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# The Blackwater is not a Back Water: Locating the Mesolithic and its Environment at Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire

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*Archaeological fieldwork at Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire documented evidence of Mesolithic activity, associated with paleoenvironmental deposits, on the Blackwater River floodplain, a river for which activity of this period was previously unknown. The discovery evolved from initial recognition of worked flint artefacts across a well weathered, stripped subsoil surface in part of the site. Additional material was collected subsequently from the summit of an adjacent low knoll. The findings were of sufficient extent and importance to warrant supplementary archaeological fieldwork using a gridded test pit strategy to evaluate the Mesolithic potential in remaining parts of the site. This resulted in the identification of additional clusters of worked flints, which were preserved* in situ.

*The clusters were predominantly of Mesolithic date but also included Neolithic and Bronze Age artefacts, indicating prolonged use of the landscape. Concentrations were consistently located on slightly elevated sand bars flanking palaeochannels of a formerly braided river system. The contemporaneity of the palaeodrainage and Mesolithic activity has been confirmed by radiocarbon dates from peat that formed during the Holocene. The collective results mark a significant contribution to knowledge of the Blackwater River valley, a major communications artery in the Mesolithic period linking the west end of the Wealden Greensand to the Rivers Thames and Kennet. These findings also highlight the importance that river valleys can make to locations that have been less well studied but nevertheless enjoyed prolonged use.*

**Keywords:** Mesolithic, Blackwater River, flint scatters, pollen analysis, Bayesian modelling

The Mesolithic period (*c.* 10,000–4000 BC) can be fiendishly difficult to identify archaeologically. It is characterised by a worked stone technology that includes distinctive, often diminutive, retouched pieces, microliths, which represent the most well-known artefacts of the period. Populated by small mobile groups who, in southern England, frequently occupied river systems, the period is represented by few of the associated trappings of settled life such as earthworks, pits, or post-holes; however, in exceptional circumstances, where faunal and organic remains are preserved (Milner *et al.* 2018a; 2018b), the potential of this period, following the retreat of the ice and adoption of more settled occupation, can be more fully appreciated. New discoveries are vital and make a greater impact when accompanied by palaeoenvironmental data that help detail the landscape in which contemporary communities lived.

The discovery of Mesolithic activity at Eversley occurred alongside the identification of a dynamic system of inter-connected palaeochannels. Palaeochannels represent the relict courses of formerly active channels and are key locations for the retrieval of palaeoenvironmental sequences and archaeological remains. While significant attention has been focused on the fluvial history of major river valleys such as the Thames, Severn, and Trent (eg, Bridgland 1994; Sidell *et al.* 2000; Bell 2007; Bridgland *et al.* 2014), smaller water courses and tributaries such as the Blackwater have received comparatively little attention until more

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recently. However, work in river valleys such as the Kennet and Colne, both tributaries of the Thames, demonstrate the rich archaeological and palaeoenvironmental data that can be retrieved through concentrated investigation both by professionals in academia and commercial archaeology and enthusiasts alike (eg, Chisham 2004; Froom 2012; Grant *et al.* 2014).

Recognising Mesolithic material across large parts of the Blackwater River floodplain, for which the Mesolithic has been conspicuously absent, and with associated palaeoenvironmental material, is therefore of considerable significance. The river connects two areas that contain some of the most well-known concentrations of Mesolithic material in Britain: the Greensand deposits bordering the central Weald (Rankine 1936; 1949) and the Kennet valley (Wymer & Churchill 1962; Froom 2012). Furthermore, the discoveries have highlighted the untapped archaeological resource that is often contained in many small tributary valleys and the methods by which Mesolithic material, recognised initially by good fortune, may be approached beneficially. The present study details the most concentrated body of data for Mesolithic activity recorded from the Blackwater Valley. The evidence for human activity is considered alongside pollen analysis and radiocarbon dating of peats infilling palaeochannels and compared with relevant data from across southern England.

## THE SITE

### *Location, geology, and topography*

Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire (NGR SU 7890 6230), lies in the valley of the Blackwater River, a watercourse that flows 36 km from its source between Aldershot and Farnham in Hampshire to the River Loddon, itself a tributary of the River Thames (Fig. 1). The site lies at a point where the river channel exits from geological deposits of Tertiary sand, silt, and clay of the Bracklesham and Barton Group and flows across London Clay. This solid geology is overlain by Pleistocene terrace deposits of fluvial sand and gravel, which are covered by Holocene floodplain sediments comprising sand, peat, and alluvial silt.

The floodplain has been subjected to extensive gravel extraction in successive phases for many years and before archaeological controls were considered necessary. Flooded pits, covering approximately 207 ha, extend 4.36 km east of Eversley Cross to the outskirts of Sandhurst. Extensive extraction has also taken place between Frimley and Aldershot further to the south. In 2008 applications were made to extend the quarry at Fleet Hill Farm and extract gravel from an area on the north bank of the present channel. The site covered approximately 48 ha, with work centred on areas defined as 1A/1B, 2, 3, 8, 10, 11, and 12 (Fig. 2).

### *Previous fieldwork*

The Blackwater Valley was known to contain a thin spread of Mesolithic sites and findspots (Wessex Archaeology 2010). The largest concentrations comprised collections from the headwaters of the river at Farnham (Clark & Rankine 1939), where activity extended throughout the period. Data contained in the PaMELA archive of Upper Palaeolithic and Mesolithic artefacts, from records compiled by the late Roger Jacobi (Wessex Archaeology & Jacobi 2014), listed only 14 locations containing 90 objects, mainly unretouched blades and flakes, within a radius of 10 km from the site at Eversley. Sites were dispersed predominantly to the north of Fleet Hill Farm on deposits of the Bracklesham and Barton Group with three locations listed in the Loddon valley. No records referenced material from floodplain deposits. Mesolithic material has also been found in test pits on Yateley Common (White 2012) where a springhead of a tributary stream flowed into the Blackwater and from Bracknell Forest near the headwaters of the dendritic drainage of the Blackwater/London basin. Five sites, containing material that was totally or partially of Mesolithic date, were also identified by surface collection of terrace deposits in the Loddon Valley (Ford 1987). Test pitting at Whistley Court Farm (Harding & Richards nd) confirmed that Mesolithic activity, revealed in this survey, was present adjacent to the river channel.

Initial trenching to evaluate the archaeological potential at Fleet Hill Farm produced small quantities of Mesolithic flint knapping debris in Area 8 (Fig. 2; Cotswold Archaeology 2008). This material was recovered from post-medieval field ditches immediately north-west of the present Blackwater River channel and a palaeochannel (11539, below), and was therefore categorised as residual. Subsequent mitigation in parts of Areas 1A/1B and 2 produced 26 additional worked flints from ditch silts (Fig. 2; Cotswold Archaeology 2009; Wessex Archaeology



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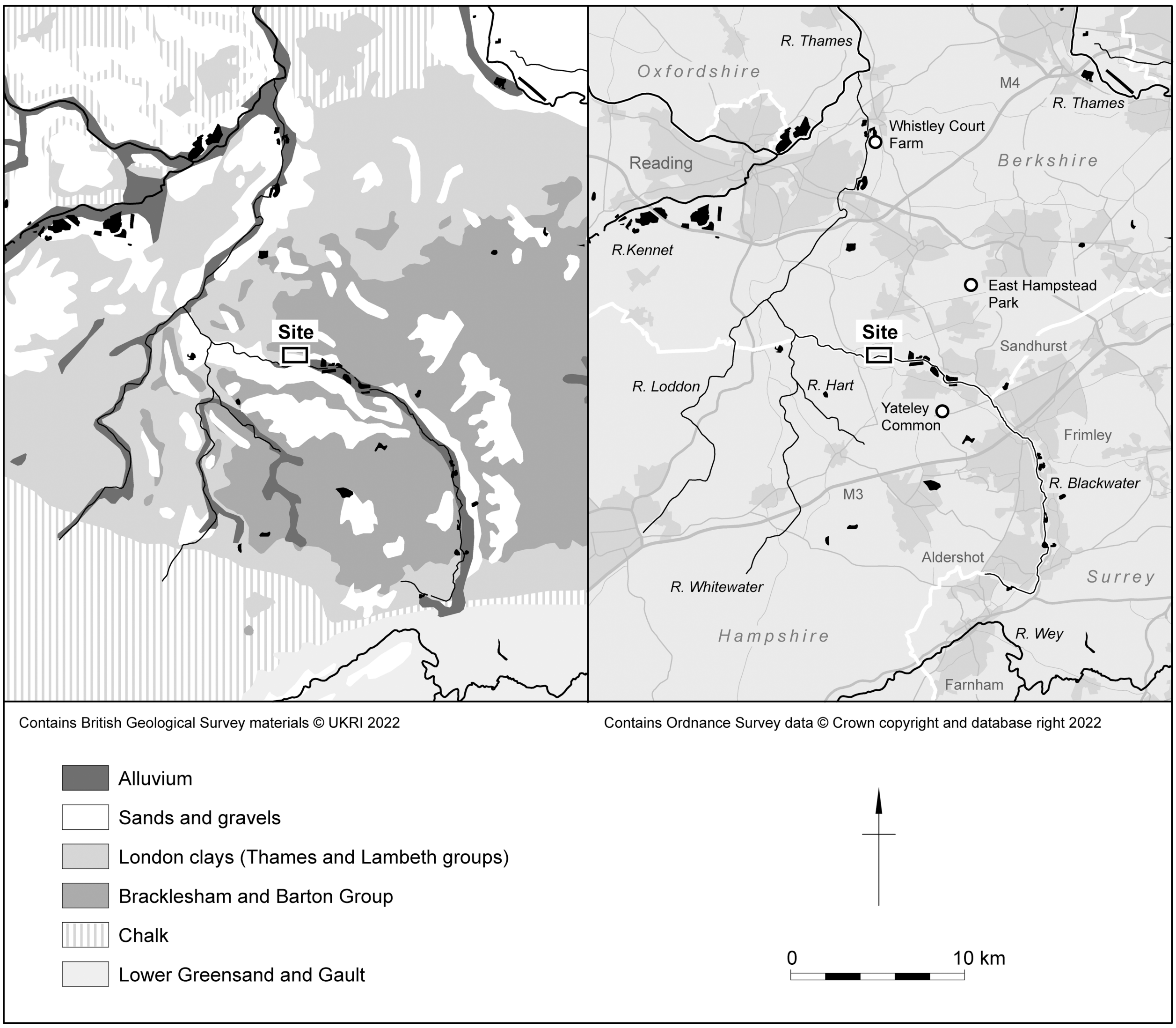


Fig. 1.
Site location and geology

2011). Artefacts were in good condition and included a significant number of blades that were removed from opposed-platform cores, confirming that some, at least, were likely to be of Mesolithic date. Palaeochannels containing sediments, including peat, provided potential for palaeoenvironmental studies.

