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ARCHAEOLOGICAL PROSPECTION AND EVALUATION IN THE SEVERN LEVELS, 1989-1999: DEVELOPING A METHODOLOGY

By Martin Locock

The recognition of prehistoric and later archaeological features exposed by erosion on the Severn foreshore in the 1980s prompted an increased interest in the potential of the equivalent deposits behind the sea wall. The main practical problems were how to locate sites masked by subsequent sediment deposition and how to define areas of high and low potential in the absence of models of site distribution and palaeotopography.

In this paper, the strategies adopted for a series of major construction projects on the Levels are discussed, demonstrating the shift in focus away from the long-term natural sequence towards specific horizons considered likely to relate human activity, alongside an increased confidence in our ability to define areas and periods of high potential. The main projects discussed are the Rumney Alternative Feeding Grounds (1989), Second Severn Crossing (English Approaches) evaluation (1991), Barland's Farm/Europark (1993), Goldcliff Wetlands Reserve (1996), Cabot Park (1994-1999) and Europark Wilkinsons (1999). The types of feature typical of the foreshore archaeology first recognised have proved to be unrepresentative of the full range of the buried resource, which is in many ways comparable to 'dry land' archaeology.

There has been considerable experimentation with methods of site prospection, with limited results. Deep cores from boreholes and augers have proved only partially effective at locating horizons of interest, and trenching remains the main method. Aerial photography and archaeomagnetism have limited application, but geophysical techniques are beginning to have some success, particularly caesium vapour magnetometry. Despite the undoubted progress that the decade has seen, the approach to the evaluation of sites on the Levels remains at the forefront of debates about how far it is reasonable to require developers to undertake extensive archaeological work to address a possible but unproven 'interest'. Even when evaluation is carried out, planning policies which permit development on the Levels effectively consign parts of a significant archaeological resource to unseen destruction.

Introduction

The challenge posed by the masking by alluvium of the archaeological resource on the Severn Levels has led to the gradual evolution of techniques and the better definition of the type of archaeology likely to be involved. The potential of the foreshore had been demonstrated by episodic exposures of sites and finds in the 1980s, and these framed the expectations of the likely nature of buried remains behind the sea wall. In some ways, this was unfortunate, since the resource as exposed on the foreshore has proved to differ significantly from the range revealed by evaluation.

The monitoring of the foreshore after erosion of overlying silts revealed archaeology of bewildering complexity and interest, covering all periods, and ranging in type from stray finds to intact wooden structures. The tidal context provided a strong 'rescue/salvage' imperative: what was not examined at the end of one season was likely to have been removed or obscured by the next. The vulnerability of timber to decay reinforced the urgency of the need to record and recover. Sites investigated included the Uskmouth Mesolithic footprints (Aldhouse-Green *et al.* 1992), the Bronze Age roundhouse at Chapeltump (Whittle 1989), the Cold Harbour trackway (Locock 1998a), and the Chapeltump II and Upton trackway sites (Locock *et al.* 2000). A recurrent problem was the difficulty of establishing the context of the sites in terms of topography and environment. The stratigraphic relationship of the Uskmouth footprints to under- and overlying peat bands had to be derived from their horizontal location, since erosion had removed the standing section; similar problems were encountered

