, could host 50-100 cattle and/or a greater number of sheep (Mercer 1990, 29), which, if they grazed and browsed through the summer months, would inevitably gradually transform the vegetation.

[5] The remains of 2-3 beavers were recovered on the hilltop, including one articulated hind-limb (Legge 2008, 566), possibly a waste product after removing a pelt, so unlikely to be carried far from the kill-site.

Figure 11.5a: View north-westwards from the exact centre of the Main Causewayed Enclosure in mid-May. The majority of the trees in the plantation on the steep slope at the head of the coomb are ashes, whose foliage is currently sparse due to Ash dieback (*Hymenoscyphus fraxineus*). Trees of similar or greater height with denser foliage would mask more of the floor of the Iwerne valley and even the downland beyond.

Figure 11.5b: The reverse view, looking towards the domed central summit from 700m to the north-east. The sparsely-leafed ash trees in Figure 11.5a are to the right. The denser trees to the left screen the summit, so clearance would need to extend well down the slope for the built perimeter to be visible.

Molluscan specialists[6], however, strongly object to this scenario, arguing that both enclosures remained quite heavily wooded throughout their use (Bell *et al*. 2008, 423-4; Allen & Bell 2008, 449-50). No pronounced spatial or temporal variations were observed in the samples, with open-country species making up under 10% of most assemblages and increasing only slightly over the lifespan of the complex. The specialists accept that taphonomic factors and sub-optimal processing of the samples might exaggerate the dominance of shade-loving species, but still confidently assert that the assemblages broadly reflect the shady character of the vegetative environment within 'a few tens of metres of the sampling points' (Bell *et al*. 2008, 423). If this conclusion is accepted, it follows that the perimeter of the MCE must have been constructed along the middle of a deforested corridor a maximum of 60-100m wide, leaving fairly narrow margins on each side, given that the combined width of the bank/rampart and ditch is over 12m. In this scenario, the perimeter would be barely visible from the wider landscape, except perhaps where it ran closest to the heads of the coombs, because it would be screened by trees growing downslope (Figure 11.5a/b). Conceivably, it would not be visible even from the forested centre of the enclosure itself: a startling and intuitively difficult idea.

The molluscan specialists bolster their argument by reference to the carbonised plant remains, which (they claim) tell the same story of a constant presence of trees through time (Allen & Bell 2008, 449-50). The carbonised wood specialists, however, make the point that the species most commonly recorded – oak, hazel, *Maloideae* and, occasionally, ash - probably reflect their preferential use as fuel and raw materials[7] for making structures and objects (Austin *et al*. 2008, 461). This theory is supported by the relative scarcity of species which are ill-suited to either use, such as lime and elm, despite the former being the dominant species in many other pollen records and likely to thrive on the alkaline soils of the hilltop. Most of the other tree species present in lower proportions, including beech, birch, hornbeam, alder, box and willow, are also useful as fuel and/or for making things. The presence of typical heathland species, including birch, pine and heather, and wetland species such as willow and alder, must indicate that people were importing wood from some distance, either as raw material or as products that were ultimately burnt on the hilltop (*ibid*., 467-8). Taken together, then, the pattern detected in the carbonised remains reflects the ways people were using wood over the lifetime of the complex, rather than stability in the extent and/or composition of nearby forests. It is helpful to know that these species were present, evidently within carrying distance. Yet the carbonised remains do not directly reflect the character of the local environment, particularly on the hilltop itself, and consequently the molluscan specialists' contention that there was negligible change in the tree cover on the hilltop over the course of at least three centuries, becomes more suspect.

[6] Pollen evidence from the hilltop is negligible because no buried soils were encountered; the relatively dry chalk conditions are in any case not ideally suited to the preservation of pollen.

[7] They also note that hazel and the *Maloidiae* are sources of edible fruits, but this does not account for the presence of carbonised wood (rather than pips, or hazelnuts), since fruits would be detached from stems.

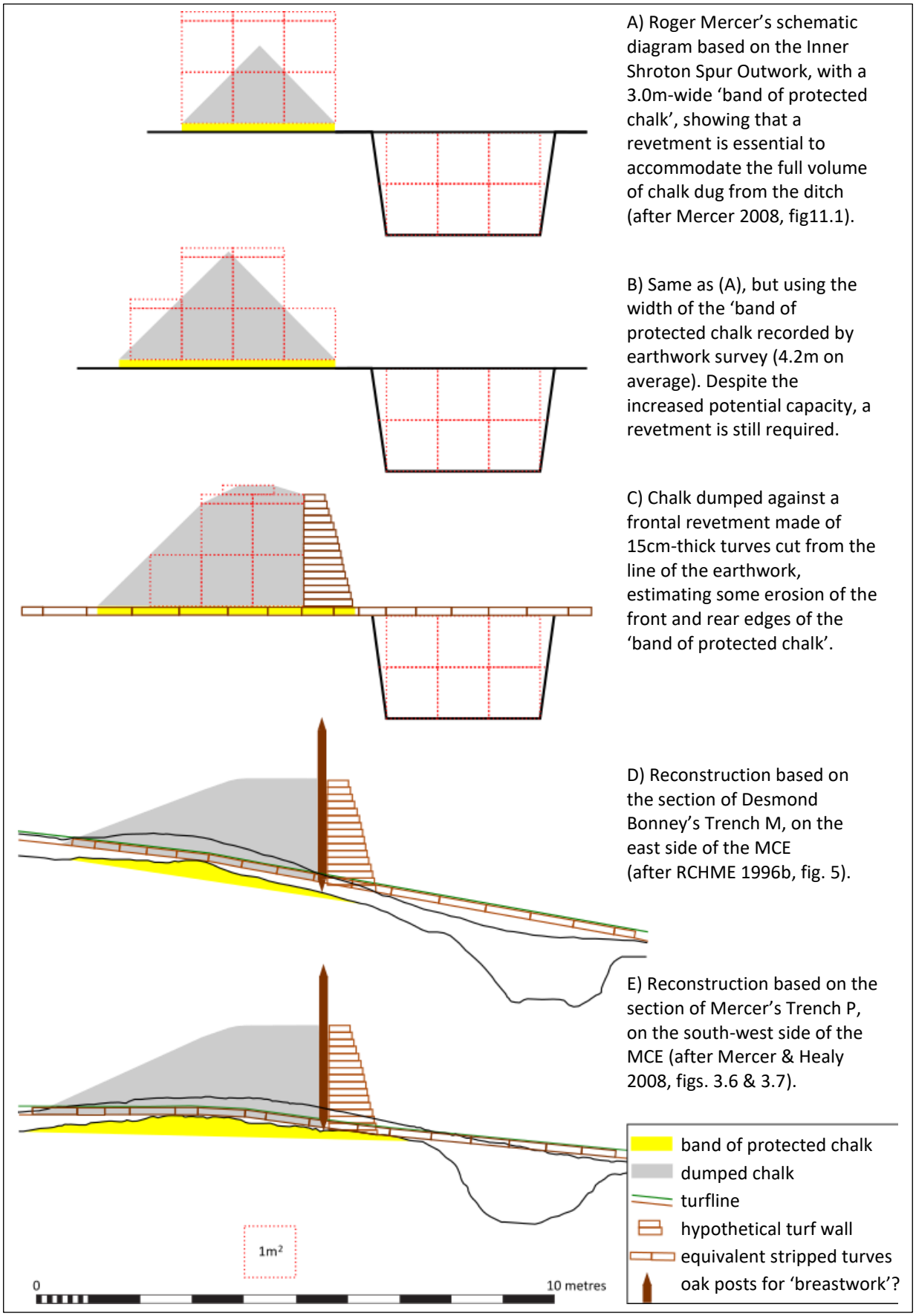

Figure 11.6: Reconstructions demonstrating the possible use of turf, rather than posts and hurdles, to construct the revetment required to retain the full volume of chalk dug from the ditch of the MCE. See Appendix 4.

It is, therefore, worth considering other ways of accounting for the molluscan evidence. Did the largest trees within the perimeter – perhaps those that were older and therefore better anchored to the ground – remain standing, their canopies providing sufficient cover to allow shade-loving species to survive in a parkland-like habitat? Allen and Bell (2008, 449) accept the possibility that the assemblages might accord with somewhat thinned forest, but stress that it was not 'a bald, grassy hilltop'. Yet, as noted in Chapter 5, a herb layer develops when light penetration reaches 15%, forming a continuous layer at *c.*50% (Ehrenreich & Crosby 1960; Anderson *et al*. 1969, fig. 1), so turf would exist, even if the hilltop remained peppered with large trees. With slim, branchless trunks and high 'topknots' of leafy growth, such trees would not seriously impede views outwards, whilst lending the hilltop a distinctive appearance from afar. Over time, however, their growth patterns would evolve in response to the increased light, making them more top-heavy and thus vulnerable to wind blows. If these trees were already mature when the trees around them were removed, many would die naturally over the *c.*350 years that the MCE remained in use. In other words, some degree of change in the vegetative environment seems inevitable.

If the perimeter approximately followed the edge of a grassy patch, might the 'rampart' itself block the transfer of open-country species into the ditch beyond, so that the samples reflect the still-forested environment outside the perimeter? Or perhaps the trees removed to accommodate the perimeter earthworks were dragged downslope and left to rot, creating a habitat where shade-loving species could survive in the margin between the ditch and the forest edge. Alternatively (or perhaps in addition), if the perimeter followed the edge of a grassy patch, could wholesale removal of the turf/topsoil in the environs of the perimeter - perhaps to build a turf wall to retain the earthwork (Figure 11.6 and Appendix 13.2) delay the release into the ditch deposits of the majority of the open country species that had lived close to the perimeter? This delay might last until the earthworks were degraded by Early Bronze Age ploughing, thus contributing to the apparent dramatic increase in open country species observed at that time. Bell *et al*. (2008, 424) argue that, given the centuries-long use of the MCE, recolonization by open-country species of the open ground around the ditch would occur eventually if there was open grassland anywhere nearby. If the ditch segments and their surroundings were regularly cleaned and recut, however, did they remain unattractive to open-country species that prefer grassland habitats? In short, the very process of constructing and maintaining the perimeter might produce taphonomic factors not considered by Bell *et al*., which mean that their conclusions about the continued existence of forest on the hilltop cannot be taken at face value.

Allen and Bell (2008, 449) estimate the proximity of the 'intact' forest edge based on the habits of *mollusca*. I have questioned their calculations concerning the vegetation within the enclosure, but the placement of some of the earthworks outside supports their contention that the forest edge was only tens of metres away. The length of the south

Figure 11.7a: View south-eastwards from near the confluence of the Manston Brook with the River Stour, 3.4km from the northern end of the hillfort spur. The long barrow is not as conspicuous as the 'cross-rampart' of the second phase of the Iron Age hillfort, which runs more perpendicular to the line of sight. Note the large size of the open expanse necessary to afford even this partial view of the hill in mid-May.

Figure 11.7b: A linear clearing in the ancient coppice on the north-east side of Duncliffe Hill, illustrating how such a clearing, if it straddled the spur, could frame (restrict) the view from/to the North Long Barrow.

long barrow – 26m – is consistent with some 'short' long barrows on Cranborne Chase, but it is also possible that it was shorter because it backed onto the contemporary forest edge. Since the barrow was built at most 15 years after the MCE, this might indicate the limit of the clearing that originally hosted the enclosure. In this scenario, that limit would lie *c.*45m beyond the MCE ditch. The Inner East Cross-dyke, built around the same time, suggests a comparable figure of *c.*35m. Taking these indicators into account, the clearing within which the 5.8ha enclosure[8] was built was perhaps *c.*10ha in extent.

11.4 The topographic settings and viewsheds of the monuments

11.4.1 The hill as a landmark

Hambledon has been called an 'island' (Tilley 1994, 166; 200-1; Mercer & Healy 2008, 764), but this is more apparent from the air than on the ground[9]. It is also questionable whether the hill 'proclaims itself as the dominant feature on the skyline' (*ibid.*) when seen from the Blackmoor Vale to the north, although it can be picked out even from the causewayed enclosure on Whitesheet Hill, 23km northward. If a link with the Vale were of paramount importance, the builders might be expected to site a monument at the northern end of the hillfort spur[10], but they did not (Figure 11.7a). Instead, that eminence, even deforested, screens all the earthworks on the hill when seen from a wide stretch of the Vale, so that they 'seem quite deliberately to turn away from the 'grand vista' to the north and north-west' (*ibid*., 766). The theory that the 'grand vista' equates to an extensive territory (Healy 2004, 31) therefore implies that the hill alone was a sufficient landmark. If we set aside the assumptions arising from the alluring panorama available today, however, it becomes clear that individual monuments were designed to be visible from different sectors of the landscape.

11.4.2 The North Long Barrow

Given the pattern established elsewhere in Britain, the North Long Barrow may well be the earliest monument on the hilltop, potentially predating the MCE by up to 300 years. Its placement and orientation were evidently carefully chosen with regard to the topography, for it occupies the highest point of, and is aligned with, the narrow spine that forms the central part of the 'hillfort spur' (RCHMEb 1996, 30). It is not, however, 'conspicuous from all directions' (*contra* Mercer & Healy 2008, 766). From the northern sector, *i.e.* the proposed Blackmoor Vale territory, the monument only becomes visible once the precipitous northern tip of the spur is climbed, assuming the clearance of forest over the intervening 300m. The fact that the front of the barrow was oriented southwards, however, suggests that there was no expectation that people would make the difficult ascent to approach from the north. In effect, the steep-sided hillfort spur

[8] Lacking digital methods, I previously miscalculated the MCE's internal area as 8.3ha (RCHME 1996b, 16).
[9] Especially compared to genuinely isolated eminences like Duncliffe Hill, 10km northward (Figure 11.2).
[10] This line of thinking prompted excavation of the 'hillfort spur enclosure' (Mercer & Healy 2008, 366; Mercer pers. comm.), which proved to be a Late Bronze Age. A lone Bronze Age barrow was built in the prime location on the highest point of the north end of the spur (RCHME 1996b, 33-4).

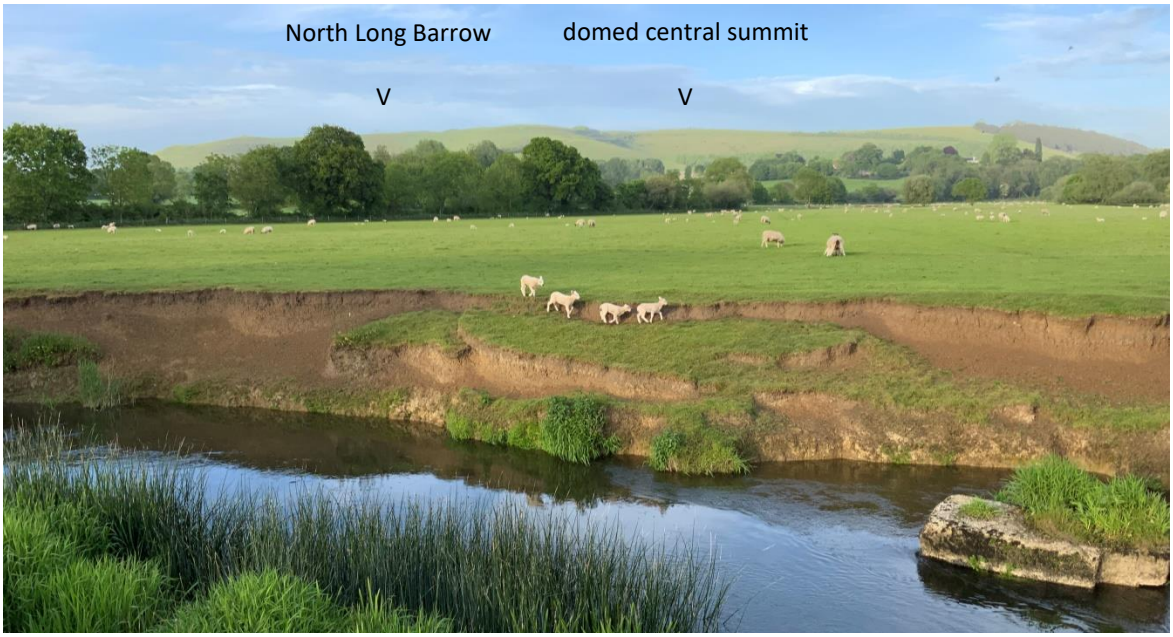

Figure 11.8a: Hambledon Hill seen from the River Stour, 2.1km to the west-south-west, in mid-May.

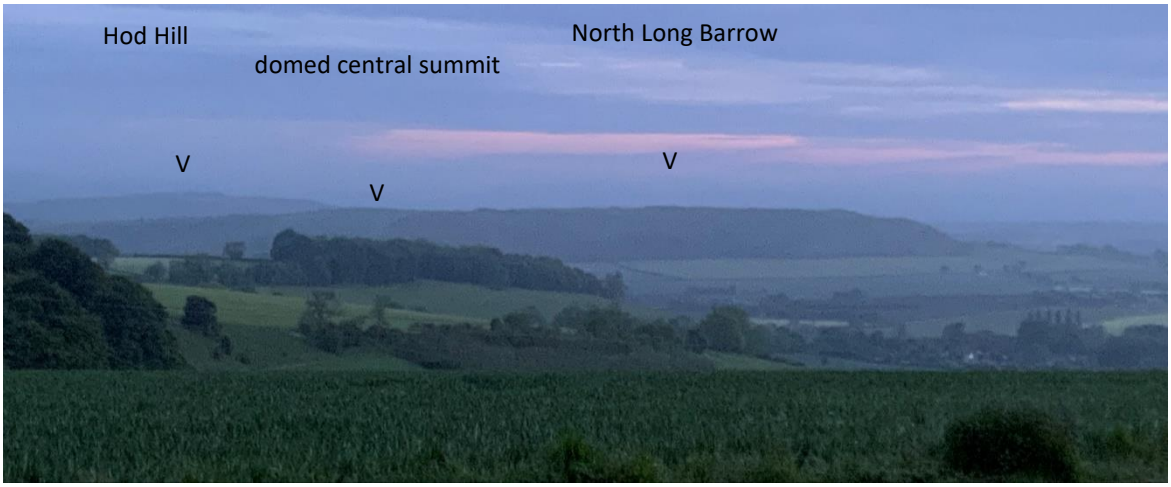

Figure 11.8a: Hambledon Hill seen from Iwerne Hill, 4.3km to the east-north-east, at dusk in mid-May.

