Land, Power and Prestige

Bronze Age Field Systems in southern england

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Front cover: a Late Bronze Age ringwork and field systems at South Hornchurch, Essex.
Reconstruction painting by Casper Johnson.

For Con Ainsworth

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Abstract

This is a study of Bronze Age rectilinear field systems in Lowland England, made possible by the rapid pace of discovery in developer-funded work. A major phase of economic expansion occurred in Southern England during the second and early first millennium BC, accompanied by a fundamental shift in regional power and wealth towards the eastern lowlands. Limited knowledge of the lowland farming practices associated with these dramatic social changes has, up to now, made researchers reliant on extrapolated models derived from upland excavations. The advent of developer-funded projects, involving large-area excavation, has started to reveal the lowland counterparts of the upland coaxial and aggregate field systems. This research offers a synthesis of available data on Bronze Age lowland field systems in England, including a gazetteer of sites. The synthesis draws on a substantial body of commercial reports or "grey literature", examining the correlation between enclosed landscapes, high status compounds and concentrations of metalwork deposition. The research demonstrates the importance of large-scale animal husbandry in the mixed farming regimes as evidenced in the design of the field systems which incorporate droveways, stock proof fencing, watering holes, cow pens, sheep races and gateways for stockhandling. It shows that Middle and Late Bronze Age rectilinear field systems are mostly confined to an area south of a line drawn between the Bristol Channel and the Wash – a politically dominant English Channel-North Sea region. The richest concentrations of larger and technically superior metalwork are accompanied by field systems in this lowland region. Along the River Thames, East Anglian Fens and Sussex Coastal Plain, prominent enclosures are associated with these areas of intense metalwork activity. Within the field grids there is evidence of ritualisation – actions which reflect some of the dominant concerns of society, in which certain parts of life are selected and provided with an added emphasis. One of those dominant concerns would have been the welfare of the breeding herd. Watering holes may contain special deposits including metalwork, quern stones, curated artefacts, animal bones, human remains and token cremations. The ditched boundaries so essential for keeping the herds in and keeping predators out were also the favoured location for special deposits especially around entranceways. In certain cases it seems as if Middle Bronze Age field systems went out of use in the Late Bronze Age and that some of the Late Bronze Age systems were established in different positions from those of their predecessors. There is little evidence that they were used or maintained far into the Early Iron Age. More importantly, there is little to suggest that similar land divisions were newly established during the Early Iron Age. In lowland England the creation of *Celtic fields* may have lapsed for several hundred years. It is argued that the field systems represented a form of conspicuous production, an "intensification" of agrarian endeavour or a statement of intent, to be understood in relation to the maintenance, display and promotion of hierarchical social systems involved in exchange with their counterparts across the English Channel.

Résumé

Cette étude, rendue possible par le rythme soutenu des découvertes dans le cadre des travaux financés par les promoteurs, s'intéresse aux systèmes de champs rectilignes de l'Age du Bronze dans les plaines d'Angleterre. Une phase importante de l'expansion économique a eu lieu dans le Sud de l'Angleterre durant le second et le début du premier millénaire av. J.-C., et s'est accompagnée d'un déplacement significatif de la puissance et la richesse régionales vers les plaines de l'est. Les connaissances limitées des pratiques agricoles des plaines associées à cette évolution sociale importante ont fait que les chercheurs se sont basés jusqu'à présent sur des modèles extrapolés à partir de résultats de fouilles en altitude. L'avènement de projets financés par les promoteurs, comprenant des fouilles à grande échelle, a commencé à révéler quel était dans les plaines le pendant des systèmes de champs coaxiaux accolés les uns aux autres des hautes terres. Cette étude présente une synthèse des données disponibles sur les systèmes de champs des plaines en Angleterre de l'Age du Bronze, avec un index géographique des sites. La synthèse se fonde sur une importante documentation de rapports commerciaux ou "littérature grise", et examine la corrélation entre les paysages fermés, les établissements en parfait état et les concentrations de dépôts d'objets en métal. L'étude démontre l'importance de l'élevage à grande échelle dans les systèmes de polyculture, comme le prouve le concept des systèmes de champs avec des chemins pour les troupeaux, des matériaux pour clôtures résistants, des points d'eau, des enclos à vaches, des stalles à moutons et des barrières pour la gestion du cheptel. Elle démontre que les systèmes de champs rectilignes du Bronze Moyen et Tardif sont principalement confinés à une région au sud d'une ligne tracée entre le Bristol Channel et le golfe du Wash – une région politiquement dominante bordant la Manche-la Mer du Nord. Les plus riches concentrations d'objets en métal d'une taille supérieure et techniquement supérieurs sont accompagnées de systèmes de champs dans cette région de plaines. Le long de la Tamise, des plaines marécageuses (Fens) de l'East Anglia et de la plaine côtière du Sussex, d'importants enclos sont associés à ces régions où le travail des métaux est intense. On trouve dans les structures de champs des preuves de rituels – des actes qui traduisent certaines des principales préoccupations de la société, où certains domaines de la vie sont retenus et protégés. L'une de ces préoccupations prédominantes a sans doute été le bien-être du troupeau reproducteur. Les points d'eau peuvent contenir des dépôts spécifiques parmi lesquels des objets en métal, des pierres meulières,des objets bénis, des os d'animaux, des restes humains et les cendres de crémations. Les enclos à fossé si importants pour garder le troupeau à l'intérieur et le protéger des prédateurs étaient aussi des aires de dépôts privilégiées, principalement près des entrées. Dans certains cas, il semblerait que les systèmes de champs utilisés à l'Age du Bronze Moyen aient été abandonnés à la fin de l'Age du Bronze et que certains systèmes de la fin de l'Age du Bronze aient été instaurés dans des positions différentes par rapport à leurs prédécesseurs. Peu d'éléments prouvent qu'ils ont été utilisés ou préservés pendant une bonne partie de l'Age du Fer. Plus important, peu d'éléments suggèrent qu'une répartition des terres similaire aurait été nouvellement établie au début de l'Age du Fer. Dans les plaines d'Angleterre, les champs celtiques sont peut-être tombés en désuétude pendant plusieurs centaines d'années. Il a été suggéré que les systèmes de champs représentaient une forme de production ostentatoire, une "intensification" de l'effort agraire ou une déclaration d'intention, à interpréter en rapport avec le maintien, la manifestation et la promotion de systèmes de hiérarchie sociale impliqués dans l'échange avec leurs homologues de l'autre côté de la Manche.

Zusammenfassung

Dies ist eine Studie über bronzezeitliche, geradlinige Feldsysteme in Niederengland, die durch die schnellen Entdeckungen von privatgesellschaftlich finanzierten Unternehmungen möglich gemacht wurden. Demzufolge fand eine Hauptphase wirtschaftlicher Expansion in Südengland während des zweiten und zu Beginn des ersten Milleniums v.C. statt. Diese Entwicklung wurde begleitet von einem fundamentalen Macht- und Reichtumswandel im östlichen Tiefland. Das begrenzte Wissen von Landwirtschaftsbräuchen, die mit dem dramatischen sozialen Wandel einhergingen, ließ Wissenschaftler bis jetzt auf extrapolierende Modelle von Hochlandausgrabungen zurückgreifen. Durch privatgesellschaftliche Projekte, die grossflächige Ausgrabungen finanzieren, beginnt sich nun ein tiefländisches Pendant zu den coaxialen und aggregaten Feldsystemen des Hochlands abzuzeichnen. Diese Studie liefert eine Synthese von verfügbaren Daten von bronzezeitlichen tiefländischen Feldsystemen in England und beinhaltet ein alphabetisches Ortsverzeichnis von allen Stätten. Bezug wird auch genommen auf eine beachtliche Anzahl von kommerziellen Berichten und andere „zwiespältige“ Literatur und die Beziehung zwischen eingefriedeten Landschaften, hochrangigen Siedlungen und Anhäufungen von metallverarbeitenden Stätten wird ebenfalls untersucht. Die Studie analysiert die Bedeutung weitflächiger Viehwirtschaft in gemischten Landwirtschaftregimen und belegt dies anhand von Feldsystemplänen, die Viehpfade, Wasserstellen, Kuhställe, Schafspferche und Bereiche für den Viehumgang aufzeigen. Es wird deutlich, daß sich die geradlinigen Feldsysteme der mittleren und späten Bronzezeit vornehmlich auf ein Gebiet südlich des Bristol Kanals und des Wash konzentieren, also auf eine Region am Ärmelkanal und an der Nordsee. Die reichhaltigsten Konzentrationen von größeren und aufwendigeren Metallarbeiten gehen einher mit den Feldsystemen in dieser Tieflandregion. Entlang der Themse, den Fens in East Anglia und der Küstenebene in Sussex werden prominente Einfriedungen mit Gebieten von intensiver Metallverarbeitung assoziiert. Innerhalb der Feldraster gibt es Anzeichen für Rituale – Handlungen von einem gewissen gesellschaftlichen Belang, die bestimmte Alltagsabläufe selektieren und diese in den Vordergrund rücken. Von grosser Bedeutung dürfte das Wohlergehen der Viehherde gewesen sein. Wasserstellen können besondere Ablagerungen wie Metallarbeiten, Mahlsteine, Artefakte, Tierknochen, menschliche Überreste und Einäscherungen enthalten. Grabenartige Grenzen, die Herden zusammen- und Eindringlinge außen vorhielten, dienten ebenfalls als beliebte Stellen für Sonderablagerungen, vor allem im Eingangsbereich. In manchen Fällen scheinen die Feldsysteme der mittleren Bronzezeit in der späten Bronzezeit aufgegeben worden zu sein. Manche Anlagen der späten Bronzezeit konnten sich an Orten etablieren, die unterschiedlich zu denen der Vorgänger waren. Es gibt wenige Beweise dafür, dass sie bis in die frühe Eisenzeit instandgehalten und genutzt wurden. Es gibt auch wenig Anzeichen dafür, dass ähnliche Gebietsaufteilungen während der frühen Eisenzeit neu etabliert wurden. Im englischen Tiefland mag die Entstehung von „keltischen Feldern“ über mehrere Jahrhunderte nicht stattgefunden haben. Es wird argumentiert, dass die Feldsysteme eine verstärkte Produktion und eine „Intensivierung“ landwirtschaftlichen Bestrebens repräsentieren; diese ging einher mit der Aufrechterhaltung, der Darstellung und der Promotion von hierarchischen Sozialsystemen, die im Austausch mit ihresgleichen auf der anderen Seite des Ärmelkanals standen.

Chapter 1. Introduction

1.1 Living on the edge

European communities three to four and a half thousand years ago are said to have experienced the first golden or international age. The period of time between 2500 – 750 BC saw exceptionally rapid economic developments and social changes in comparison with anything that had gone on before. During this European Bronze Age, widely spaced parts of the continent were drawn together by an expanding communications network resulting in the rapid spread of new ideas, technological advances, material wealth and the movement of people (Harding 2000). Eastern Mediterranean civilisations of great refinement flourished during this era leaving behind a rich archaeological record. These palace ruins and the legends preserved in the Homeric epics have continued to capture the imagination of scholars and the general public alike. The legacy of these civilisations on Crete and mainland Greece is still accessible. A much more challenging problem arises in attempting to unravel the achievements of societies on the fringes of Europe. This outer zone never achieved the splendour of the Aegean dynasties but it did experience a remarkable pace of change and extraordinary wealth and richness of artefacts between 1500 – 700 BC: a period of time that has been called the Later Bronze Age. British archaeologists face a major challenge in trying to determine how closely the fortunes of our isles were tied to the economic and social dynamism evident on the Continent. What economic power existed here to enable leaders to attract in vast supplies of bronze metalwork from the continent? What produce was returning by way of reciprocal gift exchange?

Britain and Southern Scandinavia share much in common within the European scheme of things. Both are "offshore" land blocks separated from the European mainland by their own difficult but navigable sea crossings. Analysis of the archaeological record for both the Nordic group of states and the British Isles suggests that there is a common explanation or model of how resources, ideas and people were flowing back and forth to central Europe in the Later Bronze Age. Archaeological discoveries in Sweden, Denmark and Britain suggest that the continuity of power for ruling elites in temperate Europe was directly dependent on participation in a larger continental network of alliances and exchange.

Kristiansen explores the nature of central and marginal areas during the Scandinavian Bronze Age. He suggests that on a regional scale there is a distinction between southern, central, and northern Scandinavia, reflecting a declining degree of complexity and dependency (1987, 82). So in the Late Bronze Age, distinct enclaves of power emerge in southern Scandinavia around Stockholm on the Baltic coast, the Oslo fjord region, Bohuslän and Scania in Sweden (ibid. 83). These regionally important niches are characterised by a close correlation between agricultural expansion, intensified settlement, the ritual deposition of metalwork, the use of complex ritual gear and the occurrence of elaborate rock carvings (ibid. 83). In other words they had many of the flamboyant trappings of political power. Heading further north away from these flourishing southern Scandinavian power centres, there is less abundance of metal weaponry, more local imitation and less complexity in ritual and rock carvings.

The southern regional centres could not, however, afford to be complacent for they were entirely dependent on the maintenance of an inter-regional exchange network linking them to Denmark, Germany, Poland and a wider world. In this respect successful farming and diplomacy were essential in their dealings with distant elite centres in Continental Europe; failure on

either count threatened access to exotic ritual information and prestige goods (ibid. 83) *i.e.* some of the props of their continued political fortune. The struggle for subsistence had been replaced by a struggle to maximise productive capacity. Just as in modern western societies, growing affluence, associated with economic dynamism, provided a new freedom of association where people gained status through consumption. Individual image projection was central to this new creed. Part of this ostentatious display may have been to rub home the lesson of a new parity. In this culture, admiration for economic success and displays of wealth won the respect of others in an increasingly cosmopolitan world.

