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Submerged Prehistory

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Submerged Landscape Excavations in the Solent, Southern Britain: climate change and cultural development

Garry Momber

At the start of the Mesolithic some 11,500 years ago, Britain was a peninsula of Northern Europe. The North Sea and eastern English Channel would have been a low-lying plain interspersed with hills, rivers and wetlands enabling access across territories from western Russia to Scotland, facilitating a steady groundswell of common culture. It took around 4000 years before Britain finally became an island and the proto-North Sea was formed. As the sea encroached, territories reduced but this was countered by a growth in productive estuaries, sheltered archipelagos, and maritime coastlines hosting rich ecosystems that would have been subject to increased population density. The impact of rising sea levels on societies before, during, and after final severance would have been acute and in some cases devastating as people were either forced to move, were isolated, or wiped out. When Britain became an island, the physical links with Europe were removed and cultural nuances developed along separate paths. This chapter examines some of the dichotomies between the British and European Mesolithic. It looks to the submerged palaeolandscape as a resource that could provide the answers to the apparent cultural divergence. The investigations at Bouldnor Cliff are presented as a case study that has revealed unique and significant artefacts demonstrating the potential to open the door on this little understood phase of North European human dispersal.

Keywords: Bouldnor Cliff, Solent, underwater archaeology, submerged landscapes, Mesolithic, climate change, human dispersal

Introduction

The sea-level rise during the Upper Palaeolithic and Mesolithic inundated vast ranges of the occupied land, displaced populations, and disrupted avenues of communication between Britain and continental Europe (Shennan *et al.* 2000; Lambeck and Chappell 2001; Bailey 2004). This loss, which would have had an irrevocable impact on the inhabitants, is now of benefit to archaeologists with the ability to look underwater. Ongoing discoveries have shown that where artefacts and sites are not destroyed they can remain preserved in saturated anaerobic sediments for thousands of years (Reid 1913; Coles 1998; Flemming 2004; Gaffney *et al*. 2007).

This chapter assesses the potential value of the cultural resource within these submerged lands as a primary archive for the interpretation of Mesolithic cultural progression during a time of great change. Some of the rich discoveries found at the submerged site of Bouldnor Cliff off the Isle of Wight, UK, will be presented. This case study will serve to validate the potential for the existence of similar sites that could inform our understanding of human adaptations as we map the impact of physical severance from the continent.

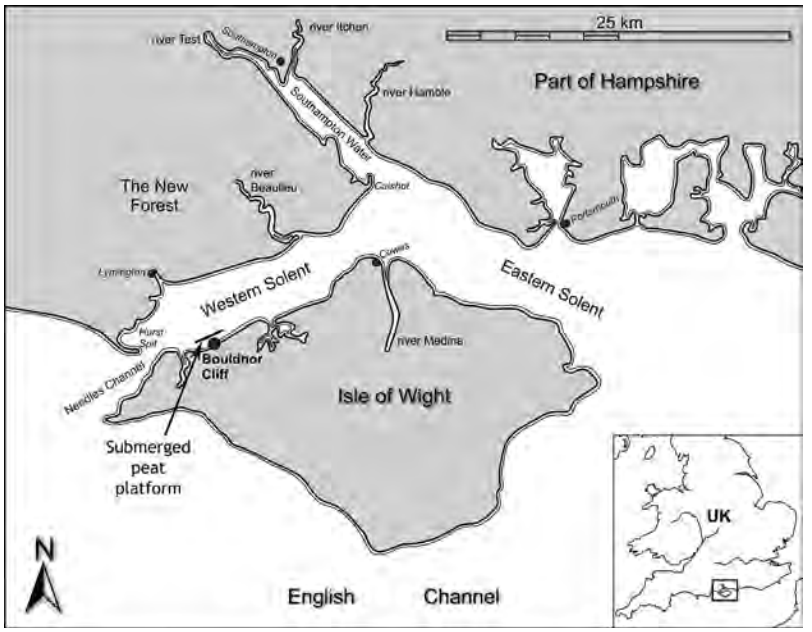


Figure 8.1: The Solent showing the location of the submerged peat platform at Bouldnor Cliff

The submerged lands of the Solent

Investigations of the 11 m deep submerged forests off the north shores of the Isle of Wight at Bouldnor Cliff have been ongoing intermittently since the 1980s, but it was not until 1999 that the first archaeological discovery was made by the Hampshire and Wight Trust for Maritime Archaeology (HWTMA). This has been followed by annual inspections and a series of fieldwork projects primarily supported by English Heritage in 2003 and the Leverhulme Trust in 2007.

The fieldwork has tested the archaeological potential of an 8000-year-old peat terrace that runs parallel with the coast for over a kilometre (Fig. 8.1). The peat protrudes from beneath protective sediments that were deposited above it as sea level rose (Fig. 8.2). Samples have been collected from the submerged landform and small evaluation trenches excavated. The results from the investigations have been presented in a number of interim publications as new information has come to light (Momber 2000, 2004, 2006; Tomalin 2000a; Momber *et al.* 2009). The studies have built a picture of the palaeoenvironment, the palaeolandscape, the manner of inundation, and the subsequent erosion.