Figure 11.8c: The front end of the North Long Barrow, illustrating the slightly steeper gradient on the west (left) side of the hillfort spur. This affords the monument greater visual reach seen from that side.

represents a literal 'dead end', easily accessible only from the south. Yet the presence of Early Neolithic material towards the northern end of the spur, unearthed during excavation of the Late Bronze Age 'Hillfort Spur Enclosure', gives no hint that the spur was made taboo by the presence of this monument to the dead[11]. From the south, its higher, broader front end is clearly visible from the hill's domed central summit[12], again assuming there was no intervening forest. But the monument was not visible from anywhere south of that summit.

Throughout the sectors to the west and east, however, even in poor light, the barrow's 66m-long profile, set centrally on the hillfort spur, dominates the horizon (Figure 11.8a/b). From lower ground, this seems a flat plateau. Due to the narrowness of the spine and the steep gradients on both sides, it is conspicuous not only from the rising ground east of the Iwerne and west of the Stour, up to 5km away, but also from the low-lying land alongside each river, only dipping out of sight near the foot of Hambledon Hill. Despite this bi-polar quality, it is slightly more prominent when seen from the west and visible right up to the very foot of the hillfort spur, because the gradient next to the barrow immediately becomes steeper on that side Figure 11.8c). We shall return to the potential significance of this observation in the concluding discussion (Section 11.6)

The natural topography of the central part of the hillfort spur would leave trees growing there particularly vulnerable to westerly winds, so the barrow was possibly built in a natural clearing, potentially of earlier origin. If the hilltop was still forested when the barrow was constructed, however, deliberate clearance of a modestly-sized transect of trees, stretching like a saddle east-west across the spur, would frame the profile of the long barrow even more impressively against the skyline when seen from either direction, whilst also narrowing the arc from which it was visible (Figure 11.7b). In this instance, customary 'gleaming-white-chalk' epithets may be appropriate. Against the flanks of the hill, which are so steep that they probably retained their forest cover longer than other areas, the newly constructed monument would inevitably be extremely prominent, especially before the eaves of the surrounding clearing had regrown. Lit by a full moon, it would be an even more striking landmark than during the day.

11.4.3 The Main Causewayed Enclosure and its outworks

The next monument to be built was probably the MCE. Mercer and Healy (2008, 766) suggest that the circuit tilts slightly to the south-east[13] , but in fact the mid-point of the eastern arc of the circuit, where it crosses the Shroton Spur, is at almost exactly the same elevation as the western arc. Variations in height are barely perceptible on the

[11] Regrettably, a magnetometry survey of the interior of the hillfort (Stewart 2017, 81-90) contributed very little to the picture gained from RCHME's (1996b) detailed analytical earthwork survey.
[12] Since the barrow probably predates activity on the central summit, it is probably coincidence that, from that viewpoint (without intervening trees), the sun at midsummer sets at the front end of the barrow.
[13] This was based on an inaccurate conversion of 19th-century contour-mapping, from feet to metres.

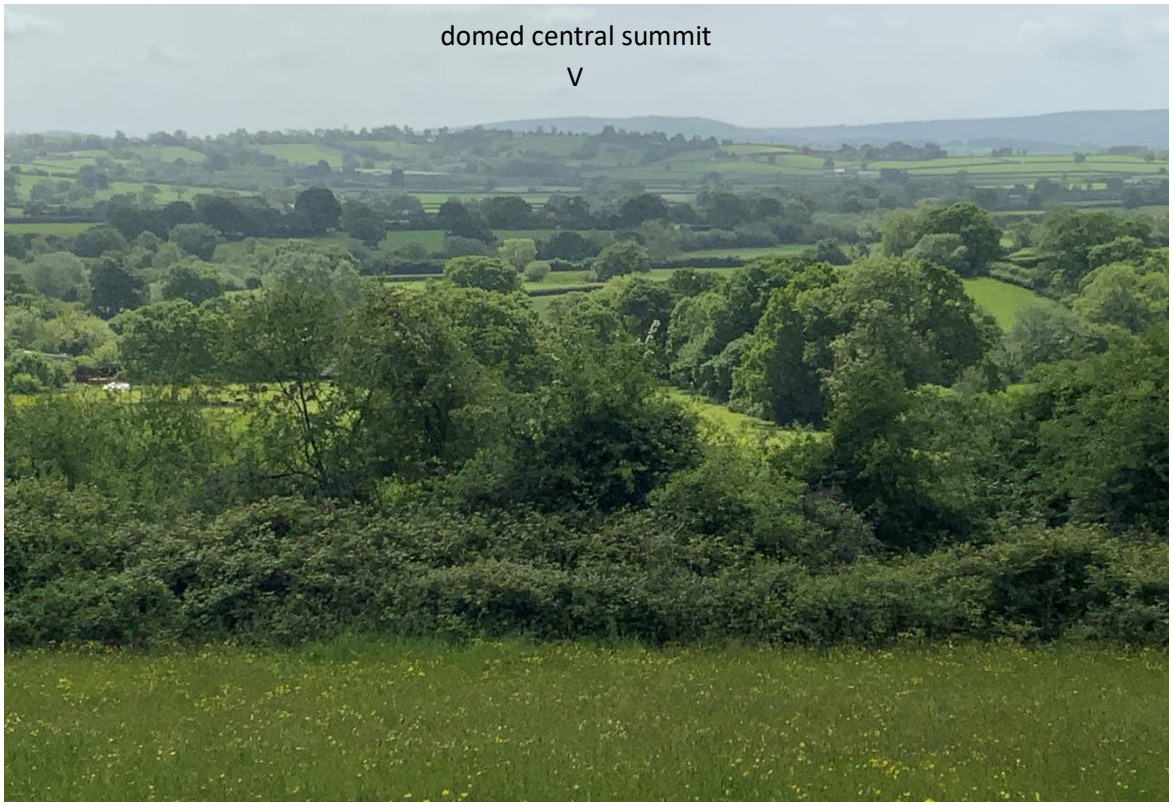

Figure 11.9a: View southwards from the lower slopes of Duncliffe Hill, 10.1km to the north of Hambledon Hill, in mid-May. From this elevation, *c.*60m above the intervening land, the central summit is visible, but a notch created by a forest clearing would be more conspicuous. The North Long Barrow is just visible.

Figure 11.9b: Aerial view of trails worn by cattle making their way down to a water trough at the foot of the Child Okeford spur. This is one of the three gentle approaches to the central summit. Image: Edina Digimap.

ground, because, atypically, the unusually large circuit fully encompasses the summit, running up to 17m downslope, not affording a clear view from any point on the perimeter to the opposite sector (Oswald *et al*. 2001, 65 & fig. 4.16; Palmer & Oswald 2008). Due to the westward bend of the hillfort spur, the hill's central summit can be picked out for up to 10km from the north (Figure 11.9a). It would be more eye-catching if it emerged from surrounding forest, whether the grassy tonsure rejected by the molluscan specialists, or a more lightly wooded patch, as discussed above. Mercer and Healy (2008, 767) suggest that the earliest earthworks – the MCE and the East Cross-dyke – 'were designed to make a statement to those living to the east'. The short long barrow admittedly has morphological affinities with examples in Cranborne Chase, a few kilometres to the east (*ibid*., 766), while the East Cross-dyke was indeed apparently designed to reinforce the visual impact of the MCE when approached from that direction.

Despite these signs of a connection with the land to the east, the MCE was apparently sited and designed with both east and west in mind. Its perimeter runs close to precipitous natural scarps at the heads of coombs on the north, south-east and west, making the earthwork potentially visible from the corresponding sectors of the river valleys. Yet if trees over 10m tall still stood along the upper edge of those scarps, it would be the summit only, rather than the built perimeter, that could be seen. To the east, north-west and south-west, both the summit and the perimeter are screened by the projecting Shroton, Child Okeford and Hanford spurs, even lacking tree cover. The gentle gradient of these spurs facilitates access to the summit from both river valleys: they are the only slopes that herders could easily persuade cattle to ascend (Figure 11.9b). Daily trips to water-sources would be essential if cattle were kept on the hilltop throughout the summer, especially if cheese production was important. Ease of access may therefore be key to understanding the choice of the central summit as the site of the MCE. It also perhaps helps to explain the construction, a generation or two after the MCE was completed, of the Shroton Spur Outwork, an earthwork precisely laid out along a 'false crest', so that it dominates the horizon for anyone approaching from the east to make the relatively easy climb up the spur. The same may apply to the undated Relict Spur Outwork on the Child Okeford spur to the north-west, and to the Middle Stepleton and Hanford Spur Outworks.

11.4.4 The Stepleton Enclosure

The Stepleton Enclosure is typical of causewayed enclosures as a class in terms of size, plan and relationship to the topography, with a viewshed oriented towards the lower reaches of the Iwerne valley (Figure 11.10a). Radiocarbon dating leaves it uncertain whether the enclosure was built before or after the adjacent Middle Stepleton Outwork (Healy *et al*. 2011, 138). It can be argued, cautiously, that the relatively gentle curvature of the north-east sector of the enclosure circuit suggests that it was built without heed to the line of the outwork and, therefore, that the outwork was a later addition, if no

Figure 11.10a: View south-eastwards from the centre of the Stepleton enclosure, looking towards the middle reach of the Iwerne, in mid-May. The ramparts of the hillfort on Hod Hill are visible to the right.

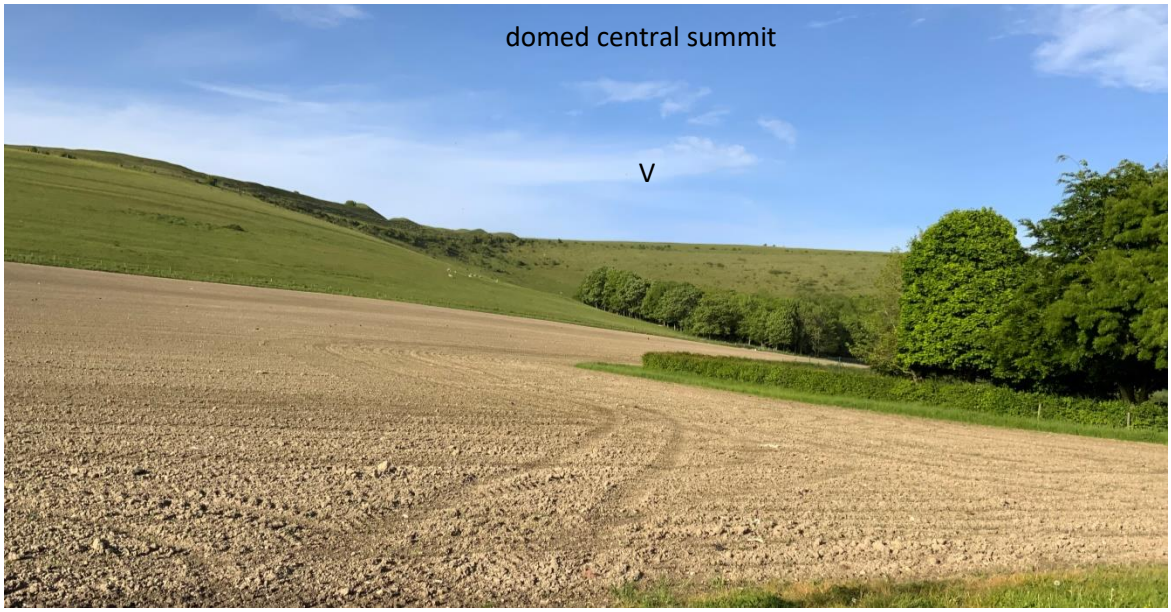

Figure 11.10b: The domed central summit, looking east-north-east from the foot of the Child Okeford Spur, 1.0km away. The line of small hawthorns just below the horizon runs immediately above the Western Outwork, or along the line of the proposed unfinished upper line of the earthwork. The height of the hawthorns (note the horses on the horizon for scale) could equate to the height of an upstanding element of the barrier, thus leaving the perimeter of the MCE visible upslope, defining the horizon, as long as the clearing was large enough. But note too how the mature trees on the low ground, photographed in mid-May, would entirely conceal the hilltop at this range. The hornwork of the south-west gateway of the Iron Age hillfort, which overlies most of the Relict Spur Outwork, dominates the horizon on the far left.

more than a decade or two later (*ibid*.). Indeed, were it not for the latter earthwork, there would be little reason to suppose that the two causewayed enclosures related to each other at all. The two are intervisible today (*contra* Mercer & Healy 2008, 762), but only because the landscape now lacks trees. If, as suggested above, the Stepleton Enclosure was built to fit within its own isolated clearing, they were certainly not intervisible from the outset.

11.4.5 The Western Outwork

Like the broadly contemporary extensions of the Stepleton and Hanford Outworks, the 340m-long Western Outwork has been interpreted as a display of strength (Mercer & Healy 2008, 768). The earthwork is not, as Mercer claims, 'in a skyline position' like the North Long Barrow, but instead follows the false crest of the natural scarp, so that it defines the skyline to someone ascending the slope. From further out in the Stour Valley, it appears below the western perimeter of the MCE, which in turn appears below the summit (Figure 11.10b). It was suggested above that the clearing made (or enhanced) at least 300 years earlier to host the MCE probably extended a few tens of metres beyond the enclosure ditch, which, at its closest, comes within 40m of the crest of the western escarpment. Over the intervening period, grazing and/or deliberate clearance perhaps pushed back the forest edge to the crest of the escarpment, which perhaps remained largely forested throughout the Neolithic. If so, the Western Outwork would follow and exaggerate this ecotone. As with the MCE when first constructed, however, unless the trees were absent for a considerable distance downslope, the whole outwork would be concealed when observed from anywhere in the surrounding lowlands. The fact that a Chalcolithic extension of the South Cross-Dyke (Palmer & Oswald 2008, 34) ran for 35m straight down the escarpment could indicate that that by that time, at least, the upper part of the escarpment was deforested, or partly so. But there is no positive evidence indicating such clearance in the 34th century BC, unless we accept the teleological argument that the Western Outwork was evidently designed to be visible, *ergo* the trees were cleared (RCHMEb 1979, xi).

These ditch segments, being difficult to access and almost devoid of cultural material (Mercer & Healy 2008, 132), were evidently not intended to serve as repositories for structured deposition. The fairly uniform length of the 17 segments recognizable on the surface is suggestive of the contributions of gangs or different family units to a communal project, as often supposed. It seems more plausible, therefore, that these ditches merely served as quarries, as Mercer has occasionally argued about the construction technique more generally (*e.g.* Mercer 1988, 89; 1990, 28; see also Startin & Bradley 1981, 291).