For Kristiansen social organisation was based on a close relationship between prestige goods exchange and a complex ritual system which perpetuated an elite ideology. Ritual, social and economic dominance guaranteed success in the new hierarchical society, producing the necessary surpluses so essential in alliances and exchange. Kristiansen notes, however, the scarcity of evidence on the nature of the surplus being generated. He speculates that the extra-ordinary wealth from Scandinavia to Central Europe depended on home-produced cattle, sheep, dried fish, furs and seal oil/skins (ibid. 83).

This model envisages an integration of the entire Scandinavian region into an international core-periphery network linking through eventually to the Aegean. It was a network, the collapse of which in the Iron Age transition caused the emergence of new fragmented, self-sufficient communities no longer tied to the pressures and gains of a dynamic extended European economy.

One other aspect of the Baltic power bases is of particular interest to our own investigations. The Nordic power centres are located on the most fertile agricultural areas and in strategically advantageous locations controlling the flow of international exchange and trade. In effect Southern Scandinavia controls the movement of ideas, people and produce between Northern/Central Scandinavia and Europe, the most important link being the crossing which now links the modern cities of Malmo in Sweden and Copenhagen in Denmark.

1.2 Southern England and the Atlantic economy

Kristiansen's analysis of Southern Scandinavia demonstrates how resources, ideas and people were flowing back and forth between "offshore" Nordic and European mainland communities. A similar movement of ideas, people and produce was also occurring across the English Channel with long distance exchange linking the "offshore" land block of Britain into a wider cosmopolitan world. Rowlands in 1980 offered a theoretical model of the social structure of Southern England to explain these European links; a model which can now be reconsidered with the newly available data from commercial archaeology.

For Rowlands, Southern England formed one part of a larger economy (the Atlantic Region) uniting southeast England and northeast France. It was a region of varying economic fortunes in which communities of different sizes and power vied with each other to gain political and economic advantage. Despite fierce competitive rivalry, all the communities on either side of the English Channel were closely bound within a highly stable and expansionist hierarchy of alliance and exchange. So close were those ties that effectively the south east became more "Europeanised" and increasingly segregated from other parts of Southern and Northern England (Rowlands 1980, 37). This resulted in a community or people straddling the English Channel and united by a common culture. Just as with the Nordic regional economy identified by Kristiansen (1987; 1998, 64), the Atlantic region including Southern England would have an archaeologically recognisable geographic limit. That was certainly the case in Southern Scandinavia, for Kristiansen was able to map a definite zone of complexity – the wealth of metalwork and rock carvings simply tailed off in a northerly direction. If Rowlands is right, the symbols of regional ideology should also peter out in England as we progress further from the main hub of the exchange network *i.e.* the Thames Valley and its estuary and the Fenlands. As we head north away from the identifiable core areas of maximum growth in the south east, we should encounter a different pattern of settlement.

Within the South East corner of England, Rowlands suggested that there was a hierarchy of exchange. Of paramount importance may have been exchange between twinned coastal

populations on either side of the Channel. In effect, there were cross channel gateways for the flow of specialist resources, people and new technology. Next may have been the exchange between centres along specific coastlines, followed by inland networks linking the coasts and river valleys to their hinterlands (1980, 38). Location on key points was essential to ensure access to a wider exchange and alliance network, preferably dominating the best possible soils (ibid. 34). The better the location, with access to external trade, the greater was the likelihood of local political dominance. Rowlands used the evidence of pottery, metalwork and burial distributions alone to suggest flourishing and densely populated zones in riverine settlements along the Thames, the English Channel coast and the East Anglian Fens (ibid. 34).

These specialist enclave economies had varying degrees of dominance and success. Their political power ultimately depended on the ability to accumulate, display and distribute wealth. Successful management of available resources including the mobilisation of labour would have transformed the nature of the lived environment. For Rowlands it was the seaboard and river elites that engaged in long distance alliance formation and exchange. Such densely populated niches or enclaves benefited from a centralisation of wealth and power greater than that in upland settlements. Rowlands admitted that there was little evidence besides the metalwork to gain any firm insight into the success of their long distance alliance formation and exchanges other than that "they must have been producing some kind of surplus in exchange" (ibid. 34).

1.3 The political ascendancy of the Lowlands of Southern England

In the same volume of the *British Later Bronze Age* in which Rowlands published his analysis, a number of fellow contributors presented new sites and new interpretations that supported his model for an emerging hierarchical society in the eastern lowlands. The new sites were located directly on the Thames estuary approaches or close by to the main river. First, there was the discovery of a substantial and permanent riverside settlement at Runnymede in the Middle Thames valley, with an impressive wharf which may have been a fitting show of display for a community evidently controlling wealth along the Thames and supporting specialist industries (Needham and Longley 1980, 421). Secondly, there was a series of Late Bronze Age ringworks in Kent and the Thames estuary. These circular ditched enclosures offered segregated living or meeting spaces and were associated with metalworking (Champion 1980, 237–243). New interpretations included a reassessment by Ann Ellison of the redistributive role of regional centres in Southern England (1980, 132–134). Those data (Ellison 1980, fig. 3) are now better understood as re-emphasising the degree of association of formal metal deposition with nodal points. Finally, an analysis by the editors examined a significant shift in political fortunes down the Thames in the Middle Bronze Age (Barrett and Bradley 1980c, 255–265). Barrett and Bradley's assessment of the growing importance of the lower reaches of the Thames valley is based largely on settlement, burial and metal evidence. They suggested that the core area of the Upper Thames, which had been the dominant power base during the late Neolithic and Early Bronze Age, was supplanted by the former buffer zone of the Middle Thames in the Later Bronze Age. This former buffer zone was ideally placed for the agricultural exploitation of the valley and this, combined with its ideal location for long distance exchange, ensured its wealth and political ascendancy resulting in the relative isolation of the Upper Thames. The new power centre depended on its ability to convert an agricultural surplus into wealth and status through exchange (ibid. 260). Shortly after the publication of *The British Later Bronze Age*, Peter Northover was able to demonstrate a dramatic shift in metal circulation zones during the Later Bronze Age, away from the traditional reliance on native ore from the west (Ireland and Wales), out towards the continent of Europe (Northover 1982, Figs 11 and 13). Northover's discovery of signature impurity groups and alloy types in the artefacts of Bronze Age Britain supported the case that increasingly powerful Southern English political economies were able to acquire, control and 'consume' status objects obtained through European long-distance alliances.

1.4 Political economies and conspicuous production

At this point we need to pause and remember that both Kristiansen and Rowlands are offering theoretical models of the Later Bronze Age. They were using the best available evidence at the time in trying to establish the nature of society within the European world. The scarcity of their evidence is most marked in respect of farming, which they both recognise to be the critical factor in the emergent political economies. In Scandinavia we are left with a lingering possibility that drying fish and seal pelts in part fuelled conspicuous consumption. Rowlands also conceded an almost total absence of data in respect of the farming regimes 'funding' conspicuous consumption in the lowlands of Southern England (1980, 35).

If productive success was such a decisive factor in these societies, logically there should be evidence of the new value attached to productive resources. Intensive farming may have been the basis of rapid economic growth. It follows that land would become a new commodity to define, enhance, own and protect. Signs of the agricultural or animal surpluses generated should be apparent in excavation. Lynchets would remain after intensive cultivation and large herds of cattle and flocks of sheep would have needed to be penned and corralled for selective breeding. It follows that stock enclosures and lanes or cattle runs might have been deployed. In Britain we know this to be the case, for there was a drastic reorganisation of the landscape around the needs of food production particularly during the Middle Bronze Age (1500–1000 BC) and access to the valued lands became controlled (Bradley 1991, 58). A century of upland surveys and excavation has proved the existence in England of permanent field systems, representing the greatest prehistoric input of communal effort upon the landscape. For Barrett, agricultural intensification was the defining feature of the Later Bronze Age (Barrett 1994). The history of those upland investigations is outlined in the next section. It shows how until recently the nature of lowland farming and therefore our understanding of social change in the Later Bronze Age was largely dependent on extrapolated models derived from upland excavations.

1.5 Prehistoric field systems in Southern England: a century of research

Sustained archaeological interest in English prehistoric field systems started just over one hundred years ago and for much of that time it has been largely confined to the investigation of upland earthworks. There had been passing reference to ancient land boundaries in the 18th and 19th centuries, including those by Stukeley, Cunnington, Lane Fox and Jones (Bowen 1970, 67; Holleyman 1987, 6; Fleming 1988, 13), but the first archaeological investigation and publication of a prehistoric field system in England was not made until the start of the 20th century.

Reginald Blaker of Lewes was the first to argue in detail for the existence of pre-Roman lynchetted land tenure and the first to undertake and publish a survey of one such group of fields on the chalk downlands in the parish of South Malling (1902). That Sussex discovery was the first of many to be made in the county and Sussex archaeologists, particularly members of the Brighton and Hove Archaeological Club (later Society), pioneered much of the early work on prehistoric field systems. Foremost amongst them was Herbert Toms, a founder member of the Brighton and Hove Archaeology Club and Curator of Brighton Museum. Largely without instruction, Toms developed methods of analytical field survey that he used to work out chronological relationships by surface observation (Bradley 1989, 32). His Sussex surveys produced the first detailed site plan of a prehistoric field system in which the distribution of surface pottery was plotted (Toms 1911, 413), and recorded new earthwork discoveries at Buckland Bank, Park Brow and Plumpton Plain (Bradley 1989, 39). His interests were not confined to the county for he returned to his native Dorset and with his wife Christine, re-investigated Angle Ditch and South Lodge Camp originally excavated by Pitt Rivers. He was able to demonstrate that Deverel-Rimbury enclosures at both sites overlay earlier field systems (Bradley 1989, 34. Toms 1925). In respect of Wessex he also helped Heywood Sumner to identify *Celtic fields*, which Sumner duly acknowledged in his *Ancient Earthworks of Cranborne Chase* (1913).

From its inception the Brighton and Hove Archaeological Club attracted an extraordinary range of members (Plate 1), including the illustrator Richard Gurd, Dr Eliot Curwen and

his son E. Cecil Curwen and George Holleyman – each in turn made significant contributions to the study of early land division.

Just as with Toms, the Curwens did not confine their interest to the Sussex Downlands. With O. G. S. Crawford they introduced the term *Celtic Field* to denote a widespread type of prehistoric field (Crawford 1923. Curwen and Curwen 1923, 64). Cecil Curwen broadened his interest in early land tenure comparing evidence first in Jersey, Cornwall, Dartmoor and Dorset (Curwen 1927) and then in Jutland and the Western Isles (1932; 1946). Curwen also perceptively suggested that whilst ard-ploughed field plots were found principally on the chalk hills he noted that the valley gravels of the Thames valley would also be suitable (1946, 64). As Stoddart observes, Curwen also contributed much to British landscape ethnography as he sought out 'primitive' agricultural conditions to better understand ancient landscapes, anticipating the *longue durée* approach to prehistory (2000, 10).

Ordered landscapes – droveways, field systems, linear ditches – were being recognised in increasing numbers not just in Sussex. Air photography revealed their scale nationally and the striking imagery in major publications, particularly *Wessex from the air* by Crawford and Keiller (1928), alerted the wider public to their existence and Crawford, as editor of *Antiquity*, gave extra prominence to the theme of landscape in prehistoric studies. The discovery, observation, classification and excavation of earthwork agrarian boundaries proceeded throughout the 1920's and 30's when it was still possible to map their distribution in relation to settlement and associated droveways (Holleyman 1935, 444).

By the mid 1930's, ploughing was encroaching on the legacy of early cultivation (ibid. 445). Wholesale ploughing up of the downs in the post war agricultural revival, hastened recording and excavation of chalk downland earthworks. That loss continued to focus the archaeological interest on the uplands, as the earthwork features were increasingly erased. In retrospect the 1920's and 30's was the last golden age for the recording of extant features; boundaries which, ironically, had only just begun to be appreciated. From the 1940's to the 1990's the uplands continued to dominate investigations.

The importance of studying that vanishing upland landscape, was spelt out by Collin Bowen in a publication entitled *Ancient Fields* (1961) which was immensely influential in promoting the study of ancient fields at the very time that they were being rapidly destroyed. It offered a clear assessment of why they were of critical importance in the archaeological record; not least because being so widespread they were involved in relationship with almost every other type of earthwork (ibid. 2). He also offered a systematic approach to recording for field archaeologists and suggested a research framework (ibid. Appendices A, B and C). Bowen also reminded field workers that they were not "just fields" but needed to be studied as responses to wider environmental, social and economic forces (ibid. 2).

Inspired by such publications a series of protracted, regional scale research projects were instigated on the chalk downlands. They included

Plate 1. Brighton and Hove Archaeological Club field walking at Saddlescombe Farm, 3rd October 1908. Herbert Toms (with pipe) demonstrating artefact recognition to Dr Eliot Curwen (wearing tall bowler hat) and E. Cecil Curwen (schoolboy). Source: Harriet Ansell photograph, reproduced by kind permission of the Sussex Archaeological Society

work on the Marlborough Downs, the South Dorset Ridgeway, Fyfield and Overton Down, and the Salisbury Plain Training Area. Upland studies continued to dominate, particularly the Wessex downlands. We shall look at these Wessex studies in turn, to assess how research aims and research frameworks evolved with the growing appreciation of the nature of large terrain management by Bronze Age communities.