Geomorphological evolution and site formation processes

Of great importance to any archaeological interpretation of inundated landscapes is knowledge of the site formation processes. The process that determines the progression from deposition to erosion or vice versa will dictate the preservation of the submerged land surface. Interpretation of that process will help recreate the palaeolandscape, which in turn can aid with modelling the location of Mesolithic sites (Fischer 1997; Peeters 2009a). Conversely, when anthropogenic activity is detected, consideration of the contemporary physical surrounding is of key importance when interpreting functional features and artefacts.

The creation of the proto-Solent has been of interest to academics for many decades. Until recently, it was believed to be a large river running from east to west across the north of the Isle of Wight. However, research by Velegrakis demonstrated that the river turned south before it reached the Isle of Wight (Fox 1862; Everard 1954; Allen and Gibbard 1993; Velegrakis 2000). A hypothesis that the western Solent was drained by a much smaller south flowing river, the River Yar, was proposed by Reid (1905) and then by Tomalin (2000b), but evidence has not been available to substantiate these propositions until deposits along the fringes of the Solent waterway were scrutinized. This took the form of bathymetric survey in conjunction with sedimentary, diatom and foraminifera evidence from select sediment archives at Bouldnor Cliff (Dix 2000; Scaife 2000, in press; Momber *et al.*, in press). The analysis has revealed a sequence of events that began with a river running north to south from the New Forest, through Lymington, across the western Solent, past Yarmouth, and out along the course of the River Yar cutting the chalk downs at Freshwater. The rise in sea level introduced estuarine sediments up the River Yar around 6000 cal BC, followed by the deposition of brackish, estuarine sediments covering and protecting what was a sheltered basin. By *c.* 4000 cal BC rising sea level overtopped land to the east of the basin and a couple of thousand years later the land barrier to the west was also breached. Radiocarbon dated vegetation from a drowned landscape 2.5 m below Ordnance Datum (OD) and immediately to the west of Hurst Spit gave a date of 1900–1690 cal BC (Beta-270797). The deposit from which the sample came is known to

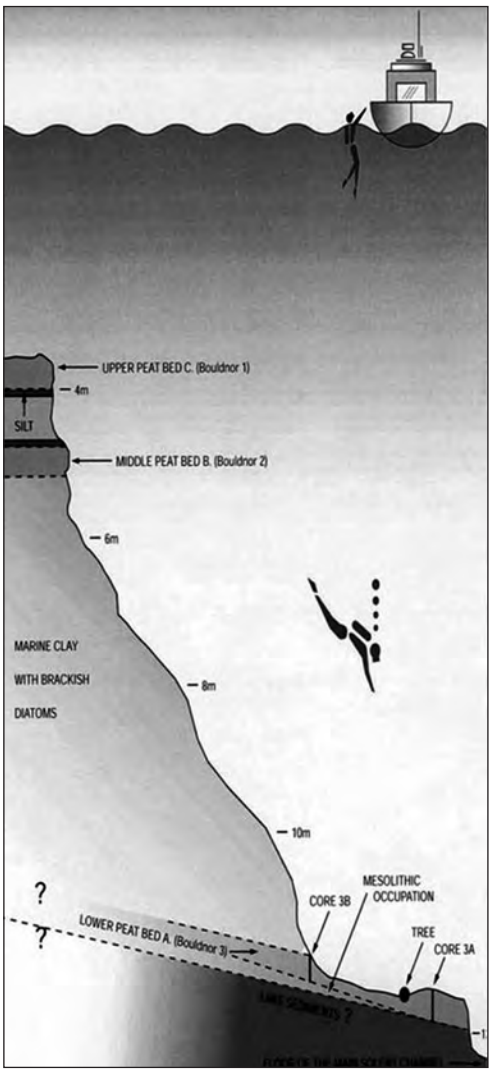


Figure 8.2: Schematic section across the submerged Bouldnor Cliff (Courtesy Isle of Wight Coastal Centre)

extend beneath the spit and would have formed an umbilical of high land that was breached when the Solent formed. Once water was able to pass from east to west, attrition from tidal currents would have begun to cut a channel, turning a sedimentary system into one of erosion (Momber *et al.*, in press).

The palaeoenvironmental evaluation in 2003, funded by English Heritage, demonstrated that the Mesolithic environment before inundation was associated with fen, a freshwater wetland and, possibly, a lake or river floodplain. This is an area that would have provided a sheltered refuge with accessible resources – in direct contrast to the landscape suggested by the current seabed, which infers a large river.

The complex scenario of varied and dramatic impacts that changed the landscape as sea level rose would not have been unique. As such, it highlights the need for informed investigation in order to determine the survival of buried terrestrial deposits.

Archaeological evidence and interpretation

Archaeological investigation in and around an evaluation trench in the area known as Bouldnor Cliff II (BC-II) has uncovered 83 worked flints (Fig. 8.3). Most of the lithics were flakes and debitage with a few retouched pieces, although the discovery of tranchet flakes attributed to the production of axes or adzes proved intriguing. On analysis, David Tomalin noted that one such bifacially prepared tranchet axe sharpening flake displayed care and symmetry usually associated with Neolithic craftsmanship (Tomalin, in press). These were recovered from the foot of the submerged clay cliff and from beneath stratified peat at a depth of 11 m below OD (Fig. 8.4). The host deposit from which the flints came represents a streamside environment that had once flourished close to a wetland or lake (Scaife, in press; Robinson, in press) that had turned into brackish water and saltmarsh by *c.* 5900 cal BC (Hamilton *et al.*, in press; Heathcote, in press).