The long-standing belief that the Western Outwork originally comprised a single bank and ditch (Palmer & Oswald 2008, 32) is worth reconsidering. The most prominent element of the earthwork is a steep, 1.2m high scarp, directly upslope from the ditch,

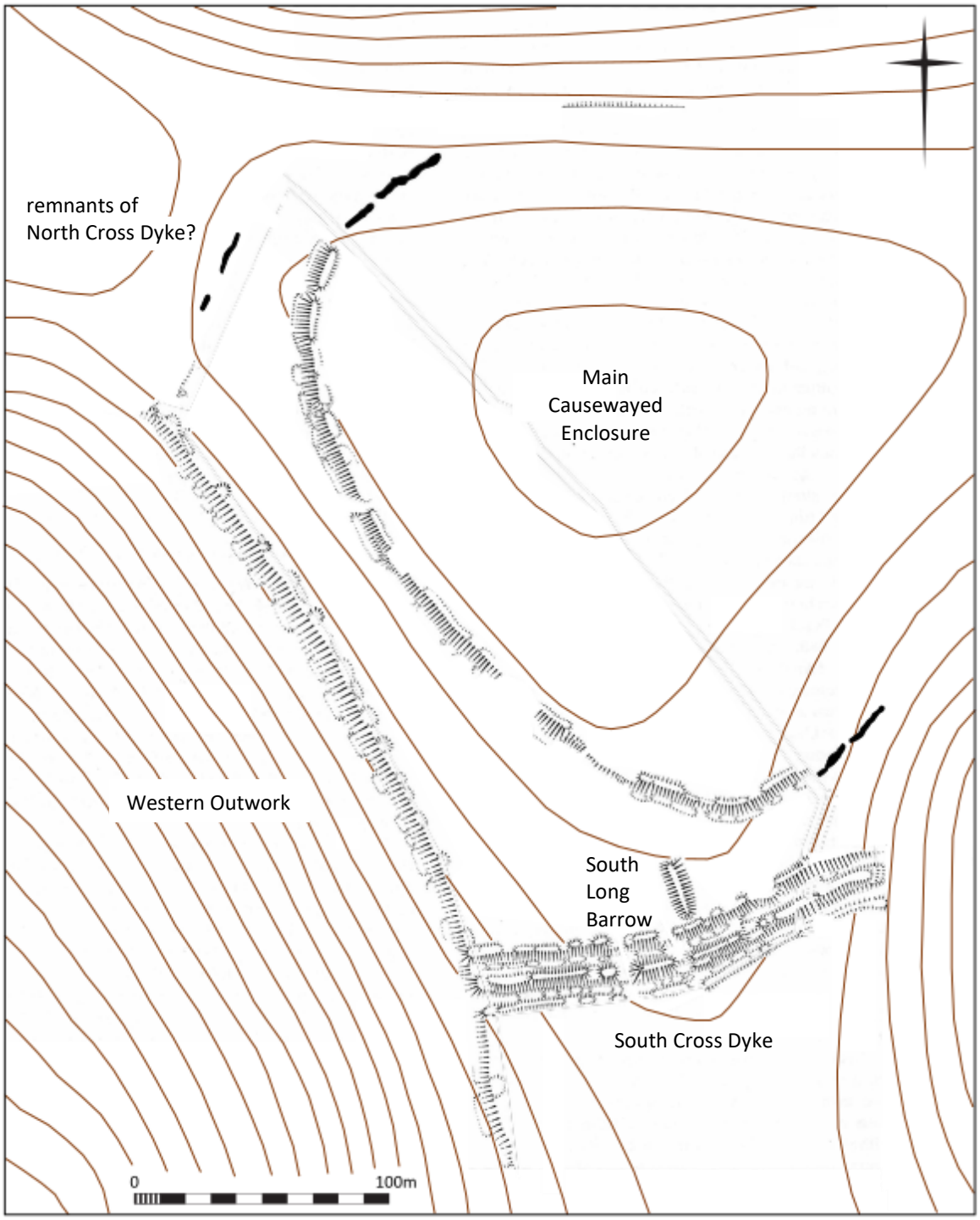

Figure 11.11: Extract from my 1996 plan of Hambledon Hill, showing the relationship of the MCE and the Western Outwork to the topography, and omitting post-Neolithic earthworks. Note the series of slight hollows and associated mounds along the upper edge of the Western Outwork, here proposed to be the initial phase of work on an upper line of causewayed earthwork, which would then echo the form of the 'cross-dykes' spanning the adjacent spurs. The existence of the North Cross Dyke is tentatively inferred from a fragment of surviving earthwork and a number of anomalous 'steps' in the side of the outermost ditch of the Iron Age hillfort's 'gateway annexe'. The north-west end of the Western Outwork almost certainly continued as far as the double-earthwork of the Relict Spur Outwork, but the intervening area is concealed by the overlying Iron Age ramparts.

apparently representing a step, perhaps originally vertical, quarried back into the natural slope. In the zone where a bank would be expected, earthwork survey identified only a discontinuous line of shallow, sub-circular scoops, three of them associated with small mounds, presumably spoil (Figure 11.11). These features seem to be contemporary with the lower earthwork. It may be fortuitous that are the same number of scoops as there are ditch segments downslope, since the two do not coincide. Excavation of one scoop, towards the northern end of the earthwork, showed that it was only 0.3m deep and contained two post-holes, each for a post *c*.20cm in diameter, but left its function uncertain (Mercer & Healy 2008, 131; fig. 3.45). A trench further south revealed two more post-holes, 2.7m apart and of similar diameter, hinting at a line of posts running along the top of the Western Outwork. Given the narrowness of the trench, however, these two might be related to the adjacent bank of the Inner South Cross-Dyke (*ibid*., fig. 3.44). Rog Palmer's view (in Palmer & Oswald 2008, 32) that the scoops might represent a 'platform' prepared to carry the bank is at odds with the form of the earthworks, which seem to represent shallow quarries. Nor is there any indication of an upstanding earthwork, since the three small mounds appear to be haphazardly deposited. Since the spoil from the ditch segments downslope, which were nearly 2m deep, was evidently not used to form a bank upslope, this begs a further question as to what was done with that spoil. The most obviously practical possibility is that it was cast downslope, leaving the adjacent 1.2m-high step as the principal upstanding barrier. Above this stood a series of posts, whether a fenceline or something more discontinuous. One possibility is that the scoops, several of which are quite linear, represent the first stage of digging a second line of causewayed ditch[14], which was ultimately left unfinished. Perhaps the builders intended to construct a bank upslope, so as to match the double linear earthwork running through Yew Wood, south of the Hanford Spur, the Relict Spur Outwork, the South Cross-Dyke and, perhaps, the almost destroyed North Cross-Dyke.

11.5 Conclusions

When the complex on Hambledon Hill was imprecisely dated to the broad span between the 37th and 34th centuries BC, generalized processes dominated interpretations (Edmonds 1999, 5). This makes the relatively precise timeline now available through Bayesian modelling one of the most important outcomes from Mercer's excavations. But because it was the last specialist post-excavation analysis to be undertaken, its ramifications are less evident in the rather invariant pictures presented by the other specialist reports. Similarly, the static focus on the panoramic 'grand vista' available when looking outwards from the domed central summit, at the expense of considering the qualities of the individual monuments and their settings, may be a symptom of the same initial unawareness of relevant chronological specificities. Unlike Knap Hill and Rybury (Chapter 7), in the case of Hambledon, the argument that the 'grand vista' might equate to an extensive territory is buttressed by the fact that some of the materials

[14] If so, this unfinished work would provide insights into the organization of the construction process.

Figure 11.12a: The North Long Barrow, seen from its front end (south). This, the least investigated monument on the hilltop, ultimately inspired new ideas about remote visual perception of the complex.

Figure 11.12b: View looking east-north-east from the north-west angle of the MCE, in mid-May.

present on site came from sources tens of kilometres away, to both north and south (Healy 2004, 30-2; Mercer & Healy 2008, 767; Roe 2008, 27-8; Figure 11.1b). Yet these items are in the minority and Mercer (*ibid*.) offers little support for his assertion that the exchange of 'domestic' goods would operate entirely differently from that of items such as less utilitarian axe-heads (Bradley & Edmonds 1993). It is questionable, therefore, whether each community needed to 'own' all the everyday materials it needed and thus to control access to them, or whether the procurement of resources such as quernstones, clay, and beach pebbles might operate through established networks of down-the-line exchange. Mercer and Healy (2008, 1) see Hambledon Hill as peripheral to the more intensively settled coastal plain and the concentration of long barrows on Cranborne Chase (see also Renfrew 1973, fig. 3). It may, however, be more appropriate to see the hilltop as being a periphery shared by two much nearer settled areas: the adjacent stretch of the Stour valley and the upper reaches of the Iwerne valley.

Consequently, this chapter has dissected the complex into its component parts, responding to the nuanced temporal picture now available and seeking to understand the various earthworks as separate projects (Figure 11.12a/b). They reflect distinct circumstances and motivations at the different times when they were built, in the context of an environment that, in some respects, inevitably changed through time. What emerges is not Mercer's (2008, 760) vision of a complex gradually evolving towards a pre-conceived, coherent masterplan, but a more piecemeal development, driven by different social stimuli at different times. In terms of remote visual perception, the argument has moved away from a 'grand vista', relating to a territory that stretched as far as the eye can see, in favour of a series of relatively intimate viewsheds relating to several different local 'constituencies' in the adjoining river valleys.

The argument has also moved away from the view looking out from the hilltop, towards considering the areas from which different monuments could be seen. The North Long Barrow, putatively the earliest monument on the hill, seems designed to be conspicuous from both east and west. The remote visibility of the monument, of course, presupposes the existence of clearings that were extensive enough for people to see beyond their perimeters. To the east, field-walking detected flint scatters almost ubiquitously throughout the ploughed fields examined, but with material present in lower densities on the low-lying ground close to the Iwerne than on the lower slopes of the downland beyond, and no major concentrations of Early Neolithic material anywhere (Palmer & Oswald 2008, 18; fig. 2.2). This pattern could reflect the build-up of later prehistoric colluvium on the lower ground, which reduces the quantity of earlier material brought up by modern ploughing (Saville 2008, 740). Given the hospitable qualities of the land alongside the Iwerne, it is reasonable to hypothesise that clearance was intensive enough to create an expanse of parkland-like vegetation, in which only a scatter of larger, older trees, or their dead hulks, still survived, thus allowing people to occasionally see the monuments on the higher ground from afar, as today.

Figure 11.13a: View westward from the perimeter of the MCE, looking across the Stour Valley, in mid-May. The shadow is cast by one of the bank segments, and the Western Outwork runs just below the fenceline.

Figure 11.13b: Woodland on the edge of the Stour water-meadows, 2.2km west of the hillfort spur. Even though the trees have not reached the maximum height for their species and the open space is large, the earthworks on the hilltop are barely visible. The line marks the estimated height of forest on the hilltop.

Despite the bipolar quality of the long barrow's viewshed, it seems significant that it is slightly more conspicuous from the land to the west of the hill, which is outstandingly favourable in terms of Piggott's (1954, 51-2) criteria for settlement, with many small, spring-fed streams flowing through gently undulating, fertile land into the Stour, with its riparian grasslands (Figure 11.13a/b). The potential importance of springs as foci for settlement was not adequately considered during the Hambledon project (Rog Palmer pers. comm.). Three lie within 1km of the MCE, easily 'within normal daily herding' (Barker & Webley 1978, 172). As in Chapters 9 and 10, the navigable river also emerges as an important factor. Pioneers conceivably found their way to this hospitable landscape by following the river inland, whether in dugouts or on foot, and quickly established farming communities on the surrounding land. Other groups might 'bud off' over time, following non-navigable tributaries, including the Iwerne. The land to the west of the Stour was equally favourable for settlement and agriculture. The lower valleys of some of the tributaries to the west of the Stour, of which only the Cookwell Brook is now named, likewise enjoy fine views of the barrow's profile. The river would not greatly hinder overland movement, for it was shallow enough to be fordable in many places[15]. It was, therefore, a long-distance north – south highway on one hand, yet, on the other hand, not a serious barrier to east – west movement. Almost all this potentiallt settled area remains under long-term pasture and has therefore seen no fieldwalking. Nor have development-led investigations in the area been sufficient, either in number or extent, to shed light on the question (information from Dorset HER). Excavation of an east – west gas pipeline *c.*1km north of the hill recorded only cut features (Catherall *et al*. 1984, map 14), but Palmer (pers. comm.) examined the spoil without noting any lithic concentrations. Despite the paucity of positive evidence, it remains an attractive hypothesis that these hospitable tracts of land within a few kilometres of the hill formed the territory, or territories, of the first farmers who occupied the region.

Mercer (2008, 751) estimated that the MCE was built by 100 families totalling 1,000 people: close to the modern population of Child Okeford (from the 2011 census). This impressive figure represents 1% of Pryor's (2003, 158-60) estimated population for Britain as a whole in the 38th century BC. But it reflects Mercer's views of the methods and material requirements involved in constructing the perimeter, which are open to question (see Appendix 13.2). If the hilltop only afforded grazing for 50-100 cows even when the clearing was at its greatest extent (Mercer 1990, 29; Figure 11.14a), the population was perhaps only a few hundred when work on the MCE began. If they lived within the area from which the various monuments on Hambledon Hill are most visible, this number would be dispersed over *c.*20km^2. The population size unquestionably changed over the three to four centuries that the hilltop remained in use. Yet compared to the 49km^2 that a community of 25 would occupy if Pryor's population was evenly dispersed (see Chapter 4.3), even this number represents a major concentration.

[15] As the early medieval placenames Hanford, Okeford and Fiddleford attest.

Figure 11.14a: White Park cattle (an ancient breed) grazing in the hillfort in mid-May. Although the viewpoint is only *c.*6m below the summit 400m away, even the relatively small trees in the coomb would conceal the perimeter of the MCE, whose earthwork is visible just beyond the hillfort's 'gateway annexe'.

Figure 11.14b: The double earthworks of the South Cross Dyke, with the (replica) South Long Barrow behind. The horizon is formed by the perimeter of the MCE, with the relict headline in the interior.

The MCE appears to relate to constituencies west and east of the hill, though not exactly the same areas as the North Long Barrow. This anomalous bipolar quality is what distinguishes its relationship to the topography from other sites, including the Stepleton enclosure, and may reflect the unification of two formerly separate communities. The construction process can then be interpreted as an end in its own right, serving to bond the two (Mercer 2008, 772; C. Evans 1988b), producing a tangible testament to the collaboration. Could the South Long Barrow, with its intimate relationship to the MCE (Figure 11.14b), commemorate the individuals who achieved this cooperation? The monument also replicates, as far as possible in the restricted space available, the ridge-top location of the North Long Barrow and faces towards it, perhaps symbolizing a continuing shared allegiance to the earliest settlers in the landscape.

Thus, Hambledon seems to represent a coming-together of small, separate communities that decided to embody their collaboration in the siting and design of monuments[16]. As different outworks were added – first the East Cross-Dyke, then the west-facing Hanford Spur Outwork – the degree to which the constituencies signalled their stake in the project fluctuated. The multiplicity of earthworks may reflect inter-community rivalry, with east and west striving to surpass each other's latest architectural elaboration of the shared arena. With the addition of the Shroton Spur and Relict Spur Outworks, the size of the area over which the MCE signalled its presence increased further. The Relict Spur Outwork would be visible from the putative settled farmland along the spring line directly west of the hillfort spur, an area where people going about their daily chores could previously see the North Long Barrow, but not the MCE. Like the outwork south-east of Rybury discussed in Chapter 7, these earthworks can be read not just as barriers controlling access to the hilltop, but also as signals of the MCE to communities who were not generally afforded any visual reminder of its presence.

The Stepleton enclosure, being typical in its size and tilting topographic setting, is distinct in character from the MCE. It was, perhaps, initially separated from the central summit by *c.*800m of forest, making intervisibility impossible, but browsing and deliberate clearance could dramatically alter the environment over the 10-60 years after the MCE was built. The siting of the enclosure suggests that it may have belonged to a separate constituency, based in the lower reaches of the Iwerne Valley to the south-east. If the inference that the Middle Stepleton Outwork is a few years later than the adjacent causewayed enclosure is correct, then construction of the outwork could be interpreted as an inclusive act, designed to incorporate the newly built and hitherto isolated enclosure within the complex as a whole. Thus, the community that built the enclosure would also literally be brought within the fold of the earlier confederation.

[16] In contrast, two enclosures at Kingsborough, Kent (Allen *et al*. 2008), were built on opposite sides of the same hilltop, maybe to keep their links to different constituencies separate or to signal independence.

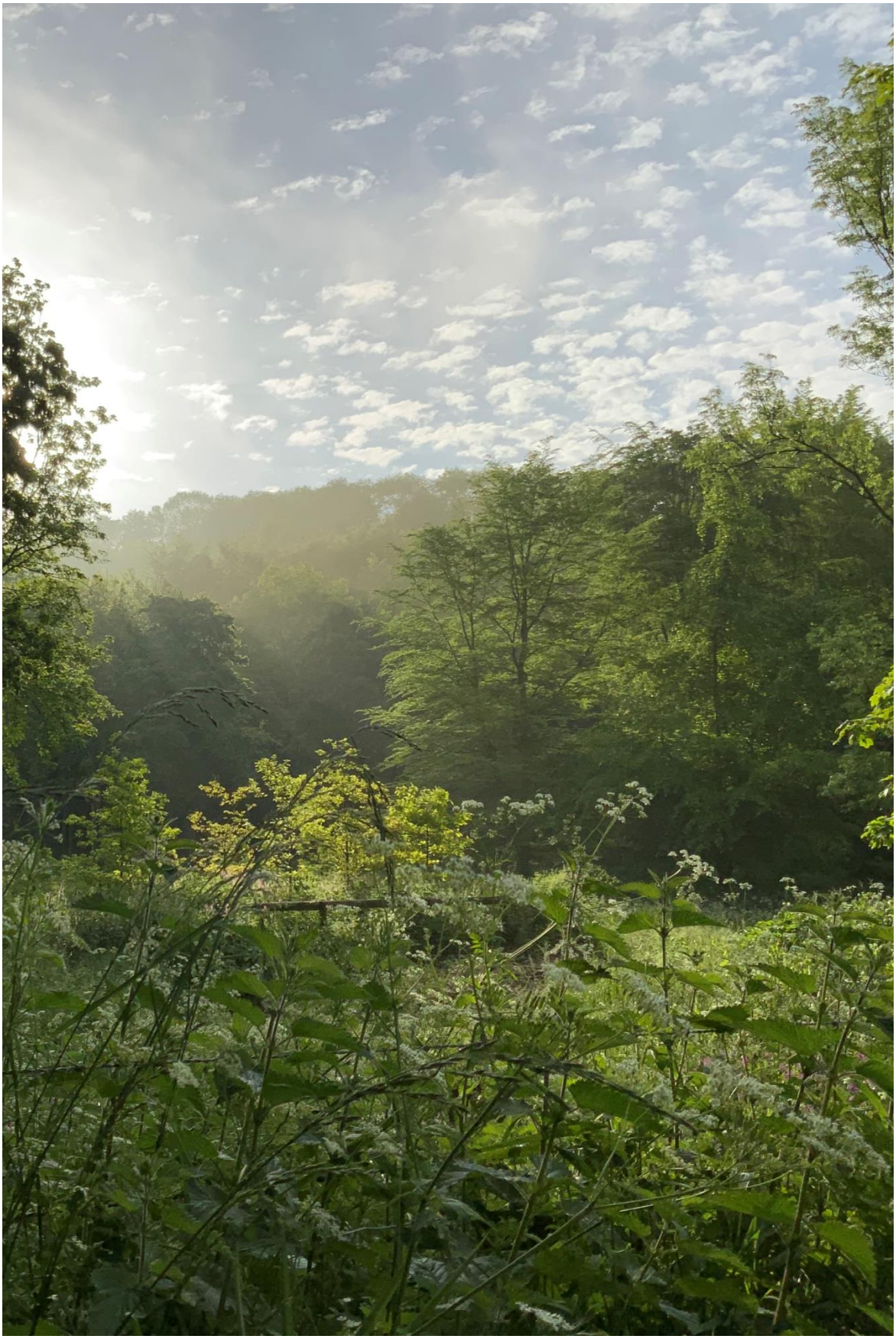

Figure 11.15: View towards the central summit of Hambledon Hill from 700m to the south-west, in mid-May. The intervening plantation comprises beech, ash and lime, all species that thrive on calcareous soils.