Until the Second World War, the Marlborough Downs contained one of the largest uninterrupted expanses of relic later prehistoric landscape in Southern England (Gingell 1992, xv). Two decades of post war arable cultivation had degraded this former downland, and a project conceived in the mid 1970's aimed to date all the field systems and linear earthworks within a ten kilometre block in the centre of Marlborough Downs (ibid. 1). A consistent pattern was revealed, of two periods of farming deploying rectilinear field systems – a Later Bronze Age episode followed eventually by a Romano-British phase (ibid. 155). The first generation of regimented land division, which did not outlive the Bronze Age itself, was heavily manured up to the time of abandonment: a conclusion reached because so many large sherds of unweathered pottery were collected in fieldwork (ibid. 155). Arable fields were then not re-established until the 1st and 2nd centuries AD.

Peter Fowler's investigation of the Fyfield and Overton Downs, to the west of the Marlborough Downs, was the culmination of thirty-nine years of research and sought to get away from the "ever-attractive funerary, ceremonial and military monuments" and expose the whole downland record looking at the importance through time of that landscape (Fowler 2000, 13). Clear land division orientations were revealed in the relic landscape; alignments which were not deployed across the downs at random but organised as a sustained act of land management (ibid. 25). Fowler's research, just like Gingell's, unpicked the very long history of land management; the palimpsest or different layers of how successive generations have worked to shape and re-shape a cultural landscape (ibid. 272).

Nearer the coast, the South Dorset Ridgeway Project ran between 1977 until 1984. It too was a response to the alarming loss of archaeological landscapes caused by modern agriculture (Woodward 1991, 2 and 172). It revealed that in South Dorset the prehistoric landscapes and societies could be seen as a complex series of episodes of technical innovation, farming development and cultural change. The Later Bronze Age witnessed a sustained farming era and it is clear that the great monuments of earlier periods were encroached upon and incorporated into field systems (ibid. 147). The study was notable for following a clear, predetermined strategy, including the development of a chronology for the known structural elements in the landscape linked to the mapping of artefact scatters within the farming structures (ibid. 14). In the latter respect the evidence from the excavated assemblages of worked lithics suggested that a considerable amount of flint was required for tool production in the Later Bronze Age. Those assemblages were characterised by piercers and scrapers. A large quantity of flint was found on the field surfaces at Sheep Down and Cowleaze. Characteristic fabrication waste had also been tipped around the field edges, within an abandoned hut and a bowl barrow at Cowleaze and a ditchless bowl barrow at Rowden (ibid. 153). Such analysis in excavation, combined with an extensive field walking programme, reflected a determination to explore the nature of the lives lived out within the enclosed land, rather than simply recording the structural enclosing barriers.

The threats to prehistoric landscapes were not confined to farming. In the early 1980's, a detailed landscape study commenced of the military training areas on Salisbury Plain (McOmish *et al.* 2002). The training area proved a fruitful place for archaeological research (because of the degree of survival of upstanding earthworks), leading to a substantial increase in the extent of *Celtic field* systems noted (ibid. xiii). The military estate covers nearly 39,000 ha, stretching some 38km east to west and 14km north to south, so the survey produced a record of an extensive ancient land surface untouched by intensive modern cultivation (ibid. figure i.1). That broad sweep over the terrain revealed a common symmetry of layout of the coaxial field systems with the predominant axis north east/south west and occasionally north west/south east. Those alignments were adhered to regardless of the underlying topography and followed a similar trajectory to those observed in the Fyfield and Overton Down research. (ibid. 54, fig 3.4).

Discoveries were not however confined to the chalk downlands. In Devon the re-discovery of the Dartmoor reave land boundaries added to the number of ordered landscapes of second millennium BC origin. Exceptional survival of the Dartmoor prehistoric landscape enabled

Fleming to survey all of the component parts of an integrated system of large terrain management (Fleming 1994, 66). The key texts of the extended programme of moorland investigation provide a meticulous record of reave alignments and associated settlement (Fleming 1978b; 1979; 1983; 1984; 1988). From those data Fleming was able to discuss the social dynamics which may have accompanied the creation and maintenance of such extended territories (Fleming 1994). His work marked a significant shift in focus for field system investigations towards exploration of attendant social structures, design principles and the genesis of the field systems. Fleming suggested that coaxially arranged land boundaries might be a continuation of an older ideology; namely, a prehistoric tradition concerned with the conscious creation and maintenance of special terrains, full of symbolic meaning (Fleming 1987, 197). He noted the sporadic adoption of coaxial land design over a long life-span (1987, 192) and their widely scattered occurrence throughout Southern England and Ireland (ibid. 189). On the eve of developer-funded archaeology he cautioned against complacency about our knowledge of early land division. He also suggested that the clearly visible coaxial landscapes characterised by earthworks and cropmarks might be the tip of the iceberg (ibid. 193).

In 1976 a symposium on ancient fields and land allotment was held, attended by most of those engaged in field research on the topic at the time. The resulting publication *Early Land Allotment in the British Isles* provided a timely corpus of site material and current thinking (Fowler 1978, iv). Significantly the discoveries reported were not confined to upland sites, for there were tantalising clues suggesting that lowland field divisions were lying undiscovered. In this respect the printed articles and work cited included reference to cropmark research along the Upper and Middle Thames gravels; evidence of settlement and possible land division at Lechlade; concentrated settlement at Beckford below Bredon Hill; reports of enigmatic coaxials on Lothingland between Great Yarmouth and Lowestoft and clear evidence of Bronze Age fields at Fengate (Fowler 1978, i–v). As we shall see in this monograph, most of these potential areas of prehistoric land division were to be substantiated by subsequent commercial work.

The overt upland earthworks of prehistoric farms dominated field systems investigations for much of the 20th century – after all, they were highly visible whilst the chalk downland sward was still largely untouched by deep ploughing. The new technique of aerial photography also was ideal at picking out what Fleming dubs the large terrain (1994, 66). When the threat of obliteration increased in the post war farming revival, efforts were renewed to record what remained. The existence of these upland formal field systems enclosing large tracts of land is very significant. Rowlands' argument, summarised earlier, suggests that this form of stylised field architecture might have characterised the politically ascendant Thames Valley and that there could be many more instances in the Fenlands to accompany the evidence from Fengate. Finding them might elucidate the nature of farming regimes in the richest parts of the country. That task has been impossible until now. The data were simply not available. Developer-funded excavations have changed all that.

1.6 Research methodology

This research is very precise, looking at only one dimension of the era of wealthy communities that flourished during the British Later Bronze Age. The aim is to test the hypothesis that field systems would be associated with the known settlements and metalwork typifying the rise to political power of the Thames Valley and eastern lowland England. In that regard county records were searched throughout England to determine how many more instances of lowland field systems, including examples in the valleys and coastal zones surrounding upland areas have been found. By taking a broad study area this research offers a synthesis of all available data on Bronze Age lowland field systems in England; examining regional variations in the distribution of upland and lowland land divisions, development sequences and evidence for their apparent demise in the first millennium BC.

1.6.1 Research methodology: the search for lowland field systems

For Barrett and Bradley the rise to political power of communities in the Middle Thames valley during the Later Bronze Age depended on their strategic location and agricultural exploitation of the valley (1980). They cited three examples of

Middle Bronze Age dateable farming regimes and six Late Bronze Age field systems in their analysis (Barrett and Bradley 1980c, 251). In 1997 new data generated by commercial excavation reconfirmed their prediction of a particularly dense pattern of Deverel-Rimbury settlement and coaxial field construction (Yates 1997; 1999). That preliminary study into new discoveries along the Upper and Middle Thames examined a 120km long valley corridor between Cirencester and Runnymede. The research was not confined to the immediate riverside frontages, but entailed countywide searches north and south of the watercourse. The results showed that all of the bounded landscapes were sited close to the arterial communications link of the main river (Yates 1999, 159). The 1997 study area did not examine the entire West of London gravels surrounding Heathrow Airport, but the author was aware of commercially sensitive information that would justify further research. In the event the pace of discovery accelerated throughout Southern England justifying a much more extensive research project – one that could be extended to the whole of England. Data for this publication was collected between October 1997 and April 2005 including a re-investigation of the Upper and Middle Thames Valley zones in the winter and spring of 2003.

The study area comprised the whole of lowland England. The economic, social and symbolic importance of lowland field systems was assessed in relationship to their upland counterparts. The study area was divided up into research zones; namely, Greater London, the Greater Thames estuary, Kent, the North Sea coastline and hinterlands, River Thames to Fens, the Fens and feeder rivers, the East Midlands, Sussex, the Solent Basin, the West Country (Hampshire, Dorset, Devon, Cornwall and Somerset), West Midlands, and all counties north.

Research into regional variations in the distribution of Bronze Age lowland field systems sought to determine a) zones of intense settlement and clearly defined bounded landscapes and b) unenclosed, relatively empty countryside lacking regimented land boundaries. The search therefore involved trawling for both positive evidence (gridded land divisions) and negative evidence (unenclosed lands not demarcated/unencumbered by terrain boundaries). The gridded terrains are characterised by rectilinear field systems, both coaxial (with one prevailing axis) or aggregate (where no dominant alignment controlled the layout) together with major linear boundaries. Field systems are not solely characterised by their boundaries for there are a range of associated structural components including waterholes, stock compounds, droveways and integrated settlement.

The search was not confined to positive evidence, for the aim was also to define apparently empty landscapes lacking any intensity of land use and management. All available records and work in progress were therefore searched. Negative evidence might be revealed by the myriad of closely grouped commercial contracts, or where the scale of works opened up sufficient ground to confirm that absence of ditch boundaries. In this respect there were three types of investigations, which provided an effective sample over large areas. First large scale linear civil engineering works cutting through urban and rural ground; including rail, road and pipeline construction. Secondly, conurbation development as in the new towns of Swindon and Milton Keynes. Third, large area works including gravel extraction or reservoir planning as at Rutland Water. Each in turn can reveal the palimpsest of land evolution including coaxial fields (not of Later Bronze Age origin) forming part of the second wave (Late Iron Age/ Romano-British) of chequerboard land tenure. During the course of the research new regional syntheses were also being produced which aided the analysis; including, the Aggregates Levy Trent Valley study and the more extensive Arts and Humanities Research Board (AHRB) project directed by Richard Bradley. The latter research, currently in progress, is developing an overview of British and Irish prehistory from 10,000 BC up to the Roman invasion. It involves a major update of archaeology for the British Isles taking into account all the developer-funded work over the last 15 years.

1.6.2 Research methodology: standardised procedure

For each regional study zone a standardised procedure was adopted. It consisted of :–

i) initial desk top research
ii) initial contact and discussion of the project to secure the co-operation of field workers and interested parties
iii) collection of data against a developed criteria of selection

iv) assimilation, production and dissemination of the first synthesis, followed by the production of the second draft
v) revisits after one year to incorporate any significant new finds likely to alter the pattern, followed by circulation of a final text.

Initial desk top research

The research was largely dependent on the willing co-operation of hard-pressed field archaeologists working on developer-funded projects. Their time is necessarily at a premium and therefore prior preparation was essential. This involved initial desktop study of fully published material already in the public domain. County journals (including published fieldwork gazetteers), air photography analyses, regional syntheses, palaeoenvironmental studies – these were used as the initial start point. Close attention was also paid to regional geology and topography. Due regard was paid to those sites published before the re-assessment of the chronology of prehistoric pottery assemblages by Barrett (1980b). As the research progressed the results of new initiatives also became available, including a spate of new regional research frameworks. In addition to public domain literature, it also proved fruitful to search out relevant unpublished postgraduate dissertations and theses.

Securing co-operation

Commercial archaeologists work for developers and are bound by a strict duty of commercial confidentiality. Researchers approaching commercial units must therefore reassure project managers and honour any embargoes on disclosure. Mutual trust has to be established and developed in order to start a dialogue on the nature of regional discoveries and new observations being recorded on site, in environmental sampling, in watching briefs and post excavation analysis.

Collection of data and the criteria of selection

There are diverse repositories of archaeological data. The primary one for this research was the commercial archaeology units. In building a synthesis for a region, the advice of site and project directors was invaluable, together with overviews provided by artefact specialists and archivists. Each unit also holds their own technical libraries; originally county based but now expanded because of the competitive tendering system which spreads their work throughout the nation. Access to the archive of grey literature provided the plotting of regional distributions including apparent voids in evidence. All client reports were checked including evaluation, walkovers, excavations, environmental sampling, strip and mapping and full scale excavation. Interim reports often flagged up the initial recognition of Bronze Age field systems, prompting a return visit at the completion of the next phase of the project. The co-operation of field staff allowed access to draft reports, site plans, sight of finds being processed, and latest radiocarbon dating results received from laboratories. Sites (work in progress), however, were only included in the gazetteers when they were no longer commercially sensitive. A number of commercial sites therefore do not appear in the published gazetteers but none of them alter the established distributions for field systems. Research within the units also extended to invitations to visit excavations in progress, to see at first hand the nature of the features being sampled.

In addition to the various commercial units other repositories of data were visited or contacted. These included Sites and Monument Record offices, local and county archaeological societies, local museums, community archaeology project leaders, county record offices to check the earliest documented boundaries on tithe maps, the National Trust Archaeology Office and researchers with regional expertise (*e.g.* J. D. Hill and Frances Healy for East Anglia).

For each designated study region a gazetteer was compiled. Each gazetteer lists sites that record aspects of an enclosed landscape or sites showing the intensification of land use during the second and early first millennium BC. The criteria for inclusion were as follows. Sites were included provided: –

a) features were securely dated by excavation or detailed survey. They represented:
b) components of ditched field systems, land enclosure and linear ditched or lynchetted land division; that had been:
c) adequately sampled; and
d) supported by collaborative circumstantial evidence.