A second major area of interest in the submerged landscape was identified in 2004. It lay 11.4–11.6 m below OD, 420 m WSW of BC-II where it is being uncovered from the northern edge of the basal peat platform. The locus was suspected to be rich in archaeology following the discovery of a pit containing burnt flints and fragments of wood, which has been interpreted as anthropogenic.

Figure 8.3: Examples of worked flints from the stratified deposits of BC-II

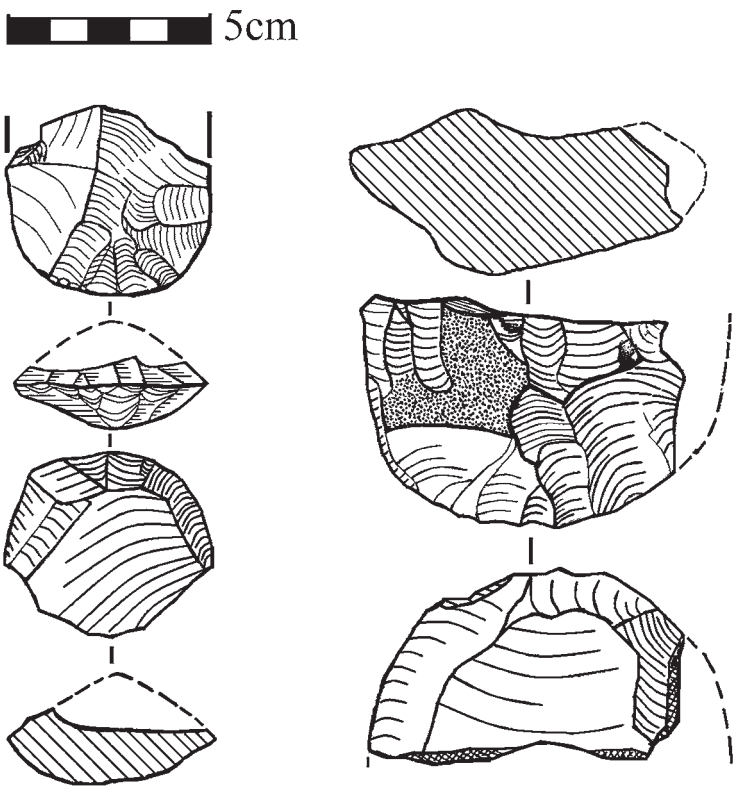
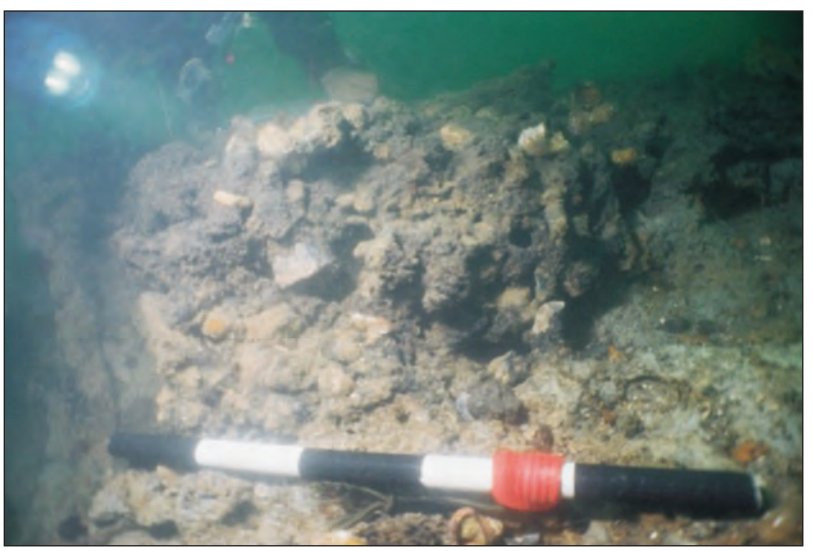


Figure 8.4: Tranchet axe sharpening flake and axe or chopper fragments (Drawn by David Tomalin)

Figure 8.5: Pit full of burnt flints found at the eroding edge of the peat shelf

The pit containing the burnt flint had been 'sectioned' by erosion and its contents were found spilling out onto the seabed below (Fig. 8.5). The remaining portion, measuring 45 cm wide by 40 cm deep had a clear outline indicating it had been dug into the old land-surface. A soft, organic-rich, silty clay covered burnt material comprising heated clay nodules, charcoal, and burnt lithics. The seabed at this point is 11.55 m (±0.15 m) deep. A piece of alder from the pit was radiocarbon dated with the posterior density estimate (95% probability) results giving an age of 6120–6010 cal BC (OxA-15699). When the final section of the pit was removed and examined, burnt layers indicated repeated use showing that heated stones were deposited in the pit on more than one occasion.



Another feature was recorded 1.3 m to the west of the pit. It comprised wood of differing shapes and sizes apparently forming a platform elevated 10–15 cm above the surrounding seabed. The feature measured 2.1 m across and had a range and variety of wooden pieces unlike any other feature recorded on the submerged landsurface. The underlying deposits were stratified. The topmost layer of fine, humified peat contained flat and roundwood. Immediately beneath was a mottled grey clay with burnt flint flakes and black organic material, which appeared to be resting on a basal horizon of twigs. A piece of alder recovered from just above the layer of twigs was impaled by a piece of worked flint (Momber and Campbell 2005). The piece of alder provided a 2-sigma calibrated age of 6100–5880 cal BC (Beta-209564). The intercalated mixture of sandy silt and cultural remains could be seen in the naturally cut section (Fig. 8.6).