Consequently, it is worth re-examining the case for the accepted defensive function of the Western Outwork (Mercer & Healy 2008, 768). Interestingly, in the 15th–16th centuries, when cattle theft was common along the Anglo-Scottish border, most raids took place in October and November, when the cattle were at their fattest and gathered for the autumn cull, and the calves were old enough to withstand being driven relatively long distances (Armstrong 2020, 262). At this season, detectable activity on Hambledon was at its peak (Legge 2008, 552-6). Perhaps the gatherings that took place to mark the end of the pastoral year were particularly prone to attack by other communities.

On the other hand, there are reasons to question whether the earthwork was defensive at all. If the valleys of the Stour and its tributary streams were indeed areas favoured for settlement and agriculture, settled early and used relatively intensively throughout the life of the complex, construction of the linear earthwork would effectively place the majority of the population in front of their own defensive line. The Stour itself offers a more obvious natural boundary and defensible line, yet this apparently linked communities, rather than dividing them. If the hilltop was regarded as a place of refuge, even the MCE would be difficult to defend, with its 970m-long perimeter and restricted visibility within the perimeter. The Western Outwork, if it formed part of a defensive line almost 4km long (RCHME 1996b, 62), would be even less defensible, especially if a smaller population than that envisaged by Mercer were involved. With hindsight, however, my tentative suggestion, based on vestigial earthwork traces, that the outwork may have continued along flank of the hillfort spur (RCHME 1996b, 62) was overly influenced by the erroneous belief that the 'hillfort spur enclosure' was potentially Early Neolithic. This proposal was seized on by Mercer as support for his theory that all the linear outworks were defensive (Mercer & Healy 2008, 768). Yet neither surface nor geophysical survey demonstrate that the Western Outwork actually extended much beyond the South Cross-Dykes (*ibid*., 131) or the tentatively identified North Cross-Dykes, so perhaps it never joined up with the Hanford/Stepleton outwork to the south or the Relict Spur Outworks to the north. If proven, such gaps would make it harder to sustain the argument that the linear earthworks formed a coherent defensive system. Nevertheless, the Western Outwork could still be interpreted as an attempt to make a visible link between the pre-existing South and North Cross-Dykes (the latter not securely identified), to make it impossible to by-pass the cross-dykes.

None of these observations necessarily negates Mercer's interpretation of the Western Outwork as a defensive structure. They do, however, elevate Mercer's emphasis on the display of strength, or the display of labour (Renfrew 1973). If a second line of causewayed earthwork was begun immediately above the recognized line of the Western Outwork, as suggested above, perhaps the builders intended to create an architectural complement to the existing double cross-dykes, as much as to make a defensible perimeter. If material quarried from the proven ditch was indeed spread downslope, the visual impact of this spill of freshly quarried chalk, in combination with a

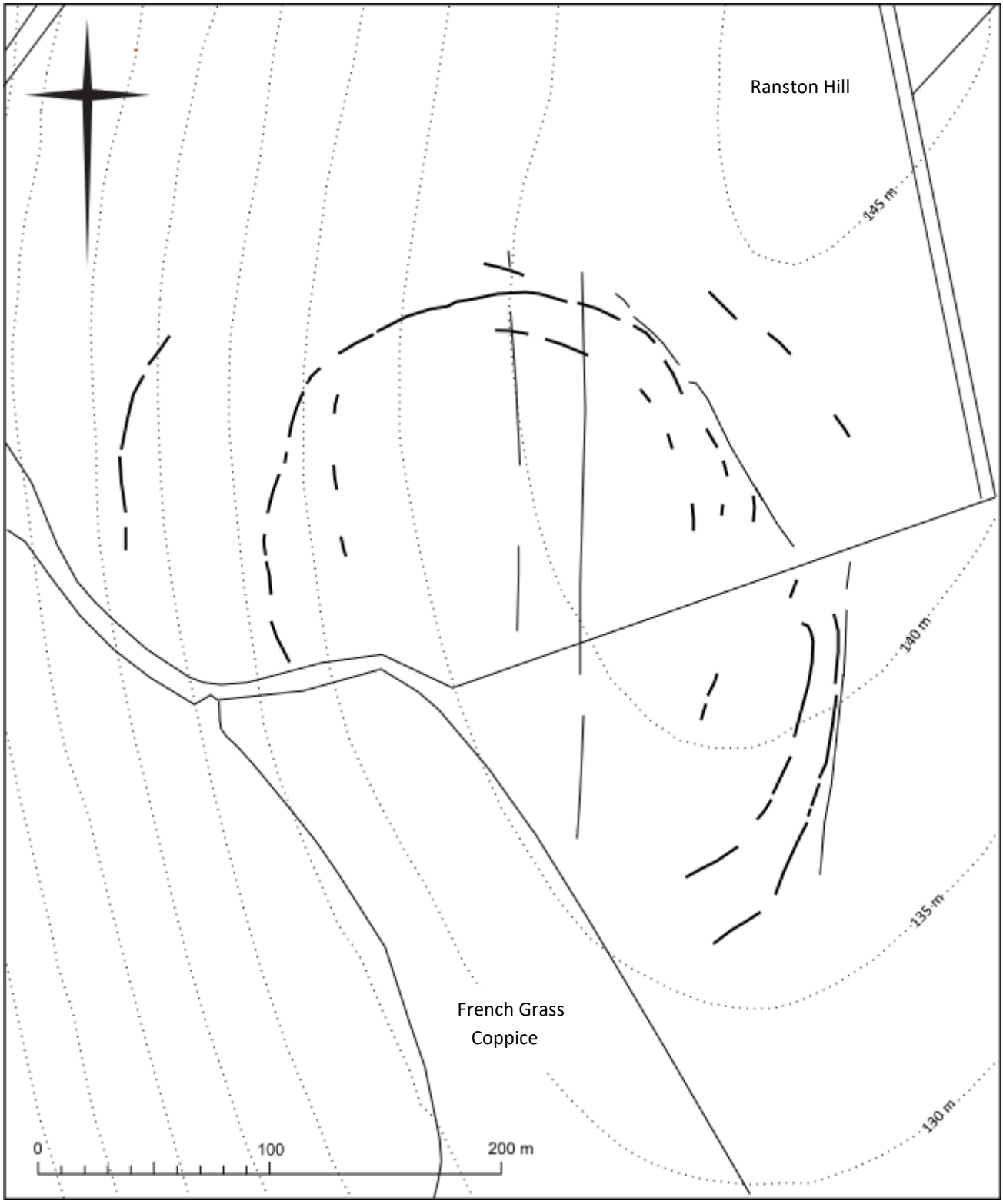

Figure 11.16: Transcription of cropmarks on Ranston Hill, on the eastern side of the Iwerne Valley directly opposite the Shroton Spur, possibly representing a causewayed enclosure (centred at ST 8685 1250). The plot, at 1:2,500 scale, is based on RAF 1945 and Bing 2023 vertical aerial photographs and Historic England's oblique images, refs: 27494/007-011, taken on 25th June 2012. Note the suggestive relationship of the enclosure to the topography. The relationship to the topography of the parallel ditches running north-south, however, makes it unlikely that they are part of a cursus.

vertical quarry face more than a metre high, would be greater than the barrier as normally envisaged; yet it is also possible that the rubble spread was simply lost into the forest fringe. The posts that surmounted this white band, if they did not form a fenceline in lieu of the unfinished earthwork, were possibly totemic, potentially rising well above the tree canopy downslope.

Perhaps, then, the Western Outwork, like the earlier outworks, primarily served to reinforce the visual presence of the MCE. Why, however, did construction resume after an interval of perhaps eight generations? Mercer's theory that political circumstances had changed is plausible, even if the need for a defensive line seems less convincing. The architectural statement was clearly meant to be appreciated from the west, perhaps suggesting a decline in the involvement of the community to the east. The Bayesian modelling suggests that the Stepleton enclosure was also abandoned around this time.

The recent identification[17] of another possible causewayed enclosure on Ranston Hill (Figure 11.16), on the eastern side of the Iwerne Valley directly opposite the Shroton Spur, may hold the key to understanding this change. The topographic setting is typical, below the summit of the spur, on sloping ground that 'tilts' the enclosure westwards towards Hambledon Hill . The cropmark is incomplete, but suggests a large, approximately circular enclosure of *c.*6ha: similar to the size of the MCE. Palmer's field-walking in this area identified a flint scatter immediately east of the enclosure, but without recognisably Early Neolithic components (Palmer & Oswald 2008, fig. 2.2). Located in a classic position on a west-facing slope below the tip of the spur, it appears to 'tilt' towards the MCE, 2km away, or towards the intervening valley bottom. Without more accurate dating, it would be unwise to make too much of the new discovery, but it is tempting to speculate that the community or communities in the Iwerne valley may have disengaged from their long-standing involvement with the MCE in favour of constructing their own monumental enclosure. In this scenario, the construction of the Western Outwork could be a reaction by the community living in the Stour valley, an investment of time and effort that proclaimed their continued commitment to the centuries-old project. Perhaps the more uniform size of the ditch segments reflects a greater need for compulsion, where once the builders had been eager to give their labour. If the project was indeed abandoned in a half-finished state, perhaps this reflects an eventual acceptance that an era of collaboration had passed.

[17]Damian Grady of Historic England first took aerial photographs of the enclosure on 25th June 2012. The potentially significant details of the cropmark were not recognized until October 2021, when the images were examined more closely (Martyn Barber pers. comm; HObUID 1628851, accessed online at https://www.heritagegateway.org.uk/ gateway/results_single.aspx?uid=1628851&resourceID=19191).

Figure 12.1: Barkhale Camp in West Sussex, the only causewayed enclosure in the British Isles with woodland directly adjacent, photographed in mid-September. It was here in 1995, when carrying out a detailed analytical field survey, that I was first struck by the profound difference that forest would inevitably make to intervisibility. In the intervening 'generation', the southern part of the interior has begun to regenerate. The mixed plantation on the steep escarpment overlooked by the enclosure continues to screen out potential views of the coastal plain.

Chapter 12. Discussion

Facts are necessary, but not sufficient; the more freely a historian gives rein to his humanity, the more completely will he solve the problems of his profession.

- Wilhelm von Humboldt (1821)

12.1 A change of perspective

When I began this thesis, I anticipated that GIS viewshed analysis would be central to my research on remote visual perception. This was predictable: viewshed tools have been a standard method of recent decades, playing a particularly prominent role in studies of Neolithic monuments. But as my research developed, it became increasingly clear that the systematic modelling I had anticipated would inevitably fail to do justice to a holistic understanding of landscape (Council of Europe 2000, 1; Harris & Cipolla 2017, 168-9); to the character of 'taskscapes' (Ingold 1993, 64); and to perception as a 'highly contingent act' (Gillings & Wheatley 2001, 13). Researchers eager to harness the increasing analytical power and sophistication of GIS have generally neglected the routines, complexities and idiosyncrasies of everyday life. Consequently, their studies, like the mathematical spatial analyses of the 1970s, still tend to be mechanistic and disengaged from the lived landscapes that they aim to represent (Tilley & Bennett 2004, 214; Gillings 2009, 339).

In parallel, I became doubtful that the long-standing emphasis on remote visual perception of Early Neolithic monuments in Britain is really justified. The majority were constructed with materials that present poor object/background contrast. Even some apparent examples of "gleaming white chalk" were actually faced with far duller turf or timber. Nearly half were located in lower-lying terrain where the builders could not hope to command the extensive vistas that apparently typify sites on downland escarpments. Yet in low-lying landscapes, higher ground with greater potential for remote visual perception was sometimes disregarded.

Faced with these concerns, my work took a different direction, seeking to 'get under the skin' of various routine practices of the earlier 4th millennium through which space was constructed (Lefebvre 1974). This pushed GIS-based analysis into an ancillary role behind 'thick descriptions' of key contexts for remote perception. Chapter 4 explored waterborne travel and the character of movement around settlement and arable taskscapes, while Chapters 5 and 6 sought to pull the environment out of the 'background' and into the heart of this research. Forest covered *c.*95% of most regions of southern Britain. It represents the most important physical and intellectual obstacle to remote visual perception and, therefore, deserves detailed consideration as an ecosystem, and as part of the landscape with which humans engaged day-to-day.

Figure 12.2: A footpath through Rumshott Common, near my home in Kent, in early October. The many young trees result from natural regeneration in the wake of the Great Storm of 15th-16th October 1987. Historically, the common was browsed by cattle.

Transhumance and gatherings that marked the end of the dairying season are widely agreed to be the most important mechanisms through which people were afforded physical opportunities to visit monuments, apart from constructional events. Chapter 6 therefore considered the likely practicalities and social relations arising from cattle husbandry and dairying. Across these chapters, I have highlighted questions of time and change - issues that receive short shrift in most GIS studies, which are essentially temporally static. All this challenges us to think differently about the quotidian worlds in which people made, thought about and, in one way or another, encountered the monuments of their times. It was in these complex, changing circumstances that traditions of settlement, movement and monumentality unfolded in locally and historically specific ways (G. Lucas 2005, 41-3). Such variety in settings, histories, and affordances for remote perception, explored across the case studies in chapters 7-11, ultimately argues that there was no universal or over-riding concern to achieve remote visual impact as traditionally defined.

12.2 Taking proper account of forest

The ecologies of the earlier fourth millennium BC were locally and regionally varied; they were also dynamic. Forest is often treated as an inert backdrop, but the environmental conditions that affected affordances for remote visual perception were constantly changing, at varying scales and tempos. It has repeatedly been argued that the siting of monuments in topographically prominent positions, like those in Chapters 7 and 8, must indicate that they occupied forest clearings large enough to allow the monuments to be seen from afar, and to allow people standing at the monuments to command reciprocal views (*e.g.* RCHME 1979, xi; Tilley 1993, 81; Cummings & Whittle 2003, 260). The implication is that their builders proprietorially surveyed broad sweeps of the forested landscape, punctuated by the clearings that hosted their settlements and fields. The courses of rivers were discernible, representing routes to more distant places, including those whence their ancestors had travelled. Self-evidently, this scenario is only valid – even potentially – for the minority of sites that stand atop steep escarpments, notably those on the Wessex and Sussex Downs. Even then, to allow views in either direction, trees, most standing 25-30m tall, would have to be removed far down the escarpments. This is an improbable scenario, given the difficulties of felling on such gradients and the dislike of cattle for steep slopes. It is not inconceivable that corridors extending downslope from monuments were cleared (as hinted by Whittle & Pollard 1999, fig. 227), but this would imply a deliberate engineering of remote perception arguably more in keeping with post-medieval designed landscapes. Unless this was the case, it would be in winter only that leafless treetops would allow people standing at the monuments to see through the highest fringe of the canopy; at that season, too, the lack of transpiration and evaporation would allow clearer views. Yet by giving greater temporal precision to the widely accepted practice of transhumance, Chapter 6 has shown that herders would only reach these places when many tree species were already coming into leaf, departing again

Figure 12.3: A clearing on the edge of the limestone plateau occupied by the causewayed enclosure at Bure-Saudron, on the fringe of the Paris Basin. With an area of 35ha, the enclosure is 30% larger than the largest in Britain (Crofton in Wiltshire). The clearing is visible in this instance because a parcel of woodland downslope has been clear-felled within the past decade, and has not yet fully regenerated. Mature trees (like the yellowing beech immediately to the right of the clearing) would entirely obscure the ground within the clearing, including any earthworks that might be built there. Photographed in early-October.

as the leaves fell. Meanwhile, the gradually unfolding transformation of the environment through grazing and browsing ultimately probably made far more profound impacts than rapid, deliberate clearance by humans. The eaves of newly-created clearings (whether of natural or human origin) would soon heal, as scrub gradually formed a semi-natural 'mantle' and the surviving trees adjusted their branches to catch the light. So herders who gazed in summer towards the low-lying expanses that seize a visitor's attention today would be looking at two ranks of visually impenetrable vegetation.

This begs questions as to where the builders did intend monuments to be seen from, and what people visiting them could see. I have argued that the huge mound of Adam's Grave was not intended to be seen from the Pewsey Vale, as has usually been assumed, but in profile from the nearby dry valley, aptly-named Summer Down. Similarly, the most visually impressive part of the causewayed enclosure on Knap Hill flanked a central entrance directed towards the easiest approach (in topographic terms) from Summer Down. The available environmental evidence suggests that this sheltered hollow was relatively open, almost certainly due to grazing and browsing. Observers standing at either monument, therefore, would be looking down at grazing livestock, tended by vigilant herders. These relatively restricted viewsheds, hemmed in by forest, were close enough for sound and even smell to form part of the 'sensory assemblage', so constant visual contact was unnecessary. Conversely, herders making their unhurried movements around the clearing, or seated companionably under a mature tree left untouched by the livestock, would not need to look up constantly to be fully aware of the presence of the great monuments overlooking them. Despite their less striking topographic situations, many lower lying causewayed enclosures on river margins, including Burham, Uffington and Southwick, as well as the long barrows on the Foulmire 'island' near Haddenham, occupied low rises intervisible with adjacent patches of natural riparian meadows. In short, the visual qualities of these monuments were directed towards nearby pastoral taskscapes.