## METHODS

### *Fieldwork methods*

Interest in the Mesolithic potential of the site accelerated in 2014 when extraction progressed into Area 8. Significant quantities of struck flint artefacts were recognised across the well weathered surface of the stripped floodplain subsoil in areas that coincided with previous discoveries (Cotswold Archaeology 2008). Further concentrations were revealed when the quarry extended into Area 10, with proposals for anticipated work in Areas 11 and 12. These collective results from the floodplain highlighted the need to address the previously under-researched nature of the Mesolithic in the Blackwater Valley, the survival of worked flint scatters, and the topography of the underlying relict



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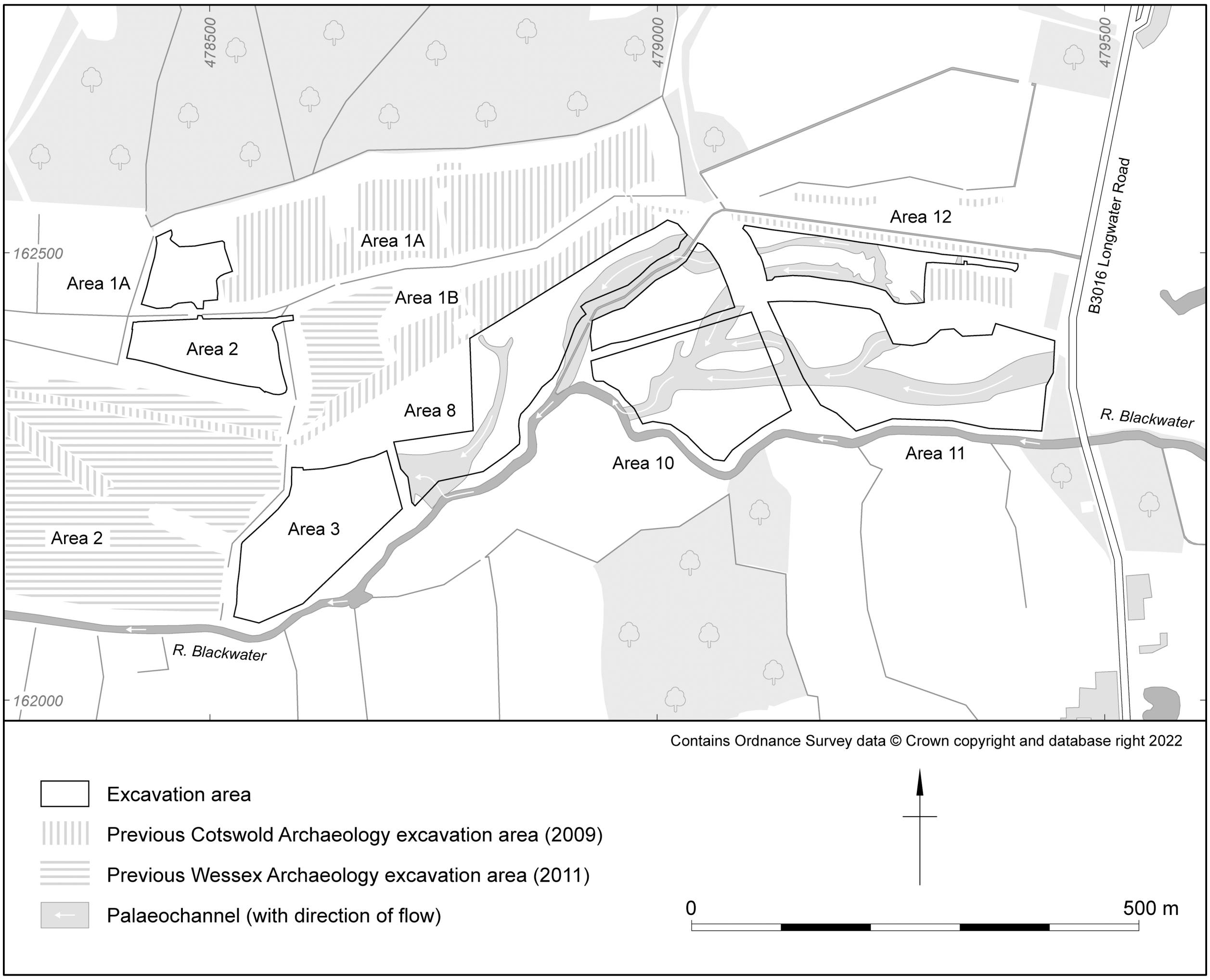


Fig. 2.
Areas of excavation

paleochannels and sand bars on which the artefacts were deposited.

Consequently, a strategy using hand-dug test pits, measuring 1 × 1 m and prefixed TP, was adopted in Areas 8 and 10 with machine-dug trenches, approximately 2 × 2 m on a 20 m grid and labelled TR, for all remaining areas of Areas 10, 11, and a small part of 12 (Figs 2–5). In-built flexibility in the strategy made it possible to modify test pit location and fully establish the extent and context of additional flint scatters which were subsequently preserved *in situ*. Pits were dug in spits with artefacts recovered during machine excavation and 100 litres of the subsoil sieved through 4 mm mesh to ensure representative levels of artefact recovery. Hand-dug test pits were excavated in 50 mm spits and sieved through 4 mm mesh. Recovery of three artefacts from an individual test pit spit was used to constitute a scatter, as per definitions employed at Denham in the Colne Valley (Wessex Archaeology 2005; 2009).

### *Palaeoenvironmental sample site*

Samples for pollen analysis were taken from the peaty fill of a substantial palaeochannel (11539) recorded within Area 8. The palaeochannel measured approximately 53 m across and was traced for approximately 56 m on a south-east to north-west alignment from the



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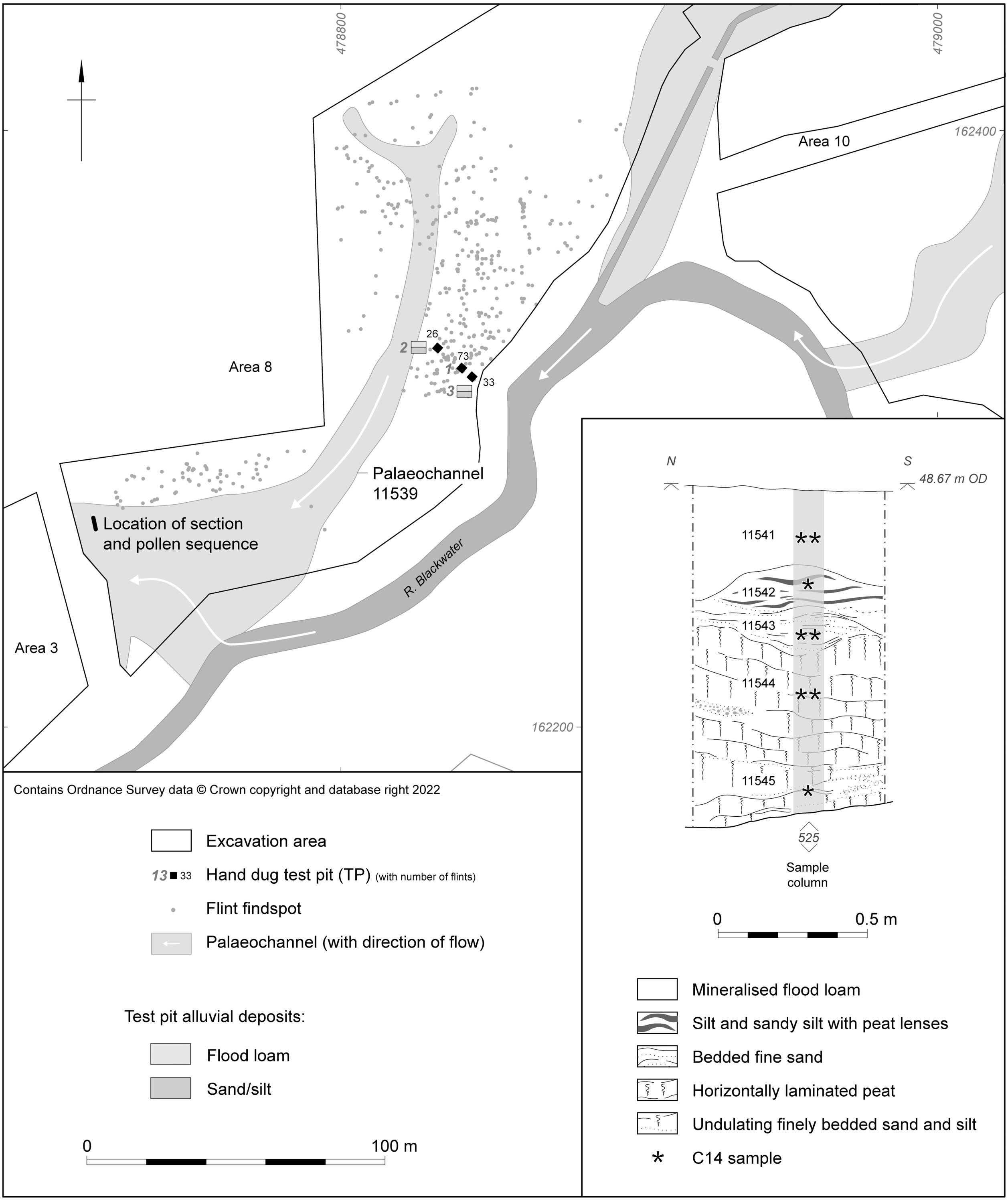


Fig. 3.
Area 8 showing distribution of artefacts from surface collection, test pits, and monolith section from palaeochannel 11539



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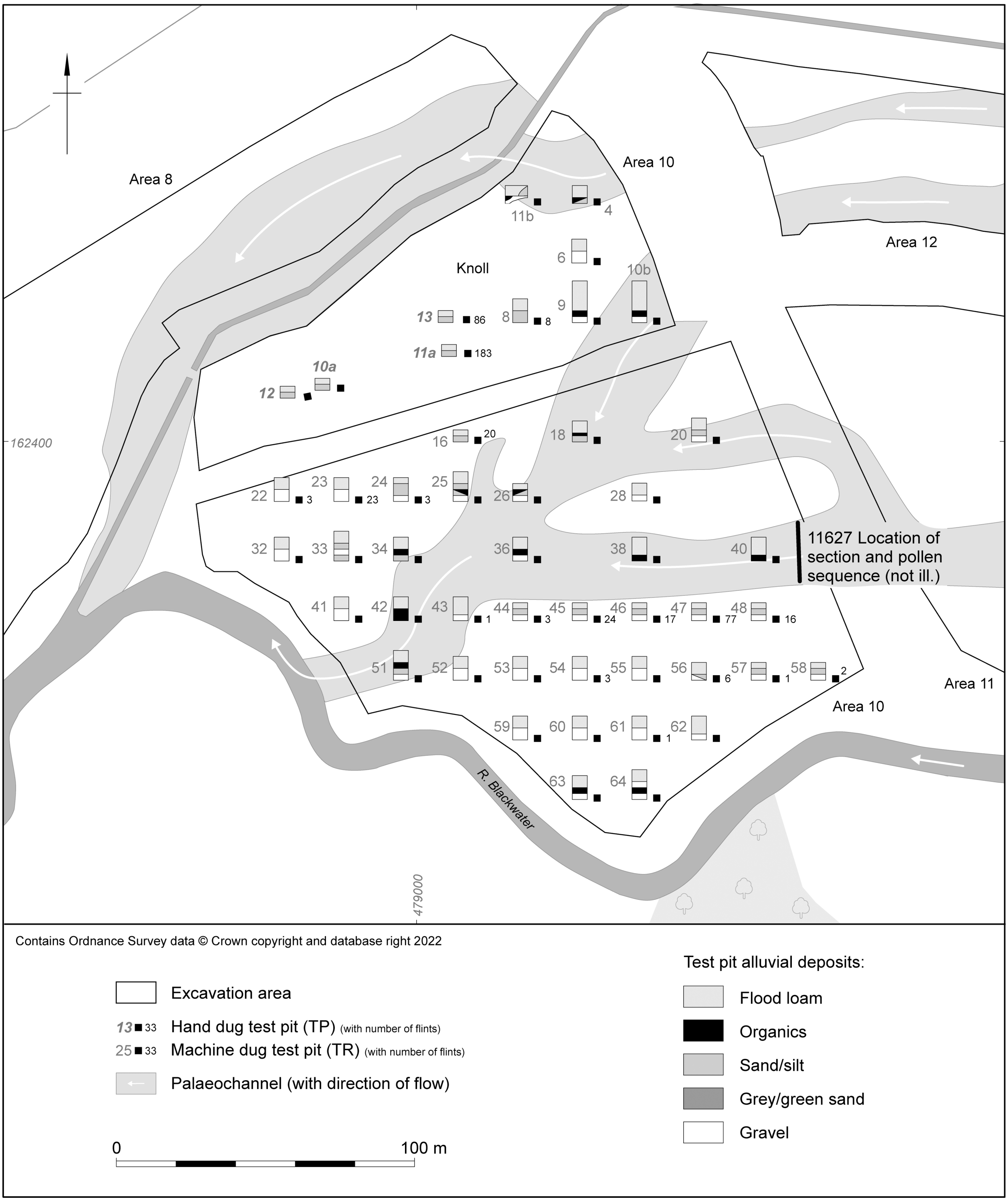


Fig. 4.
Area 10 showing distribution of hand dug test pits and machine excavated pits with artefact totals and deposit summaries