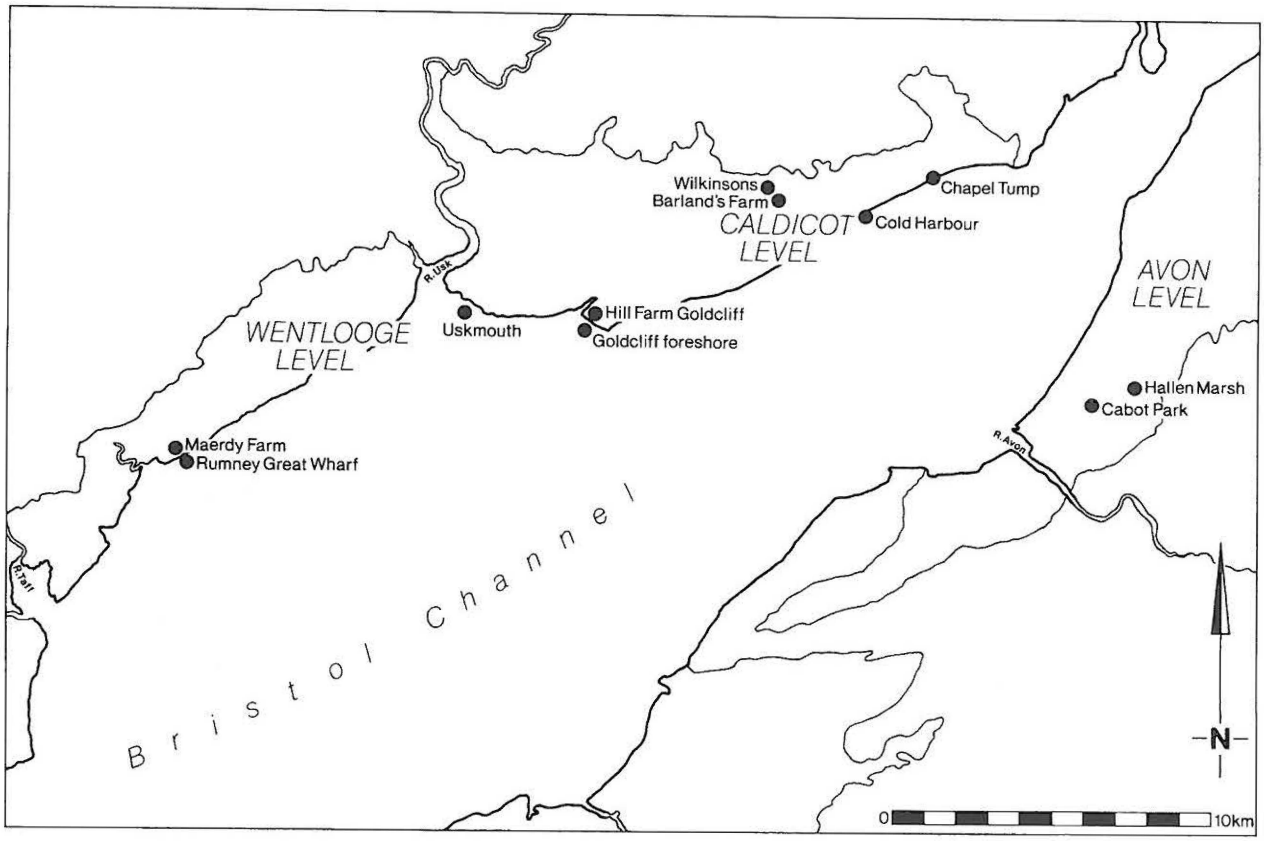

Figure 1: Location of sites.

elsewhere, and many sites have perforce to be located in terms solely of their height OD and nearby peat deposits and palaeochannels, leaving the actual topography during occupation undetermined.

In contrast to this wealth of data from the foreshore, there was still in the 1980s almost no information at all about the buried stratigraphy behind the sea wall apart from limited borehole data. Descriptions of the Wentlooge Formation (e.g. Allen and Rae 1987) implied an alternation between estuarine and freshwater deposition creating the observed silt and peat layers; episodes of stabilisation and soil formation were considered to be unlikely to leave recognisable traces.

Thus as development proposals for the Levels began to encounter requirements for evaluation, there was little firm information about the date, depth and nature of the archaeology to be expected. Although the generally high potential of the present and previous dry areas and high spots in the Levels and around the edges was clear, the information needed to establish models which could hope to predict the depth and nature of activity was not available, and thus the emphasis tended to fall on clarifying the natural sequence which provided the context for activity.

Evaluation strategies

Rumney Alternative Feeding Grounds, Cardiff (formerly South Glamorgan) (1989)

The design of the Cardiff Bay Barrage development at the mouth of the River Taff at Cardiff involved the permanent flooding of a large area of tidal flats used by wading birds. The barrage development was governed by an Act of Parliament, rather than planning regulations. In accordance with the *Assessment of Environmental Effects Regulations 1988*, an archaeological evaluation was commissioned of an area at Rumney, on the Wentlooge Level immediately inland of the foreshore Roman features at Rumney Great Wharf (Allen and Fulford 1986; Fulford *et al.* 1994), intended for replacement ponds.

The method adopted was to open 21 large trenches, stepped in to allow safe access to a depth of 2.5 m from the present ground surface (which corresponds to the Wentlooge palaeosol on the foreshore), in order to reveal the sequence of silts and the uppermost organic bands (Parkhouse and Parry 1990). Six ditches were noted from well below the present ground level (Figure 2). The cuts were hard to distinguish within the clays, but were readily