Although sound has not played a major role in this thesis, I have established that some of the key sounds associated with livestock husbandry – the lowing of cattle and, perhaps, the whistles of herders – can be heard at distances of *c.*5km, even in wooded landscapes. When flint tools were being manufactured, this sound would also carry well; drum-beats would transmit further still. Given the historical evidence that the distances over which transhumance operated were sometimes less than 5km, and the observation that inferred settlements on the springline below Knap Hill were under 2km from Summer Down, it is entirely plausible that the clearings that hosted monuments were signalled almost constantly by 'soundmarks'. Increases in the volume of the herds' voices would signal their arrival and departure, while changes in tone would signify danger. At an early stage in this research, I explored the possibility of digitally modelling the transmission of various sounds in forest, but it rapidly became clear that this, like rigorous viewshed modelling,

Figure 12.4: A steer drinking from the River Ouse on a hot day in early September.

constituted a separate thesis and that use of digital technologies was no guarantee of a more informative or reliable product.

Additionally, clearings that contained monuments often seem to encompass natural routes for long-distance travel. Summer Down offered a way onto and across the North Wiltshire downland to the settled Kennet valley, an hour's walk away. The enclosures at Burham, Uffington and Southwick overlooked navigable watercourses. To people approaching Etton and Northborough by boat, or to pedestrians following riverside trails, the enclosures would appear to sit almost within the river channels. People at the enclosures could conceivably watch and hear these travellers over distances of several hundred metres or more. The burial monument at Coldrum, on the other hand, was sited on the edge of a cleared patch that was perhaps grazed in summer, but faced towards a minor stream that was probably a key route followed by approaching herders and their animals. Both the enclosures and the long barrows on the Cotswold escarpment were apparently designed to be detectable (not always seen) from 'least cost paths'. But all these examples are far more localized viewsheds than the vast vistas traditionally linked to the monuments of the earlier 4th millennium.

Direct intervisibility, however, was not the only form of remote visual perception at play. Clearings in the forest were potentially far more eye-catching from afar than the built monuments; perhaps they were deliberately created or enlarged to achieve this (Tilley 2010, 29). The study of forest dynamics in Chapter 5, on the other hand, demonstrates that wind-blows frequently created small clearings, especially on exposed topographic features like those occupied by most monuments. Repeated burnings of the resulting chaos of gradually drying debris would produce plumes of smoke visible from huge distances, establishing their position in the landscape. Clearings were, therefore, equally landmarks in the Mesolithic. Once created, some forest clearings, whether natural or anthropogenic, signalled their own locations as significant places by creating a notch on the horizon. Their significance was established not simply by their existence, but by habitual practice: early generations of Neolithic immigrants repeatedly using them as remote pastures and, in some cases, hunter-gatherers seeking food for centuries before. That significance was then appropriated, affirmed and consolidated by the construction of a long barrow or an enclosure, whose existence in that location would be known, even though the monument itself remained invisible from afar. Monuments built in clearings were thus *addenda* that amplified the significance of pre-existing remotely visible places. In people's minds, the monument perhaps gradually came to be equated with the place, but the monument itself did not have to be visible from afar, because the significance of the place was long established and the mark made by the clearing remained a proxy visual sign of its location.

Other clearings may have been left un-monumentalized, leaving only a localised lithic scatter to testify that they existed and were landmarks just as detectable as those

Figure 12.5: Cattle trails in the high transhumant pastures of the Diois region of south-eastern France.

clearings that hosted monuments. This returns us to the technically unsophisticated, yet highly insightful, analysis by David Fraser (1983; 1988), who argued that it is not necessary to see a monument clearly – or even at all – for its location to be known and for the significance of the place to be understood. Indeed, such knowledge is innate and inevitable for those who dwell in a landscape, as opposed to outsiders, who need to search for, or to be shown, indications of significant places. Archaeologists must be numbered amongst those outsiders. There is, then, a contradiction in Tilley's repeated insistence that monuments must have been visible from afar, because it is precisely the experience of living and working in a particular landscape that makes direct or routine visibility unnecessary.

12.3 Methodological issues

There may be major problems with past approaches to remote visual perception, but none of the issues raised above imply that GIS-based research has reached a dead-end. Indeed, the fine-grained and complex depiction of everyday life that emerges from this thesis could underpin a range of future GIS-based investigations. The increasing sophistication of such methods offers real potential for the development of more dynamic models that properly accommodate multiple vantage points, movement, local variety and temporal change. There is, in other words, no need to 'throw out the baby with the bathwater'.

If this is true of GIS, it is also pertinent when thinking about the more fundamental process of observation and inference that has underpinned much of the work presented here. The lengthy 'perambulations' (to use a traditional term) undertaken for each case study all produced new insights, but also echoed observations made by pre-War archaeologists, including Curwen, Piggott, Crawford and Clark. Their confident, no-nonsense, common sense interpretations tended to draw upon the natural sciences and their first-hand familiarity with 'rural practices', which they saw as timeless (Stout 2008, 235). Their efforts to explain the material evidence were largely air-brushed out by later processualists, who caricatured them as 'mere' culture historians, and later by post-processualists, who equated their observations with so-called 'middle-range theory'. Some post-processualists might see a return to uncomplicated field observations about the landscape's natural affordances as being 'revisionist' or tainted with environmental determinism (*e.g.* Thomas 2013, 167). But the 40-year-long stand-off between processual and post-processual approaches has long since reached the point of diminishing returns; it is more fruitful to inhabit a theoretical 'broad church' (Harris & Cipolla 2017, 5; 29) and to consider properly ideas that circulated a century ago.

Francis Pryor's (1997) protest that modern archaeologists are ignorant of the practicalities of rural life has made little impact on the practice of archaeology, which is still conducted largely by academics who only escape campus in summer, and 'commercial' diggers whose working conditions can make it difficult to step back from the trench. Field

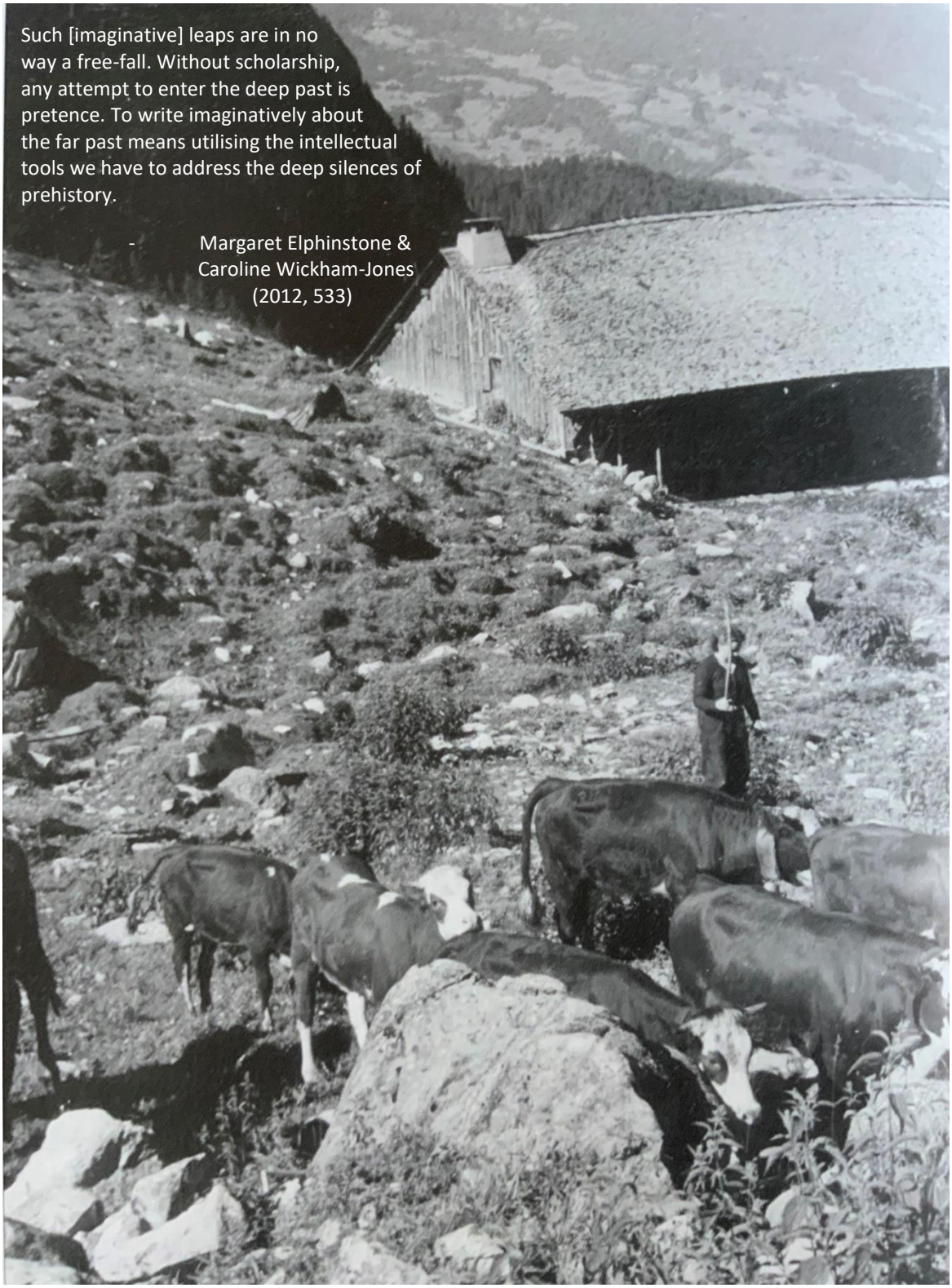

Figure 12.6: Alpine transhumance in the mid-20th century in the Commune of Samoëns, in the Haute-Savoie region of south-eastern France (from Gardelle 1999, 265)

surveyors – or 'fieldworkers' as traditionally defined – are arguably afforded some advantages over both academic and commercial archaeologists. Their year-round investigations are relatively mobile; require familiarity with farmed landscapes and ecological features; involve regular interactions with farmers and livestock; and necessarily engender an awareness of different scales and tempos of temporal change, and of diachronic patterns of land-use. Additionally, my own fieldwork, both before and during this degree, has afforded unusually prolonged experience of working in wooded landscapes (*e.g.* Oswald 2007; 2019), which has helped to inform my thinking concerning forest ecologies and remote visual perception.

12.4 'Facts are necessary, but not sufficient'

In the inter-War years, a close-knit band of noted prehistorians (Stout 2008, 241) saw explicit reliance on material evidence as the way to establish archaeology as a respectable discipline, distinct from history, geography and anthropology. The continuing legacy of this is an emphasis on artefacts, recording and methodological rigour over interpretation. The authors of *Gathering Time*, unquestionably the most important synthesis for decades, urge that archaeology should 'work from the base up' (Whittle, Healy & Bayliss 2011b, 4; 12). But how should archaeologists address questions for which a material evidential base does not - or cannot – survive? Many respond by refusing to speculate or even, in extreme circumstances, denying the possibility that something might have happened, because no supporting material evidence exists. Faced with 'the deep silences of prehistory' (Elphinstone & Wickham-Jones 2012, 533), archaeologists face a stark choice between determinedly disregarding those areas of life for which material evidence is inevitably scarce (or non-existent), or building interpretative narratives that draw on other disciplines, thus escaping the compartmentalization of knowledge and experience inherent in modern academic life (Lefebvre 1974). As Hoskins (1955, 19) insisted, this imaginative exercise is not a free-fall into mere guesswork, but a reasoned series of inferences based on detailed, contextual consideration of what we do know from studies of ecology, woodland management, livestock husbandry, animal behaviour *etc*., plus archaeological evidence itself. This thesis has largely been built around a set of phenomena for which there is always going to be scant surviving material evidence, including log-boats, foggage, honey-gathering, beavers, wolves, whistled languages, mobile pastoralism, cheese-making and forest exploitation. Yet these phenomena – or comparable ones - were the substance of the landscape as it was lived and experienced (Ingold 2013, 132-3). I have referred wherever possible to surviving material, but evidence from documented practices and historical geography have played an equally important role.

Some well-researched and evocative novels have been written about hunter-gatherers and about Stonehenge (*e.g.* Elphinstone 2009; Haggarty & Brockbank 2010; Cornwell 1999). For the Early Neolithic, however, the only example is *Stig of the Dump* (C. King 1963), a children's book whose climax imagines the construction of the megalithic burial

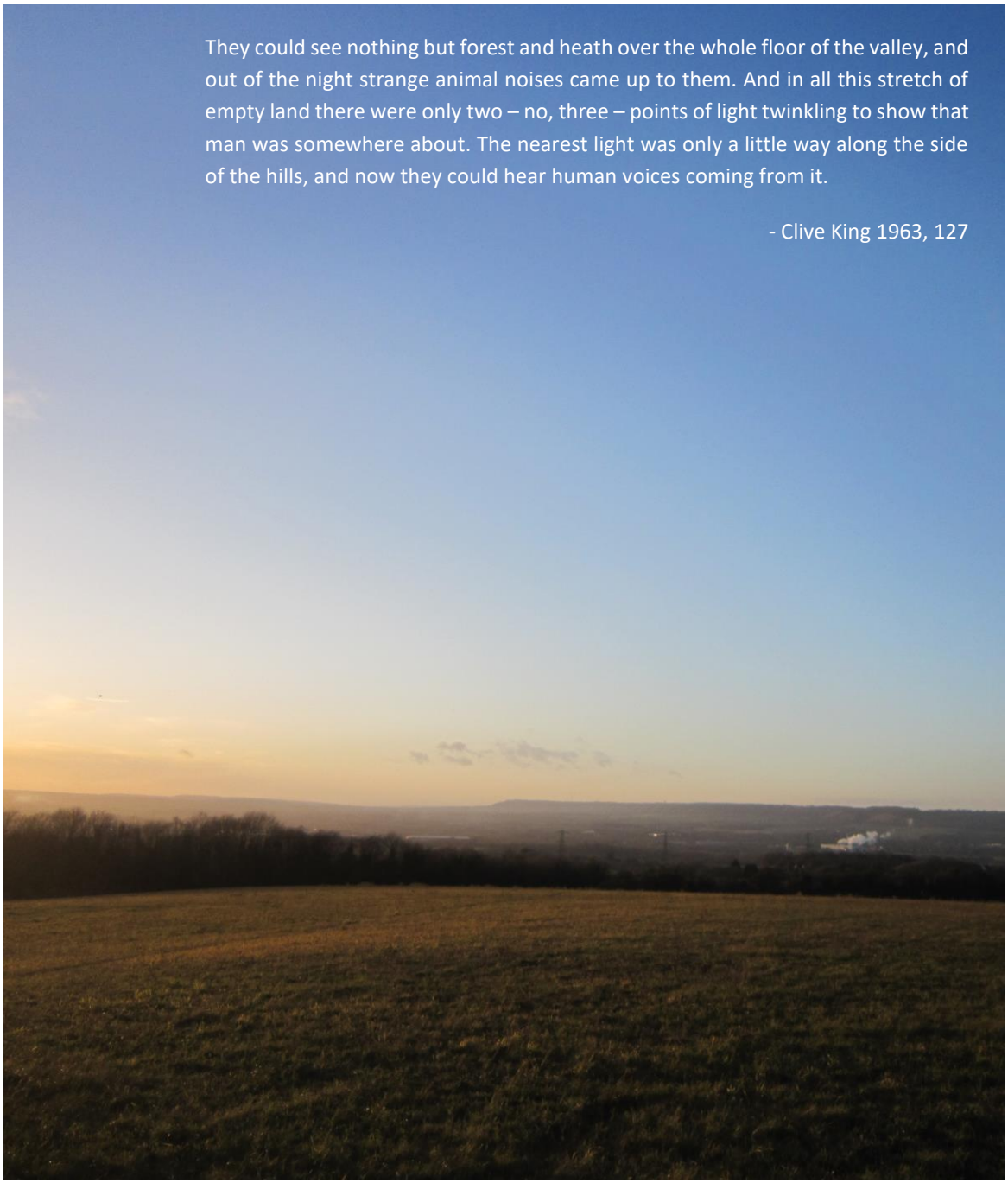

Figure 12.7: The setting sun at the winter solstice highlights the plough-levelled mound that once covered Kit's Coty, in Kent. This view corresponds to that envisaged in Clive King's 1963 novel *Stig of the Dump*, although he imagined that the megalithic chamber was completed at dawn on the summer solstice.

chamber known as Kit's Coty, discussed in Chapter 9 (Figure 12.6). The images conjured by the story are permeated by contemporary theories about Early Neolithic society, monuments and environment. Although that scholarship is now somewhat dated, the author's effort to evoke a full sensory experience of a specific place and time exemplifies the imaginative exercise that all archaeologists should attempt (Edmonds 1999a, 8-9). To this end, archaeologists need to think creatively about data, and gather data creatively (*e.g.* Bradley 1993, 1-2; Pluciennik 1999; Pearson & Shanks 2001, 131). Above all, they need to use their imaginations to flesh out aspects of prehistoric life where the 'facts' are not sufficient.

12.5 Perceptions

Most academics have interpreted both long barrows and causewayed enclosures as symbols imbued with ancestral power, which the builders consciously devised to stake their claim to extensive territories (*e.g.* Gillings & Wheatley 2001, 13; Malone 2001, 107). This view underpins the GIS viewshed analyses discussed above, though seldom explicitly. Even though this thesis argues that the monuments themselves were not visible from such great distances as traditionally assumed, monuments may well have prompted those perceptions amongst most of the community who initiated the building, as well as segments of any 'excluded' communities, especially during the decades around the relevant constructional events. Such evocations of 'power' and 'politics' may have faded as generations passed, but perhaps came back into sharper focus occasionally, through inter-community competition over resources or other sources of conflict.