Features dated by excavation or meticulous survey

Coaxial field systems and aggregate field systems cover a long time-span. These design forms occur in two main phases during the prehistoric period; the Later Bronze Age and the Late Iron Age/Romano-British era. This research therefore

followed the criteria that securely dated excavated land divisions would be central to the study. Land allotments judged to be prehistoric on the basis of air photography alone were excluded; though account was taken where air photography could trace the extension of land divisions from an excavated layout, as at Castle Hill in Devon and East of Corfe River, near Wareham.

Component parts of field and enclosure defined farms
A field system is an assembly of parts connected in an organised manner such that each component is linked directly or indirectly to every other element. The main structural elements are the linear boundaries forming rectilinear land blocks; either all aligned coaxially or an accreted mix of alignments (aggregate in nature). Large linear borders and blocks of enclosures and compounds are counterparts to this gridded land arrangement. The size of area stripped or subject to evaluation trenching will help determine whether the discoveries have revealed a coaxial or aggregate field system. The gazetteers only designate coaxial land blocks where the excavations have confirmed an extensive ditched terrain, one that follows a common orientation. Otherwise the term rectilinear field system is used.

Sample size
No field system has been fully excavated. A sampling strategy is followed reliant on designated section cuts, bulk sampling and area strip. The exposure of a coaxial field layout, extensively sampled, incorporating an absolute dating programme together with a full palaeoenvironmental investigation provides the best evidence for regimented land management. But it is possible to detect an organised terrain in small-scale excavation because, in commercial work, the frequency of interventions in the same locale can quickly accumulate sufficient evidence to confirm whether a well-organised countryside had existed. Even evaluation trenching might determine the overall orientation of field blocks. Once that judgement has been made, even seemingly insignificant outlier fragments of ditch section may, with confidence, be included within the perimeters of the farmland.

Collaborative circumstantial evidence
Field systems are more than functional structures comprising linear constraints. They were arenas for social reproduction and were manifestations of a new ideology and mode of living.

Clearly dated and investigated land blocks have produced a repertoire of evidence, which reflect a sedentary lifestyle – one of conspicuous consumption and production. A range of circumstantial evidence can alert a researcher seeking other zones of intensified and formally marked land tenure. Such circumstantial evidence is included, where appropriate, in the regional gazetteers to accompany evidence of formal land division. Gridded landscapes may be linked with urnfields, watering holes, metal finds, pottery and lithic concentrations, burnt mounds and settlement. Land divisions close to river frontages may be tied into various forms of managed access to waterfronts, including jetties, staithes, causeways, raised trackways and bridges.

Each gazetteer seeks to contribute towards a regional prehistory; so in Cornwall for example, account is taken of the local tradition of non-linear land boundaries. Throughout the study all evidence was explored and preconceptions avoided. However, by the close of the research certain discoveries came as less of a surprise because of the repeated preference for siting lowland land blocks on intensifiable ground in a strategic location. In that respect in one region alone along the North Sea coast it was suggested that the possible land blocks on Lothingland between Great Yarmouth and Lowestoft might be of Bronze Age origin.

Assimilation, production and distribution of draft syntheses
While considering the mass of regional data, visits were made to the counties concerned to gain a better appreciation of the various locales of concentrated field systems. All the zones in this study were visited from Penwith Peninsula in the west to Tendring Peninsula in the east, from Selsey Bill in the south to the Welland Valley and beyond in the north. Extensive visits of this nature were not solely confined to placing existing excavated sites in the landscape, for en route it was possible to observe major building sites prompting further enquiries as to the nature of the planning stipulations placed on those works. The commercial archaeology unit that had successfully gained the contract was ascertained and subsequently contacted. In some instances air photography archives were consulted, as for

instance around Richborough in Kent, because finds suggested the possibility of intensified settlement which might have been associated with an enclosed landscape. As a result of those visits and the assimilation of the data collected, a first draft synthesis plus site gazetteer and accompanying distribution map was circulated to those field archaeologists and interested parties able to comment on the accuracy and coverage of the first summary. Subsequently, on receipt of comments, a second version of the regional synthesis was prepared.

Final regional synthesis

Where time permitted the region was revisited and newly available client reports examined to reconsider the earlier interpretations made. For example the data for Kent was first explored in 1999 and subsequently reassessed in 2001 and 2004. The initial survey suggested a number of relevant sites (Yates 2001) but the pace of discovery grew, increasing the number of sites in the same distribution zones (Yates 2004). By contributing an analysis to contracting units, new material was returned in exchange including major contracts again confirming a void in Bronze Age land appropriation.

1.6.3 Research methodology: the issue of Sites and Monument Records

The primary data collection point was the contract archaeological units, not the Sites and Monument Record offices. The reasons for that are explained in this separate section. Sites and Monument Record Offices (SMR) were visited and the staff proved to be extremely co-operative. But the systems controlling their work showed up inherent weaknesses. The record is designed to capture site specific monuments and artefact find locations but is less effective at "capturing" large terrain landscapes. The processes of new site finds is not matching the pace and scale of commercial discovery The SMR's were useful in this research a) because they stored client reports lodged on completion of archaeological interventions. That grey literature archive is contributed to by the diverse and geographically separated field units who have successfully bid for work in that county/administrative area. b) In many instances those SMR offices also had their own technical libraries. c) The SMR map provided an overview of density of settlement and artefact recovery, which in addition to confirmed land boundaries, prompted further analysis of work in progress. d) The co-operation of SMR staff in some lead counties (Essex, Suffolk and Norfok) resulted in the creation of various distribution maps using their GIS systems, including correlation plots of pottery, metals and settlement. Such plots in some instances convincingly revealed the negatives of Bronze Age site distribution *e.g.* the GLSMR records (Museum of London 2000 Map 5).

A number of specific problems were encountered when using the SMR databases. These are issues likely to confront any researcher attempting a synthesis from the raw data available.

a) Processed data

The monumental scale of land appropriation in the late second and early first millennium BC alters the scale of known "archaeological sites". Interrogating an SMR for a discrete monument type, for example a barrow, shows the benefits of this form of archaeological record. The classification of a landscape however poses problems. The record may hold all the component parts of an ordered terrain – waterhole, ditch section, stakeholes – but unless an excavation is of a size to help to expose a rectilinear arrangement of fields the record falls short. Fragments of Bronze Age land tenure may also lie hidden within a complex palimpsest of land evolution and in the processing of the SMR entry there may be a tendency to classify the field system by its later Roman or Medieval layers. Typically also there is a recurrent pattern that Later Bronze Age field blocks straddle modern administrative boundaries. In consequence the full significance of disparate and poorly understood features in each county masks the true nature of the integrated structures crossing county lines. A far more critical problem for synthesis research is the inquiry principle underlying the database. The SMR provides answers to specific requests – but in accessing negative evidence it fails.

Access to the record is restricted by its nature. SMR offices maintain reference material with readers making bookable appointments. There are restricted opening hours and often restrictions on the number of files that can be consulted at any one opportunity. Being a fixed resource, copies of key texts need to be made and it is not always possible to copy the entire record. Furthermore, in some SMR's there are bans on reproducing

site plans and normally there is a complete ban on copying the SMR/Ordnance Survey overlays. All of these restrictions pose especially difficult problems for synthesis since much time has to be spent assimilating diverse data and re-visiting the data to develop a coherent interpretation of the diverse elements in the record.

b) Data not processed
Many of the issues regarding the quality of access and reliability of data already captured are being addressed. During the course of the research *Exegesis* software programmes were being adopted and lead SMRs were putting data online. But the speed of information capture remains a problem in a synthesis of current commercial discoveries. The very pace of discovery after PPG16 is creating pressures on understaffed SMR offices and the pace and scale of finds is producing a considerable backlog of unprocessed data in SMR offices. A two or three year backlog is not uncommon. Few people are therefore in touch with the wider picture and SMR officers report that they have little time to reflect on the data coming in – it is increasingly difficult for staff to assimilate the material themselves.

c) Data not yet submitted
The scale of discovery is also leading to a backlog in the commercial units in terms of writing up evaluation or excavation reports. The post excavation stage might also be hampered by the national shortage of specialists. That regional data is also fragmented between competing units – hence the necessity of visiting the field units.

d) Data not to be submitted
Some data may never reach the SMR and the public domain. A new variant of investigation was encountered during the research. Developers may employ archaeologists to carry out an evaluation on land irrespective of planning applications, in order to audit the future potential costs of development. Such assessments are retained by the developer, and disclosed only if building is eventually judged to be commercially viable.

1.6.4 Research methodology: testing out the negatives

Countywide sweeps through the data in all available commercial reports aimed also to determine empty areas lacking field systems. To test out these negatives a regional synthesis was prepared and distributed to County Archaeologists and others with local expertise. This helped to ensure that the voids were not the result of a failure to incorporate sites already in the record. Revisits after a time delay provided another opportunity to reassess whether any new work might have changed the observed pattern. The increasing number of high standard fieldwalking programmes by County Societies also added to the interpretations, and additional feedback was sought by a series of public lectures publicising the results to date. In consequence information on new sites was received and incorporated – all added to the known clusters observed in the research, including rare reports by excavation assistants of Bronze Age field boundaries encountered in excavation but not given prominence in published reports. One final invaluable confirmation of voids in the record came from the extensive AHRB prehistory research programme directed by Richard Bradley.

1.7 Developer-funding and landscape exploration

Late Bronze Age studies have established the emergence of a powerful lowland England (especially along the Thames Valley and its estuary) but we had no knowledge of the farming practices associated with the dramatic social changes taking place at this time. It had been suggested that we would remain in ignorance, and that in these areas the archaeological record would be entirely lost by the end of the 20th century (Taylor 1972, 112).

Developer-funded archaeology has dispelled these gloomy predictions and has started to provide a vast range of new evidence, which we can use to reassess the social model suggested by Rowlands in 1980. A quarter of a century later it is no longer a question of too little information. Instead, as predicted by Thomas (1991), researchers are more likely to drown under a torrent of data flowing from contract evaluation and excavation. Within that abundance of new finds there is evidence of concentrated settlement, extensive field systems, long distance droveways, trackways enabling passage over marshy ground and a proliferation of enclosures.

The advent of commercial excavation has radically changed the pace of discovery in Britain. Retiring Chief Archaeologist Geoffrey Wainwright chronicled the events leading up to this transformation from state funding to developer financing. Written in a refreshingly uninhibited "demob happy" style, Wainwright explains the political events leading to the issue of PPG 16 the main central government policy ensuring archaeology's success by its integration within the development and planning world (2000). That document has undoubtedly resulted in a huge increase in archaeological activity but its success tends to be measured in terms of inputs into the system rather than what it has delivered (Baker and Morris 2001, 610). This research has used the profusion of commercially generated finds to examine one critical development in British prehistory. The conclusions drawn confirm that client material is a highly effective research tool for any synthetic study of nationwide social change. It can deliver to the community an enhanced understanding of the past.

Fields systems are the largest form of prehistoric monument. They have few structural elements relative to the size of land enclosed and in the lowlands are often sealed beneath layers of overburden. Hidden from view they are difficult targets to hit in small-scale excavation work for they largely comprise enclosed voids. In addition any chance strikes on isolated ditch segments may leave the archaeologists none the wiser as to their significance. This largely explains their virtual absence from the archaeological record of lowland England until recent years.

This research shows that commercial work provides the means to reveal these land divisions. An isolated small-scale investigation will not define a prehistoric enclosed landscape, but a proliferation of small-scale client projects in the same locality can. Similarly the use of machine-cut evaluation trenching is now a mainstay of developer-funded investigation and is very effective in confirming the existence and approximate orientation of dispersed linear features such as fence lines or ditched boundaries. Contracts tied in with civil engineering projects can also involve much grander forms of linear archaeology including road widening, bypass work, rail track construction, utility pipelaying and flood relief schemes. In effect wide transects are being cut, which can strike enclaves of formally defined prehistoric farmland. Ultimately the largest scale of works, frequently aggregate extraction, involves the recording of features exposed in much larger land blocks, often over several hundred hectares. The results derived from any of these interventions can produce negative as well as positive evidence on early agriculture and land tenure, revealing contrasting zones of formally appropriated land and open environments.

The frequency and scale of developer-funded projects provide a highly effective weapon in exposing the remnants of anciently enclosed lands. Those boundaries often defined valued or prized land; grounds which became popular for settlement and cultivation over a prolonged period, leaving behind extremely complicated archaeological remains. Project managers are therefore faced by two dimensions of complexity: first, the sheer scale of large area stripping and secondly, the investigation of potentially complex stratification normally associated with urban excavations. With growing experience it is becoming apparent that the late second and early first millennium BC field blocks are intricate creations incorporating ritualised activity. In effect, the laid out grids become elaborate frameworks for the burial of token cremations, curated artefacts and the incorporation of placed metalwork. Such subtleties of design and reinforcement have additional implications for the research design incorporated into large area exploration. The normal scarcity of dateable material on such ancient farmed land and the quest for sealed environmental data is another priority best addressed by adequate funding for an extended excavation.

Field teams have cut innumerable ditch sections, planned and projected miles of boundaries and bagged countless bulk samples in the fulfilment of commercial contracts. In specific zones of Southern England, project managers are only too painfully aware (financially) of the complexity of the Bronze Age landscape they are likely to encounter in large-scale excavation. The very real achievements of committed field personnel, professional and amateur alike, are revealing a scale of prehistoric landscaping without parallel to date in Europe. Developer backing has produced a database of immense significance for a reassessment of the heritage of Britain. This exciting story is therefore one amongst many more that can be told.