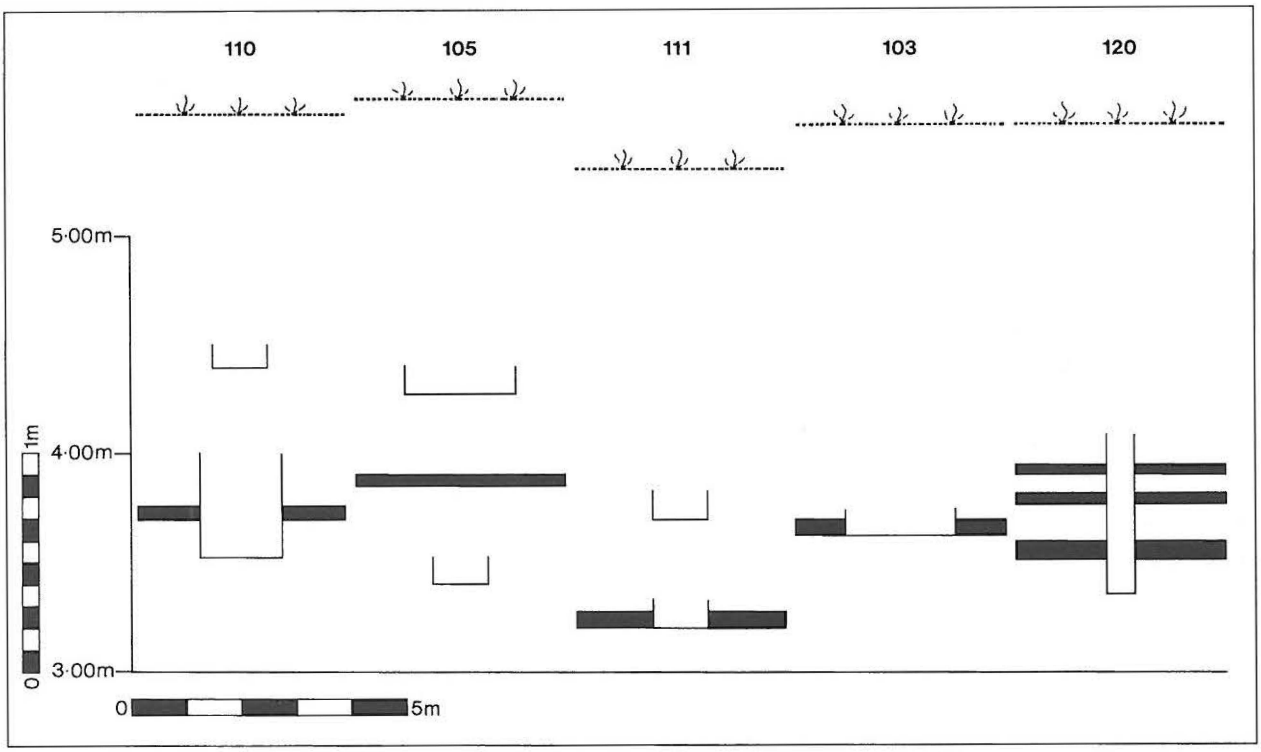

Figure 2: Schematic section of features at Maerdy Farm, Rumney.

seen where they cut into or were sealed by the organic horizons (Figure 3). There does not appear to be any consistent pattern, but there is an implied phasing; at least one ditch pre-dates the organic clay horizons. The evidence for Iron Age ditches and other features on the Levels in association with at least temporary settlements (as found at Goldcliff and Greenmoor Arch) may provide a model for the pattern of land-use that the Rumney ditches represent.

The main focus of the analysis was on the natural sequence, with extensive palaeoenvironmental work on the organic deposits, including intensive pollen analysis on the peat and more limited work on the organic clays and other silts (by J Blackford) and macrofossil analysis of the peat (by A Caseldine). Although the uncertainty of the dating renders detailed discussion difficult, the general sequence is of interest. Blackford defined nine phases for the sequence as a whole; these have been assigned indicative dates for convenience.

With hindsight, it is possible to recognise the unusual nature of the Rumney results. The presence of organic horizons and definable archaeological features in some density (20% of trenches) would now be identified as worthy of comment. The vital importance of establishing the chronology, underpinning all of the other analyses, is now better understood, even where its resolution remains problematic.

Table 1: Environmental sequence recorded at Maerdy Farm, Rumney

Phase 1	(?pre 1500 BC)	Below-peat clay. Saltmarsh, Graminae, Chenopodiaceae
Phase 2	(?1500 BC-1000BC)	Peat. Succession through reedswamp to fen to willow carr to Sphagnum bog
Phase 3	(1000BC-?400BC)	Transgression: return to saltmarsh, Graminae, Chenopodiaceae.
Phase 4	(?400BC-?300BC)	Dried out oxidised layer (lower organic clay)
Phase 5	(?300BC-?300AD)	Saltmarsh, low in tidal range, followed by reedswamp and return to saltmarsh (lower organic band)
Phase 6	(?300AD-?1000AD)	Clay/silty clay accumulation. Estuarine.
Phase 7	(?1000AD-?1100AD)	Salt marsh, Graminae, some organic accumulation, evidence of land-use (upper organic band)
Phase 8	(?1100AD-1500AD)	Clay/silt accumulation, oxidation horizon showing drying at one point
Phase 9	(1500AD-present)	Pastoral grassland with trees, aquatics in reens

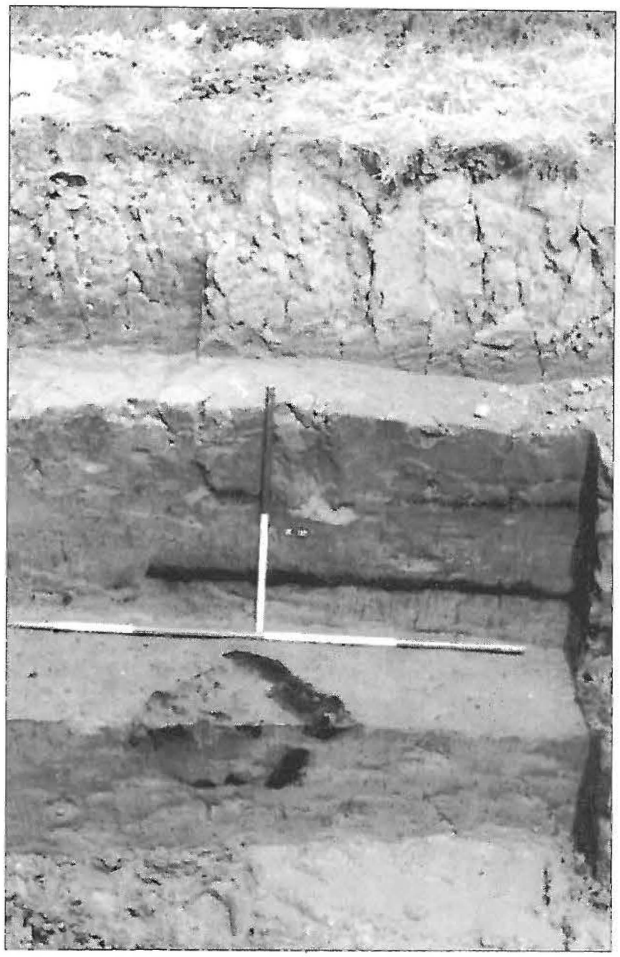

Figure 3: Section through alluvium at Maerdy Farm, showing organic bands and cut feature in Test Pit 120 (horizontal scale 2 m in 0.5 m segments).