Yet these grand concepts seem basically at odds with the more intimate perceptions generated through the on-going cycle of pastoral living and the habitual practices involved in transhumance and dairying. For many, monuments must have equated to, or represented, places replete with memories, some stemming from very recent events. To a large degree, perceptions must therefore have been complex and personal, varying between individuals and sectors of the community. For many direct participants, transhumant summers might be halcyon days, perhaps representing the transition into adulthood, spent in the company of a close-knit band of peers and wise supervisors, plus livestock who were almost literally part of the family. Adventure and occasional danger were probably part of the mix. The occasional loss of companions, relatives or beloved animals to disease or accident might taint perceptions with sadness, and eventually nostalgia. Attacks, like those perpetrated at Crickley Hill and Hambledon, must have left the communities involved with utterly different perceptions. For the losing side, any visual reminder of the place might recall anger, grief, shame. At another level, transhumance meant social separation, so ritualized celebrations marking the end of the transhumant season, and being reunited (for better or worse), must have been keenly anticipated. Expectations for future summers must also have been bound up in those perceptions. Those who were more briefly involved as 'visitors' to summer pastures would perceive

Figure 12.8: Brookhurst Field, a species-rich hay meadow that originated as a small medieval assart, near my home in Kent, photographed in mid-July. The 1.3ha clearing is sufficient to keep 30 sheep. Though it occupies a fairly steep slope leading down to the eponymous brook, it is not large enough to afford views beyond its own perimeter (the tree-line is 100m away from the viewpoint).

them as special places, but in different ways. Burial monuments might be sited in clearings precisely because they were outside everyday inhabitation, yet had quickly acquired deep significance for the entombed individuals and those who revered them, recent immigrants though they all were. In short, regardless of the precise compositions of the different parts of the community involved, these remote summer taskscapes signified shared experiences and emotions (Bickle & Morris 2022), so perceptions would vary accordingly. Similarly, causewayed enclosures might be the eventual incarnation of customary practices and social relations gradually established over some eight generations following the first immigrations. Unquestionably, both types of monuments made major contributions to the visual character and significance of particular places. But the primary importance of those places arguably lay in simple pastoral routines, monumentalized only by a gap in the forest canopy that, except in unusually dramatic topographic settings, was barely detectable from afar.

Figure 13.1: Sheep grazing a woodland clearing near the causewayed enclosure on Dorstone Hill, Herefordshire, in mid-August.

13: Appendices

Appendix 1: Revisiting the evidence for sedentism

Statements lumping together 'traditional ideas' linking agriculture with sedentism (*e.g.* Bradley 1984, 4-9; Thomas 1991, 28; Snashall 2002, 3; Garrow 2006, 5; 8) apply to economically determinist arguments put forward from the 1970s onwards (*e.g.* Meillassoux 1972), but are a rather unfair characterization of thinking in the first half of the 20th century. Well before Bersu's (1940) recognition of Iron Age grain storage pits and postholes indirectly ruled out the possibility that people had lived in the ditch segments of causewayed enclosures, fieldworkers studying the Neolithic had begun to suspect that there was a significant degree of mobility in the way people inhabited landscapes, related to a pastoral lifestyle. In 1932, for example, a published photograph of a pastoralist encampment in a woodland clearing in Morocco evidently reinforced Curwen's thinking about the links between causewayed enclosures and semi-mobile pastoralism, and between ditch segments and dwellings (Figure 4.6a). Crawford, who reported the observation, accepted the proposed association of the causewayed circuit with pastoralism unhesitatingly, but clearly nursed serious doubts about the concept of pit-dwellings (Crawford 1933). When, in 1936, news was published of the excavation of a Neolithic settlement in the province of Kiev, comprising a ring of inward facing buildings surrounding a central space interpreted as a corral, he expressed eagerness to find out whether the buildings were free-standing or sub-surface (Crawford 1937). When Childe (1950, fig. 81) eventually reproduced plans and reconstruction drawings showing a circle of inward-facing freestanding timber longhouses, Crawford maintained the basic interpretation he and Curwen had formulated, but substituted longhouses for the pit-dwellings (Crawford 1953, figs. 21 & 22; Figure 4.6b). Though Piggott was careful to avoid any references to pit-dwellings, which by then had been discredited, he does refer to 'oval hut basements' (Piggott 1954, 35), which seem to be the same thing.

Belief in mobile pastoralism reflected both the dominance of cattle bones in excavated faunal assemblages and the lack of earthworks resulting from prolonged arable agriculture (Curwen 1927, 281, 285-6; 1938, 28, 37; Crawford 1933, 345; Childe 1940, 31-2), despite the discovery of cereal grains and querns. Fox (1933, 78) presciently suggested that the preference for high ground was more apparent than real, reflecting the need for a pastoral 'hinterland', which he equated with the supposedly deforested high ground. This was taken to imply episodic use of the enclosures and the existence of a scatter of impermanent occupation sites in the land around them (Hawkes 1937, 56; Curwen 1946, 55; Childe 1947, 313). A predominantly pastoral way of life was seen as bridging the 'evolutionary gap' between mobile hunter-gathering and fully sedentary agriculture in the Bronze Age, thus fitting straightforwardly into the prevailing culture-historical framework. It was agreed that the term 'camp' conveyed an apt vagueness about the longevity of

occupation at causewayed enclosures (Crawford 1953, 132; see Chapter 2, footnote 5). This emerging British picture of mobility could be reconciled with Iversen's (1941) influential model of 'landnam', which provided a mechanism, equally in accord with the culture-historical approach, by which communities might have shifted at approximately generational intervals. These ideas were revived more than half a century later (*e.g.* Richards 1999, 23 Whittle 1999, 64). The early recognition of a potentially higher degree of mobility in the Neolithic than in the Iron Age (Curwen 1927, 281; 1938, 28; 37; 1946, 55; Crawford 1933, 345; Hawkes 1937, 56; Childe 1940, 31-2; 1946, 55; 1947, 313) presented an opportunity to reconsider the role of visually conspicuous monuments and to inject the dynamism of movement and diachronic change, first called for by Crawford (1921, 154) into the rather static conception of remote visual perception presented by Pitt-Rivers (1869). However, rather than proving a touchstone for explicit discussions, the idea that scattered, mobile communities straightforwardly 'tethered' themselves to their territories through monuments was tacitly accepted.

Piggott's (1954) synthesis of earlier thinking, which provided a bench-mark for researchers up until the 'radiocarbon revolution', depicted causewayed enclosures as meeting places and cattle corrals, built by co-operating families of semi-nomadic herders who normally lived in isolated dwellings scattered over a sizeable area, but who gathered each autumn to undertake tasks associated with the end of the pastoral year (Piggott 1954, 29-30). Piggott (*ibid*., 29) considered that cattle were 'the main economic standby', a conclusion reaffirmed by later faunal analyses, although pig and sheep are invariably present in significant proportions (Murray 1970, 51-82; Serjeantson 2011, 15-17; 34-5). He also argued, however, that cereals played a 'not inconsiderable part' in diet and that people would consequently need to live in one place between sowing and harvest, probably in well-built timber houses in lightly-wooded valleys near streams or springs. Childe, on the other hand, drew on his wider European frame of reference to reject semi-nomadism, though he conceded that he could not identify any British[1] examples of longhouses like those of the *Linearbandkeramik* (Childe 1949, 86). His confidence that substantial, permanently occupied dwellings would eventually be found was echoed by Bristoe (1954), following initial excavations on what eventually came to be termed a 'pit cluster' at Hurst Fen, Suffolk, and by Piggott (1954, 29; 92), who generally espoused the idea of fairly mobile pastoralism. Subsequent excavations at Hurst Fen did not meet Briscoe's expectation[2] (J.G.D. Clark 1960, 205), so scholars revived earlier inferences that Early

[1] He saw the stone-built houses he excavated at Skara Brae in 1928-30 as anomalous 'translations' from timber, necessitated by the lack of forest on the Orkneys (Childe 1931, 1; 155; 1949, 77). Recent discoveries of timber buildings, some directly underlying the stone structures, support Childe's view (Richards & Jones 2015; Edmonds 2019).

[2] Neither Briscoe nor Clark gave any hint that they anticipated the discovery of enclosing earthworks, however, apparently presuming the site to be delimited by the wetland. The findings therefore helped to challenge the belief that valley floors were impenetrably wooded; to establish an equation between pits and settlement; and to question the assumed link between enclosure and sustained settlement.

Neolithic houses were lightweight and insubstantial, suiting a more mobile life[3]. Substantial dwellings, it was agreed, were rare, with even the few recognised 'halls' perhaps non-residential (J. Thomas 1996; 2008, 70; Topping 1996; Pollard 1999, 77; Cross 2003; Last 2006; Garrow 2006b, 234-5; Evans & Garrow 2006, 228; Hayden 2008, 7). Yet the *LBK* model continues to prejudice our expectations, despite radiocarbon dating showing this to be inappropriate (Last 1996, 27-28).

Julian Thomas' later 'rethinking' (1991, 28) was another reaction against continuing arable-centric economic determinism[4] (*e.g.* Reynolds 1987, 20-23; Mercer 1990, 8-9). His proposal that the Early Neolithic was as mobile as the Mesolithic grew out of studies that appeared to show that communities in southern England remained heavily reliant on hunting and gathering (Entwistle & Grant 1989; Moffet *et al*. 1989). His ideas were initially widely accepted (*e.g.* Chamberlain & Witkin 2003). Putting a somewhat different emphasis on the issue, Mercer followed Piggott (1954, 101) in suggesting that the indigenous Mesolithic population and Neolithic farmers had complementary skills and therefore 'crossed the boundary between hunting and stock rearing in both directions and repeatedly' (Mercer 1990, 8). In consequence, a 'new orthodoxy' based on mobility almost became established, in southern England, if not Ireland (Cooney 1997, 24; 26).

In contrast, a spate of discoveries in Ireland has produced over 90 'farmhouses' (Rathbone 2013, 42), each capable of housing 6-12 people (Grogan 1996, tables 4.1-3). This phenomenon could extend to west Wales[5], while recent discoveries in Ayrshire (Green 2017; N. Smith 2021) may be part of a distinct Scottish tradition, but neither seems reflective of southern England (Cooney 1997; Smyth 2011; 2014; O'Connor 2021). Consequently, most scholars still contend that the rarity of their discovery there reflects genuine scarcity (*e.g.* J. Thomas 2013, 289; Cummings 2017, 79; Bradley 2019, 42).

It remains possible, however, to argue for the existence of more robust dwellings in southern England, suggesting more sustained attachments to particular places. Each might accommodate an extended family or a larger 'house community', who cooperated, but were not necessarily blood relatives or co-habiting year-round (Sørensen 2010, 123; Thomas 2013, 306). Edmonds (1997, 104; 1999) uses the term 'lodge' to imply that occupation was prolonged, but not necessarily permanent, while encompassing a range of timber forms. Evans and Garrow (2006, 233) understandably express surprise that people who lived in a forested environment, and were evidently expert woodworkers,

[3] For example: N.H. Field *et al.* 1964, 367; Megaw & Simpson 1979, 86; Healy 1988; Sherratt 1990, 149; J. Thomas 1999, 18; Garrow 2006a, 33; Lawson 2007, 41; Bradley 2007, 39; Serjeantson 2011, 8.

[4] Particularly in the Sheffield Department of Prehistory and Archaeology where Thomas was studying, personified by Robin Dennel, Robin Torrence, Graeme Barker, Paul Halstead and Glynis Jones.

[5] A settlement comprising several rectangular buildings was discovered at Llanfaethlu on the north coast of Anglesey (Rees & Jones 2017) and two buildings, *c.*500m apart, were found not far away at Llandygai, just inland from Bangor (Lynch & Musson 2001; Kenney 2008). It is worth adding that regional differences have been noted within Ireland (Caulfield 1983; Grogan 1996; Cooney 1997; C. Jones 2009).

apparently did not routinely use timber for domestic structures. It is perhaps more reasonable to conclude that they did, and that the evidence for such timber structures only survives or comes to light under exceptional circumstances.

The factors mitigating against both the survival and the recognition[6] of post-built buildings have been set out in detail (*e.g.* Megaw & Simpson 1979, 86; A. Gibson 2003, 137-8; Bradley 2003, 218). The most significant for chalklands is surface loss through *in situ* dissolution, usually estimated to be towards the upper end of a 15-75cm range (I. Smith 1975, 32; Drewett 1977, 205; 1980; Startin 1978, 152; Bedwin 1984, 14; Mercer 1980, 46; 2004b, 44; 2008a, 745-6), enough for deep postholes to vanish. In contrast, the more stable geological conditions at Hembury (Clay-with-flints over Greensand) partly account for the recognition there of a post-built building, associated with a well-preserved hearth and 'cooking pit' (Liddell 1931, 97 & fig. 3; I. Smith 1964, 369; 1971, 96-7 & fig.14). We may question Bradley's (2019, 42) claim that those parts of Ireland where dwellings have been discovered were cultivated just like the lowlands of southern England, and therefore that differential levels of preservation cannot have caused the apparent lack of buildings in England. Lowland England not only experienced more serious arable attrition in the Late Iron Age and Roman periods, but medieval ridge and furrow, which was particularly destructive, lasted for nearly five centuries and was virtually ubiquitous where ground conditions allowed it. By comparison, the Anglo-Norman arable system was not introduced into Ireland until the late 12th century and diminished dramatically after *c.*1300, thus lasting approximately a quarter as long as in England (Jäger 1983, 56). Similarly, Thomas' (2013, 286) objection that large numbers of later prehistoric roundhouses survive in southern England disregards the facts that these were far more numerous to begin with; that they are more readily recognisable to most archaeological prospection techniques; and that in many cases all that survives is the so-called 'drip gulley' (sometimes just its deepest sections), without any trace of the structure itself. It also perhaps underplays the damage done by forest regeneration over the intervening millennia. Even the stone-founded Neolithic houses of the Highland Zone, which are rightly thought more likely to be recognisable than timber buildings, are all freak survivals, for various reasons (A. Gibson 2003, 138; Gibson *et al*. 2017, 202-3).

[6] This perhaps reflects a tendency amongst excavators familiar with ploughzone levels of preservation to play down the potential for upstanding features which leave little or no sub-surface signature, and a reluctance to look beyond the ploughzone for potential analogues. For example, the existence of banks accompanying the ditches of causewayed enclosures has been doubted (Pryor 1988a, 110; Evans 1988b, 133-4), despite the presence of banks at every site with surviving earthworks (Oswald *et al.* 2001, 43). Similarly, many scholars refer to the 'permeable' nature of so-called 'pit alignments', even though upland examples are consistently accompanied by continuous banks, potentially topped by hedges or fences (Oswald 2011, 4). Again, in response to Garrow's (2006a, 55) uncertainty as to how Early Neolithic pits were recognised after they were filled in with midden material, only Darvill (2012, 38) has pointed out that the digging of the pit would produce a corresponding volume of spoil, potentially formed into a mound, which could have marked the pit originally, but would not survive later ploughing.

In questioning Thomas' reinterpretation of the buildings at Trelystan, Powys, as mortuary structures, Gibson also raises the possibility that dwellings were coincidentally preserved beneath barrows. An intuitively more appealing argument is that some burial monuments replaced houses and replicated their form, a practice which may often have been overlooked in Britain (Bradley 2001, 50; 2007, 41; Darvill 1996, 80-81; 2004, 76-7; L. Larsson 2008, 197; M. Larsson 2014, 54). This is suggested by excavations at, amongst other sites, Balloy in the Seine Valley (Mordant 1998), Gwernvale in South Wales (Britnell & Savory 1984, 50-2) and Cat's Brain in Wiltshire (Leary *et al.* 2020).

Despite these factors, a few convincing houses have been found in lowland England, *e.g.* at Horton and Datchet, both in Berkshire (A. Barclay & Chaffey 2014; Powell & Chaffey 2019, 32 Figure 4.3a/b). In each case, the discoveries resulted from large, open-area excavations in areas where there have previously been few large-scale projects since PPG16 to trigger that scale of archaeological response (A. Barclay *et al.* 2003a, 71; Cooper 2012, 320). Given the sparse scatter of dwellings suggested by the population estimate in Chapter 4.3, and the tiny sample of lowland England so far subjected to open area excavation, the inference must be that more such buildings may await discovery and/or may have been missed by previous excavations that relied upon less thorough sampling strategies (Kenney 2008, 12-13). In sum, it follows that the few recorded examples of substantial buildings might represent the tip of an iceberg only likely to be revealed by accident (Kinnes 1988, 5). The observation that the plan of a building at Horton was close to an example at Lismore Fields, 250km away in Derbyshire, prompted the excavators to suggest that members of one community had visited the other (Barclay & Chaffey 2014, 28; see Figure 4.3b). It seems more reasonable to infer that such houses were more numerous than has hitherto been proven.

We should also consider the 'villages' directly associated with enclosures in north-east France, from where the immigrants to Britain came. The buildings at Horton are similar in size and plan to post-built examples within the Late Rössen enclosure at Berry-au-Bac in the Aisne Valley, north-east of Paris, more than 400km away as the crow flies (Figure 4.3b; Dubouloz *et al*. 1988, fig. 11.7). Pits and postholes at Mosegården in eastern Denmark were interpreted as lightly-built, impermanent 'huts' (Figure 4.3b; Madsen & Jensen 1982, 83 & fig. 4), but could represent a single building, again similar in size and plan to the British and French examples. The bipartite buildings (of somewhat uncertain number) within the Chasséen causewayed enclosure at Noyen-sur-Seine, south-east of Paris, appear to have been slightly smaller than the British buildings, but comparable in respect of the vestigial evidence they left: they were only recognised through extremely sensitive excavation of ill-defined pebbly 'floors', revealing the imprints of sleeper beams and slim vertical posts resting on the surface (Mordant & Mordant 1977, 266-7; Burkill 1983, 233). Early excavators, expecting to encounter well-defined post-holes, perhaps missed such ephemeral traces.