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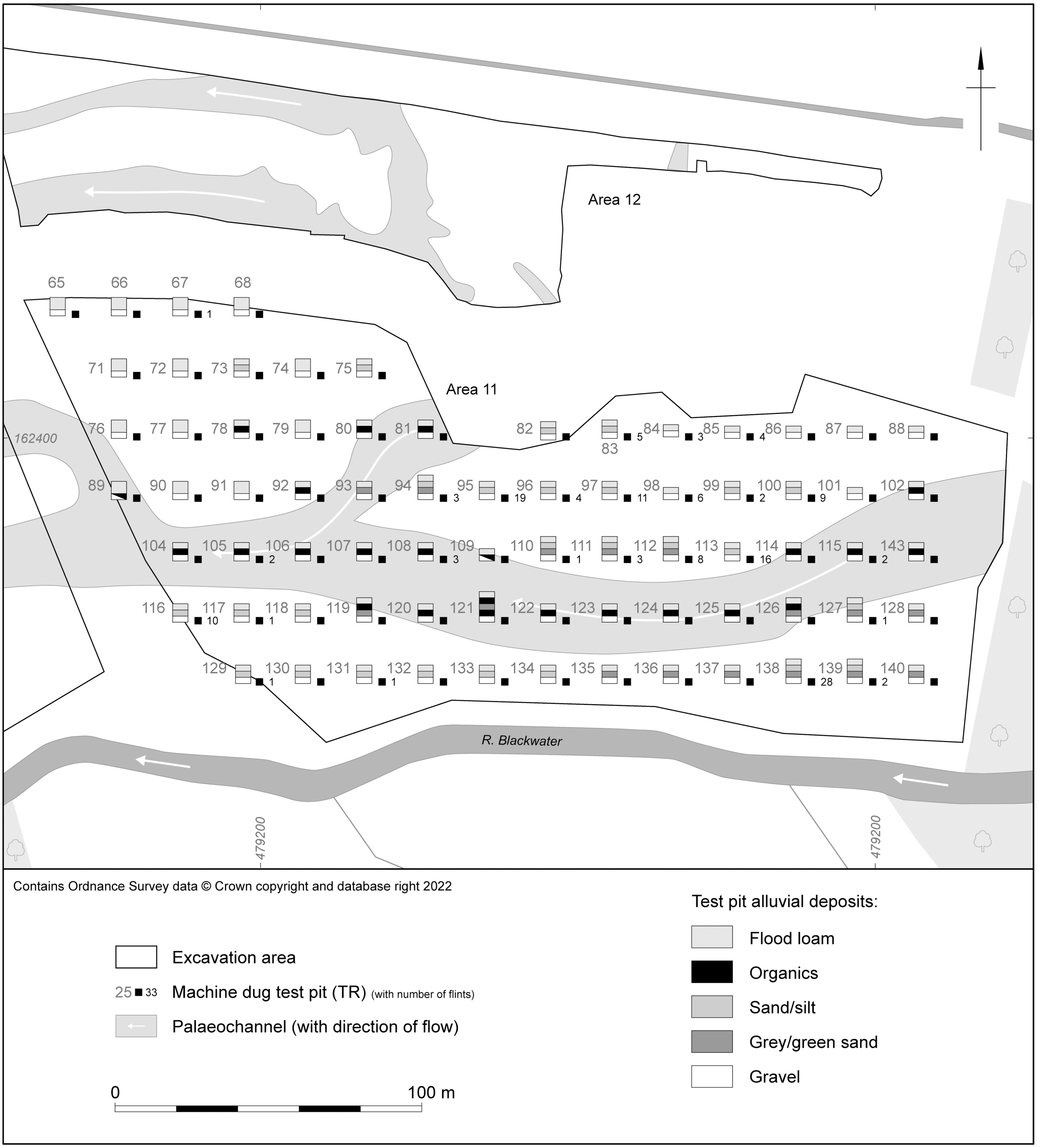


Fig. 5.
Areas 11 and 12 showing distribution of machine excavated pits with artefact totals and deposit summaries



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present Blackwater River to a point where it had been truncated by quarrying in Area 3 (Fig. 3).

Sediments at the southern end of the palaeochannel comprised alternating, slightly undulating beds of light yellow and grey sand and silt, with lenses of sub-angular and rounded flint gravel which fined upwards. However, at the northern end of the palaeochannel, a fine, horizontally laminated peat, 0.59 m thick, was recorded and sampled (monolith 525). The monolith contained 0.86 m of sediment. Gravels at the base of the monolith (0.86–0.79 m) were overlain by a 0.23 m (0.79–0.56 m) basal black, fine and somewhat humified silty peat (11545) and 0.36 m (0.56–0.20 m) of friable peat with a lower silt content (11544); there was a clear erosional boundary between the two peat layers at 0.56 m. The peat was overlain by 0.20 m of laminated sands and silts, interspersed with thin bands of humified peat.

An additional sample for pollen assessment was recovered in Area 10 from thinner peats preserved in palaeochannel 11627 (monolith 531) (Fig. 4). The two sequences produced similar pollen assemblages, suggesting they were of comparable Mesolithic date. However, pollen concentrations and preservations were generally poorer in monolith 531 and analysis was focused on monolith 525.

*Pollen and microscopic charcoal analysis*

Samples for pollen analysis were taken from monolith 525 (palaeochannel 11539) at intervals varying between 40 mm and 70 mm. Samples were prepared following standard laboratory techniques (Moore *et al.* 1991) and mounted in glycerol jelly stained with safranin. A minimum of 300 pollen grains of terrestrial species was counted for each level. Pollen percentages are calculated based on terrestrial plants. Fern spores, aquatics, and *Sphagnum* are calculated as a percentage of terrestrial pollen plus the sum of the component taxa within the respective category. Identification of indeterminable grains was recorded according to Cushing (1967). The pollen diagram was produced using Tilia version 1.7.16 (Grimm 2011). Local pollen assemblage zones (LPAZ) have been determined on the basis of observed changes in principal plant taxa. Microscopic charcoal was quantified using the point count method of Clark (1982), investigating randomly spaced parallel transects to ensure that a representative portion of the slide was examined.

*Radiocarbon dating*

Ten samples from palaeochannel 11539 were submitted for AMS $^{14}$C radiocarbon dating, eight to the 14CHRONO Centre, Queen's University, Belfast (UBA) and two to the Scottish Universities Environmental Research Centre (SUERC), University of Glasgow (see Table 2, below). At UBA, the bulk sediment samples were treated with Acid; at SUERC, the plant remain samples were treated with AAA and the bulk sediment with Acid on the humic fraction; detailed descriptions of the methods employed by the laboratories can be found in 14Chrono (2019) and Dunbar *et al.* (2016). Insufficient short-lived plant material was available for dating and the decision was made to submit paired bulks. Paired dating can mitigate issues associated with dating bulk sediment related to increased probability of samples incorporating a mixture of plant remains, some of which may carry an offset (eg, aquatic remains with a reservoir effect and intrusive roots). Calibrated age ranges were calculated with OxCal 4.4 (Bronk Ramsey 2009) using the IntCal20 curve (Reimer *et al.* 2020). All radiocarbon dates are quoted as uncalibrated years before present (BP), followed by the lab code, the calibrated, and the modelled date-ranges (cal BC/AD) at 95% probability, with the end points rounded out to the nearest 10 years. The ranges have been calculated according to the maximum intercept method (Stuiver & Reimer 1986).

*Bayesian modelling*

The radiocarbon dates from palaeochannel 11539 have been modelled as Poisson or non-uniform depth sequence (P_Sequence; with the parameters k=10 and interpolation=1) (Bronk Ramsey 2008; Bronk Ramsey & Lee 2013). The ages associated to the depths of the different pollen samples from the palaeochannel sequence have also been obtained from the model (see Fig. 8, below). The Bayesian approach to the interpretation of $^{14}$C radiocarbon dating results is used to provide age estimates for archaeological events and phases of activity (Bayliss 2009; Bronk Ramsey 2009), whereas radiocarbon dating simply returns the radiocarbon age of the submitted sample, which can be converted into a calendar age by the application of calibration. Bayesian modelling is achieved by combining known stratigraphic (prior) information with radiocarbon dates to produce age estimates (posterior density). Overall, the method



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tends to improve the precision of radiocarbon dating chronologies.

## RESULTS

### *Archaeological results*

A total of 1740 pieces of worked flint was recovered from Areas 8, 10, and 11; no material came from Area 12 (Table 1). This material could be placed in context using surveys compiled from test pits, which made it possible to reconstruct the gravel topography of the Holocene palaeodrainage, most notably in Areas 10 and 11. The results confirmed that floodplain gravel was overlain by Pleistocene sand and silt in most test pits, with shallow beds of peat in palaeochannels. The braided nature of the fluvial deposits was most clearly demonstrated in test pits TR 97 and TR 116 in Area 11 where beds of inclined grey-green sand were exposed, revealing the structure of respective sand bars which lie along palaeochannel margins. These elevated ridges, which can still be detected as subtle features in the modern landscape, provided a template on which flint scatters, correlating with human presence, can be superimposed. The sands and silts were overlain by heavily bioturbated subsoil, also formed from grey-brown sandy silt, which was 0.15–0.30 m thick on the sand bars, but thicker in the palaeochannels. The flood loam graded into well sorted, heavily oxidised, grey-brown sandy silt topsoil, up to 0.15 m thick. Small quantities of post-medieval and modern pottery were recovered from the subsoil, confirming the impact of bioturbation and also a relatively low level of former cultivation. Undated burnt flint was similarly present in all areas of excavation and is not described in detail.

*Area 8* (Fig. 3): Worked flints comprising flaking waste, cores for the production of blade/lets and retouched tools (Table 1: Area 8 – scatter) were plotted from the well-weathered surface of this area, covering approximately 15,144 m$^2$, on the north side of the Blackwater River. Artefact density within the area available for survey was variable. Objects were most plentiful in an area immediately east of a tributary which flowed into palaeochannel 11539 but thinned dramatically to the south. A separate cluster, including a microlith (Fig. 6.1) was located on the north bank. Artefacts also diminished to the north-east, a fact that may reflect the true distribution of material or result from greater removal of artefact-bearing subsoil during the machine stripping. Test pits TP 1, 2, and 3 (Table 1) were hand-dug across the densest part of the scatter to recover a more representative sample of the assemblage and establish its vertical distribution through the sediment. Artefacts, including a backed microlith with retouch extending around the base (Fig. 6.2) (1155), were concentrated in spit 1 of the subsoil in each test pit with reduced quantities below. It seems likely that the upper parts of the unit have been truncated by agriculture and preliminary stripping for gravel extraction with the consequential loss of artefacts; nevertheless, the area containing the principal concentration of worked flints was preserved *in situ*.

*Area 10* (Fig. 4): Archaeological monitoring of topsoil stripping on the northern and western lower slopes of a low, but prominent, sandy knoll on the north side of Area 10 produced a spread of 198 artefacts. These objects, which included a broken tranchet axe (Fig. 7.32) near the summit, were plotted individually. Two small, nucleated flint scatters, containing 18 and 33 artefacts respectively, were identified and sampled (TP 10a and 12) at the west end of the field which also included a microlith (Fig. 6.3) and microburin (Fig. 6.9). Artefact density increased further upslope. Two more hand-dug test pits, TP 11a, which produced two additional microburins (Figs 6.10 and 11) and TP 13, were positioned on the summit of the knoll where the topsoil had not been removed and ensured that the entire subsoil profile remained intact. This two-pronged approach, combining surface collection with targeted test pits, confirmed that larger, more easily identified objects dominated findings from the surface scatter. Sieving of all material from test pits supplemented the collection and produced a more comprehensive range of material, highlighting the potential artefact density on the knoll. Individual spits, within each test pit, confirmed (Table 1) that artefacts were distributed throughout the subsoil, extending only 0.10–0.15 m in TP 10a and 12, where the subsoil is likely to have been truncated, but deeper, 0.25–0.30 m, in TP 11a and 13, where the soil profile was more complete. These latter figures are comparable but at the lower end of the range which demonstrates that vertical movement of artefacts through the soil profile is greater on sandy deposits than those of silt (Barton 1992, table 3.3). Burnt flints were also recovered from the test pits; these remain undated but may result from hearths on the knoll.