Second Severn Crossing (English Approaches), Bristol and South Gloucestershire (formerly Avon) (1991)

The construction of the Second Severn Crossing and its associated motorways led to a series of evaluations and excavations. Work on the Welsh side comprised 16 trial pits excavated to 2.5 m as a Stage 2 evaluation, followed by Stage 3 excavation of the environs of the Roman villa at Stoop Hill and sampling at Vurlong Reen (BUFAU 1994; Walker *et al.* 1998). On the English side, trenching was undertaken following a watching brief on geotechnical pits with the dual aim of checking for archaeological features and establishing the background sequence. As with the Rumney site, this involved very large trenches in order to reach the depth of 3 m.

In addition to investigating points of interest, the evaluation attempted to clarify the stratigraphy of the post-glacial sequence, as analysis of borehole data had suggested that there were five peat bands within the silts. It was found, however, that the peats were too localised and variable to permit mapping on a macroscopic scale.

The key discovery was the existence of a buried soil associated with Iron Age and Roman cultural material, the extent of which was mapped through auger survey extended from the main site at Hallen Marsh. In subsequent Stage 3 works (Barnes 1993), Wessex Archaeology extended the auger transects over much of the Avonmouth Level. Since the palaeosol surface lay at depths of less than 1 m, it was recognised that (as long as earlier prehistory could be ignored), open trenching was a viable approach. The deeper deposits, including the peats, could not, however, be reached by trenching, and any earlier human activity was therefore not evaluated.

Barland's Farm/Europark, Magor, Newport (formerly Gwent) (1993)

This was the first major evaluation on the Levels to arise from the planning process in line with PPG16 (Lawler and Nayling 1994, Nayling *et al.* 1994, Nayling and McGrail 1995, Walker *et al.* 1998). The development area lay to the east of Llanwern steelworks, at the junction of the solid geology and the back fen of the Caldicot Level, to be used for large distribution units. The first unit, for Tesco Stores, covered an area 300 m x 100 m, with piles at 5 m centres. There were no surface features to guide the evaluation, and thus the key known interest was the sequence of peats, important both as environmental indicators and possibly retaining evidence of human activity.

Since there was still considerable doubt about the dating of the alluvial sequence, the best option was to investigate the buried stratigraphy in order to derive topographic models which would in turn permit the limited number of intrusive evaluations the best chance of locating archaeology. This approach was broadly comparable to that adopted in the Vale of Pickering, Yorkshire, for investigating a large area of buried landscape, where a series of trial pits were dug to locate excavations, on the basis that "one cannot dig at random in a peat bog" (Cloutman and Schadla-Hall 1985, 7).

There is, however, a difference of scale: instead of 2 m pits through peat, at Barland's Farm there was 10 m of alluvium. The first step was an intensive borehole survey at 100 m centres, which allowed the modelling of the bedrock, glacial head, clay and