1.8 Chronology

This synthesis pieces together a considerable number of individual site findings, in order to provide an overview of social and economic developments in the Bronze Age. The time spans of Early Bronze Age (EBA), Middle Bronze Age (MBA) and Late Bronze Age (LBA) continue to dominate site interpretation in commercial excavation reports. They have therefore had to be used in this study, together with the term Later Bronze Age which is used to encompass the traditional Middle and Late Bronze Age. The broad date ranges are as follows:–

Early Bronze Age	2000 – 1500 BC	
Middle Bronze Age	1500 – 1000 BC	Later Bronze Age 1500–700 BC
Late Bronze Age	1000 – 700 BC	

Where absolute dates are available, the radiocarbon dates cited in the text are quoted at the 95% confidence ranges, and are calibrated according to the OxCal 3.10 program (Bronk Ramsey 1995 and 2001).

Chapter 2. The Range of Evidence

2.1 Introduction

A considerable range of evidence exists which enables us to examine the formal landscape of the late second and early first millennium BC, characterised by straight and parallel-sided land blocks. The evidence can indicate distribution patterns, and the wider economic and social significance of land division.

2.2 Field layout

Land divisions in the late second and early first millennium BC are distinctively rectilinear, creating a grid of fields. They may be *coaxial* or *aggregate* in layout.

A *coaxial* field system has one prevailing orientation. Most of the field boundaries follow this axis or alignment (axial boundaries) or run at right angles to it (transverse boundaries). Axial boundaries on Dartmoor occasionally end on a linear boundary, referred to by Fleming as a terminal boundary (1987, 188). This kind of large-scale gridded landscape was initially referred to as 'cohesive' (Bradley 1978, 268). The size of coaxial systems and their inherent inflexibility tends to make them terrain oblivious; that is, marked out by unswerving linear boundaries seldom allowing variation for topographical obstructions. They take no account of existing land division, nor do they normally take account of established monuments in their path. The repetitive field blocks create a formal or mechanistic landscape. Integrated *droveways*, marked by paired ditches or other divisions, may be incorporated to ensure controlled movement through the Later Bronze Age field systems. Social conventions appear to prescribe not just the layout of the borders but also activity within the enclosed ground, for example the 'correct' placement of metalwork. The most striking feature of the coaxial systems is their size (Bradley 1978, 269); the two largest Dartmoor systems (Dartmeet and Rippon Tor) each cover over 3,000 ha and commercial work around Heathrow airport suggests land appropriation extending over 5–15,000 ha. Such earthworks cover much of the Salisbury Plain Training Area creating large conglomerations resembling a chequerboard (McOmish *et al.* 2002, 51). There appear to be two major phases of prehistoric coaxial landscaping; the Later Bronze Age and the Late Iron Age/ Romano-British era. The origin and phasing of a field system is best determined by large area excavation, though small-scale excavation combined with survey can also be effective. Reliance on air or field survey alone is insufficient.

Rectilinear fields where one layout axis is not dominant over the other, are referred to as *aggregate* field systems. Field blocks were clearly added to one another on a piecemeal basis rather than in adherence to one plan (Bradley 1978, 268). Excavation may show that the aggregate field system results from a number of phases of boundary realignment. Each phase may have conformed to one dominant axis.

2.3 Boundary construction

Construction techniques for the permanent boundaries differ between: a) the main upland field systems found on Exmoor, Bodmin Moor, Dartmoor; b) the Wessex and Sussex chalklands; and, c) the lowland field systems (those below an arbitrary contour of 75m OD). These are largely confined to East Anglia, the river valleys and coastal fringes in the area south of the Cotswolds and the Chilterns.

On Exmoor, Bodmin Moor, and Dartmoor

boundaries are composed of linear stone walls built from the local geological deposits. Those on Dartmoor are the most impressive and extensive of the upland granite zones. The boundaries there are called *reaves*. A reave (the word derives from the Old English word *raew,* meaning a row) is a prehistoric linear land boundary consisting of a low stony bank (Fleming 1978, 17). Some of these low vegetation-covered ruined stone walls are several kilometres long, They are usually 1m and 2m wide and less than 1m in height (ibid. 17). In construction the walls are identical in appearance to the walls of prehistoric hut-circles and enclosures which are familiar features of Dartmoor's archaeological landscape (Fleming 1978, 97). On Dartmoor, reaves demarcate extensive blocks of coaxial fields. The recording of *gang junctions* suggests that individual sections were built and maintained by different work groups. The skill of second millennium surveyors is evident in the construction of Walkhampton Common Reave which does not deviate by more than 3m from a straight course over a distance of about 1400m (Fleming 1987, 102). Dating of the reaves is largely reliant on the stratigraphic relationship with roundhouses and enclosures on Dartmoor, some of which are incorporated into the reave stonework.

On the chalklands of Wessex and Sussex the defining features of land division are *lynchets*. The preserved outline of field systems can be demarcated by banks or 'lynchets' consisting of soil which has crept downhill under the influence of repeated ploughing and slope-wash, accumulating at the lower edges of each field. Such banks are called *positive lynchets*, while the scarps left by erosion at the upper edges of each field are called *negative lynchets*. The result often resembles a kind of terracing of the fields, each plot being separated from the one below it by a lynchet which is positive in its upper half and negative in its lower (Curwen 1937, 182). The term derives from the Saxon '*hlinc*' meaning ridge (McOmish *et al.* 2002, 51). Barriers interpreted to have been associated with stock handling on the chalk uplands include *cross ridge dykes* and *holloways*. The former are large linear ditch and banked structures placed tangentially across a ridge or plateau, restricting or controlling movement. Holloways are created by the continual passage of people and animals along a pathway, creating a sunken route cutting deep into the natural/bedrock. Excavation of the lynchets and analysis of valley bottom colluviation is required to determine the date of field clearance and boundary construction (Barber *et al.* 2002).

The stone boundaries and earthworks, so visible in the uplands, are absent in the lowlands. While some traces of land division can be revealed as soil marks in air reconnaissance, most are undetectable. Open area excavation is necessary to expose the ditched lowland coaxial and aggregate field systems. The evidence is not immediately apparent. On brickearths, at least three days are required to allow the exposed archaeological layer to weather. Differential rates of drying between the natural subsoil and the ditches with their higher silt content then show the positions of the lowland boundaries. In addition to these linear features, post-holes, stake-holes and fence lines may be recorded, together with round houses, burnt mounds and associated lithic/pottery scatters. Sections cut through the *ditched boundaries* may reveal that they were embanked, doubled ditched and banked, reinforced by hedging/posts or constructed as foundation trenches for stout fencing.

2.4 Stock handling features

Large area stripping on lowland sites may reveal sophisticated compounds and integrated trackways. These have been thought to be built for livestock management. Droveways are a central design component of the lowland field systems. The discovery of hoofprints, cart tracks and high phosphate levels provide direct evidence of their function (Meddens 1996). *Watering holes* are a common feature within lowland fields, including compounds abutting droveways. They comprise a pit, with ramped access, which suggests that animals were able to drink from them. *Wells*, in contrast, restrict access, and the water had to be raised. They were often revetted to prevent collapse, notched wooden frameworks allowed access to ensure maintenance and bailing when waterlevels fell. Both watering holes and wells may contain what are interpreted as ritual deposits. Pit wells were amongst the major inventions of the 2nd millennium BC and a keystone in permitting more permanent modes of settlement (Edmonds *et al.* 1999). The waterlogged deposits in these features can be analysed for the presence of insects and pollens likely to indicate livestock use and the nature of plant cultivation nearby.

In addition to 'simple' lowland fields and

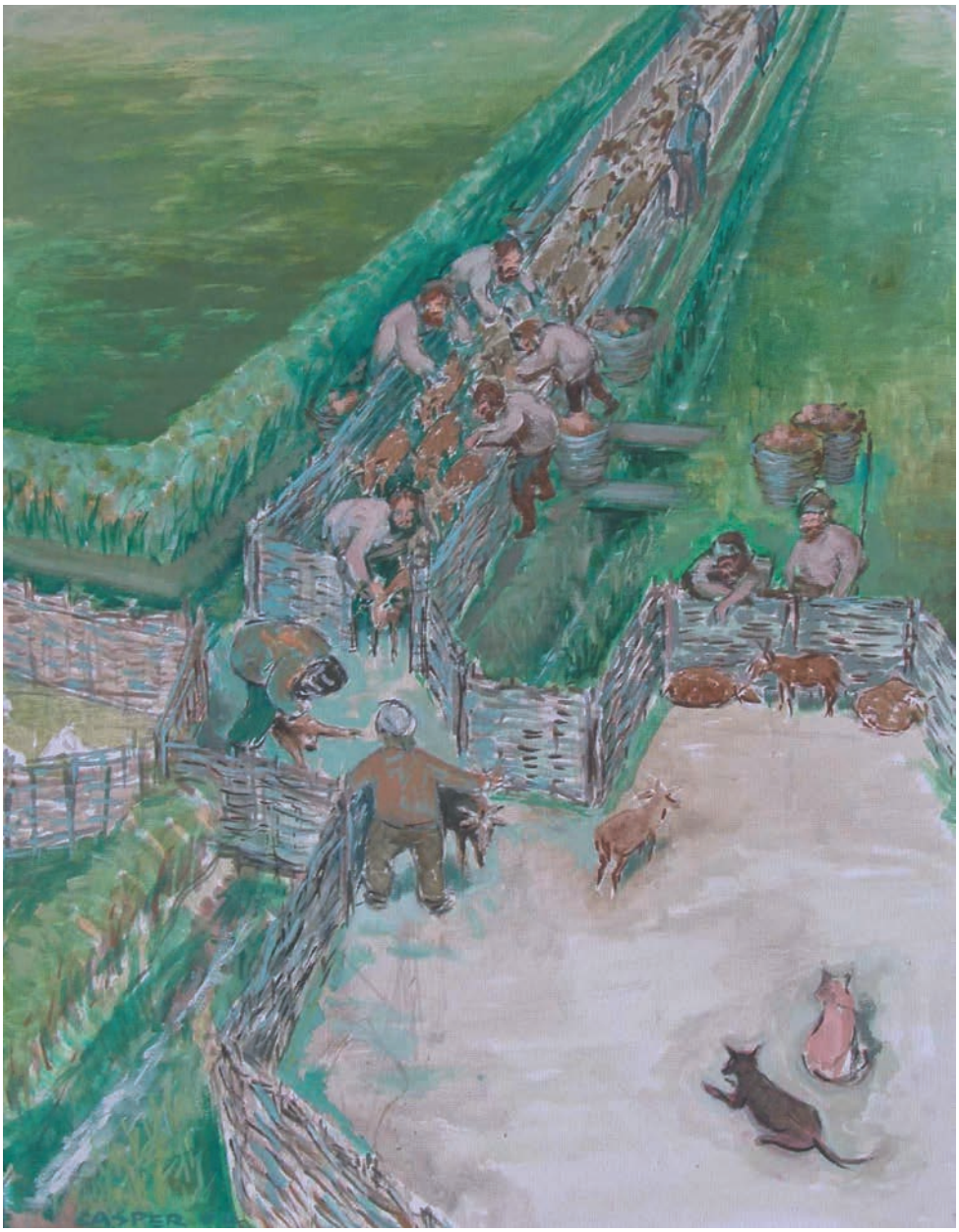


Plate 2. Storey's Bar Road, Flag Fen. Reconstruction painting by Casper Johnson. Initially held in collecting pens, individual animals stream down a narrow path to a series of drafting gates where the shepherds separate out the breeding/cull ewes, lambs and shearlings

paddocks, excavators have identified more complex pastoral compounds. Pryor has interpreted some as *stockyards* serving individual farms, and the more elaborate as '*community stockyards*' serving wider communities. The latter comprise a series of integrated holding yards, inspection paddocks with associated constricted droveways to control the movement of animals being handled (Pryor 1996, 316). Pryor suggests that smaller scale stock handling systems include the use of *sheep races*, which he proposes were narrow droveways used for the inspection and sorting of sheep, as illustrated in Plate 2 (Pryor 1998, 103).

2.5 Settlement evidence

Permanent *roundhouses* and land boundaries appear at the same time in the archeological record. Throughout the Later Bronze Age the

houses and fields retain their distinctive design – the circularity of settlement and the linearity of land ownership. Just as some paddocks become more intricate over time, some settlements become more elaborate.

Settlements generally consisted of a single household group occupying several unenclosed post-built roundhouses sometimes set within the field boundaries. Increasingly during the course of the Later Bronze Age more elaborate forms of enclosed settlement were constructed. They include small sub-rectangular ones as at Lofts Farm (Brown 1988a) and Windmill Field, Broomfield (Atkinson 1995) and circular compounds, regular in plan, called *ringworks*. Another form of circular design, the *D-shaped enclosure*, is also becoming more common in the archaeological record. An enclosed Late Bronze Age *longhouse* discovered in Cambridgeshire and *riverside settlements* at Wallingford and Runnymede, each of them on a small island, add to the variety of known settlement.

Ringworks may be of particular significance as they are sited in strategic positions such as low hills or terrace bluffs to provide commanding views over valley or coastal approaches. Often, these circular ditched enclosures surround a single substantial roundhouse with associated ancillary buildings. Extra-mural activity may encircle the segregated compound. On-site metalworking is often associated with these Late Bronze Age structures (Needham 1992; Needham and Ambers 1994). Needham and Ambers note that while ringworks are very diverse structurally and functionally, the choice of circular earthworks implies a degree of conformity to an ideal, suggesting a form of *aggrandised enclosure* inspiring emulation by others (1994, 240). *Aggrandisers* are defined as those who exploit the new opportunities of farming surplus (Clark and Blake 1994, 17).