Another piece of roundwood with evidence of working was found 20 m to the west. The surviving section was 0.32 m long and had been exposed as the seabed sediments were eroded. A small segment of wood had split from the main piece and bent beneath the tip, indicating that it was a wooden post that had been forced into the ground (Fig. 8.7). The timber was subsequently analyzed by wood specialist, Maisie Taylor, who concluded that it had been torn from the parent tree where chopping was used to cut through the final connecting strands of wood (Taylor, in press).

Monitoring over the next few years saw rapid erosion. In 2007, the Leverhulme Trust, through the University of York and the HWTMA, supported work to recover and record further samples of seabed from small evaluation trenches to help characterize the extent and potential of the archaeological remains. Most of the samples were collected in galvanized steel tins measuring 200 mm long by 250 mm wide by 330 mm deep. Evidence recovered from around the eroding features included charcoal, worked wood chippings, burnt flint, roasted hazelnuts, and prepared string (made of some, as yet,

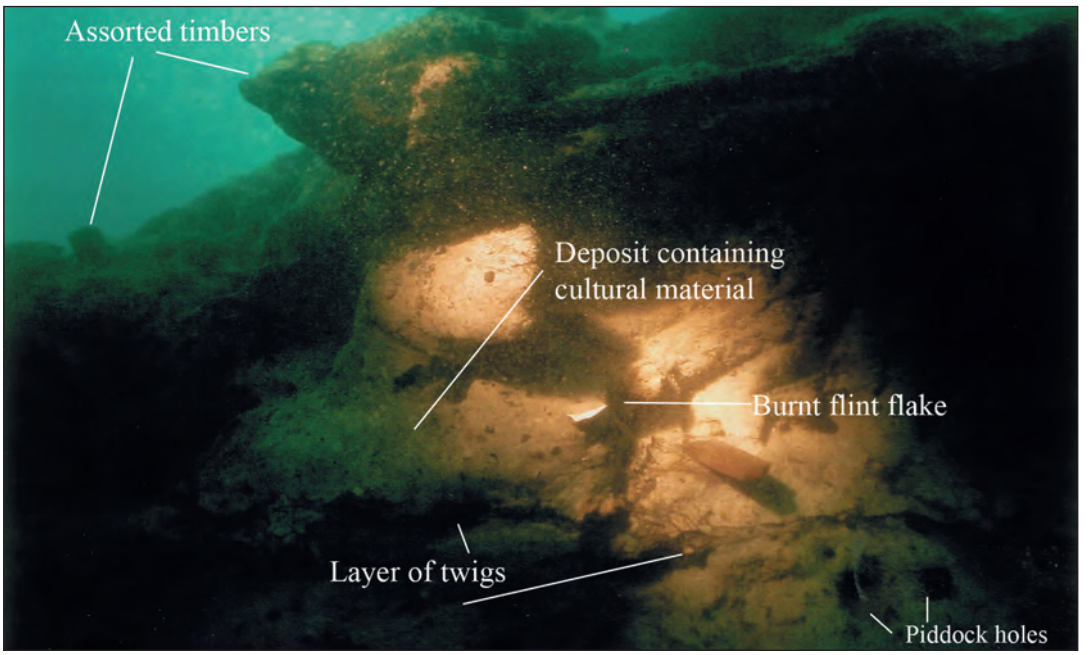


Figure 8.6: Eroded section showing assorted fragments of wood sitting on top of a 30 cm thick cultural deposit underlain by a layer of twigs, plus alder branch impaled by a burnt flint that had been worked

unidentified material). The finds occurred in a distinct stratified horizon that contained abundant burnt flints (Fig. 8.8).

Two metres to the south of the platform edge another concentration of wood fragments, which had become exposed beneath the peat, was investigated. An area approximately one-and-a-half metres square was uncovered, revealing 13 pieces of wood lying next to and across one another. The concentration was surveyed and the most vulnerable pieces were recovered. The pieces of wood were analyzed by Maisie Taylor who concluded that, 'all appear to have been modified by humans in some way. Some pieces show clear and definite signs of working, whilst others are less clear' (Taylor, in press). Figure 8.9 shows an example of the cut-marks observed on the timber.