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TABLE 1: WORKED FLINT, BY LOCATION

| | *Area 8: scatter* | *Area 8: TP 1* | *Area 8: TP 2* | *Area 8: TP 3* | *Area 8: test pits Total* | *Area 10 Knoll: scatter* | *Area 10 Knoll: TP 10a* | *Area 10 Knoll: TP 11a* | *Area 10 Knoll: TP 12* | *Area 10 Knoll: TP 13* | *Areas 10 Knoll: test pits Total* | *Area 10 Knoll: machined Total* | *Area 10: machined Total* | *Area 11: machined Total* | *Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Blade cores | 14 | 0 | 0 | 0 | 0 | 12 | 1 | 0 | 0 | 1 | 2 | 2 | 2 | 3 | 35 |
| Bladelet cores | 21 | 0 | 0 | 0 | 0 | 22 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 45 |
| Flake cores | 13 | 0 | 0 | 0 | 0 | 24 | 0 | 2 | 0 | 1 | 3 | 3 | 6 | 5 | 54 |
| Broken cores/ core frags | 10 | 1 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 18 |
| Blades | 39 | 2 | 1 | 1 | 4 | 23 | 3 | 7 | 2 | 1 | 13 | 3 | 9 | 7 | 98 |
| Broken blades | 29 | 2 | 0 | 2 | 4 | 15 | 2 | 7 | 2 | 6 | 17 | 2 | 4 | 2 | 73 |
| Bladelets | 5 | 0 | 1 | 0 | 1 | 3 | 1 | 4 | 3 | 4 | 12 | 3 | 2 | 1 | 27 |
| Broken bladelets | 10 | 1 | 1 | 0 | 2 | 1 | 2 | 8 | 9 | 2 | 21 | 1 | 8 | 2 | 45 |
| Flakes | 154 | 14 | 2 | 6 | 22 | 99 | 12 | 42 | 21 | 15 | 90 | 14 | 55 | 50 | 484 |
| Broken flakes | 98 | 28 | 3 | 10 | 41 | 40 | 29 | 72 | 29 | 38 | 168 | 23 | 67 | 49 | 486 |
| Crested pieces | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 6 |
| Rejuvenation tablets | 8 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Microliths | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 8 |
| Microburins | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 2 | 0 | 0 | 5 |
| Chips/ microdebitage | 7 | 22 | 16 | 14 | 52 | 0 | 12 | 32 | 14 | 12 | 70 | 11 | 39 | 42 | 221 |
| Scrapers | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Other tools | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 7 |
| Axe thinning | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Projectile points | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Core tools | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Edge damaged | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Piercers | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Burins | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Debitage | 21 | 1 | 2 | 0 | 3 | 12 | 2 | 3 | 0 | 2 | 7 | 4 | 8 | 16 | 71 |
| Miscellaneous retouched | 12 | 1 | 0 | 0 | 1 | 8 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 23 |
| Total | 454 | 73 | 26 | 33 | 132 | 285 | 66 | 184 | 80 | 86 | 416 | 69 | 202 | 182 | 1740 |

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The fieldwork strategy confirmed that the spread of worked flints on the knoll, including additional microliths and microburins (Figs. 6.4, 6.12, and 6.13) extended, albeit in reduced quantities, to the east (TR 8) and for at least 30 m to the south (TR 22–24). Furthermore, these test pits demonstrated that flood loam thickened towards the lower slopes, potentially increasing the prominence of the sandy knoll in the landscape during the Mesolithic period.

The southern margins of Area 10 included a slightly elevated sandy bar which defined the southern boundary of a palaeochannel. This bar also produced a scatter of worked and burnt flints in TR 44–48, including microliths in TR 47 and 48 (Figs. 6.5 and 6.6). The epicentre of the spread, in TR 47, diffused southwards to TR 56, and extended eastwards into the adjacent field, Area 11, where additional artefacts were collected in TR 116 (Fig. 6.7). This area was preserved *in situ*.

*Area 11* (Fig. 5): Artefact densities were reduced from machine-dug test pits in this area; however, traces of prehistoric flint working were identified on a low plateau of sand and silt along the north side of the area and also in the south-east corner, where TR 138 produced 28 pieces of undated worked flint on a relict sand bar. These areas were both preserved *in situ*.

The artefact scatter in the north part of the area covered approximately 8400 m$^2$ and contained two distinct nuclei of material in TR 95, where 19 pieces including a microlith (Fig. 6.8) were recovered and TR 113 which produced 16 pieces with blade/lets indicating additional Mesolithic occupation in that area. The totals were supplemented by products of a flake technology, together with an Early Neolithic leaf arrowhead (Fig. 7.29) and an Early Bronze Age barbed and tanged arrowhead (Fig.7.30) from TR 98. These objects emphasised the potential of multi-period activity, including continuity of Mesolithic and Early Neolithic land use for hunting and collecting in the valley and longevity into the Bronze Age.

Small sediment sub-samples from the sections of test pits TR 81, 106, 115, 120, and 123 in Area 11 produced charcoal flecks from the upper parts of peat deposits. These flecks, like the burnt flints, remain undated. It is uncertain therefore whether they relate to the worked flints and prehistoric domestic hearths (Mellars & Dark 1998; Barnett 2009), to prehistoric landscape management (Bos *et al.* 2013) or represent derived debris from subsequent iron working or charcoal production (Hardy & Young 2019).

## WORKED FLINT ASSEMBLAGE

### *Condition and raw material*

Artefacts are mostly in mint/sharp condition suggesting that they have undergone only limited horizontal movement from their original point of deposition. However, bioturbation, cultivation and plant movement during stripping of the site may all have contributed to post depositional edge damage as much as prehistoric tool use.

Nodules of flint were available from the local gravel, as a 'tested nodule' weighing 542 g confirms. Smaller pebbles, fragments of debitage, or flake blanks were also exploited for core production. All artefacts are unpatinated, although some display a light orange stain while others are completely unaltered. Flint varies between good quality pure black material which flakes well to nodules that contain thermal fractures with coarse cherty inclusions.

### *The industries*

Table 1 shows levels of variability in the composition of individual collections from each area of the site and the methods used, which influence efficient artefact recovery. Despite clear differences in assemblage size the results show that cores were more prevalent in collections derived from surface scatters. Cores also featured more frequently in machine dug test pits located around the fringes of the knoll; it is unclear whether this relates to specific activity areas or is influenced by downslope movement of heavier artefacts. Technological and typological characteristics of the worked flint have been noted but, due to the limited quantity of material recovered and its broad distribution, detailed metrical analysis has not been undertaken. Assemblages were predominantly composed of blade/lets and flakes, recovery of which was maximised by use of sieving in hand-dug test pits. Blade/let production ranged between 31% and 9% (mean 17%) when flakes and blade/lets were combined. These totals fall below those computed from other selected Mesolithic assemblages in southern England using comparable data (eg, Powell Mesolithic surface collection (28%) and 1980–3 excavations (41%) at Hengistbury Head, Dorset (Barton 1992,



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table 5.1); Area A, Rock Common, West Sussex (29%) (Harding 2000); Greenham Dairy Farm and Faraday Road, Berkshire (53%) (Ellis *et al.* 2003)). They were nevertheless indicative of producing blade/let blanks at Eversley; these products were noticeably reduced in Area 11, where Early Neolithic and Early Bronze Age artefacts indicate the presence of later material, and also by low scores in the cluster noted in TR 138.

*Technology*

Blank production was predominantly undertaken using hard hammers, although features of soft hammer mode were noted in small numbers. Attributes of blade/let technology included cresting, platform abrasion and platform rejuvenation. The blade and bladelet cores (Fig. 6.14–6.21) are consistent with this form of production, making opportunistic use of fragments or flakes to remove bladelets. Single platform cores predominated with supplementary opposed platforms created as necessary. Some cores were less well prepared, others were unproductive and were abandoned at an early stage of flaking.

Flake cores, including discoidal examples, similar to others from the site that were attributed to the Late Neolithic period (Wessex Archaeology 2011), were also recorded. However, the condition and the apparent absence of other diagnostic Late Neolithic artefacts on the site suggests this material is probably also of Mesolithic date.

*Retouched material*

A small collection of, predominantly Mesolithic, retouched tools represent a wide range of activities. The Mesolithic component included eight small microliths, typical of the Late Mesolithic period, that were all recovered from sieved test pits. The total included a backed microlith (TP 1; Fig. 6.1), recovered from the cluster of worked flints in Area 8, with a backed microlith with retouch extending around the base from TP 1 (Fig. 6.2). Two backed bladelets (TP 10 and TP 23; Figs. 6.3 and 6.4) were found on the knoll and an unfinished triangle (TP 47; Fig. 6.5), an isosceles triangle (TP 48; Fig. 6.6), and a backed bladelet (TP 129; Fig. 6.7) in the flint cluster on the sand bar near the south edge of Areas 10/11. An obliquely blunted point (TP 95; Fig. 6.8) was found in Area 11, confirming the spread of Mesolithic activity in this part of the site.

Four proximal microburins (TP 8, 11, and 23; Figs. 6.10–6.13) and a distal microburin (TP 10; Fig. 6.9), which represent by-products of microlith manufacture, were also recovered from test pits on the knoll, confirming microlith production in that area.

The distributions of other classifiable retouched tools were largely recovered from areas that were stripped by machine. However, six scrapers were found on the knoll of Area 10 (Figs. 7.22 and 7.23), confirming this as an area of intensive, variable activity, with three other examples (Fig. 7.24–26) located on the well weathered subsoil surface of Area 8. The blade segment of a snapped tranchet axe (Fig. 7.32), which had been recycled for use as a core, was also found on the knoll. Two burins, a dihedral burin made on the proximal end of a blade with additional retouch at the distal end (Fig. 7.27) and an angle burin (Fig. 7.28), were also catalogued from the worked flint concentration in Area 8 adjacent to TP 1–3.

Evidence of subsequent activity on the site was demonstrated in TP 98, Area 11 which produced an Early Neolithic leaf shaped arrowhead (Fig. 7.29) of Green's (1980) type 3B and a barbed and tanged arrowhead (Fig. 7.30) of Sutton b type (*ibid.*) with an end scraper/knife from TP 97 (Fig. 7.31), which might be contemporary with either of these objects. The tip of the barbed and tanged arrowhead is missing, possibly a result of impact during hunting. These respective arrowhead types predominate in most regions of Britain.