Re-appraisals of the pit clusters at Hurst Fen and Kilverston in Norfolk have identified 'voids' in the distributions, possibly representing the footprints of rectangular buildings of similar size to those identified more confidently elsewhere (Figure 4.4a; Garrow 2006a, 55; Bradley 2007, 44 & fig. 2.5; 2019, 48 & fig. 2.6; *pace* Bradley 1998b, 10). J.G.D. Clark's (1960, 205) puzzlement at the lack of hearths at Hurst Fen, despite the concentrations of charcoal and fire-cracked flints[7], hints that hearths were raised (Figure 4.4b). Footprints of buildings not defined by post-holes have been recognised elsewhere, importantly on indissoluble gravels (Chaffey & Brook 2012, 206-7). This implies use of a building technique which allowed large and presumably robust buildings to leave few sub-surface traces[8], or none (Lawson 2007, 41). Turf sleeper walls, as postulated at Hurst Fen and Bridlington, might be widespread (J.G.D. Clark 1960, 205; Kinnes 1985, 25; Loveday 2006b; Fenton-Thomas 2009). If so, buildings probably stood in established clearings where turf had developed. There are plausible alternatives: vertical posts might stand on stone pads, in the manner of many medieval buildings, serving both to spread the load and to protect against rot[9]. Equally, a 'log cabin' style of architecture[10] would be well suited to the long, straight, branchless trunks that were common in Early Neolithic forest (see Chapter 5), requiring simple joints that are easily produced using an axe.

Indeed, the equation of lightweight construction materials with 'flimsy' and/or short-lived buildings (*e.g.* Pollard 1999, 80; J. Thomas 2013, 286) is unwarranted: as in later prehistory and historic times, hurdles, attached to thin posts set into the ground or wall-plates[11], could be used to create strong, durable buildings, like those at Durrington Walls (Parker-Pearson 2008, figs. 11-12). If raised on turf sleeper walls, perhaps in turn resting on stony 'damp-proof courses' (Gates 2009, 78-9), no subsurface trace need survive later ploughing. This technique was widely used at Lough Gur, in south-west Ireland (Grogan 1996, figs. 4.2

[7] The same phenomenon has been noted in a Middle Neolithic context, near Bridlington in Yorkshire (Fenton-Thomas 2008, 31)

[8] No waterlogged sites are known in Britain like those at Karavaikha in Russia, where Early Neolithic timber buildings were excavated in 1938-55. Each was *c.*4m square, slightly irregular, with floors of daub-covered brushwood resting on joists, so that the floors were raised *c.*15cm off the ground (Bryusov 1955, 81-3). In places where the river bank was boggy, the joists were supported on vertical piles, but these were not placed regularly. Only a few of the vertical poles of the wattle and daub walls were driven into the ground. We may speculate whether the building of similar size and plan recognised at Etton (Pryor 1988, 81-2; 106; 356) would have been interpreted as such on the strength of the artefact-rich 'floor' deposit alone, *i.e.* without the discontinuous, L-shaped arrangement of post-holes and gullies that defined it.

[9] Although, as modern residents of medieval oak-framed buildings will attest, contact with moist ground does not necessarily lead to the rapid structural deterioration of substantial oak timbers.

[10] Childe (1950, 77) stated that this form of architecture was not introduced until the late Bronze Age, but his conclusion was reached purely on the basis of an absence of evidence. In Orkney, where the timber-built houses of the mainland were supposedly 'translated into stone', the routine use of long, horizontal slabs and the absence of any potentially 'skeuomorphic' vertical elements may support the suggestion that horizontal timbers were commonly used elsewhere.

[11] These were invariably made of rot-resistant oak and traditionally called 'moulds'.

& 4.8). Thomas (2013, 286) dismissed a trapezoid building at Haldon, Devon, as 'ephemeral and amorphous'. Yet it had regularly-spaced, slim, vertical posts, set into a low sleeper wall of clay and rubble, which Aileen Fox (1964, 32-3 and Figure 4.3b; Willock 1936) believed would support intervening wattle-and-daub panels. For various reasons, therefore, the paucity of evidence for substantial residential buildings cannot be taken as evidence of absence. One consequence of this problematizing is that there may, after all, have been substantial, long-lived buildings within some causewayed enclosures, both in Britain and north-east France (Mordant & Mordant 1988, 244), though it does not follow that they were occupied year-round. Even Thomas, once a prominent sceptic, has identified longhouses at the causewayed enclosure on Dorstone Hill, Herefordshire, arguably over-zealously (Thomas & Ray 2013; Figure 8.11).

Ironically, the assumed longevity of post-built longhouses is itself now open to question, for radiocarbon dates from Ireland and Llandygai suggest that they were in fashion for only three to five generations around the first three-quarters of the 37th century BC (Kenney 2008, 26-7; Cooney *et al.* 2011, 598-601). Similarly, examples in southern England may represent communal dwellings built by the first immigrants (Sheridan 2008, 3; 2009, 93; see also Thomas 2013, 296). Chris Fowler (2022) describes them as being 'not particularly long-lived', but the two best dated examples, at White Horse Stone in Kent and Yarnton in Oxfordshire, were in use for up to 430 and 410 years[12] respectively (at 68% probability; Bayliss *et al.* 2011, 380; Healy *et al.* 2011, 421).

The overall settlement pattern is usually seen as dispersed, comprising isolated single dwellings (Rathbone 2013). Yet at Lismore Fields, there were three buildings; at Horton four or five; and at White Horse Stone, in Kent, two longhouses within the narrow strip excavated, implying the potential presence of others (Barclay *et al*. 2006, 45-7; Hayden 2008; see Chapter 9). There were also potentially several buildings at Hurst Fen and Kilverston (Figure 4.4a). Perhaps, then, small, nucleated settlements existed, comparable to the four or more buildings at Llanfaethlu and several sites in Ireland. Barker & Webley's (1978, 170) community of 25 people[13] is therefore used in Chapter 4. The light, well-drained soils and gentle topography on which the definite buildings were located compares with the sites favoured for pit clusters, where buildings are only suspected (Garrow 2006, 15-19; J. Thomas 2012, 4; Carver 2012, 131). This is consistent with earlier predictions that people would settle land suitable for arable cultivation, close to watercourses or springs, but at some distance from the monuments (Piggott 1954, 92; Barker & Webley 1978, fig. 4 (Figure 4.4c; Darvill 1987, 56-7).

[12] Julian Thomas (2013, 297), in striving to cast these buildings as short-lived symptoms of indigenous hunter-gatherers 'becoming Neolithic' – a starting-point now discredited by genetic studies (Neil *et al.* 2020; Rowley-Conwy *et al.* 2020; see also Sheridan 2015) – plays down these potentially lengthy lifespans.

[13] Gregg's (1988, 128-31) analysis of the resources required by an *LBK* community living in the Alpine Foreland is based on a model village of six dwellings housing 34 people.

Figure 13.2a: A dead oak makes a 'gap' in the canopy of Carstramon Wood, Dumfries & Galloway.

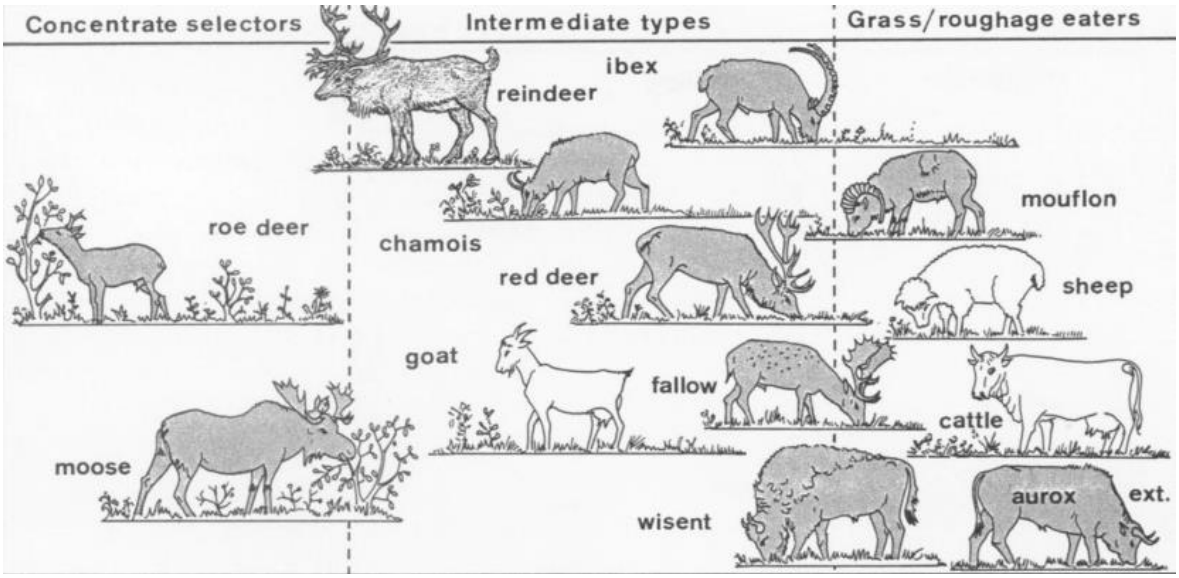

Figure 13.2b: The feeding preferences of European ruminants (from Hofmann 1989, fig. 2).

Appendix 2: The 'closed canopy' versus 'parkland' debate

The model of closed canopy forest established a century ago has received some support in the 21st century. Synthesis of worldwide research suggests that while small clearings in closed canopy forest tend to generate 20-40% non-arboreal pollen, the proportion repeatedly found in Early Neolithic Europe is consistently less than 15% (Vuure 2005, 181; see also Soepboer & Lotter 2009). Mitchell's (2005) thorough analysis suggests that this pattern holds good at continental, regional and local scales. Yet van Vuure declines to define 'small', so his argument begs the question as to the source of the non-arboreal pollen that is recorded, and what scale of gap in the canopy is actually required.

Oak and hazel make up variable, but consistently significant, proportions of the trees attested by pollen diagrams throughout Holocene Europe. Key to Vera's argument are his observations that oaks need fairly open conditions to grow beyond seedlings, while mature hazels that become shaded by higher canopies cease to produce pollen and eventually die (Vera 2000, 6-8 and fig. 1.5). He argues that clearings under 0.1ha, like those modelled by A.S. Watt (1947; Figure 13.2a), are too small to allow oaks to mature, because they are rapidly recolonized by fast-growing, shade-tolerant species already growing nearby. Advocates of the 'closed-canopy hypothesis' have so far failed to present a convincing explanation[14] for these species' evident success in regenerating. The presence of various insect species whose preferred habitats are ancient trees, which are only likely to survive in more open environments where competition was reduced (K.N.A. Alexander 2005; Buckland 2005; *contra* Vuure 2005, 178-9), the occasional presence of mistletoe (*Viscum album)*, and various species of herbs (Rackham 2006, 91-100), all point to the existence of relatively large clearings like those that Vera envisages.

According to Vera, browsing by large wild ungulates (red and roe deer, aurochs, plus fallow deer, bison and horses[15] in parts of the European mainland, plus beaver and the omnivorous wild boar), played a crucial role in creating a relatively open forest structure (Figure 13.2b). Different levels of 'palatability' would affect species composition. Mature oaks, for example, whose bark is rough and tannin-rich, are less prone to bark-stripping by ungulates than species such as willow, ash, rowan and beech, in that order (R.E. Chapman 1975; H. Armstrong *et al*. 2002, 34 and table 1; Tudge 2005, 353; Rackham 2006, table 1). In addition to killing mature trees by bark-stripping, deer hinder regeneration by cropping seedlings and suckers. Aurochs doubtless behaved similarly (Vuure 2005, 213-32); but, like deer, they also required some open country, as confirmed by detailed

[14] Rackham (2003; 2006, 96-7) proposes that the late-19th century introduction of powdery mildew (*Erysiphe alphitoides)* (Mougou *et al*. 2008), made today's oak seedlings more intolerant of shade. This seems to be special pleading, given his own observation that oaks are slow to evolve (Rackham 2006, 26).

[15] The Romans probably introduced Fallow deer (*Dama dama*) to Britain (Chaplin 1975, 41).The long-standing question of whether wild horses also survived in some regions of Britain remains unresolved (Kennard & Jackson 1935; Serjeantson 2011, 34), but is not critical to this thesis. Thurnam (1869, 229) reported horse teeth from four chambered tombs, but Serjeantson (2011, 34) is sceptical of other finds.

historical research (Rackham 2006, 21-2; Vuure 2005, 216-21[16]). On the other hand, Rackham (2006, 91-100) points out that the virtual absence of buttercup (*Ranunculus sp*.) and grass pollens prior to the Early Neolithic must show that the grasslands were not as extensive as Vera proposes. His observation that ungulates do not generally touch buttercup refutes Vera's argument that grazing was so intensive that herbs never flowered. Furthermore, Ireland, which lacked large ungulates throughout the Mesolithic, does not display a markedly different vegetation history (Mitchell 2005; Birks 2005). It has also been argued that the low frequencies of dung beetles in southern England prior to the start of the Neolithic must indicate that large ungulates were not present in sufficient numbers to be important agents in shaping the extent or structure of the forest (Whitehouse & Smith 2010, 550). This may reflect sampling issues, however, for despite their acknowledgement of local variability, all these studies treat ungulate browsing as a constant whose effects would be spread equally across the landscape. It is perhaps more plausible that animal populations would congregate in areas where grazing and browsing resources were more abundant due to other natural agents of change, such as river valley floors and exposed uplands (Bell 2007, 322; see Section 5.4). More food resources would lead to a higher reproduction rate (Mellars 1976, 24-26) and thus to a 'feedback loop', which would amplify the maintenance and expansion of clearings. Along watercourses in Yellowstone National Park, for example, browsing by ungulates has reduced the numbers of smooth-barked tree species by *c.*95% since hunting ceased in 1872 (Kay 1994).

Vera (2000, 76-8) also contends that the conventional practice of applying 'correction factors' to the percentages of different pollens is a circular argument rooted in the long-standing assumption that closed-canopy forest was the 'natural' state of forest prior to the Neolithic. Correction factors, he argues, effectively make shade-tolerant species, especially lime (*Tilia sp*.), appear more dominant, which in turn supports the assumed dominance of closed-canopy forest. Rackham (2006, 77-8; 80; see also Greig 1982, 25-6) disputes this, pointing out that lime pollen is only produced by trees over ten years old and travels less far because it is dispersed by insects, and so is under-represented compared to oak. On this point, the composition of ancient submerged forests of late Mesolithic and Early Neolithic date found around Britain's coastline might initially seem to support Vera, since oak is often identified as the dominant species, with virtually no lime (Reid 1913; Godwin & Newton 1938; Bell 2007, 7; 10, 37). The other species regularly identified, however, include alder and willow, suggesting that these low-lying habitats were too damp for lime to thrive even before the start of marine incursion (Martin Bates, pers. comm.).

Ecologists in this debate tend to cherry-pick archaeological evidence - as opposed to ecological evidence from archaeological sites (G. Clark 1945, 56-7; Limbrey 1982, 279;

[16] P. Evans (1975, 45) points out that grass contains too much protein for ungulates to eat it all the time.

Edmonds 1999b, 485; Allen & Gardiner 2009, 59). The greater volume of research into the Neolithic compared to the Mesolithic gives an impression of abrupt and major change at the start of the Neolithic (Whittle & Cummings 2007, 3). In Vera's scheme, Mesolithic communities profited from clearings created by animals, but did little to actively create or enlarge them. Yet palaeoenvironmental studies from the 1960s onwards show that forest burning by Late Mesolithic communities in Britain was widespread and frequent[17]. This created 'ideal hunting grounds' (Williams 2006, 21), with expanses of wood-pasture similar to the environment envisaged by Vera and grassy clearings up to 20km^2: places doubtless attractive to immigrant farmers (Barker & Webley 1978, 167-8; Care 1979, 100). Fungal spores in peat deposits indicate dramatic increases in the number of wild ungulates visiting such clearings (Innes & Blackford 2003; Blackford & Innes 2007). While the evidence is biased towards uplands where suitable deposits commonly survive, this may reflect a real trend if humans favoured areas where animals concentrated to take advantage of clearings created by more frequent wind damage and lightning strikes. Fire was not the only tool available for clearance in the Mesolithic. Large posts near Stonehenge and on Hambledon Hill in Dorset (Allen & Gardiner 2002, 145) imply the use of axes to work, if not to fell, large trees. An oak at Stainton West in Cumbria was girdled using an axe, but presumably to kill it rather than use it (F. Brown 2009, 20). Obviously, being able to fell trees for a specific purpose is a different matter from undertaking full-scale clearance.

When shaded, hazels fruit very poorly (Mabey 1979a, 30), yet nuts were a staple of Mesolithic and Early Neolithic, diets, hinting at curation amounting to farming (D.L. Clarke 1976, 376; Jacobi 1978, 82-3; D. Field 2008, 203-4; Mercer 2008, 763). Oak and hazel were both routinely used in Early Neolithic timber structures, supporting the existence, many decades or perhaps centuries earlier, of sizeable clearings. Molluscan assemblages indicate that some monuments were constructed in open country, which may have originated in the Mesolithic (*e.g* Selkirk 1971, 10; Robinson & Wilson 1987, 30; Scaife 1990, 218-9; Kerney 1991; Parker 1995, 210). Turf was used in Neolithic structures (Barker & Webley 1978, 166-7; Bradley 2005, 23-8; Campbell & Robinson 2007, 23), implying well-established clearings (Campbell 2013; Field & McOmish 2016, 47). The presence of four hare bones in Early Neolithic assemblages from southern England invites the same inference (Serjeantson 2011, 47). Evidence of ploughing sealed beneath a number of British long barrows led Mercer (1981, x) to claim that 'substantial areas' must already have been cleared[18]. In part because of his increasing awareness of such archaeological evidence, Rackham, a long-time supporter of the closed-canopy hypothesis, began to express doubts before Vera (Rackham 1998; 2006, 94-9).