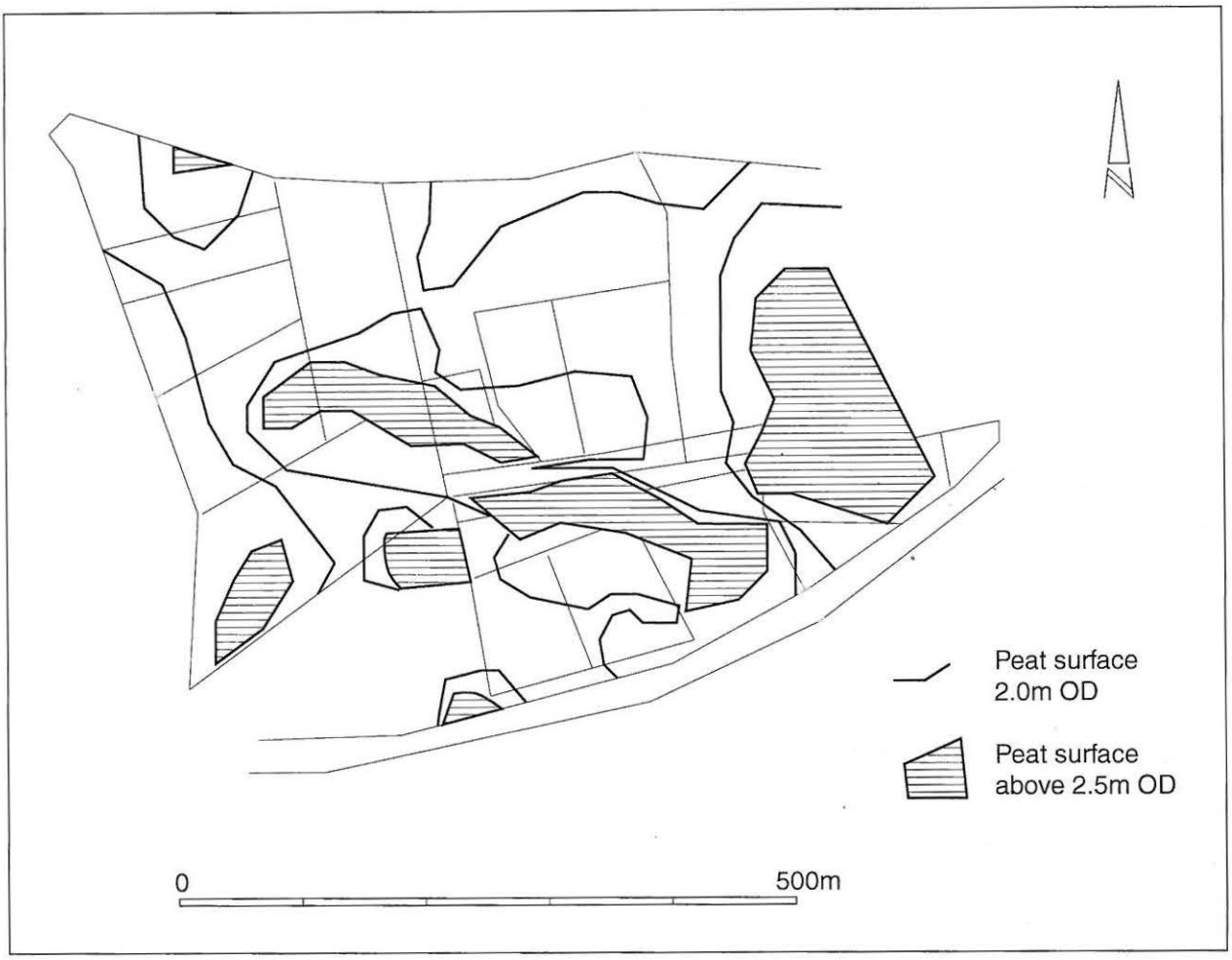

Figure 4: Model of upper peat surface from boreholes, Europark.

peat horizons across the site. This was followed by three coffer-dam trenches to permit sampling through the Middle and Upper Wentlooge Formation, at points where the peat was best developed. The upper sequence was apparently uniform silt, with no differentiation, and the fourth trench, excavated as an open area, was located to investigate a geotechnical pit which had reported stone at a depth of 3 m (Figure 5). This proved to be a Roman stone and timber feature in the bed of a channel. An archaeomagnetic column through the channel fill and underlying silts was sampled by Tony Clark, but the results were poor, failing to display any discontinuity as the column crossed from the channel fills to the much earlier silts.

The strategy recovered a good deal of data about the sediments, and some topographic information, but fell short of identifying specific archaeological remains beyond the known stone feature. The identification of a second Roman stone and timber feature, incorporating a near-complete Romano-Celtic boat (Lawler and Nayling 1994), was the result of a watching brief on subsequent groundworks, in an area which would not have been selected as of particularly high potential (Figure 6).

Goldcliff Wetlands Reserve, Newport (formerly Gwent) (1996-1999)

The Rumney Feeding Grounds site having been deemed unsuitable, the Cardiff Bay Development Corporation then selected the Goldcliff area for the ponds required as mitigation, covering a large area just inland of the foreshore exposures investigated for Cadw: Welsh Historic Monuments by GGAT and University of Wales Lampeter (Bell and Parkhouse 2000). In contrast to Barland's Farm, there was, therefore, a well-established stratigraphic sequence associated with identified human activity nearby, and the evaluation concentrated on filling out the topographic model and investigation of the upper horizons, which had been lost to erosion in the intertidal area. For the deep modelling, a drive-in sampler was used, which was both quicker and cheaper than the conventional rig.

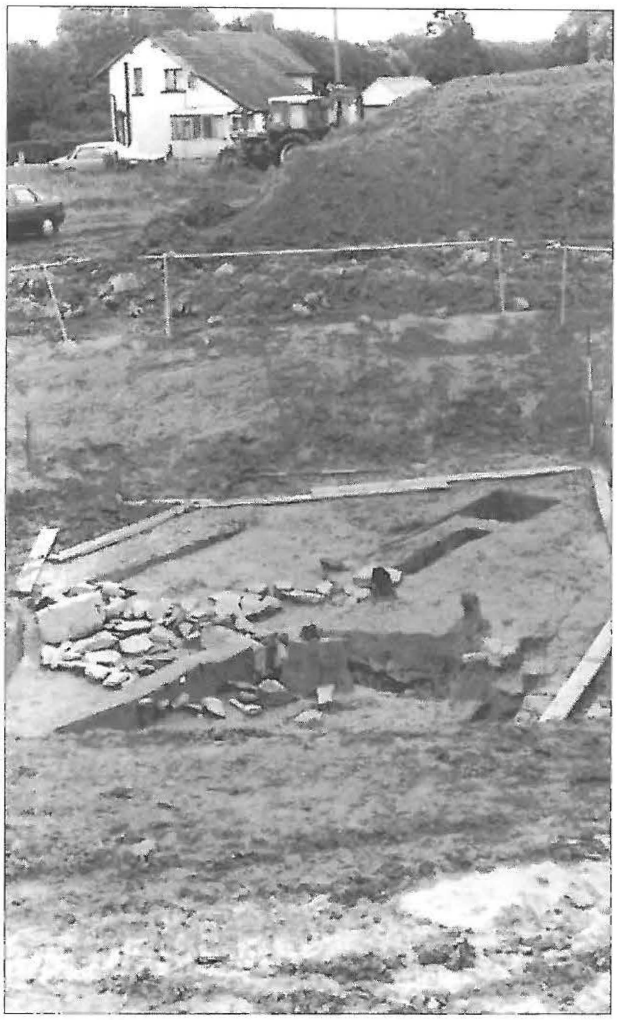

Figure 5: Stone structure in Area 050, Europark, initially identified in geotechnical pit, and exposed as an area with battered trenches to reach 3 m.

Figure 6: Barland's Farm boat found during watching brief at Europark (stern) (scale 0.5 m in 0.10 m segments).

Although it had been thought that the main peat surface would prove the archaeologically-significant horizon, since it correlated to the Iron Age activity on the foreshore, the trenching revealed the presence of a narrow marker band which proved to be an Iron Age/Roman soil horizon, associated with ditches and banks, within the overlying alluvium (Locock 1997, 1998b, 1998d; Locock and Walker 1999). This band would be hard to spot in cores, although it was noted in an auger transect by University of Wales Lampeter (Bell 1995, 135). This gleyed horizon has been subject to detailed analysis and interpretation, and is interpreted as representing a phase of stabilisation, soil ripening and vegetation, followed by a rise in water table and renewed silting (Locock 2000a).