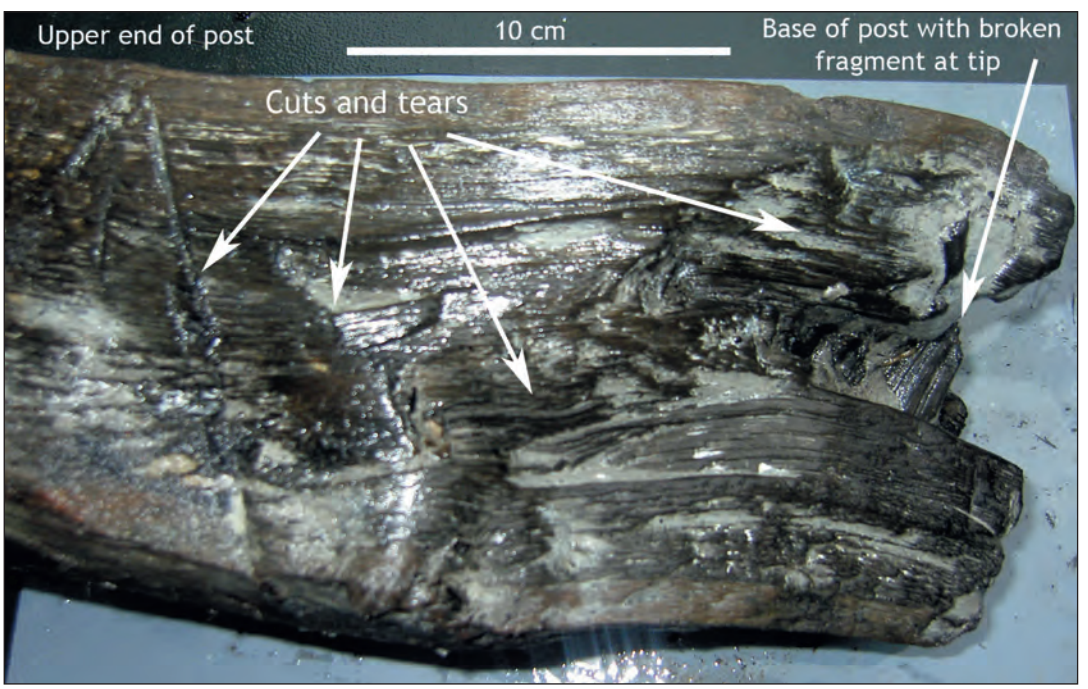


Figure 8.7: Base of post with marks cut into the timber when it was separated from its parent trunk and a broken piece of wood at its tip indicating that it had been forced into the ground

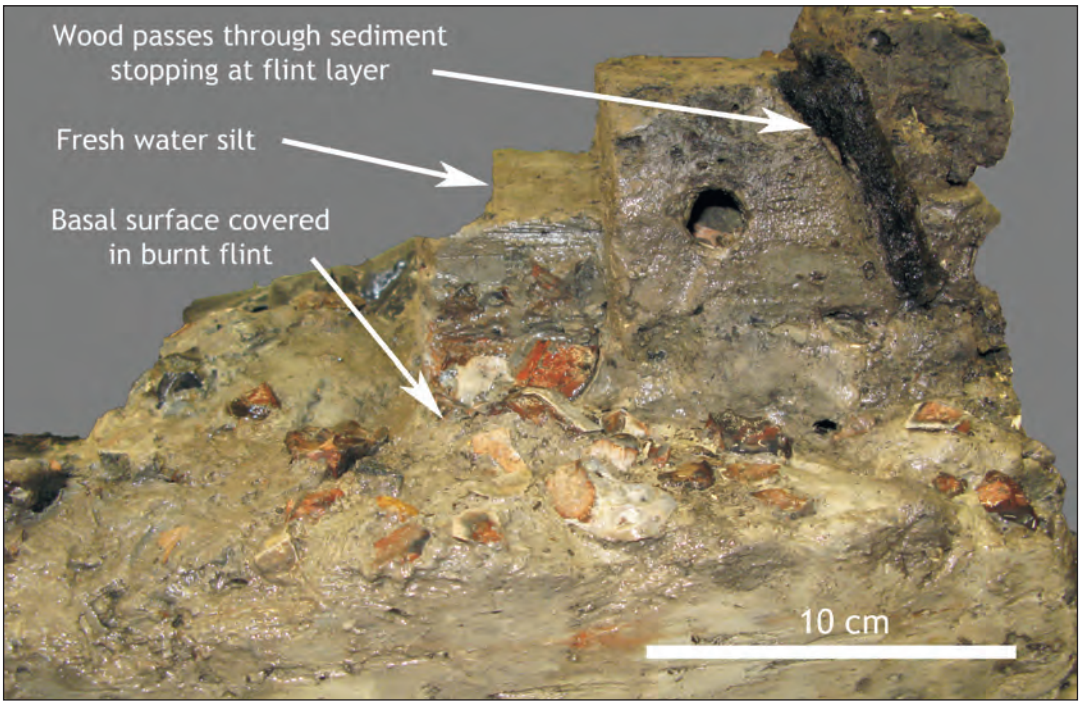


Figure 8.8: The burnt flint occurs within an archaeological horizon from which a range of organic artefacts have been recovered. The vertical piece of wood represents a possible later phase of activity

The piece with the most significant evidence of working measured 0.94 m by 0.41 m. It lay horizontally on the old landsurface and has provided a 2-sigma calibrated age of 6240–6000 cal BC (Beta-249735). The specimen, referred to as BC-F061, tapers at one end where there are signs of burning and it has a maximum thickness of 25 mm (Fig. 8.10). It was described by Maisie Taylor as, 'a large timber of oak (*Quercus* sp.), which has been tangentially split from a big tree and could have been hewn' (Taylor, in press). It is improbable that the trunk was split by natural forces, and the interpretation favoured by the present author is that the timber was deliberately removed from a large oak tree. This method employs wedges to split the tree toward the edge enabling the production of wide flat planks. Once this is removed from the oak bole, around three-quarters of the tree's circumference would be available for further conversion. The relative angles of the medullary rays, which were almost parallel, suggested the timber had been removed from the edge of a tree in the order of 1.5–2.0 m wide. This technique was used to create large, deep, log boats or dugout canoes in later periods, e.g. the Bronze Age boats from Appleby and Brigg (McGrail 1978). These boats were both made of oak, which is the wood used for a number of the post-Mesolithic log boats discovered in Britain and Northwest Europe (McGrail 1978; Okorokov 1995; Mowat 1996).