2.6 Special deposits in field and settlement boundaries

There is increasing evidence to show that field systems and farmsteads were associated with particular *depositional practices*. Critical points in the fields and the settlement were marked by the deposition of artefact concentrations or the placing of special single finds including quernstones, bronze objects and token human cremations (Brück 2001, 151). Those *token cremations* are small in size and weight (seldom more than 50g) and are made up of bones selected from the original pyre. The need to use bulk sampling to retrieve this human skeletal evidence is readily apparent (Guttmann and Last 2000, 155). Special deposits appear to emphasise important points in the land and settlement boundaries. They provide clues to the complexity of a cultural landscape in which formal land tenure was not solely an impersonal expression of demographic and economic forces (Fokkens 1999, 41).

2.7 Environmental evidence

The direct evidence of land division and associated structures in the landscape can be studied against a range of environmental data. These aid insights into the nature, date and effects of prehistoric land clearance and subsequent resource exploitation. Research into possible erosion rates centre on the study of colluvial deposits. *Colluvium* is accumulated material, especially soil, which has been transported downhill by a combination of weathering (erosion) and gravity. The rate of colluvial build up is greater the more unstable the land surface uphill – anthropogenic disturbance in the form of deforestation, ground clearance and cultivation being the primary cause. For example, Favis-Mortlock, Boardman and Bell have modelled the progressive loss of soils through human action on the South Downs in later prehistory (1997). Similar studies of *alluvial deposits* in lowland river valleys can suggest the degree of human disturbance through study of the freshwater-borne sediments, generally composed of very fine sand silt and clay-sized material collecting in a river valley floodplain. Hill- and river-wash studies in association with micromophological, pollen and molluscan analyses can provide a better understanding of the timing, nature and extent of any clearance. It helps to place the advent of land division within a longer history of land use. Charles French cites work in the lower Welland valley to show the potential of a multi-disciplinary research approach to past landscapes (2003, Chapter 6).

2.8 Evidence of counter claims in land ownership

During the early part of the first millennium BC there is evidence on the uplands and lowlands of new land claims: *linear earthworks* cut across existing coaxial field systems. On Salisbury Plain at least 70km of major ditched and banked linear boundaries formed new landholdings (McOmish *et al.* 2002, 56). This radical reshaping of the countryside seems to have been accompanied by the construction of a series of rectilinear enclosures unconnected with the existing coaxial field systems (Lawson 2000, 252; Cunliffe 2004). Similarly, in the lowlands there are instances along the Thames where new barriers slighted coaxial field systems. Single banks and ditches were used to cut off the river meanders, enclosing large tracts of land. These *meander boundaries* impeded movement and river access by traversing existing land boundaries and severing earlier routeways (Yates 1999, 167). All these different sources of information are used in the following chapters.

Chapter 3. The Straits of Dover and the Thames Estuary

3.1 The search

Our search for the earliest prehistoric formal land divisions starts in the south-eastern corner of England in Kent; the county with the shortest sea route to mainland Europe. From here the aim is to plot the distribution of late second and early first millennium BC fields throughout England, particularly the lowland examples which have proved so elusive to date. Essentially we shall be mapping a distinctly formal landscape characterised by the construction of straight ditches, banks or fence lines resulting in the creation of coaxial fields, rectilinear land blocks, enclosures, droveways and raised trackways. Such linear structures transformed parts of the countryside. They accompanied a sustained shift to intensive farming and therefore our investigations will also examine available environmental evidence providing more clues to the rate of land clearance, soil erosion, and farming priorities.

This chapter examines the nature of land divisions in the area surrounding the Greater Thames estuary. Subsequent chapters will then use this starting point to explore the remainder of England. Initially we will examine a broad sweep along the length of the River Thames right up to the Cotswolds in Gloucestershire. Then, all the land south of the Thames from the Sussex/ Kent border towards Lands End; and finally, a trawl through all the excavation work north of the Thames up to the Scottish borders. The finds to date will then be discussed in concluding chapters on the chronology, function and social significance of the creation of the new forms of land tenure.

If seaboard communities along the Straits of Dover and the lands overlooking the Thames estuary were controlling long distance exchange and alliance formation, as predicted by Rowlands, the archaeological record should reflect a concentration of Bronze Age settlement on the eastern seaboard from Folkestone to Deal and on the waterfronts of the Greater Thames estuary. Those populated zones should (in theory) be accompanied by finds of prestige goods indicating hierarchical settlement; together with the overt symbolism of a new controlling interest in land – permanent land boundaries.

The pace of archaeological discoveries is now remarkable, no more so than in Kent, South Essex and the eastern fringes of London. This research did not confine itself to archaeological finds immediately bordering the major rivers, coast and estuary. All available published and developer-funded work was examined for entire county-wide areas north and south of the Thames Estuary and for each of the East London Boroughs. That approach helped to identify areas of both negative and positive evidence, confirming zones where field systems were and were not constructed. The proliferation of projects makes such an analysis increasingly possible.

3.2 Emerging patterns in the SE corner

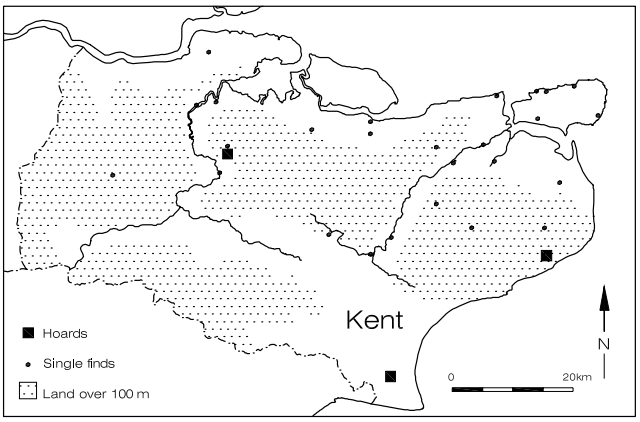
Champion, writing in 1980 observed that the prehistory of Kent and especially the Bronze Age had been sadly neglected with interest focused instead on all things Roman, Saxon and Medieval (1980, 223). While Bronze Age settlement and pottery evidence was limited, one category of material was plentiful – the metalwork. Figure 3.1 shows the finds spots of Early, Middle and Late Bronze Age metalwork up to 2003. The wealth derived from participation in an increasingly cosmopolitan world is clearly seen in the accumulating scale of metal deposition. The increase in prestige weaponry in circulation

with an even greater emphasis on ostentatious objects and depositional cult practices is of particular interest – suggesting that social elites had developed by the Late Bronze Age. The range of weaponry and ornaments originating from the great river communities of north-west Europe (particularly the Seine and Somme) suggests a close bond between peoples on either side of the Channel.

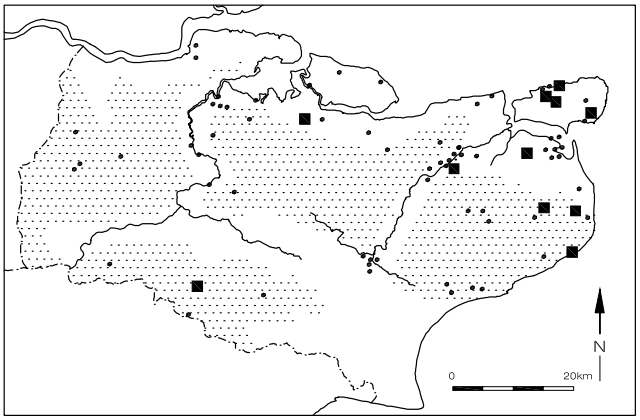
Champion in his synthesis of Bronze Age Kent concluded that by the Late Bronze Age the focus of activity was riverine, estuarine and coastal (1980, 229). Twenty years on and with the benefit of a considerably greater database that same pattern holds true (2001; 2004). Figure 3.2 shows the effect of the first dozen years of developer-funded work in the county resulting in a remarkable increase in known settlement and, more spectacularly, the discovery of the structured fields associated with the farmsteads. The pace of discovery continues to accelerate. The county is experiencing an extraordinary construction boom generated by its lead role in European Community initiatives. Without the integration of archaeology into the planning and development process much of this knowledge would not have been recorded.

Despite the vast range of metalwork discovered in the county little was known until recently of Bronze Age settlement and even less of the associated farming practices. Developer-funded archaeology has made a significant breakthrough in this respect. The scale and frequency of evaluation and excavation work, allowing large areas to be stripped, has started to reveal the field systems, stock enclosures, waterholes and droveways that had proved so elusive. The evidence now available suggests a regime of highly organised mixed farming with livestock rearing a special priority.

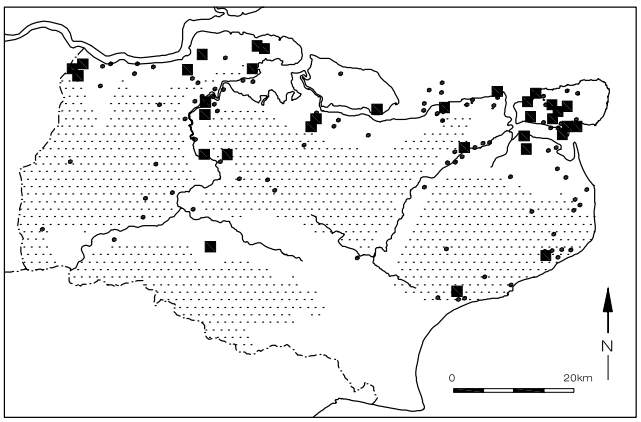
Figure 3.3 records the location of the settlements, field systems and other forms of land boundary. The choice of prime sites made by these farmers is quite apparent, revealing a preference for coasts, major river valleys and estuary foreshores. At the start of the approach to the Thames, land divisions and settlement concentrations are found on either side of the Wantsum Channel, a key navigation route for inter-regional traffic. On the Reculver Peninsula and out towards Whitstable there is a particular intensity of land use. The coastline here has been severely eroded since the Bronze Age (Allen 1997; So 1966; 1971), so what evidence remains (and it



Distribution of Early Bronze Age metalwork
2000 - 1500 BC



Distribution of Middle Bronze Age metalwork
1500 - 1000 BC



Distribution of Late Bronze Age metalwork
1000 - 700 BC

Figure 3.1 Bronze Age metalwork in Kent. Compiled from data supplied by Martyn Barber. The maps show the accumulating scale of metal deposition and the importance attached to key routeways, particularly the Wantsum Channel in the north east corner of the county

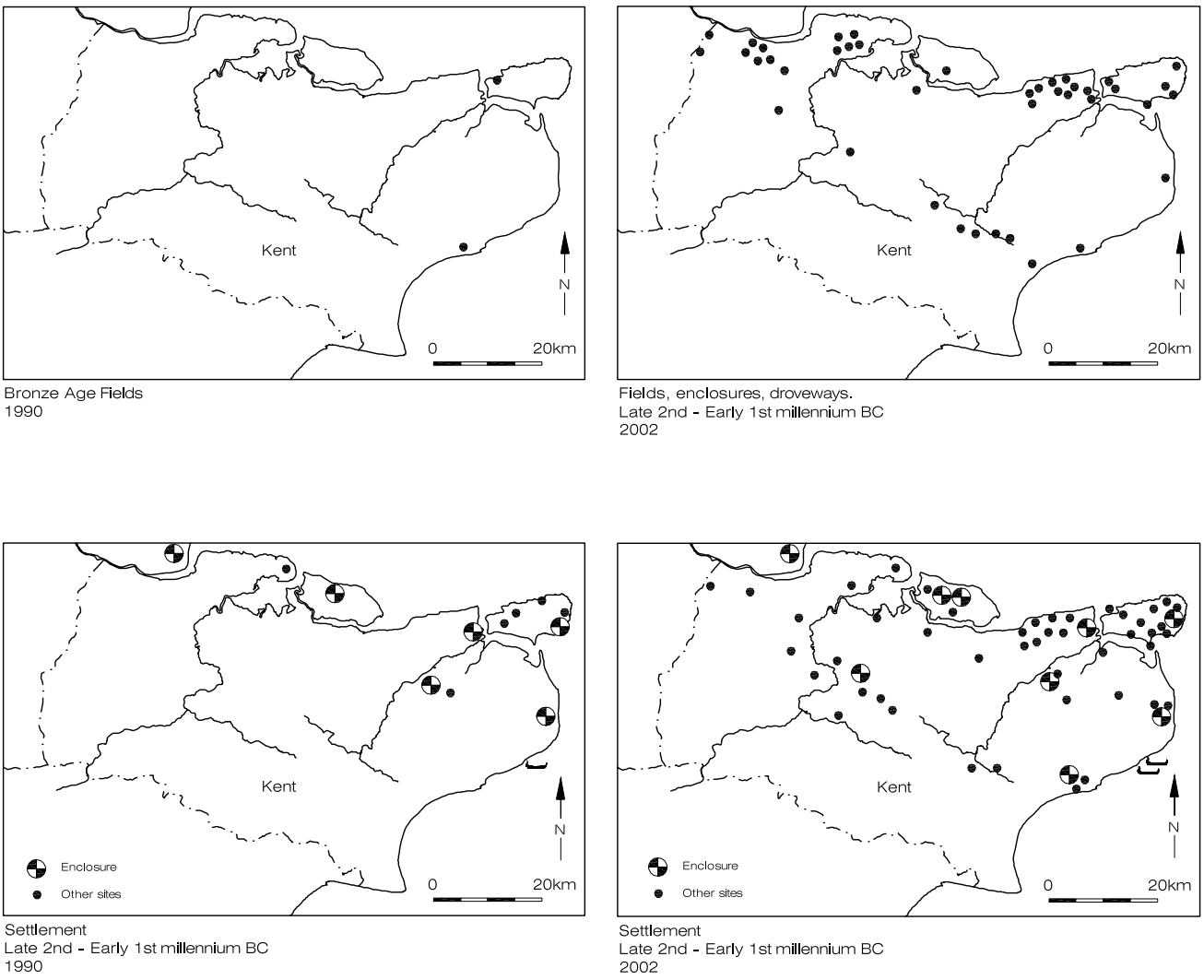


Figure 3.2 The first dozen years of commercial work in Kent. Commercial work has greatly increased the record of Later Bronze Age settlement and land division. The maps show the contrast between recorded sites in 1990 and 2002

is spectacular) offers only a partial insight into a tract of heavily populated coastline. Further west, settlement and land management are apparent on either side of the lower reaches of the River Medway, particularly the brickearths on the southern part of the Hoo peninsula opposite Gillingham.