This evaluation, and the identification of similar horizons elsewhere on the severn Levels (e.g. Rippon 2000), transformed the expectations of fieldwork, since it was now possible to hope for more than archaeological features spread throughout undifferentiated alluvium, and, where horizons could be noted, the investigation of spatial patterning became feasible. In addition, the type of environment implied by the soil formation lay outside the model of alternating freshwater peat and estuarine silt deposition, suggesting that local micro-topography might be a significant variable.

Design changes after the evaluation preserved most of this horizon intact below the wetland reserve, and a watching brief on the necessary intrusions tracked the ground surface over a large area (1 km square).

Cabot Park and Rockingham Farm, Avonmouth, Bristol (formerly Avon) (1993-1999)

The southern end of the Avonmouth Level had seen a variety of industrial development, but in the 1990s the emphasis shifted towards distribution and

Figure 7: Kites Corner, Cabot Park, under excavation, showing gridded soil sampling of the Later Bronze Age ground surface. The main activity cluster is in the centre of the picture, shown by the darker soil.

warehousing, exploiting the proximity of the Avonmouth Docks and improved road links. An area of 100 hectares is undergoing development, initially as Severngate (the Rockingham Farm site) and subsequently as Cabot Park.

In addition to a large number of surface interests (including medieval moated sites, post-medieval farms, and extensive ridge-and-furrow earthworks), the buried resource was significant. Using a similar approach to Barland's Farm, geotechnical data was used to map the deep deposits revealing that in this area, peats were largely absent. This data was of limited use until soil horizons and associated activity began to be recognised in the upper silty clays (Locock 1998c, 1999, 2000b, in press; Locock *et al.* 1999; Locock and Lawler in press).

It has now been established that extensive Neolithic, Later Bronze Age and later soil horizons occur across the site, some of which (particularly the Bronze Age layer) are associated with human activity. A surprising aspect of the stratigraphy was the shallowness of these deposits: the entire post-4000 BC sequence was represented by 3 m of silting (the preceding 10 m of post-glacial deposition having accumulated much more rapidly). This means that conventional trenching can reach all but the earliest phases of high archaeological potential.

The clear understanding of the nature and depth of the target horizons led to a renewed interest in the potential for geophysical survey as a prelude to evaluation, in order to avoid the cost, time and logistical problems associated with trenching at current levels. Following initial work by the English Heritage Ancient Monuments Laboratory, a series of surveys comparing different techniques over the same footprint has been undertaken by Stratascan, and it seems that features of the Later Bronze Age surface (at 1 m depth) can be identified by magnetometry.

Excavation of the Later Bronze Age site at Kites Corner (Figure 7) included vertical and horizontal sampling and an archaeomagnetic column, discussed below.

Europark Wilkinsons, Magor, Newport (formerly Gwent) (1999)

When the area to the northwest of the Tesco building at Barland's Farm was developed in 1999, the topographic modelling was reviewed. Particular attention was focused on the trenching of the surface

of the upper peats (Figure 4), which formed a series of islands on which (by analogy with Goldcliff) evidence of activity might be predicted (Locock 2000c). This approach proved productive, and identified two separate groups of Iron Age rectangular structures on the summits of peat ridges, associated with ditches (Figure 8). In addition, an unexpected discovery was an extensive area of pits dug into the peat, of uncertain but probably Roman date.

Thus the modelling at Europark, informed by the evidence for the chronological distribution of interests from the foreshore, provided a means to correctly identify *foci* of activity, although leaving unpredictables such as boats unlocated.

The buried resource

This evaluation work has done much to characterise the specific nature of the buried resource within the sea wall; it is interesting to note that it differs markedly from that recorded on the foreshore, mainly because of the circumstances of investigation.

The foreshore resource appeared to be scattered through a poorly-differentiated sequence, localised, and reflecting in the main 'wet', temporary, activities such as intertidal hunting. Evaluation behind the sea wall has shown that there are also large sites and features, particularly dating to periods of stabilisation in the Bronze Age, Iron Age-Roman periods and post-reclamation early medieval and medieval, in which the type of activity is much closer to 'dry land' archaeology than intertidal: ditch systems and settlements.

However, this distinction cannot be taken too far; rather, it is only the opportunity for extensive and controlled exposure within the sea wall that has allowed the significance of minor stratigraphic changes to be noted, and both share the characteristics of the wetland resource: they are fragile (subject to decay or distortion), represent ephemeral or short term activity (e.g. the Later Bronze Age sites at Kites Corner and Chapeltump II: Locock *et al.* 2000), and may be informed by good palaeo-environmental preservation (although it should be noted that the silts, and particularly the upper, oxidised, silts, cannot compare with the quality of evidence from true peats).

Philosophically, too, these sites (as has been established for Kites Corner: Locock in press) can only be understood as part of a complex pattern of land-use and resource exploitation, rather than as a conventional 'site' in which the settlement forms the principal component (as typified by the approach to the later history of the Levels: Rippon 1996). The paucity of data from the other part of the wetland equation, the bedrock, makes analysis of the prehistoric evidence difficult, as a comparison between the Kites Corner model and its subsequent application to Langstone Harbour, Hampshire, where the dry-land zones are much better understood (Gardiner and Allen 2001, 213, fig. 67).

Figure 8: Greenmoor Arch, Europark. Excavation of Iron Age buildings 2 and 3 on the summit of the peat ridge, following machine removal of 2 m of overlying silty clay. Construction works are visible in the background.