Evidence from other sites suggests this tangentially split timber could have been part of a monumental structure. Prehistoric timbers using these conversion techniques have been found on the British mainland, although not for another 2000 years. The earliest example is the Neolithic Haddenham Long Barrow *c.* 4000 BC where large timbers of this type were used to construct a chamber to house burials (Evans and Hodder 2006).

Ongoing monitoring in 2009 and 2010 identified more timbers eroding from the bank. The evaluation trench cut in 2007 was extended to record them. Removal of the covering sediment revealed additional interconnected pieces several of which had evidence of cutmarks. One is a 1 m long curved piece with deep grooves and channelling along its inner and outer edges. The function of the worked wood is yet to be resolved. It forms part of a larger assemblage, although the full extent and number of the timbers remain unknown as the feature extends below the submerged bank. The complex arrangement of the worked wooden pieces suggests that a substantial Mesolithic structure once stood in this location.

Although the work is still at the evaluation stage, already it has produced artefacts of a kind rarely found in British Mesolithic sites. The presence of string, flint tools, crafted peg-like roundwood, charcoal, wood chippings, and a

reused pit containing burnt flints, all point to a site of industrial activity. This was set in a natural amphitheatre that would have been ideal for fishing, wildfowling, and hunting in watercourses that would have allowed opportunities for movement in all directions. The sea, with its marine resources, was in the order of 8 km away and could be reached by foot or watercraft. The variety of geographical and ecological systems found within a day's walking distance in any direction from the western Solent basin could potentially have provided resources needed for year-round survival. These included flint from the chalk cliffs, timber, and foodstuffs. It appears that the lowland basin below Bouldnor Cliff offered attractive settlement opportunities. This rich source of archaeological material from the occupied area on the edge of the basin contrasts with the scarcity of Mesolithic occupation sites in the wider region.

It is also worth noting that while the initial visual survey at the second locus covered approximately 60 m^2 of the seabed and evidence of anthropogenic activity was found at points across the whole area inspected, this is only a small fraction of the kilometre long palaeolandsurface exposure. Within the survey area there were many pieces of wood that appeared anomalous when compared with the branches and roots we know to be natural. However, degradation of this 'anomalous' wood caused by exposure to the water column makes definitive interpretation problematic. To access better-preserved material excavation is necessary, but even then the absence of comparable data from the Mesolithic presents a challenge. To overcome this problem there is a need for further discoveries that can enlarge the national database of Mesolithic organic artefacts. Bouldnor Cliff presents an opportunity to address this but, to gain the most from this internationally significant site, material must be recorded before it suffers further degradation and potentially valuable information is lost. To date, only *c.* 1 m^3 of the palaeolandsurface has been subject to detailed excavation.

Assessing archaeological potential and drivers for change

The archaeological evidence informing our understanding of cultural changes through the Mesolithic indicates that they evolved along a number of pathways. Cultural modifications through the period mirror environmental changes that occurred after the abrupt end to the Younger Dryas (Alley 2000). In the early stages of the Mesolithic common tool assemblages, occupation patterns, subsistence, and burial practices appear to cover wide swathes of Northwest Europe (Clark 1932, 1936; Bang-Anderson 2003; Conneller 2009a, 2009b; David 2009; Schulting 2009). The extensive distribution demonstrates the wide-ranging interaction between mobile bands of hunter-gatherers made possible by relatively unrestrained movement across expansive tracts of land.

As the epoch ran its course and climate fluctuated, cultural trends appear to have become more localized. In time, warming temperatures saw woodland vegetation move across the plains and with them, a more disparate variety of animal species (Gumiński and Michniewicz 2003). The increased forestation resulted in the fragmentation of ranges for migratory herds while giving rise to a wider diversity of ecological zones. Movement (at least over land) by humans

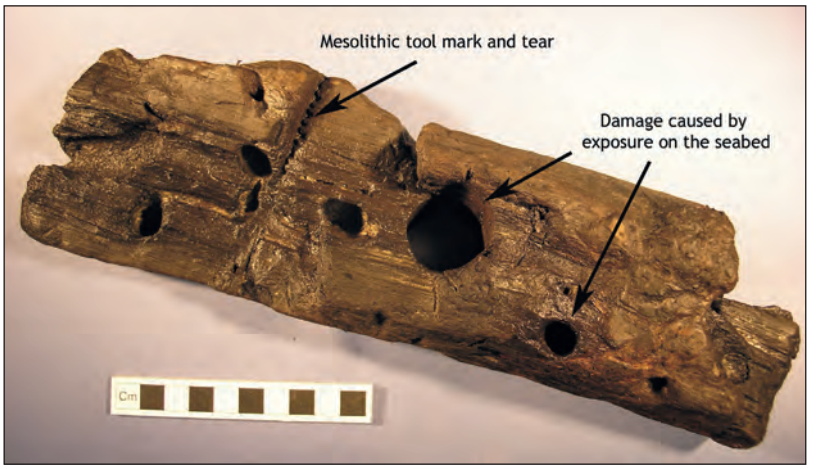


Figure 8.9: The sample of timber contains a deep, clearly defined cut in spite of its poor condition. The cut, which is parallel to the grain, is distinctive as one side is flat and straight, while the other is slightly 'crinkled'