## PALAEOCHANNELS

Palaeochannels forming part of an inter-connected river system were present in all areas, most notably across Areas 8, 10, 11, and 12, including palaeochannel 11539 (Area 8) which ran through an area containing Mesolithic flints. The network of palaeochannels was investigated at multiple locations across these areas (Fig. 2). Sections across palaeochannel 11539 showed that it comprised a series of individual channels that had progressively migrated northwards. Its southern end was dominated by alternating, slightly undulating beds of light yellow and grey sand and silt, with lenses of sub-angular and rounded flint gravel, which fined upwards indicative of decreasing water velocity. The channel had migrated northwards through time, where coarser sediments were overlain



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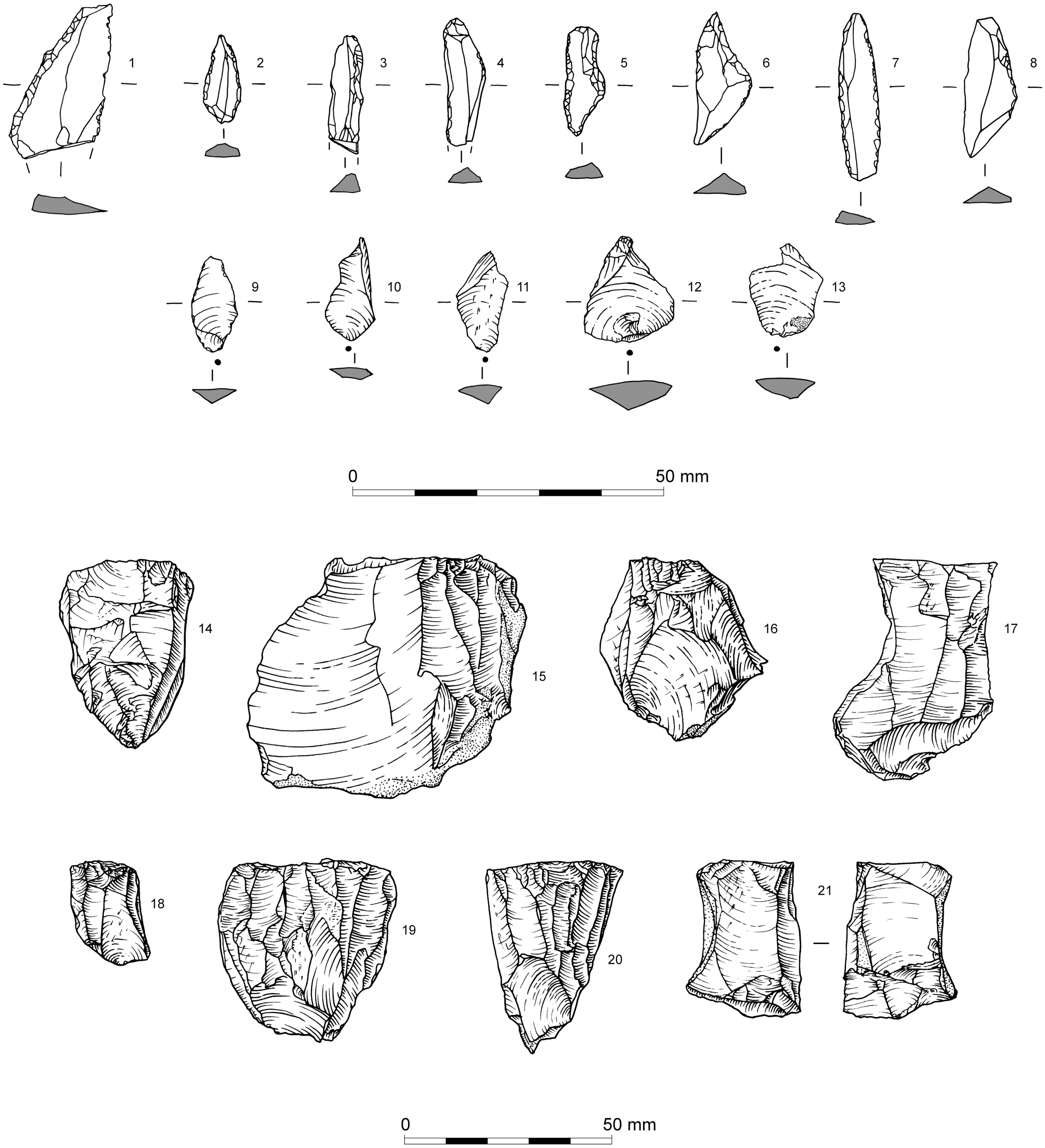


Fig. 6.
Selected flint artefacts from the fieldwork, Nos 1–21



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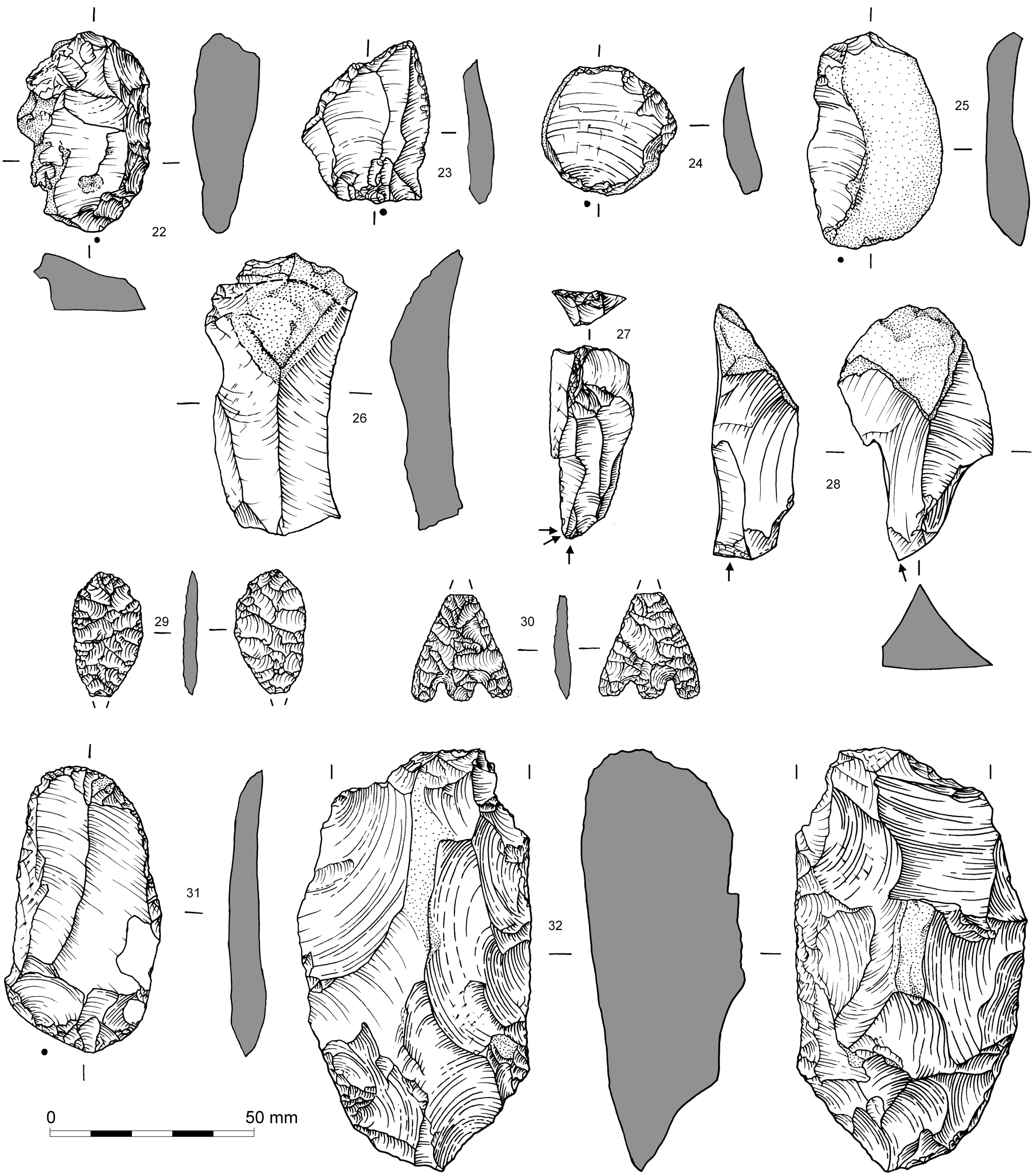


Fig. 7.
Selected flint artefacts from the fieldwork, Nos 22–32



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by grey sand which also fined upwards to silt (11545), being up to 0.40 m thick. Peat formed in the northern end of the palaeochannel, on which the palaeoenvironmental analysis described below was undertaken.

Palaeochannels in Areas 10, 11, and 12 were of variable widths and rarely contained peat in the final filling that was more than 0.40 m thick. Earlier infillings were represented by green sand, which was deposited as the water migrated across a much wider channel in the floodplain. Isolated pockets of organic material on the slightly elevated margins adjoining the peat-filled corridors suggest that marshy conditions were often widespread across the floodplain. This suggests that higher bars and eyots in the floodplain were the most attractive locations for camp sites.

### *Chronology*

The modelled AMS radiocarbon dates provide an indication of the dates of peat accumulation within palaeochannel 11359 (Table 2; Fig. 8), in spite of internal inconsistencies within some of the pairs of dates. Two distinct sets of radiocarbon results are apparent, representing peat formation in the Early and Late Mesolithic. The basal sets of dates at 0.76–0.74 m (SUERC-59073 (GU-36924), *9860–9440 cal* BC) and 0.51–0.50 m (UBA-45076/75, *9300–9230 cal* BC) suggest a phase of peat formation in the Early Mesolithic, representing between 630 and as little as 140 years of peat formation. The modelled date range suggests peat formation may even have commenced in the terminal Upper Palaeolithic. Descriptions of monolith sample 525 suggested a possible erosion break at 0.56 m but this is not supported by the pollen or radiocarbon dates. However, a hiatus in peat formation is suggested somewhere between *c*. 0.50 and 0.36 m. At 0.37–0.36 m a clear sedimentary boundary was recorded in monolith sample 525 comprising a mineralised band including vivianite and rare small stones, corresponding to a sharp shift in pollen assemblages at this depth. This is consistent with the radiocarbon model that suggests a hiatus in the depositional sequence, that could correspond to a radical change in the deposition rate or to an erosive event at some point between the depths of 0.50–0.51 and 0.35–0.36 m (this latter dated to *6690–6590 cal* BC, UBA-45074/73). This hiatus may be further supported by

TABLE 2: RADIOCARBON DATES, MONOLITH 525, PALAEOCHANNEL 11539

| *Lab. ref* | *Depth (m)* | *Material* | *Radiocarbon age BP* | *Calibration* | *Posterior density estimates 95% probability cal* BC |
|---|---|---|---|---|---|
| SUERC-59073 (GU36924) | 0.74–0.76 | Sediment (humic fraction) | 10,053±31 | 9860–9400 | *9860–9440* |
| UBA-45076 | 0.50–0.51 II | Sediment: 3.09 g | 9835±27 | 9320–9250 | *9300–9230 (R_Combine $\chi^2$ ν=1 T'=9.712 T'(5%) =3.8)* |
| UBA-45075 | 0.50–0.51 I | Sediment: 3.09 g | 9716±27 | 9280–8950 | |
| UBA-45074 | 0.35–0.36 II | Sediment: 1.14 g | 7725±25 | 6640–6470 | *6690–6590 (R_Combine $\chi^2$ ν=1 T'=21.375 T'(5%) =3.8)* |
| UBA-45073 | 0.35–0.36 I | Sediment: 1.14 g | 7895±27 | 7030–6650 | |
| SUERC-59072 (GU36923) | 0.22–0.24 | Sediment (humic fraction) | 7799±29 | 6690–6510 | *6660–6510* |
| UBA-45072 | 0.11–0.12 II | Sediment: 3.8 g | 7538±24 | 6450–6270 | *6450–6270 (R_Combine $\chi^2$ ν=1 T'=0.3 T'(5%)=3.8)* |
| UBA-45071 | 0.11–0.12 I | Sediment: 3.8 g | 7514±37 | 6440–6250 | |