The pattern of settlement and land use on the northern coast of Kent is reflected on the other side of the estuary. From one of the highest points on the Isle of Sheppey, the ringwork located at Kingsborough Farm, it was possible to look north across the Thames estuary to Southend on Sea. That commanding peninsula has a high volume of metal deposition, which is matched by intense settlement activity and field construction (Couchman 1980; Wymer and Brown 1995). The cluster of settlements and regimented lands at Southend borders directly on the estuary and this zone forms a definable enclave of intense activity in marked contrast to surrounding land use in South Essex. The first ditched land divisions appear in the Middle Bronze Age and there are further developments in the Late Bronze Age. Three sites to date are of Middle Bronze Age origin and none suggests continuity into the Late Bronze Age. Excavation at North Shoebury shows that the abandoned Middle Bronze Age enclosures are respected in part by later agricultural boundaries to the south and east. There are four Late Bronze Age field sites including two developer-funded projects at London Southend Airport. These

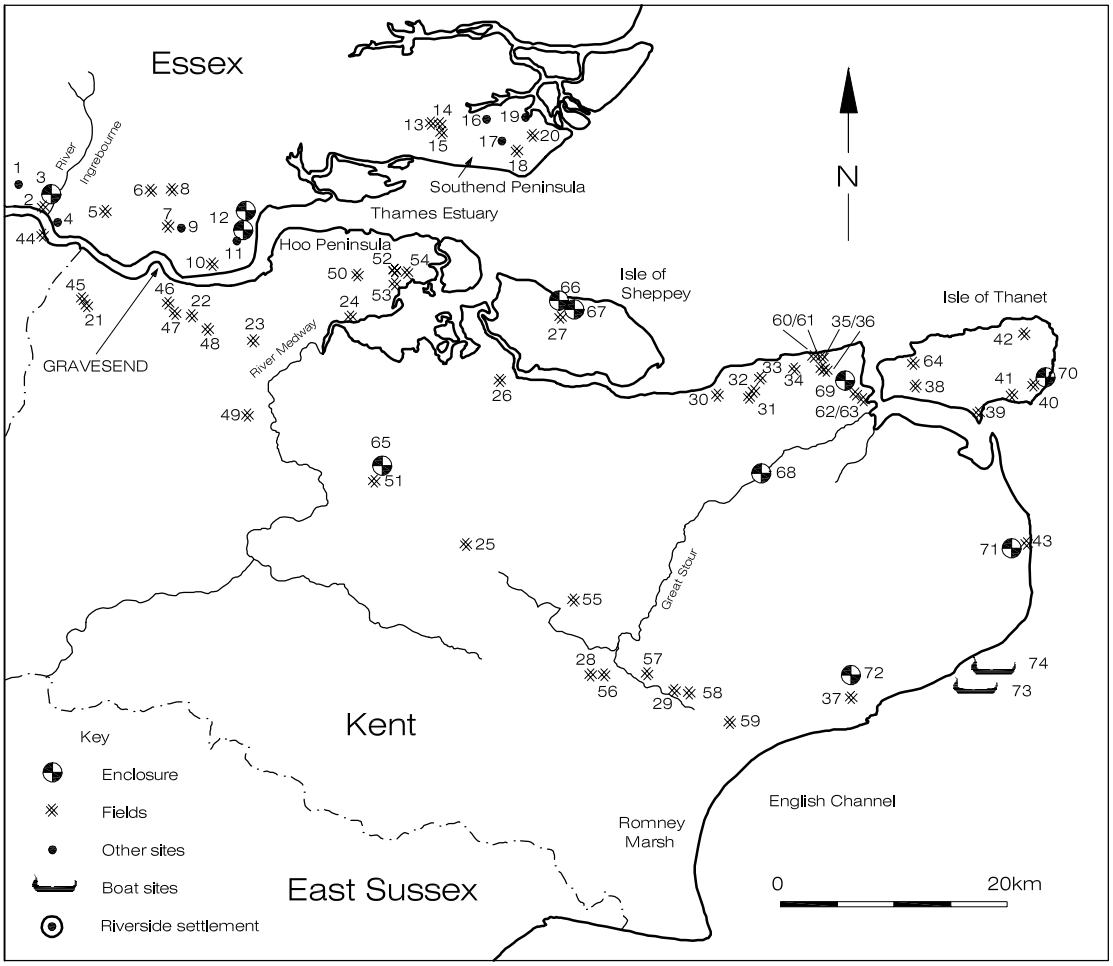


Figure 3.3 The Straits of Dover and the Thames estuary: Later Bronze Age fields, enclosures and droveways. 1. Church Lane, Dagenham. 2. Bridge Road, Rainham. 3. South Hornchurch. 4. Site nine. Horndon to Barking pipeline. 5. Whitehall Wood. 6. Site five. Horndon to Barking pipeline. 7. William Edwards School. 8. Site four. Horndon to Barking pipeline. 9. Baker Street, Orsett. 10. Gun Hill. 11. Linford. 12. Mucking. 13. Eastwood. 14 and 15. Southend Airport. 16. Butlers Farm. 17. Wick Farm. 18. North Shoebury. 19. Baldwin Farm. 20. Great Wakering. 21. Princes Road. 22. Coldharbour Road. 23. Cobham Golf Course. 24. Hoo St. Werburgh. 25. Lenham. 26. Kemsley Fields. 27. Shrubsoles Hill. 28. Brisley Farm. 29. Little Stock Farm. 30. Church Lane East. 31. South Street. 32. Radfall Corner. 33. Churchwood Drive. 34. Eddington Farm. 35. Willow Farm. 36. Beltinge Cliff. 37. Holywell Coombe. 38. Monkton Court Farm. 39. Ebbsfleet Farm. 40. Manston Road. 41. Ramsgate Harbour. 42. Northdown School. 43. RM Barracks, Deal. 44. Erith. 45. Joyce Green Lane. 46. Springhead. 47. Temple east of Springhead. 48. West of Church Road. 49. Snodland. 50. High Halstow. 51. Thurnham. 52. Malmaynes Hall Farm. 53. Damhead Creek. 54. Middle Stoke. 55. Tutt Hill. 56. Westhawk Farm. 57. West of Blind Lane. 58. Church Lane, Smeeth. 59. Link Park, Lympne. 60. Dence Park. 61. Bogshole Lane. 62 and 63. Herne Bay pipeline. 64. Netherhale Farm. 65. White Horse Wood. 66. Minster Abbey. 67. Kingsborough Farm. 68. Castle Street, Canterbury. 69. Highstead. 70. South Dumpton Down. 71. Mill Hill. 72. Hawkinge Aerodrome. 73. Dover Boat. 74. Langdon Bay. Site details in Table 3

recorded components of a Late Bronze Age coaxial field system showed no evidence of continuity into the Early Iron Age. In contrast at the North Shoebury site, the major Late Bronze Age boundary remained in use for a considerable time and formed the axis of the subsequent Early Iron Age settlement (Wymer and Brown 1995, 21). The exceptional environmental work associated with the Hullbridge project provides some insights into activity during the Late Bronze Age**.** The Hullbridge Crouch 22 site produced a wooden structure or hurdle likely to have

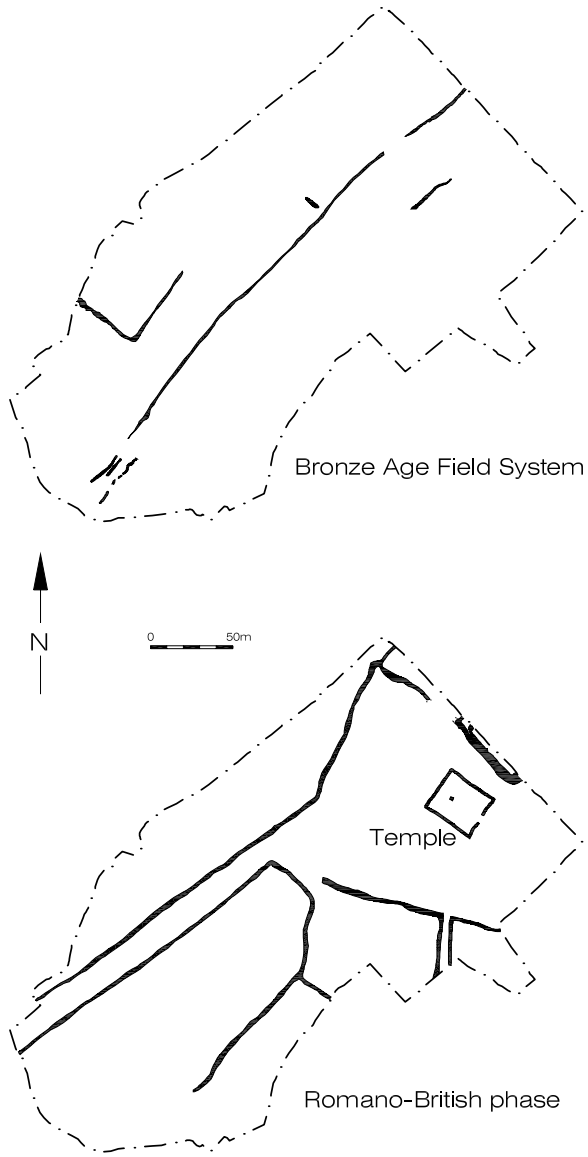


Figure 3.4 Westhawk Farm, Ashford, Kent. Derived from Booth and Lawrence 2000. Two episodes of formal land division were encountered: construction phases separated by a thousand years

been associated with seasonal sheep handling dated 1130–800 cal. BC (HAR-5736; 2800±70BP) (Wilkinson and Murphy 1995, 136). The discovery of an increasing number of loomweights on the peninsula might also suggest textile manufacture and inter-regional exchange of which woollen cloth formed a part.

This land block seems to have been affected by the cessation of exchange networks at the end of the Bronze Age. Some of the field systems were abandoned and generally there are far fewer Early Iron Age sites in the Southend peninsula than Late Bronze Age ones. These Early Iron Age sites also appear to reflect a greater degree of self-sufficiency (Wymer and Brown 1995, 157).

Communities on both sides of the Thames estuary were therefore active players in this important zone of exchange and contact. At the head of the estuary at Gravesend and Mucking coaxial land division also defined and reserved new land resources either side of the narrowing Thames channel (Yates 2001).

One cluster of land division seems not to adhere to the established riverine, estuarine and coastal pattern; a group of inland field blocks close to Ashford in Kent, including Westhawk Farm (Figure 3.4). Whilst they are sited near the head of Great Stour River, they are not in the main valley and are some distance from the Wantsum Channel and the sea. Not only do these sites appear relatively land locked but also the ground here can be difficult. For example, the paddocks and boundaries built at Brisley Farm cover some of the worst clay soils imaginable (Plate 3). In consequence the dedicated excavators, having experienced appalling ground conditions during excavation, nicknamed the place "Grizzly Farm". The appropriation of this poor ground (for livestock rearing) provides some indication of the pressure on land during the Later Bronze Age. When its close proximity to the southern Bronze Age coast is noted that value is better understood. That ancient shoreline is now many miles from the present coast, trapped by the extensive tract of land called Romney Marsh.

3.3 Social inequality

Inevitable social differences arise in a society where achievement or failure is based, in part, on success in producing and managing an agricultural surplus. A form of social elitism becomes apparent in Kent as elsewhere along the Thames corridor during the Late Bronze Age and earliest part of the Iron Age. The increasingly fine nature of the metalwork gives the first clue. New discoveries are providing more conclusive proof in relation to settlement patterns. High-status enclosures are constructed by the Late Bronze Age in the same areas of concentration of field systems, settlement and bronze metalwork. Eleven elite enclosures are shown in Figure

Plate 3. Brisley Farm, Ashford. Snow covered coaxial fields in the Weald of Kent. Late Bronze Age paddocks and boundaries covered some of the worst clay soils imaginable. Reconstruction painting by Casper Johnson

3.3. They form part of a series of contemporary aggrandiser enclosures sited on key strategic points right along the River Thames.

The Wantsum Channel which separates the island from the 'mainland' has two elite sites: one overlooking the northern mouth of the Wantsum navigable route at Highstead and the other overlooking the southern approaches to the throughway at Mill Hill, Deal. Off this stretch of water it seems possible that another high status site was built in the centre of Canterbury, in Castle Street. Further west on the north coast of Kent another Late Bronze Age ringwork has been discovered at Minster Abbey, Sheppey. Commercial work here has again added to the existing record with the excavation of a second elite ringwork at Kingsborough Farm, one of the highest points of the island. Inland just above Maidstone on the North Downs another rich centre has been discovered. This site at White Horse Wood with commanding views over the Medway Valley, would have enabled the occupants to look out over the movement of people and stock. Two ringworks dominate the entrance of the main River Thames at Mucking and recent work at South Hornchurch has discovered another (Yates 2004). A similar structure was excavated at Hawkinge Aerodrome above Folkestone (Stevens 2003).