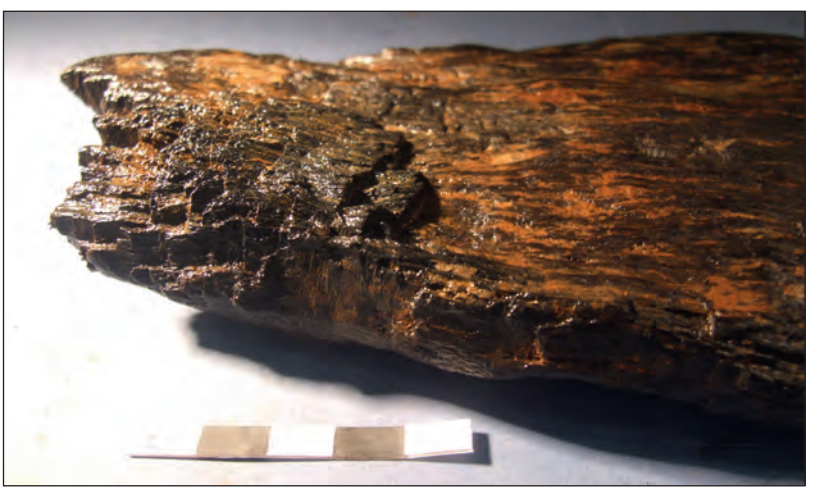


Figure 8.10: Burnt end of a tangentially split timber that was removed from a large oak tree

would now have become more difficult and in some cases less necessary. The result could have been the observed regionalization allowing idiosyncratic traits to emerge, particularly where locations were more isolated. As a consequence technologies and subsistence strategies were adapted to meet new demands. Research by many authors into tool variants, settlement patterns, art, and burial practices has looked to define this longstanding framework and sub-cultural differences (Clark 1936; Jacobi 1981; Grøn 2003; Bell 2007; Chatterton 2007, 2009; Suddaby 2007; Warren 2007; Conneller 2009b; Schulting 2009; Wickham-Jones 2009).

In Britain, the divergence from the common templates of the Early Mesolithic was invariably a result of adaptation to select ecosystems. This would have been compounded by the inevitable isolation of hunter-gatherer communities over their enormous temporal and spatial spread. Despite the emerging differences, there appears to have been the transition of comparable practices in the later Mesolithic. This is seen with shelters, structures, and tool typologies where the dominance of large sites with many thousands of worked flints gives way to smaller, more numerous assemblages. Notwithstanding occasional exceptions toward the end of the Mesolithic epoch, the large structures constructed for habitation in the first couple of thousand years of occupation recede from the archaeological record as they are superseded by more discrete, less permanent dwelling places (Leakey 1951; Rankine 1952; Clark 1954; Wymer 1977; O'Malley and Jacobi 1978; Barton 1992; Reynier 2000; Wickham-Jones 2004; Gooder 2007; Suddaby 2007; Waddington 2007). The evidence suggests this was part of a gradual progression, although sudden leaps over large distances may have occurred: travel across water to Ireland or the Hebridean Islands being examples (Edwards and Mithen 1995; Woodman 2003). The ability to travel across the sea shows there was interaction with water and the new marine and estuarine ecological regimes associated with sea-level rise would have offered strong drivers for change. The model in the Baltic, where Late Mesolithic communities were attracted to the coastline, provides tangible evidence of human responses to the marine ingress. Research by Rowley-Conwy (1983) demonstrates that the productivity of certain estuarine coastal zones was three times greater than that inland. During the Mesolithic, the rising waters took away a great deal of terrestrial living space but as it did so the encroaching waters increased the number of estuaries and multiplied the length of intertidal coastline in areas such as the Baltic and southern England. A result was the introduction of different ecosystems many of which, but not necessarily all (see Westley and Dix 2006), would have been richer and more productive. On the continent, at a number of locations from Brittany to the Baltic, coastal communities became a focal point and flourished, which resulted in increased coastal sedentism, social development, and technological advancement (Grøn 2003; Fischer 2004; Skaarup and Grøn 2004; Åstveit 2009; Grøn 2009; Sergant *et al.* 2009). In Denmark investigations of submerged sites off the Storebælt and Funen in the Danish Archipelago over the last few decades have produced thousands of Kongemose lithics dated from *c.* 6400 to 5400 cal BC, many associated with old coastal sites (Pedersen *et al.* 1997; Skaarup and Grøn 2004). The quality of the material has been referred to as 'some of the finest … from the Mesolithic in Denmark' (Fischer 1997: 70). This strong archaeological signature is supported by the building of substantial structures and the use of extensive burial practices at a time when people were moving away from a more terrestrial to a marine based diet (Conneller 2003; Grøn, 2003; Skaarup and Grøn 2004; Fischer *et al.* 2007; Chatterton 2009; Jenson 2009; Marchand 2009; Meiklejohn *et al.* 2009; Sergant *et al.* 2009). Within a thousand years the sea level in Denmark was only a couple of metres lower than today and the Kongemose had been superseded by the Ertebølle, which was a culture that concentrated on the exploitation of marine resources (Pedersen 1997; Lübke 2009).