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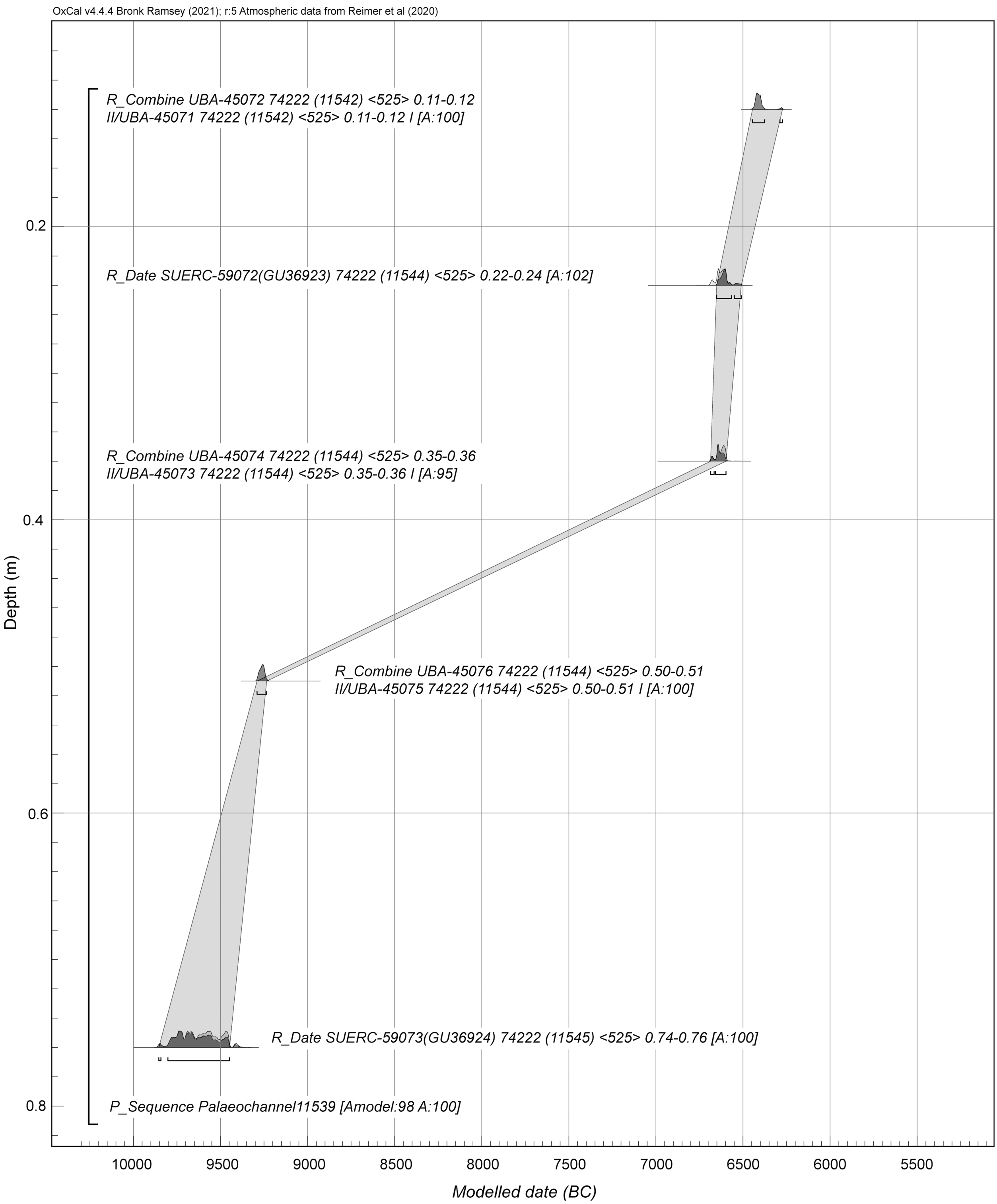


Fig. 8.
Radiocarbon age-depth model, palaeochannel 11539



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the inconsistent results for the two pairs of measurements from these depths (R_Combine $\chi^2$ v=1 T'=9.712 T'(5%) =3.8 and R_Combine $\chi^2$ v=1 T'=21.375 T'(5%) =3.8 respectively), which suggest the admixture of material of different radiocarbon ages. The peat surface directly below the hiatus is undated but is likely of Early Mesolithic date, suggesting a hiatus in peat formation of *c.* 2500–3000 years. Modelling of radiocarbon dates at 0.36–0.35 m (UBA-45074/73), 0.24–0.22 m (SUERC-59072 (GU-26923)) and 0.12–0.11 m (UBA-45072/71, this latter pair successfully combined (R_Combine $\chi^2$ v=1 T'=0.3 T'(5%)=3.8)) indicate a defined period of peat formation in the Late Mesolithic from *6690–6590 to 6450–6270 cal* BC.

Zone 525-1 (0.78–0.55 m) Poaceae-Cyperaceae (*c.* 10,100–9230 cal BC)

Pollen assemblages are characterised by high values for non-arboreal pollen (NAP) and low arboreal pollen (AP), principally Poaceae (grasses), Cyperaceae (sedges) and *Anthemis* (chamomiles) (Fig. 9). Pollen of Rubiaceae (bedstraws) increases, with a notable increase towards the top of the zone in Rosaceae (rose family) and *Filipendula* (meadowsweet). In general there is a greater diversity in herbaceous pollen taxa in Zone 1, and to a lesser degree Zone 2, that is likely to represent a range of species forming components of a floristically diverse swamp environment. Intermixed with stands of sedges and reeds is a range of plants which would have been growing at lower levels underneath a taller canopy of sedges and reeds, including on sedge tussocks or as sprawlers and climbers (eg, represented by Rubiaceae and Apiaceae: carrot family). The large values for NAP likely reflect dense stands of reeds and sedges growing locally within the palaeochannel and adjoining wetland areas, filtering out pollen of taxa growing on the nearby dry ground. AP largely comprise *Betula* (birch), *Pinus sylvestris* (pine), and *Salix* (willow) with occasional *Corylus avellana*-type (hazel) and *Juniperus* (juniper), suggesting a largely open *Betula–Pinus* woodland with occasional *Salix* potentially growing on wetter soils within the river valley. A peak in microscopic charcoal is recorded at 0.62 m (1.6 $cm^2$ $cm^3$). The charcoal was generally amorphous with occasional fragments preserving cellular structure characteristic of grasses.

Zone 525-2 (0.55–0.37 m) *Betula–Salix*–Poaceae (*c.* 9230–6600 cal BC–?)

This zone is considered likely to include a substantial hiatus in peat accumulation based on the sedimentary, radiocarbon, and pollen data. Values for AP increase through the zone with a significant decline in NAP (Fig. 9). Cyperaceae decreases sharply with fluctuating but generally declining frequencies for Poaceae pollen and an overall decline in the range and values for herbaceous pollen taxa. AP is represented primarily by *Salix* alongside *Betula*. Values for *Pinus* are low but increase gradually towards the top of the zone along with higher values for both *Corylus avellana*-type, *Quercus* (oak), and *Ulmus* (elm). The increase in AP over NAP is likely to reflect a growing contribution of *Salix* growing on wetter soils along with *Alnus glutinosa* (alder). A peak in microscopic charcoal is recorded at 0.5 m (1.4 $cm^2$ $cm^3$), declining to 0.79 and 0.1 $cm^2$ $cm^3$ through the zone. The charcoal was largely amorphous with occasional fragments preserving cellular structure of grass.

Zone 525-3 (0.37–0.02 m) *Pinus–Corylus–Quercus–Ulmus–Alnus* (*c.* 6600–5290 cal BC)

There are significant changes in the composition of the pollen assemblage from Zone 2 to Zone 3 and the values for individual pollen taxa (Fig. 9). Arboreal pollen dominates, including increasing quantities of *Pinus*, *Quercus*, *Corylus*, *Ulmus*, and *Alnus glutinosa*, with occasional *Salix* and *Tilia* (lime). *Pinus sylvestris* produces significant quantities of well-dispersed pollen and may have formed a locally important component of a woodland canopy that was increasingly dominated by broadleaved trees. Microscopic charcoal was recorded in consistently low values ($<0.4$ $cm^2$ $cm^3$).

## DISCUSSION

The site at Eversley marks a significant discovery in the Blackwater Valley. It occupies an otherwise notable blank on distribution maps of Mesolithic occupation connecting the Weald in the east and the Kennet Valley in the west. The collaborative approach, comprising recovery of worked flint artefacts with associated palaeoenvironmental material which has been dated by radiocarbon, providing an environmental and landscape context for human



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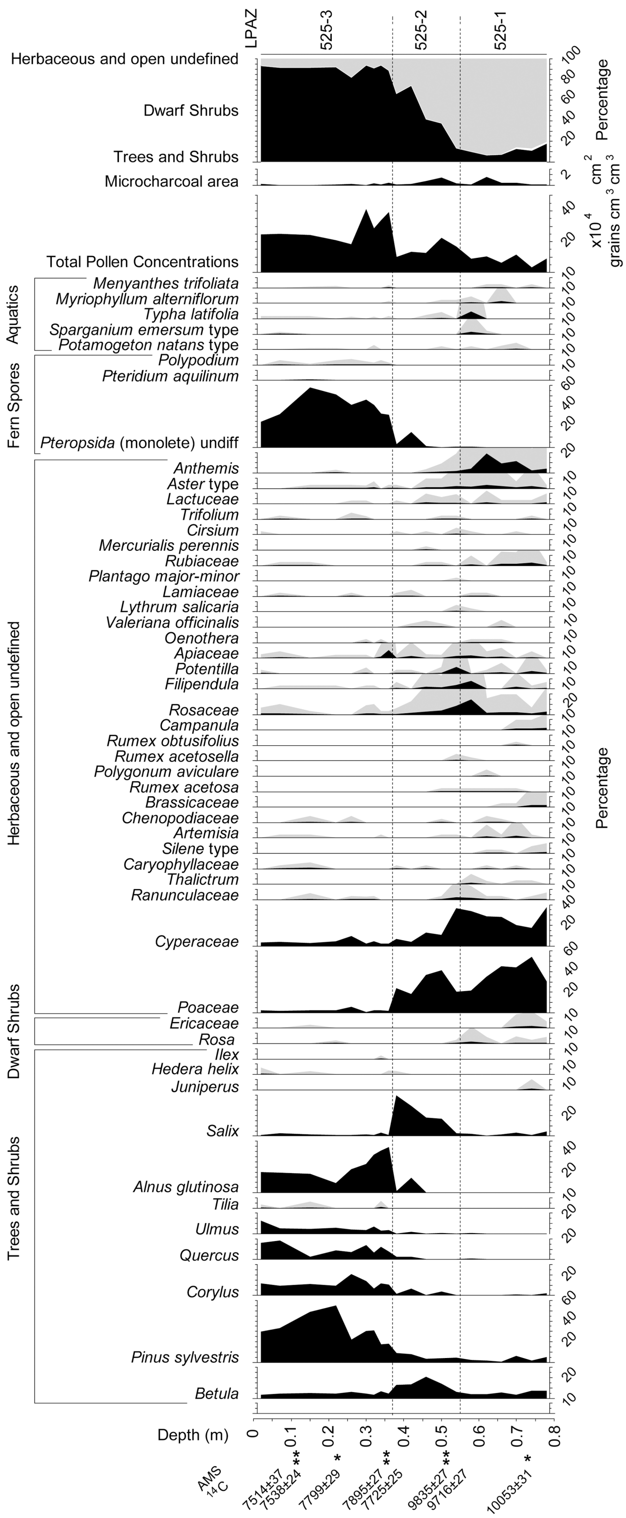


Fig. 9.
Pollen percentage and microscopic charcoal-area diagram, monolith 525, palaeochannel 11539



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activity. The combined results provide a major additional component to our understanding of the Mesolithic in the region.

*Physical landscape and environment*

Pollen analysis, supported by radiocarbon dating and Bayesian modelling of peat in-filling palaeochannel 11539, has contributed to a picture of a dynamic floodplain environment within the Blackwater during the Late Glacial and early Holocene. Palaeochannels, including both networks and isolated channels, are a ubiquitous feature of river valleys across the UK throughout the Pleistocene and Holocene, occurring in both major and tributary river systems and indicative of dynamic and complex fluvial environmental histories (eg, Sidell *et al*. 2000; Bates & Whittaker 2004; Baker 2007; Howard *et al*. 2014). River systems are highly dynamic and are influenced by a range of factors, including climate, vegetation, hydrology, and human activity. The network of channels recorded at Eversley are filled with sands and gravels and layers of sand and silt with lenses of sub-angular and rounded gravels, representing a high energy, braided river system characteristic of a Late Glacial floodplain environment. These channels were separated by elevated mobile sand and gravel bars on which Mesolithic activity was later variously located.

The fills of the palaeochannels grade into finer grained sediment, indicating a reduction in fluvial energy within the channels, succeeded by organic-rich deposits. Modelling of radiocarbon dates provides a broad date range for the basal organic deposits within palaeochannel 11539 (*10,100–9540* cal BC) but raises the possibility that initial formation of the silty peat may have commenced as early as the terminal Upper Palaeolithic, though an early Holocene date seems more probable. This reduction in fluvial energy saw the river develop into an anastomosing form, comprising multiple, interconnected, low energy channels likely separated by largely stable vegetated islands. Brown *et al.* (2018) highlight that there is abundant evidence that many UK river systems during the early–mid-Holocene were anastomosing, including major rivers such as the Thames and Trent. At Eversley, the development of peat may reflect the final phase of channel activity as plant communities increasingly colonised slow moving water courses, with channels gradually de-activating as the river evolved into a single meandering course. The higher silt content of the peat from 0.79–0.56 m, and higher incidence of aquatic pollen in zone 525-1 (Fig. 9), is indicative of peat formation in a low energy fluvial environment. However, the shift in peat composition from 0.56 m, lower incidence of aquatic pollen and increase in pollen of willow and birch, is suggestive of the development of semi-terrestrial wetland plant communities within the former channel.