Methods

Deciding on the methodology has been constrained by the intractable nature of the alluvium, which has precluded the use of much of the conventional battery of dry-land site identification techniques, and the methods adopted in English foreshore survey (Tyson *et al.* 1997) have proved unsuited to the Severn.

Table 2: Evidence for Later Bronze Age activities on the Avonmouth Level used to compile land-use model

Activity/resource/feature	*Evidence*
Fish	Fish bone from Kites Corner; no examples of fish weirs or trackways from Avonmouth Level; fish weirs and trackways on Gwent Levels (Whittle 1989, Locock 1998a, Nayling 2000)
Stone	Stone from Kites Corner
Game	Small quantity of bone from Kites Corner
Salt	(no direct evidence)
Pottery	Possible manufacture noted at Kites Corner and Hallen Marsh
Arable	Cereal grains in charcoal from Kites Corner; no direct evidence
Wood	Charcoal from Kites Corner; no direct evidence
Ritual	Kingsweston Hill barrow group (excavated 1920s); some indication of LBA/EIA use (Tratman 1923; 1924; 1947; 1975)
Metal	Kingsweston Hill hoard (Grinsell 1986)

Aerial photography

Aerial photography has proved to be of limited value. As a method of recording surface earthworks it is invaluable, particularly since the immediately post-war vertical cover records many features which have been degraded or destroyed by subsequent ploughing and development, including ridge-and-furrow and recent palaeochannels. However, even the most prominent of buried features have proved invisible as cropmarks, and less conventional techniques such as false spectrum infrared photography have also failed.

Coring

A range of techniques to recover deep cores have been tried, including a drive-in window sampler and a conventional cable-percussion auger borehole. The 'gold standard' for this work would be to recover intact long sections through peat and clays, permitting both detailed stratigraphic analysis and sampling from defined layers to be undertaken in a laboratory environment. Unfortunately, the soft, waterlogged, material is subject to compression and suction, and even in good conditions cannot give precise locations. In addition, experience at Barland's Farm has shown that the peat horizons are of varying depth, thickness and date, and the attempts to correlate horizons over long transects have failed as a result.

Auger survey, as a cheaper and quicker method of examining the upper parts of the sequence, has been attempted on the Avonmouth Level on the Second Severn Crossing and ICI Severnside. Although this has been successful at plotting peats and organic deposits, it remains doubtful whether it can identify soil horizons reliably. Certainly in the Cabot Park area, horizons found by trenching had not been located by previous auger work.

The opportunity to view a standing section seems to be vital to the identification of the soil horizons, which effectively limits such detailed modelling to the reach of machine-dug trial pits (about 3 m). The importance of these horizons as archaeological surfaces and environmental indicators has now been established, and provides a new perspective on accounts of the depositional history of the alluvial sequence (Locock 2000a; Rippon 2000).

Trenching

Digging long trenches through the upper alluvium in search of archaeological features, or recognisable topographic units, is an expensive, disruptive and time-consuming business. It also requires a clear understanding by the fieldworkers of the nature and significance of the deposits, since the key horizons are vestigial, intermittent and poorly-differentiated, and are thus easily missed by the inexperienced. However, trenching does seem to be the most effective way of identifying the buried resource. Practical limitations restrict the technique to the uppermost 1.2 m in general, thus preventing examination of the earlier horizons. The necessity of stepping-out the sides of deeper sections means that reaching a depth of 2.4 m requires the excavation of 3.5 times as much spoil (the storage of spoil away from the trench requires double-handling); to reach 3.6 m involves 7.3 times as much. There remains an unease amongst the construction community about the creation of potential soft-spots of this size under

the proposed buildings, while the resources required for these deeper trenches may be better used for more extensive examination of the near-surface levels.

Dating

Although scientific dating is not normally needed as an evaluation tool, in the context of the Levels it remains critical, since the establishment of the chronological framework is vital to the interpretation of the changing landscape. Since organic material is often unobtainable, the potential for direct dating of sediments by archaeomagnetism has been explored at sites including Rumney, Barland's Farm, Second Severn Crossing (English Approaches) (Stage 3) and Cabot Park. Results have varied from indifferent to poor; it has been concluded that the level of bioturbation prevalent in the Wentlooge Formation disturbs the magnetic alignment of the waterlaid silts.

Radiocarbon dating of sediments is not without its problems: carbon levels are often marginal, even for AMS, and multiple dates from a site tend to vary widely, accentuating the difficulties caused by calibration for dates in the first millennium BC. At Cabot Park and Goldcliff Wetlands Reserve suites of determinations from a single deposit have yielded dates which fail to overlap at two sigma. The upper soil horizon at Cabot Park, above the Later Bronze Age surface, has yet to be dated successfully, despite several attempts, and thus its identification as the probable Roman ground surface remains unproven. These difficulties mirror those experienced at the Glastonbury Lake Village, where a suite of determinations were compared to artefact-based dates and concluded to range from 'the potentially close to the highly problematic' (Coles and Minnitt 2000, 178).

Dendrochronology provides the best hope for high-precision dating (as demonstrated in the detailed analysis of the Somerset Levels (Coles and Coles 1999) and the Caldicot timbers (Nayling and Caseldine 1997), but the survival of suitable timbers is rare and unpredictable. On-site sampling strategies need to address the possible locations of preserved waterlogged wood (for example palae-ochannels) as a key interest in the value and interpretation of a site.