On both sides of the North Sea basin the sites in the Baltic and in the Solent share common traits in their association with lacustrine and estuarine locations. Recent research underwater has revealed that similar Holocene landscapes remain beneath modern sediment in large areas of the North Sea (Gaffney *et al.* 2007). These contain geomorphological features interpreted as lakes, rivers, hills, and marshes. The landscape is protected under sand and silt deposits offering significant potential for preservation. In 1931 an antler harpoon was trawled up from around the Leman and Ower banks (Godwin and Godwin 1933). It was subsequently dated to *c.* 13,600 years old (Bonsall and Smith 1989). Since that

time, thousands of faunal remains and worked flint tools have been recovered by trawlers or gravel dredgers after having been freed from anaerobic sediments beneath the silts or from exposed Pleistocene gravels (Peeters 2009b; Tizzard *et al*., this volume).

Discussion

The increasing exploitation of coastal resources around 8500 years ago in Northwest Europe occurred when the transgression was pushing inland at a rapid pace, extending coastlines, forcing seawater into the Baltic, and creating large estuaries across the lower European plains. Late Mesolithic communities in mainland Europe responded by exploiting the coastal zone and making it a major part of their subsistence patterns, while the British record is in marked contrast. In Britain, marine resources are exploited at a number of locations but their importance seems to have been relatively limited where coastal exploitation was important for some but not significant for most (Churchill 1965; Palmer 1977; Edwards and Mithen 1995; Loader *et al*. 1997; Allen and Gardiner 2000; Richards and Schulting 2003; Mithen 2004; Bell 2007; Mannino and Thomas 2009; Wickham-Jones 2009).

At Bouldnor Cliff evidence of coastal exploitation has yet to be found. Initially it was a lacustrine site but the sea would not have been more than a few hours away by foot or boat. As only small areas have been investigated along the peat platform to date this is not surprising, but what has been found has greater affinities to continental material than that found in Britain. Indeed, the woodworking skills represented by the discoveries at Bouldnor Cliff indicate a technological ability 2000 years in advance of material found at British terrestrial sites. As demonstrated in the Baltic and referred to above, sites near the coast have been linked to increased technical advancement and semi-sedentary behaviour and they occurred just before the final severance when estuarine conditions would have been at their most extensive. It may be that this period of great change and new opportunity spurred on technical developments while the rising waters increased cultural divergence.

Britain and mainland Europe were ultimately separated by water and although travel by sea was demonstrably possible, as indicated by occupation on islands around the UK, it invariably became more risky as the sea swelled. This presents some interesting enigmas: were the technical skills expressed in the finds from Bouldnor Cliff lost and the original inhabitants forced to change their lifestyle as their preferred environments were overtaken by the sea. Or did these skilled people move to continental Europe where archaeological evidence from the Baltic demonstrates similar skills existed. Or is it simply that we have not yet found other examples on land? Were these artefacts just associated with an isolated group, or were they comparable to similar groupings in equitable environments that have since been submerged? The western Solent was occupied by people who soon found themselves isolated from the Continent by the sea, but the archaeology is more akin to European examples. This suggests a cultural link, which can only be substantiated by looking at the areas between the two places that are now underwater So, if such a connection was broken, at what point did the water act as a barrier to interaction rather than as a link?

If we are to address these issues the challenge now is to locate, recover, and analyze archaeological evidence from other environments that were sheltered from the destructive impact of rising sea level. To do this there is a need to understand the processes that reshaped the landscape in order to recreate locations where human activity might originally have been focused and where archaeological material is likely to be preserved and accessible to discovery. The work at Bouldnor Cliff has demonstrated this is possible and the material survives. By unravelling the formation processes of the Solent it has been shown that the palaeoenvironmental exposures are due to long-term geomorphological evolution, which is subject to extensive change. Understanding this may help us interpret comparable sites, a number of which are being identified in offshore geophysical datasets (Gaffney *et al*. 2007). Investigations at the site are in their infancy but the results are demonstrating the potential to open the door on this little understood phase of North European prehistory.

Conclusions

The data from Britain suggest that parity with continental European peoples was initially strong and that influences migrated between east and west before diminishing during the Late Mesolithic. This appears to be attributed

to environmental change, which led to increased forestation then sea-level rise. By *c*. 6000–5500 cal BC Britain had become an island and the expansive lands that once connected Britain to the continent were displaced permanently.

The process of inundation took several thousand years before a discernibly modern coastline was formed. During that time the resource-rich lowlands, which had been the foundation and springboard for British occupation and European coastal exploitation, steadily diminished as the landscape, and all who lived in it, were relentlessly inundated. The story, however, is far from complete as the evidence we need lies in land that is now many metres below the sea.

Archaeological sites and submerged landscapes, of which Bouldnor Cliff is an example, contain a wide range of well-preserved materials. They boast artefacts unlike any others found in contemporary terrestrial contexts demonstrating their potential to preserve rich and unique records of Mesolithic culture. Similar palaeoenvironmental deposits are now known to be prolific across the North European continental shelf. The discoveries at Bouldnor Cliff indicate that high levels of social and technical sophistication were achieved around the wetlands and estuaries in the period immediately preceding the final severance and formation of the North Sea. The archaeological record highlights the importance of this period to cultural divergence and human dispersal, while the European landmass took on its current shape. It is therefore apparent that drowned lands present a unique and incredibly significant archive that can offer a window into the lives of European people at a time of great change. To realize the full potential of the resource for both academic and management purposes there is a need to quantify the archaeological archive held within these submerged lands. It is not difficult to see how easily-accessible areas of stratified Mesolithic land like that found along Bouldnor Cliff present opportunities to study a drowned terrestrial landscape that has many parallels across Europe's shallow seas.

Acknowledgements

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