Radiocarbon dating indicates a significant hiatus in peat formation of *c*. 2500–3000 years at some point between *c. 9230 and 6690 cal* BC (0.50–0.51 m and 0.35–0.36 m), which could correspond to a sedimentary hiatus at 0.36–0.37 m indicated by a mineralised band containing vivianite and occasional small stones. The subsequent peat, forming in the Late Mesolithic, includes a significant alder component likely representing stands of wet carr-woodland forming on wet ground across the floodplain and/or along channel margins and boggy areas. Hiatuses are commonly recorded in fluvial and wetland sequences, and a synthesis of their occurrence and date by Simmonds (2017) from sites across south-eastern England reveals examples of varying age and duration. There is no regularity in the timing of these hiatuses between sites, suggesting that they were largely influenced by localised changes in hydrology and landscape. At Eversley, the former channel most probably persisted as a hollow feature in the landscape with renewed peat formation in the Late Mesolithic as a consequence of hydrological change (eg, rising ground water) with no sign of channels re-activating.

The vegetation signal from palaeochannel 11539 is consistent with palynological data from southern England and patterns of tree-spreading characteristic of an ameliorating climate from the onset of the Holocene (eg, Day 1991; Scaife 2000; Chisham 2004; Groves 2008; Groves *et al.* 2012; Brewer *et al*. 2017; Simmonds *et al*. 2021). Cold, open tundra environment was replaced by an open birch–pine woodland, with pine becoming the dominant woodland component from *c*. 9500 cal BC to around 8200 cal BC. In pollen sequences, pine typically declines in favour of hazel from around 8500/8300 cal BC, followed by an increase in oak and elm from *c*. 8000 cal BC. This pattern of vegetation succession is not present at Eversley due to the hiatus in peat formation which covers this period and, although the Late Mesolithic is characterised by a mixed broadleaved woodland, there remains a significant pine component. Due to the high pollination rates and wide dispersal of pine



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pollen, only values above 20% were considered by Bennett (1984) to reflect localised populations. At Eversley, pine is recorded up to 60% in the Late Mesolithic, suggesting pine formed an important component of the local woodland canopy. The high values do not necessarily suggest pine was the dominant woodland component, owing to its profuse production of pollen grains, but may have been co-dominant along with oak, elm, and hazel.

At Conford in Hampshire (Groves 2008; Groves *et al.* 2012) and Elstead Bog in Surrey (Simmonds 2017) pine similarly remains an important component of the local woodland canopy into the Late Mesolithic. The persistence of pine at these locations has been linked to the presence of nutrient depleted, free draining sandy soils which provided pine with a competitive advantage over other arboreal species. At Eversley, concentrations of pine therefore likely persisted on the former sand and gravel terraces and more broadly on soils developed on Bagshot sands present to the north and south. The localised survival of pine has also been attributed to burning, which may have involved a combination of both natural agencies and human manipulation. The threshold for ignition of pine is lower than for other species such as oak, for example, which, when combined with pine's growth on dryer free-draining soils, is likely to have made populations highly susceptible to burning (Hille 2006). While at sites such as Conford there is a relationship between high charcoal and pine values through the Mesolithic (Groves *et al.* 2012), which may include anthropogenic activity, no such relationship is apparent at Eversley. However, peaks in microscopic charcoal values are apparent at Eversley in the Early Mesolithic associated with the localised dominance of herb swamp vegetation. Several fragments of charcoal preserve cellular structure identifiable as grass and which may reflect localised burning of reeds, perhaps similar to that widely recorded across Britain and in cases closely associated with Mesolithic activity (eg, Mellars & Dark 1998; Chisham 2004; Brown 2005; Bell 2007).

### *Human activity*

The palaeoenvironmental evidence at Eversley has created a canvas on which Mesolithic activity in the Blackwater/Loddon valley can be superimposed. The results embellish a picture of human land use that extends across the London Clay and its component river systems into adjoining geological and topographical divisions. The River Thames and its tributaries provided vital interconnecting axial routeways linking this major river to adjoining river systems in the west (Bell 2020) and the Midlands. This network can now be confirmed into the Weald via the Blackwater River. It is unclear when human groups first visited the valley: no unequivocal traces of Late Glacial or Early Mesolithic presence were found at the site. However, the terrace margins and floodplain of the rivers Wey (Jones 2013; Hayman *et al.* 2015; Barton *et al.* 2020), Kennet (Froom 2005), and Colne (Lewis & Rackham 2011; Jones 2013; Barclay *et al.* 2017) all contain important Late Upper Palaeolithic flint scatters suggesting that comparable material is likely in the Blackwater valley.

There has been a marked increase in the number of Mesolithic sites across Northern England and the Midlands in the present century (Myers 2006), an observation that extends across southern England. Much of this improvement has resulted from increased commercial archaeology involving field work in river valleys. These locations were not routinely conducive to excavation but are now accepted as important locations for Late Mesolithic occupation across large parts of lowland Britain (Conneller 2022, 294; Hey and Robinson 2011) including the Thames basin where exploitation extended across a range of geologies and topographies.

Mesolithic studies are well established in the Kennet valley (Wymer 1959; 1960; 1962; 1963; Froom 1976; 2012). Understanding of Late Mesolithic activity has expanded along the Thames valley (Bishop 2002; Leivers *et al.* 2007; Bates & Stafford 2013; Bishop *et al.* 2017), its watersheds and tributaries including the Ebbsfleet (Bates & Stafford 2013), Lea (Conneller 2022), Colne (Conneller 2022), Mole (Poulton *et al.* 2017), and Beam (Champness *et al.* 2015). Artefacts in the valleys of the rivers Wey and Mole have remained concentrated close to the respective head waters below the North Downs escarpment, extending along the Wealden Greensand. Downstream, these arterial southern tributaries of the Thames, where they cross the London Basin, are less well represented by sites although records indicate a high potential. The PaMELA archive (Wessex Archaeology & Jacobi 2014) lists only 25 objects from 13 locations along the Wey valley and 3497 objects in the Mole valley from 17 locations – of which 3310 pieces were collected from Southwold Manor Farm, Hersham.



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These records have been supplemented by confirmation of untapped potential of the higher ground surrounding the valleys. Springs that fed the Thames on Hampstead Heath (Collins & Lorimer 1989) are well known, with more recent discoveries made on Thanet Sand bordering the River Mole (Wessex Archaeology 2015).

These national trends can now be applied to the Blackwater floodplain and on the higher flanks of the Blackwater (White 2012). Discreet scatters of Mesolithic worked flints can be traced intermittently for approximately 700 m along the valley floor into flooded areas of former quarrying. These results can be added to those from Whistley Court Farm, (Harding & Richards nd) where worked flints occupied a band, approximately 200 m long and 50 m wide, adjacent to the present channel of the River Loddon.

Artefact densities within scatters at Eversley varied; each collection providing no more than a sample of the technology and assemblage composition. Nevertheless, the results have provided sufficient hints of date and site use that are comparable with established Mesolithic site types. The microliths suggest a date within or after the 7th millennium BC. Radiocarbon dates indicate that peat development at the site had largely ceased and the floodplain and related landscape was drier and colonised by mixed broadleaved woodland with pine. Human presence within this environment was represented by an extensive spread of artefacts on a prominent knoll in the floodplain. These distinct topographic features may have been adopted as accessible, well known locations that were revisited frequently or seasonally and conceivably acquired special status. The collection contains a wide range of artefact types, including axes, microliths, microburins, scrapers, cores, and other miscellaneous retouched material. Sites of this type have been viewed (Mellars & Rheinhardt 1978; Barton 1992) as long-term, valley home bases, where multiple tasks were performed. Sites with comparable retouched tools include Tolpits Lane B101 in the Lea valley, Broxbourne 105 in the Colne, and Avington VI in the Kennet (Conneller 2022, table 5.7).

The remaining clusters, which may have co-existed with these home base locations, comprised small, nucleated assemblages. Clusters were characterised by flaking debris and restricted tool composition, predominantly microliths, and have been linked to short-term occupation based on hunting expeditions, by small, relatively mobile groups. These sites were located on well drained, sand bar levees that resulted from overbank flooding at the channel edge. Many of these features survive in the present landscape, adjacent to the present channels of the river and relict palaeochannels. Harding and Richards (nd) stressed that awareness of these subtle changes in the extant microtopography was an essential element in recognising and predicting potential locations of Mesolithic activity. Studies towards the edge of the floodplain, to the north and west (Cotswold Archaeology 2008; 2009; Wessex Archaeology 2011), produced relatively low densities of worked flints. It suggests that the drier conditions that prevailed by the Late Mesolithic period made the floodplain more accessible, creating a landscape where Mesolithic groups gravitated to eminences at the channel edge. Comparable utilisation of the well-drained elevated sands and silts at the edge of the Kennet floodplain has been noted at Wawcott III, Berkshire (Froom 1976; 2012). Seasonal floodplain use with more concentrated, but small scale, use of floodplains and gravel islands was also evident at the Eton Rowing Lake, Buckinghamshire (Allen *et al.* 2013, 76) and at Runneymede Bridge (Needham 2000), where Late Mesolithic scatters, predominantly from late 7th millennium BC, illustrated short-term occupation. Use of localised high spots in the floodplain has also been recorded in the Trent valley (Myers 2006).

The flint scatters provide enduring evidence of human activity and were undoubtedly accompanied by organic waste, hearths, and traces of shelters. Excavations in the Kennet valley (Wymer & Churchill 1962; Ellis *et al.* 2003) and further afield (Milner *et al.* 2018a; 2018b) provide vivid illustrations of abandoned camp sites. Diet was apparently based around terrestrial species, including aurochs, wild pig, red, and roe deer with smaller quantities of other quarry (Conneller 2022, table 5.6), a pattern repeated at Faraday Road, Newbury, Berkshire (Ellis *et al.* 2003). These locations, as Hey and Robinson (2011) have emphasised, resulted from groups of individuals with complex social, spiritual, personal, and collective lifestyles who shared a common bond with their environment and landscape. Charcoal has featured frequently in Mesolithic studies. Significant quantities found on sites in East Anglia (Billington 2017) may have been produced by campfires; however, it is also possible that it resulted from strategies to control the local environment (Barnett 2009; Bos *et al.* 2013).



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Charcoal flecks in the upper parts of the peat sequence at Eversley may also provide tantalising hints of this practice, involving burning of the undergrowth to encourage plant regeneration and grazing opportunities.

This project has added the valleys of the Blackwater and Loddon to the national corpus of Mesolithic occupation of Britain. The results have reinforced the conclusion that the conventional evaluation methodology by machine trenching provides an inappropriate strategy for locating Mesolithic flint scatters. Furthermore, the failure to implement a supplementary phase of work to evaluate the potential presence and survival of Mesolithic material, which had been identified in later features, within the subsoil was critical. The identification of Mesolithic material in 2014 owed its discovery to the fortuitous observation of worked flint scatters on the well-weathered surface of the stripped subsoil.

### *Understanding patterns of settlement and resource utilisation in riverine environments*

The evidence for Mesolithic activity and environment at Eversley is considered in the content of broader models of Mesolithic settlement and resource utilisation. This requires one to think beyond the site level and consider human–environment relationships at a landscape scale, and one in which river valleys formed part of a broader pattern of landscape connectivity and settlement. Traditional models of Mesolithic settlement emphasise seasonal mobility, including bimodal models first proposed by Clark (1972) based on evidence from Star Carr, East Yorkshire, and involving a distinction between aggregated lowland and transitory upland settlement related to the seasonal availability of resources. The concept of settlement concentrating in lowlands in winter followed by group dispersal into uplands in summer has had a far-reaching impact on subsequent models of hunter-gatherer settlement (eg, Barton *et al.* 1995; Simmons 1996; Legge & Rowley-Conwy 1988). Models of task specific mobility, also termed logistical mobility, involve variable degrees of movement between aggregated base camps and satellite camps based on the seasonally and spatially irregular distribution of resources. More recent models have considered concepts of hunter-gatherer territoriality (eg, Donahue & Lovis 2006; Waddington 2015) linked to both seasonal and year round mobility. Critics have emphasised that models are often over simplifications of actual hunter-gatherer systems which often display considerable variability (Jochim 1991), with a spectrum ranging from highly mobile to sedentary settlement.