[17] *E.g.* A.G. Smith 1970; Mellars 1975; 1976; J. G. Evans 1975, 14-15; Simmons 1988; 1996; 2001; Caseldine & Hatton 1994, 40; A.G. Brown 1997, 134; Innes 1999; Innes & Simmons 2000; Gearey *et al.* 2000, 502; Bell 2007, 323; Lawson 2007, 38. For elsewhere in western Europe, see Erny-Rodmann *et al*. 1997.

[18] This claim reflects his belief in economic optimization and intensive clearance by the pioneer farmers, rather than environmental management by Late Mesolithic communities.

Figure 13.3: A young yew on the steep eastern side of Oldbury Hill, Kent, photographed in mid-February.

Appendix 3: A reconsideration of accepted signs of seasonality

Flooding, which occurred at Etton, Abingdon and Springfield Lyons (French *et al*. 2005, 3-4; Leeds 1928, 461; N. Brown 1997, 90), is sometimes held up as proof that low-lying causewayed enclosures could not be used in winter. There is, indeed, compelling evidence that ground water briefly rose in northern European river valleys *c.*3950 BC, while British rivers began to flood more frequently around 3970 BC and again around 3780 BC (Tipping 2010, 70). In historic times, however, while *c*.78% of flooding (at least in northern Britain[19]) does occur between October and March, the mean peak typically falls in late November into December *i.e.* late autumn (Black & Werritty 1997, 8-13). Flooding was, therefore, not necessarily an unbearable risk throughout winter[20].

A range of wild foods available in late summer/autumn have been found at long barrows and causewayed enclosures (see Table 5.3). Piggott's (1954, 28; 92-3) view that the presence of charred hazelnut shells and crab apples indicates that Hembury was occupied in late September to October has been reiterated uncritically elsewhere (e.g. n. Brown 1997, 94; Chaffey & Brook 2012, 207). Such robust, easily recognisable ecofacts, however, along with apple pips, sloe stones, acorns and haws, are more likely to survive and to be retrieved in excavation than the remains of wild foods available in spring and mid-summer (Oswald et al. 2001, 131). Furthermore, all the easily recognizable fruits and nuts can be preserved by roasting, drying or making into jams[21], and might therefore be brought to sites up to six months after they were picked (Pryor 1998, 66).

Discussing the seasonal use of Hambledon Hill, Legge (2008, 552-4 and Table 8.4) highlights mandibles and teeth representing 13 caprids, ranging in age from a few weeks to *c.*9 months; and one roe deer *c.*6 months old. He infers that these were present on the hill when they died (or were slaughtered), in spring and late summer/autumn. Other studies[22], however, urge caution in using age-of-death to determine seasonality, since sheep may lamb at any point between late January and late May, depending on the species and herd (O'Connor 1998; Milner 2005, 34). The evidence could, therefore, be argued to indicate a spring and autumn presence; a spring to autumn presence; an autumn presence; or even, though perhaps with special pleading, as spanning the whole year. Mercer (2008, 755) puts his own spin on Legge's discussion when he concludes that people visited the hilltop 'in early summer and in autumn'. In summary, a presence through the transhumant season is entirely compatible with the available evidence.

[19] No similar systematic study of the historical evidence has been undertaken for southern Britain. The study of northern Britain, of course, relates to largely deforested landscapes, in which surface run-off would be relatively rapid.

[20] Furthermore, the siting of most riparian causewayed enclosures suggests that slightly elevated positions were carefully chosen, perhaps to deliberately reduce the risk of flooding (Oswald *et al.* 2001, 93); the same appears to be true of pit clusters (Garrow 2006, 58).

[21] The pectin in crab apples makes them inedibly bitter, but is essential ingredient of jam manufacturing.

[22] It is worth adding that Legge's report was prepared long before its eventual publication in 2008, and therefore before the publication of the cautionary studies.

Figure 13.4: A hazel, naturally 'coppiced' by a nearby poplar falling on it and breaking the main trunk. Photographed at the end of October near the causewayed enclosure at Womaston, Powys (Britnell 2013).

Appendix 4: A reappraisal of Mercer's reconstruction of the perimeter earthworks on Hambledon Hill

Mercer (2008, 744-5) bravely attempts to quantify the materials and labour required to build the perimeter of the Stepleton enclosure, a structure that he suggests may be similar to the other boundaries. Excavation revealed a 3m-wide band of 'protected chalk', thought to represent the breadth of the lost bank/rampart. Mercer first employs a schematic calculation to demonstrate that the volume of material obtained from the ditches would be too great to fit within the width of this band, if the material was just heaped up like a 'dump rampart' (Figure 11.6). From this, he infers that there were front and rear revetments made of vertical posts holding hazel hurdles, forming a 'box rampart' 2-4m wide and 2-3m high, plus the height of any 'breastwork' formed by additional hurdling (Figure 11.1b). Such a perimeter would be visually imposing at close range, even if forest hid it from afar. He considers that posts standing to the full height as the 'rampart' (or higher, if supporting a breastwork) would be needed every 1.5m, at front and back. An important *caveat*, discussed further below, is that the excavations found very few such post-holes, apart from regular arrangements defining the terminals flanking the gateway in the Inner Stepleton Outwork (Mercer & Healy 2008a, fig. 3.111). Mercer accounts for the absence of evidence elsewhere by reference to natural solution of the chalk, elsewhere estimated at 0.5m (*ibid*, 8). He goes on to estimate the quantities of timbers and hazel rods required, and the time needed to obtain them (*ibid*, tables 11.1-11.3; Table 13.1), giving an impression of the magnitude of the project.

At the outset of my research, it seemed that this quantity of materials might offer a proxy indicator of the extent of forest clearance, though there are many variables to consider. The palisade at Haddenham is now thought to be Bronze Age, as mentioned in Chapter 10. However, Evans and Hodder (2006, 318), in calculating the timber needed

Material	No. per 1.5m linear section	Dimensions	Weight per item	Total weight per 1.5m section
Upright oak posts	2	2-3m long x 0.2m diam.	42-65kg	84-130kg
Front-to-back oak cross-braces	2	2-4m long x 0.2m diam.	42-85kg	84-170kg
Lateral braces	2	1.5m long x 0.2m	32kg	64kg
Front and back hurdles	2	1.5m wide x 2-3m high	31-46kg	62-92kg
= individual hazel 'rods'	80-125	-		
Front-to-back hurdles	1	2-4m wide x 2-3m high	41-123kg	41-123kg
= individual hazel 'rods'	40-60	-		
Total weight of materials per 1.5m linear section				335-579kg

Table 13.1: Quantities of oak and hazel required for Mercer's reconstruction of a 'box rampart' (after Mercer 2008, Table 11.1). Numbers and weights of hazel rods added, based on my own research.

for that structure, suggested that 50 years before[23] construction began, the site might have been coppiced to produce enough oak 'poles' with an average diameter of 30cm, estimating that *c.*200 could be obtained from each hectare. The postholes of the Inner Stepleton Outwork indicate posts of similar girth (20-45cm) to those at Haddenham; the plan and profile of some examples suggest sharpened roundwood stakes (Mercer & Healy 2008a, figs. 3.111-112). Based on Evans' figure, a parcel of oak coppice equal to the footprint of the MCE could generate 2-3 times the number of poles needed to construct Mercer's proposed structure around its *c.*970m-long perimeter. As described in Chapter 5, however, high-canopy forest tends to produce slender, straight trunks which might partly obviate the need for the long-term planning involved in coppicing. The range of diameters of the postholes at the Inner Stepleton Outwork would be equally consistent with uncoppiced trees 25-75 years old. In that scenario, these would have to be gathered from a wider area. The least steep ground on the hilltop covers *c.*50ha, so if the builders exploited this area, they would have to find 14-22 suitably slim oaks per hectare. Tansley's (1939, 277) estimate that typical forest would have contained 150-250 trees per hectare would mean that oaks made up 6-14% of the total numbers of trees. As mentioned above, however, oak would never thrive on the light, calcareous soils of the chalk downland, so the existence of sufficient numbers of individual trees, let alone a parcel of oak coppice, seems highly improbable. Instead, timber would have to be gathered from the surrounding lowlands and dragged up the spurs – arguably a less likely scenario than the use of materials that lay closer to hand.

Structure	Peri-meter length	Linear m of oak post	Number of trunks if used round	Number of trunks if quartered	Number of hazel rods	= coppice stools @ 30 rods per stool	Number of hazel rods, omitting front-to-back panels	= coppice stools @30 rods per stool
MCE	970m	7,113 - 10,993	356-550	89-138	77,600-120,000	2,587-4,000	51,733-80,833	1,724-2,694
Stepleton enclosure	400	2,933 – 4,533	147-227	37-57	32,000-49,333	1,067-1,644	21,333-33,333	711-1,111
South X-dyke	350	2,567-3,967	128-198	32-50	28,000-43,167	933-1,439	18,667-29,167	622-972
Western o/w	300	2,200-3,400	110-170	28-43	24,000-27,000	800-900	16,000-25,000	533-833
Shroton o/w	300	2,200-3,400	110-170	28-43	24,000-27,000	800-900	16,000-25,000	533-833

Table 13.2: Mercer's estimates applied to different elements of the complex on Hambledon Hill.

[23] Oaks growing in shady conditions increase their girth by 1.9-2.5cm per year, so Evans and Hodder's estimate of 50 years uses the lower end of that range; the upper end would give a period of 38 years.

To obtain sufficient numbers, larger trees could be cleft into quarters. Cleft timbers are traditionally regarded as making better posts than roundwood trunks, because the heartwood of an oak post is structurally strongest and resists rot for generations (Edlin 1949, 91). Trees 40-90cm in diameter would be 50-185 years old if growing in forest conditions, indicating that the builders could utilize all but the largest oaks present in the forest. In this scenario, the construction project would have an appreciable impact on the forest growing on the valley floor, but not on the hilltop itself.

Although hazels would tolerate the calcareous soils on the hilltop, finding the sheer number of 'rods' required by Mercer's blue-print would present an equally serious challenge. In traditional hurdles for sheepfolds, only the lowermost rods are roundwood, while the rest are cleft in half (Edlin 1949, 70-1). This makes the rods easier to bend and obviously doubles the quantity, as well as making each hurdle portable for one person. However, cleaving requires great skill, even with metal tools, and leaves the rods weaker. Nevertheless, my calculations have assumed that rods were cleft in two. In addition to the front and rear hurdles, Mercer suggests the use of hurdle panels running front-to-back, turning each 1.5m-long segment into a 'gabion', but this would confer limited extra strength, while at least doubling the number of rods required. In Table 13.2, these internal panels are treated as an option. A carefully coppiced mature hazel, grown in adequate space and protected from browsing, can produce up to 60 stems over 2.1m long, but some stools will only produce a quarter of that number (Jeffers 1956), so in Table 13.2 I have based calculations on each stool producing 30 stems – still a fair number. Left unmanaged, hazels will often naturally produce only a handful of good, straight stems (Figure 13.4 shows an exception), so the vast numbers of rods required even for the slimmed-down version of Mercer's structure almost demands that coppicing was practiced somewhere in the landscape. If this was not on the hilltop, bundles of rods could be dragged up the gentlest approaches. There are temporal implications arising from the supposed use of hazel: traditionally, winter-cut rods were preferred, because rising sap from spring onwards made them brittle. Whenever cut, they needed to be woven quickly before losing their pliancy; once finished, the hurdles would be stacked and seasoned for several weeks[24] (Edlin 1949, 71-2). If we accept this scenario, construction of the MCE could coincide with the 'slack period' of the agricultural and pastoral years.

If the procurement of the materials required to make Mercer's structure would not greatly affect the hilltop's tree cover, what other impacts could the project have? First, as discussed in Chapter 11, it seems inevitable that trees along the course of the MCE's perimeter (at least) would be removed – either felled with axes or more probably pulled over and left to rot – prior to the digging and bank building.

[24] Thus, hurdles made in late winter would be ready for use by lambing time.

Large oaks take more than half a century to disintegrate. Where the perimeter follows the steepest slopes, trees falling away from the summit might induce 'windrow felling'[25], for some distance downslope. This could make the perimeter more visible from afar. It is also likely that the removal of trees, even if just along the corridor needed to construct the perimeter, would make the newly exposed forest edges more vulnerable to wind, so that many more trees might fall within the first few years of the initial deliberate clearance. Most of those that survived might be older trees which had already developed stronger root buttressing, or resilient small trees like hazel, elder and hawthorn, thus producing the partial shade envisaged by the molluscan analysis.

Even disregarding the problems involved in procuring the necessary quantities of oak and hazel already discussed, there are other reasons to doubt Mercer's reconstruction, raising further questions about the visual qualities of the structure. First, his proposed reconstruction, based on the plough-levelled remains of the Inner Stepleton Outwork, posits a continuous rampart standing behind a causewayed ditch (Figure 11.1b). Excavation showed that this particular outwork – or at least the excavated stretch flanking the gateway – had relatively few causeways and numerous postholes along the presumed edges of the bank/rampart. But this is not representative of the surviving earthworks elsewhere on the hill, where the banks were generally interrupted almost as frequently as the ditches and associated postholes were scarce. These observations might support Mercer's suggestion of 'gabion'-style construction, but the irregular length of the bank segments[26] seems to indicate a less systematic method.

Second, the 'bank' as recorded by earthwork survey is on average 4.2m wide, 40% wider than the underlying band of 'protected chalk' (Palmer & Oswald 2008, 31). A dump rampart this wide could absorb 71% of the ditch spoil, more than twice what Mercer's model suggests (Figure 11.6 (B)). Furthermore, the estimated scale of solution implies that the edges of the band of protected chalk would themselves be lost: a width of 5m (*i.e.* assuming the dissolution of 0.4m of each side of the surviving earthwork) would absorb 100% of the spoil from the ditch as a simple dump. A bank of fresh chalk could make more visual impact than a wooden façade, at least until it became overgrown.

Third, hazel wattle panels will survive for less than 10 years even in dry, airy conditions (www.hedgesandhurdles.com/commercial/wattle-hurdle; Edlin 1949, 71-2). This seems an implausibly short lifespan, given the overall longevity of the complex. Furthermore, hazel is susceptible to more rapid decay if it remains intermittently damp, leading to structural weakness in less than five years. It is conceivable, therefore, that repairs or

[25] In other words, a domino effect, as described in Chapter 5.
[26] Isolated segments of bank and ditch, as seen on the east side of the Combe Hill enclosure, East Sussex, (Figure 3.2b) also seem to indicate a spatially and/or temporally piecemeal approach to construction.

replacements would be required[27] even before the whole circuit of the MCE was complete. It remains plausible, however, that such hurdles formed 'breastworks' rising above the main barrier, as seen in the carbonised remains in ditch Segment 6 of the Inner Stepleton Outwork. Overall, however, the inadequacy of hazel hurdling in the role envisaged by Mercer means that the 'rampart' did not necessarily make such an architectural impact, nor would the need for hazel rods greatly affect the environment.

Another possibility, not considered by Mercer, is the use of turf to build a frontal revetment, as seen in several other Early Neolithic structures (Whittle 1977b, 338)[28]. The molluscan evidence suggests that there was no established grassland nearby, but there are reasons to doubt that conclusion, particularly with regard to the area inside the perimeter (see Chapter 11). If turf was available, it has several advantages over hurdle panels: the revetment can be raised gradually as the height of the dumped chalk increases, rather than the builders having to transfer the quarried chalk over a 2-3m-high barrier from the outset; regrowth of the turves bonds the revetment more strongly over time, actually benefitting from the damp chalk behind it; decay of turf walls tends to be slow and gradual, allowing any deformed sections to be rebuilt, buttressed or even pinned back with vertical posts[29]. A frontal revetment 1.0m wide at the base and 1.8m–2.1 high[30] (*i.e.* just over head-height), battered and tapering to reach around 0.45m wide at the top, would require the stripping of a band of turf extending *c.*12m from front to back, equivalent to the combined span of the bank and ditch[31] (Figure 11.6 (C)). Even without the construction of a rear revetment, a frontal turf revetment could retain the quarried chalk within the width of the MCE's bank as recorded by earthwork survey (Figure 11.6 (D, E)). To judge from the widespread preservation of post-medieval sod-cast walls in upland landscapes, such a barrier could last for many decades if not centuries, more in keeping with the duration of the monument's use as indicated by radiocarbon dating. If a 'breastwork' formed of hurdles surmounted the earthwork, fixed onto posts placed directly behind the turf wall (but not necessarily penetrating the ground), this would have required around a quarter of the linear metres of oak posts and about half the number of hazel rods (still *c.*40,000, or the product of perhaps 1,000 coppiced stools. Having problematized Mercer's model, and explored the variables potentially involved, it became

[27] Though there are signs in places of the sudden collapses that might be expected (Mercer 2008, 747), the idea that such weakness was repeatedly 'designed in' is difficult to accept.
[28] And later structures, such as most Roman temporary camps and the western stretch of Hadrian's Wall.
[29] This could account for the occasional postholes that were identified.
[30] These being the usual breadths of stock-proof drystone walls, which usually stood 1.5- 1.8m high.
[31] Stripping thick turves from along the line of the earthwork might account for the absence of buried soil deposits under the residual banks, and for the 'step' observed immediately in front of them (downslope). This feature, not discussed by the excavators, is now the most prominent element of the perimeter, standing up to 1.0m high. A plausible explanation for its existence is that the surface of the chalk in front of the rampart remained exposed for a prolonged period, leading to more intensive erosion and solution.

clear that using the wooden building materials as a proxy indicator of the extent of cleared forest is not a line of enquiry worth pursuing.