Geophysics

Geophysical survey has been attempted on several occasions (for example magnetometry at Northwick: Barnes 1993), and recently a controlled comparison exercise was undertaken at Cabot Park by Stratascan. The particular conditions of the Levels mean that

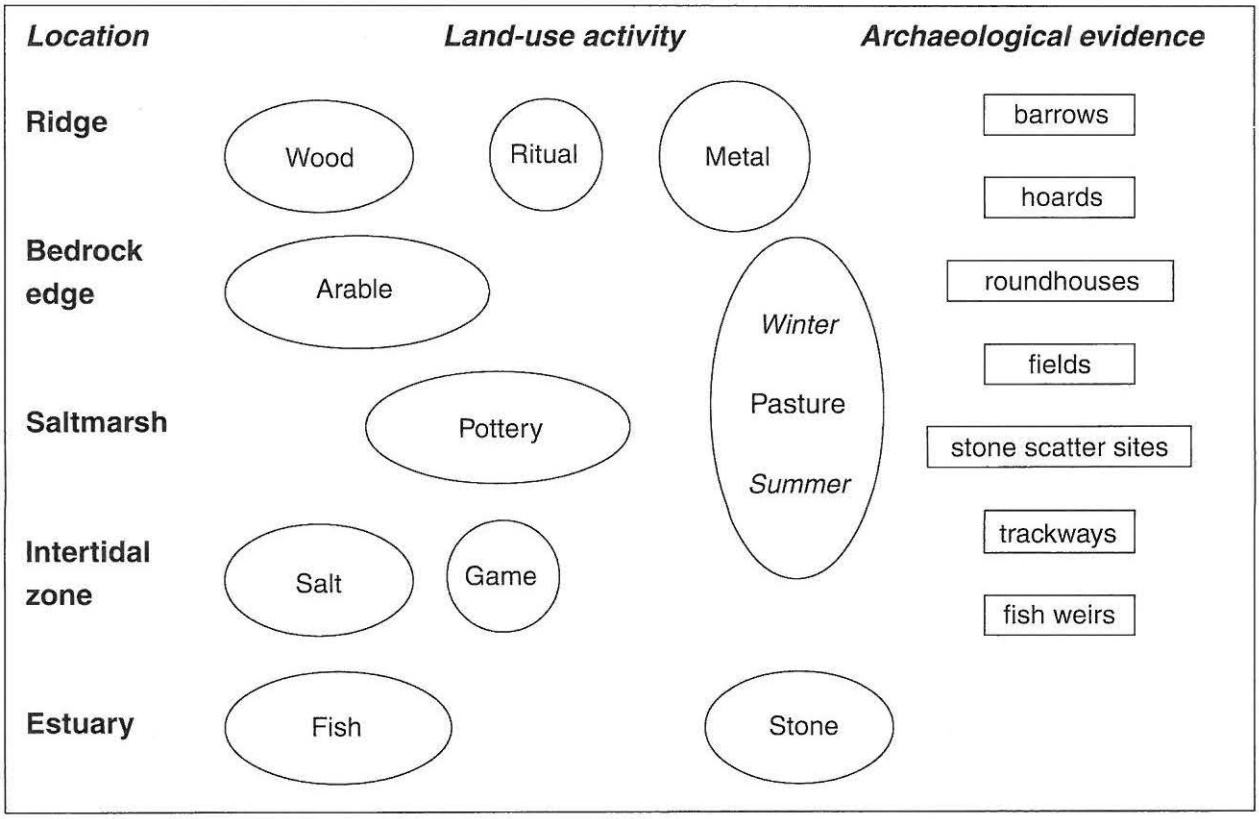

Figure 9: Model of Later Bronze Age land-use in the Avonmouth area.

resistivity and ground-penetrating radar are often ineffective, since the level of noise is high. The newly-sensitive caesium vapour magnetometry has had some success at identifying palaeochannel fills and areas of activity on a ground surface at a depth of 1 m (Locock 2000d). More success has been achieved on the North Somerset Levels, where resistivity has successfully located Roman features (perhaps significantly, relatively close to the surface, at 0.3-0.5 m: Rippon 2000, figs. 4-5)

There remain questions about the sort of archaeological feature we can hope to locate through such techniques, and certainly the hard question of whether our confidence is sufficient to reduce the need for trenching is still unresolved.

Evaluation as mitigation

In 1989 the need for evaluation was accepted, but there was little guidance on the methodology to be adopted or the overall nature of the resource. There are now a range of techniques which can give us some confidence in the identification of significant sites, reflected in high-profile examples such as the Cabot Park's Bronze Age sites, Europark's Iron Age buildings, and the Goldcliff and Rumney ditch systems; the surrounding landscape of less well-defined features remains difficult to investigate.

The techniques work best close to the surface, dealing with extensive areas of coherent deposits, when there are organic components, and where previous work nearby has provided evidence for the buried topography. Elsewhere, evaluation remains problematic.

However, it should be emphasised that even when evaluation does work, we can have little confidence that we have identified all of the elements of the resource under threat. Examining 1 or 2 or 5 per cent of the footprint of a built structure, with the resources this involves, leaves the remainder unexamined. The earlier horizons, beyond the reach of trenching, are examined by borehole or not at all. The type of archaeology characteristic of the foreshore remains hard to locate and identify. The location of sensitive sites by evaluation may not lead to their preservation, since exposure destabilises the soil conditions.

It remains true, therefore, that development of all kinds on the Levels poses an unanswerable archaeological question. Planning policies allocating land for industrial use are therefore creating a framework in which the best efforts of contractors and curators can do little more than salvage what they can within time and resource constraints. If the Levels are worth saving, then such policies must be abandoned.

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