It has been suggested that the degree of mobility may be evident in the artefact diversity on sites, with mobility increasing as artefact diversity decreases (Shott 1986). Sites in the Pennines (Mellars 1976) and Yorkshire Wolds (Jacobi 1978) exhibited a clear difference between large diverse tool assemblages on lowland sites and small microlith dominated assemblages in upland sites. This was interpreted as evidence for a distinction between lowland winter base camps, occupied for extended periods of time and where a range of activities were undertaken, and transient upland summer camps focused on specific activities. The lithic assemblage from Eversley comprises a comparatively limited number and diversity of tool types but large numbers of cores. Any assessment of the overall assemblage against Shott's (1986) criteria would ignore the potential for changes in mobility patterns and frequency of visits over time and the likely multi-functional nature of tools which would belie the range of activities occurring on site.

A recent overview of settlement models for Mesolithic Britain and Ireland (Preston & Kador 2018) highlights the dietary evidence from isotope data suggesting the possibility of separate hunter-gatherer groups focused on coastal and inland territories. This has been used to suggest models of mobility focused on territories defined by river basins within which a diversity of mobility patterns may have occurred. The Kennet Valley is well known for the concentration of sites along the floodplain and floodplain edges, which have been interpreted to reflect axes of movement between the rivers Thames and Avon to the east and west respectively (eg, Bell 2020). A similar concentration of Mesolithic activity is recognised from the upper Colne valley and its tributaries (Lewis & Rackham 2011), which argues for mobility focused within river valleys, while a spatial examination of findspots in Surrey included concentrations in wet–dry marginal locations (Simmonds *et al.* 2019). Riparian ecosystems are characterised by their high potential for biological diversity and productivity. These habitats often exist as ecotones, representing natural boundaries with marked changes in vegetation (Walker *et al.* 2003), frequently occurring as comparatively small areas of



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ecological richness between areas of greater homogeneity. This richness and diversity, also seen in coastal or lakeside settings, clearly formed a focus for hunter-gatherer activity. The focus on rivers is likely a reflection of the tendency towards more open, resource rich mosaic habitats representing natural routeways for both humans and animals, influenced and shaped by both anthropogenic and natural disturbance factors. It is not the aim of this article to add to debate on the recognition of natural versus anthropogenic agencies in the archaeological record, other than to accept that together various factors played an important role in shaping environments and influencing settlement patterns. Mesolithic communities may variously have burned reed swamp or modified woodland/woodland edge environments to promote the growth of edible plants or encourage increased graze by herbivores. Likewise, natural fires, storms, and the impact of herbivores (beavers and grazers and browsers) on vegetation development and succession no doubt provided additional and, perhaps at times, unexpected niches for human exploitation.

Eversley lacks the full range of organic and environmental data present from other well known Mesolithic sites such as Star Carr (Milner *et al.* 2018a; 2018b) and Goldcliff in the Severn Estuary (Bell 2007), and as such consideration of settlement patterns in the Blackwater are in their infancy. However, existing models provide an interpretative framework as new sites and data emerges. Although there is limited evidence from the pollen record (Fig. 9) for modification of the local vegetation, this could reflect taphonomic factors related to the source area of pollen and charcoal (eg, Patterson *et al.* 1987; Ohlson & Tryterud 2000; Hellman *et al.* 2009), or a strategic application of specific resource/land-use strategies. Certain activities such as coppicing, localised patch burning, or management of berries/nuts can be challenging to detect in the environmental record (see Warren *et al.* 2014, for example) except under exceptional preservation. The lithic evidence suggests a diversity of settlement activity at Eversley which may have extended from long term base camps through to short term activity focused at the wet–dry interface. This reflects the importance of a river/wetland edge setting, although at present we lack sufficient evidence to suggest if there was a particular focus on movement along the Blackwater or as part of wider settlement on the interfluves.

The dynamic nature of river valleys can act to both truncate and remove as well as preserve and obscure evidence. Although Eversley is the first Mesolithic site identified from the Blackwater, the expectation is that it formed part of a broader pattern of Mesolithic settlement within the valley and broader tributary system. Floodplain and wetland edge locations in particular have a high potential for recovery of artefactual and associated environmental remains. Blank areas on the map, such as the Blackwater valley are key contexts for identifying sites and further testing and refining existing models of settlement and human–environmental interactions within riverine landscapes.

## CONCLUSION

The results of the archaeological fieldwork have established a significant presence of Mesolithic activity with associated palaeoenvironmental data at Eversley, the first such site of this period recorded from the Blackwater valley. The findings highlight the undoubted potential for similar sites along the entire length of the Blackwater/Loddon valley but have gone unrecognised through lack of appropriate fieldwork. Radiocarbon dating and Bayesian modelling in support of this publication established that the peat preserved in palaeochannel 11539 represented two phases of relatively short peat formation, each ranging between 150 years to a few centuries at most, separated by a substantial hiatus of up to 2500–3000 years. Despite the somewhat restricted chronological extent of the pollen sequence, this is not uncommon in minor river valleys compared to the more extensive sequences available from major rivers such as the Thames. The data, nonetheless, provides an environmental context for Late Mesolithic activity, as well as for the preceding Early Mesolithic, despite the current lack of archaeological evidence for activity.

The floodplain at Eversley developed from a high energy braided river system in the Late Glacial to an anastomosing system in the Early Mesolithic. Over time, the channels silted up and were ultimately colonised by vegetation and infilled with peat, leaving hollows in the floodplain landscape that later became boggy, with renewed peat formation as a result of fluctuating groundwater levels. Mesolithic activity is likely to have occurred on vegetated bars adjacent to these channels and areas of boggy ground along the floodplain, though this does not preclude as yet



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unidentified activity of similar or Early Mesolithic date along the valley flanks. It is hoped that the results of this study will act as a basis for future work within the Blackwater and other minor river valleys, further supporting and emphasising the value of minor water courses to preserve important palaeoenvironmental archives and associated archaeological evidence for past human activity.

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## RÉSUMÉ

*La Blackwater n'est pas une eau stagnante : localiser le Mésolithique et son environnement à Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire, par Phil Harding, Alex Brown et Inés López-Dóriga.*

Des recherches de terrain à Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire, ont mis en évidence la présence d'activité mésolithique, associée à des dépôts paléo-environnementaux, dans la plaine d'inondation de la rivière Blackwater, où aucune trace de telles activités n'était connue auparavant. Cette découverte a commencé avec l'identification d'outillage lithique taillé réparti dans une partie du site sur une couche de sol inférieure, exposée par l'érosion. Du matériel supplémentaire fut ensuite prélevé sur le sommet d'une butte basse adjacente. La quantité et l'importance de ces découvertes étaient alors suffisantes pour justifier une intervention archéologique comprenant une série de sondages disposés en grille, afin d'évaluer le potentiel mésolithique des autres secteurs du site. Cette opération permit d'identifier d'autres concentrations de silex taillés, préservés in situ.



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Ces concentrations datent essentiellement du Mésolithique mais elles comptent également du mobilier néolithique et de l'âge du Bronze, ce qui indique une longue utilisation de ce paysage. Les concentrations se situaient systématiquement sur des bancs de sable de faible élévation, situés sur les bords de paléocanaux d'un ancien cours d'eau en tresses. La contemporanéité de ces paléocanaux et de l'activité mésolithique a été confirmée par la datation au radiocarbone de matériel tourbeux formé durant l'Holocène. Ces résultats collectifs représentent une contribution importante aux connaissances sur la vallée de la Blackwater, une artère de communication majeure reliant l'extrémité ouest de Wealden Greensand aux rivières Thames et Kennet. Ces découvertes soulignent également l'importance des vallées fluviales pour des lieux qui ont été moins étudiés mais qui jouirent néanmoins de fréquentations sur le long terme.

## ZUSAMMENFASSUNG

*Der Blackwater ist kein Backwater: Die Lokalisierung des Mesolithikums und seiner Umwelt in Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire*, von Phil Harding, Alex Brown und Inés López-Dóriga

Archäologische Feldforschungen in Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire, erbrachten Nachweise für mesolithische Aktivitäten, die mit paläoökologischen Ablagerungen im Überschwemmungsgebiet des Blackwater River in Verbindung stehen, einem Fluss, für den Aktivitäten aus dieser Zeit bisher unbekannt waren. Die Fundstelle zeigte sich durch die anfängliche Entdeckung von bearbeiteten Feuersteinartefakten auf der Oberfläche eines stark verwitterten, abgetragenen Untergrundes in einem Bereich des Fundplatzes. Weitere Funde wurden später auf der Kuppe eines angrenzenden niedrigen Hügels gesammelt. Umfang und Bedeutung der Funde waren ausreichend groß, um zusätzliche archäologische Feldarbeiten zu rechtfertigen, bei denen ein Raster von Testschnitten angelegt wurde, um das mesolithische Potenzial in den übrigen Bereichen des Geländes zu bewerten. Dies führte zur Identifizierung zusätzlicher Cluster von bearbeiteten Feuersteinen, die *in situ* erhalten geblieben waren.

Diese Cluster datieren vornehmlich ins Mesolithikum, schließen aber auch neolithische und bronzezeitliche Artefakte ein, was eine fortgesetzte Nutzung der Landschaft anzeigt. Fundkonzentrationen befanden sich durchweg auf leicht erhöhten Sandbänken, die Paläokanäle eines ehemals verzweigten Flusssystems flankierten. Die Gleichzeitigkeit von Paläodrainage und mesolithischer Aktivität wurde durch Radiokarbondaten aus Torf bestätigt, der sich während des Holozäns gebildet hatte. Die zusammengeführten Ergebnisse stellen einen bedeutenden Beitrag zum Wissen über das Flusstal des Blackwater dar, das im Mesolithikum eine wichtige Verkehrsader gewesen war, die das westliche Ende des Wealden Greensand mit den Flüssen Themse und Kennet verband. Die Ergebnisse unterstreichen auch die Bedeutung, die Flusstäler für Räume haben können, die weniger gut erforscht sind, aber dennoch lange Zeit genutzt wurden.

## RESUMEN

*Río Blackwater no es un remanso: identificando el Mesolítico y su ambiente en Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire*, por Phil Harding, Alex Brown *e* Inés López-Dóriga

Los trabajos arqueológicos en Eversley Quarry, Fleet Hill Farm, Finchampstead, Berkshire documentaron evidencia de actividades durante el Mesolítico, asociadas a depósitos paleoambientales en las zonas inundables del río Blackwater, un cauce cuya actividad durante este período era previamente desconocida. El descubrimiento se produjo desde la identificación inicial de artefactos líticos trabajados a lo largo de una superficie erosionada y natural en una parte del sitio. Posteriormente, se recogieron materiales adicionales en la cima de un montículo adyacente. Estos descubrimientos fueron suficientemente extensos e importantes como para garantizar una intervención arqueológica suplementaria empleando una estrategia de sondeos en una superficie cuadriculada para evaluar el potencial de las ocupaciones mesolíticas en las restantes partes del yacimiento. Esto supuso la identificación de conjuntos adicionales de útiles de sílex trabajados que fueron preservados in situ. Estos conjuntos eran predominantemente de cronología mesolítica, aunque también incluían



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artefactos neolíticos y de la Edad del Bronce, indicando un uso prolongado del espacio. Las concentraciones fueron consistentemente localizadas en zonas arenosas ligeramente elevadas que flanqueaban los paleocanales de un sistema fluvial previamente trazado.

La contemporaneidad del sistema de paleodrenaje y las actividades mesolíticas ha sido confirmada por las dataciones radiocarbónicas de la turba que se formó durante el Holoceno. Los resultados globales marcan una significante contribución al conocimiento del valle del río Blackwater, una importante arteria de comunicación durante el Mesolítico que unía el extremo oeste de Wealden Greensand con los ríos Támesis y Kennet. Estos descubrimientos también resaltan la importancia que los valles de los ríos pueden tener en los lugares menos estudiados pero que, sin embargo, disfrutaron de un uso prolongado.



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