Such a closely allied network had of course an inherent weakness. Widespread social dislocation is apparent along the Thames corridor and in Kent at the end of the Bronze Age (Yates 2001). This decline reflects a significant shift in the patterns of long-distance exchange and inter-regional contact on mainland Europe. The Hallstatt C culture brought large-scale disruption and local warfare to many areas of western

Plate 4. South Hornchurch reconstruction painting by Casper Johnson. The gridded land slants away across a flat tract of cultivated fields and trodden earth. The grid is made up of banks, hedges and fencing. The spaces are full of life, the stockpens and droveway full of cattle doing the things cattle do. Corralled overnight the livestock will await the next drive to distant lands where they will be separated, exchanged and sorted again. The animals inhabit pastures that have been parcelled out, flattened and tamed

Europe, disrupting the traditional exchange links between southern and northern Europe. A new European economic axis emerged. The northern centres of trade shifted their attention eastward – from Western Jutland to Eastern Pomerania. The southern centres directed their interest to the west – from the Carpathian Basin out toward Southern France (Pydyn 1999, chap. XI; Kristiansen 1998, chap. 6). As the bronze-based prestige goods economy collapsed and new inter-regional exchange networks were established, the Late Bronze Age/Earliest Iron Age ringworks and the highly regulated formal landscapes in Southern England went out of use.

Environmental data is still relatively limited but the general picture suggests considerable agricultural activity from at least the middle of the second millennium BC with indications of intensified clearance and land reform during the Late Bronze Age (Champion 1980, 227; Scaife 1995, 311; Cross 1992, 10).

3.4 Mucking to South Hornchurch

The shorelines on both sides of the estuary are therefore marked by concentrations of formal land division and droveways as that at

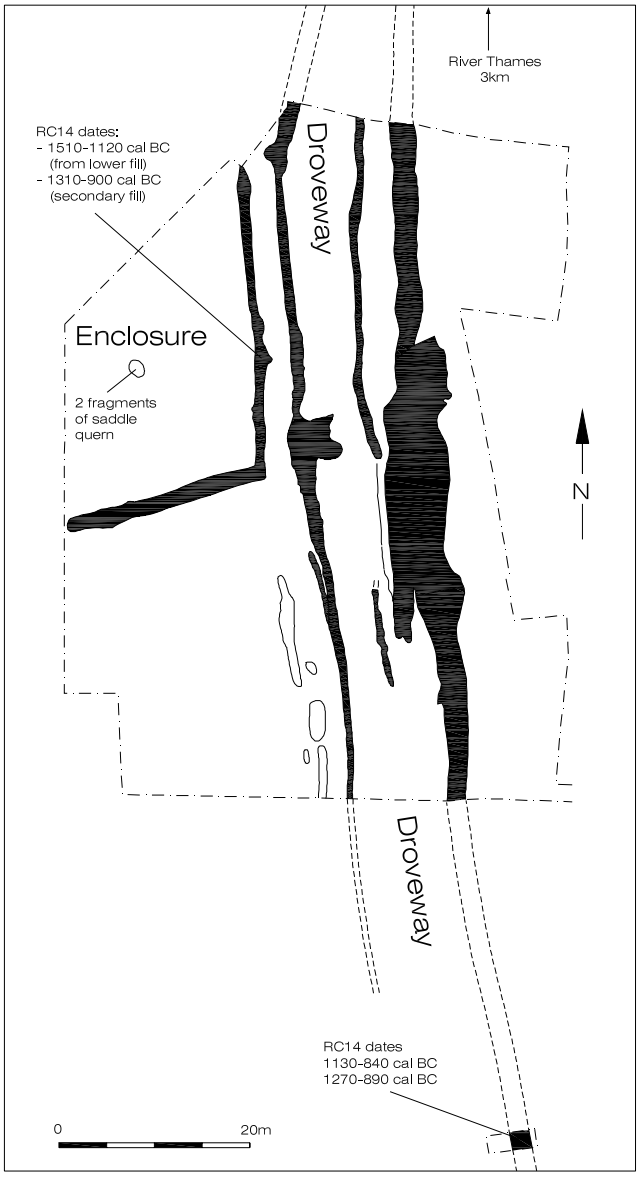


Figure 3.5 Gravesend droveway heading down to the Thames. After Mudd 1994. The cattle and sheep track at Coldharbour Road headed north towards the Thames, three kilometres away. Such droveways with associated roadside holding pounds are characteristic of the English Channel – North Sea exchange region

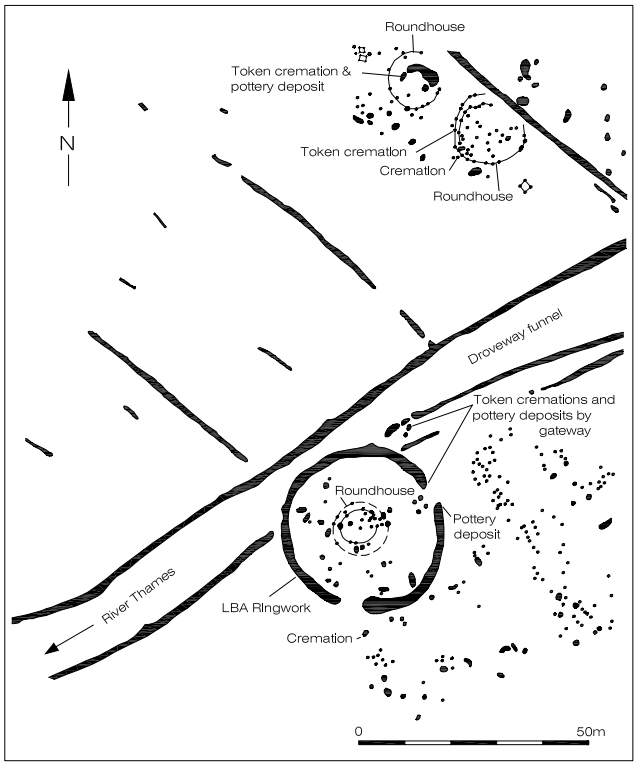


Figure 3.6 South Hornchurch ringwork and field system. Derived from Guttmann and Last 2000. The excavation record shows a Late Bronze Age ringwork integrated within a contemporaneous landscape of fields and settlement. Movement through the landscape is controlled, for the compound encroaches on a droveway heading south west toward the Thames

Gravesend (Figure 3.5). The great estuary funnels maritime traffic into the Thames river mouth. The ringworks and the Middle Bronze Age field system at Mucking may have afforded one of the best vantage points for observing incoming traffic into the Thames valley itself. There may have been a concentration of activity around Mucking, for in a reappraisal of loomweight evidence in Essex, Barford and Major note that the greatest concentration in the county occurs in this zone around Thurrock. Significantly most of these are Late Bronze Age pyramidal loomweights (Barford and Major 1992). Bond also concludes that pastoral evidence at the North Ring, Mucking predominates (1988, 52). To the south on the opposite bank there is increasing evidence of formal land division around Gravesend, suggesting that this lowest area of the river course was important.

From Mucking heading west there are elements of enclosed land at Tilbury, Orsett and Upminster (Yates 2001). Activity is noticeably greater as we approach the River Ingrebourne. At South Hornchurch a ringwork with associated field systems and integrated droveways has been recorded (Figure 3.6 and Plate 4). A controlling interest in livestock movement is noticeable in the design of a funnelling droveway in an earlier phase of the site and the later construction of a 175m long sheep race (Guttmann and Last 2000,

350, 353). Just down river along the Ingrebourne at Bridge Road, Rainham a rectangular enclosure likely to have been associated with animal husbandry was set at right angles to a brushwood trackway (Meddens 1996, 325).

3.5 Contacts with afar

These permanent settlements and fixed land divisions were the structuring components in a new outward looking world, one in which ideas, people and materials were flowing back and forth along communication routes. The vast quantities of metalwork provide the most notable legacy of that long distance exchange and trade. Other imported items included Trevisker wares from Cornwall and Ardleigh ceramics from the North Sea Coast of Essex. Products were also flowing out of the zone. One of the quernstones from Flag Fen found beneath timbers dated by dendrochronology to 1350 BC (Buckley and Ingle 2001, 322) may have been brought from the Lower Cretaceous Beds at Folkestone (Middleton and Bowman 2001, 328).

3.6 Conclusion

Rescue work at Mucking provided the first identification of Middle Bronze Age coaxial land division within the Thames estuary (Clark 1993). Subsequent discoveries have continued to remedy a particular void in the archaeological record in the south-east. That British success in commercial work has, however, created a wider imbalance in research. The discovery of the formal Later Bronze Age regulated lands is not matched in the archaeological record in North Eastern France. But while there is an absence of known contemporary French coaxial fields (to date), Clark shows that other evidence confirms a special affinity and direct involvement in exchange across the Straits of Dover. He draws attention to the strong cultural similarities between Middle Bronze Age settlements in Kent and those in the Pas-de-Calais in terms of pottery, metal and funerary monuments (Clark 2004a; 2004b). So alike are the cultural traditions (in terms of architecture, ceramics and metalwork) that the Pas-de-Calais and parts of the lower reaches of the Somme seem to resemble a prehistoric form of 'Little England'. This distinct cultural enclave, including sites at Fréthun and Étaples (Figure 12.2), suggests a Middle Bronze Age social structure similar to that in Southern England and sharply different to that found further inland in France. The great enclosed settlement at Étaples in particular bears close comparison with the specialist maritime haven at South Dumpton Down on the Isle of Thanet. Étaples is a natural port where marine currents from the south lead naturally to landfall in the Wantsum Channel and Thanet "Gateway Island" (Clark 2004a; Perkins 2000).

Chapter 4. The London Basin

4.1 Into the heart of things

Moving further up river from South Hornchurch and Dagenham we journey deeper into the London Basin – the natural river catchment for modern day London. It is bounded on the southern side by the North Downs and on the northern side by the Chilterns. From the west, waters from the Upper Thames flow in through a breach in the chalk downlands, at the Goring Gap (Plate 5). Published excavation reports and grey literature for the entire basin reveal a pattern of clustered activity along the Thames valley during the late second and early first millennium BC, particularly at confluence points with the rivers Kennet, Colne, Wey, Wandle and Lea. Away from these river frontages there is a dramatic and immediate decrease in activity (Yates 1999; 2001). Recent excavation has shown a close correlation between concentrations of metalwork, settlement and land division. Commercial work also continues to reveal an extraordinary amount of activity on the Heathrow terraces, in Carshalton at the head of the Wandle and near to Marshall's

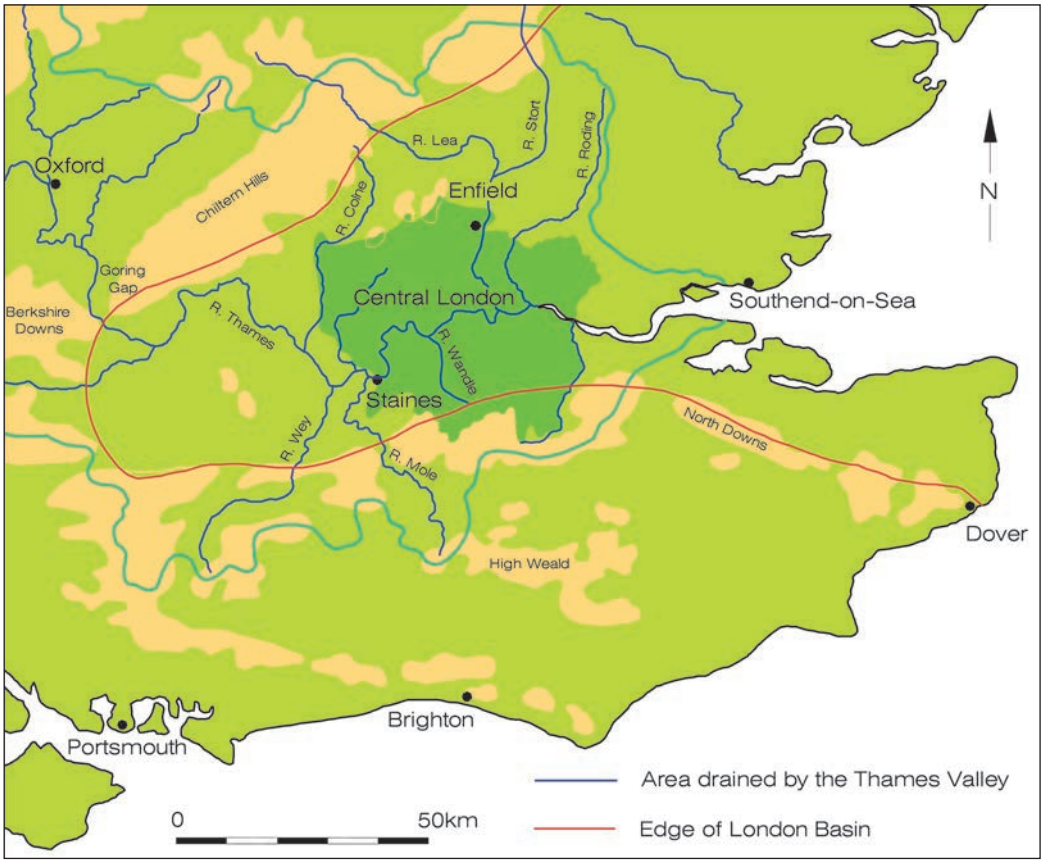


Plate 5. The London Basin. Derived from Merriman 1990

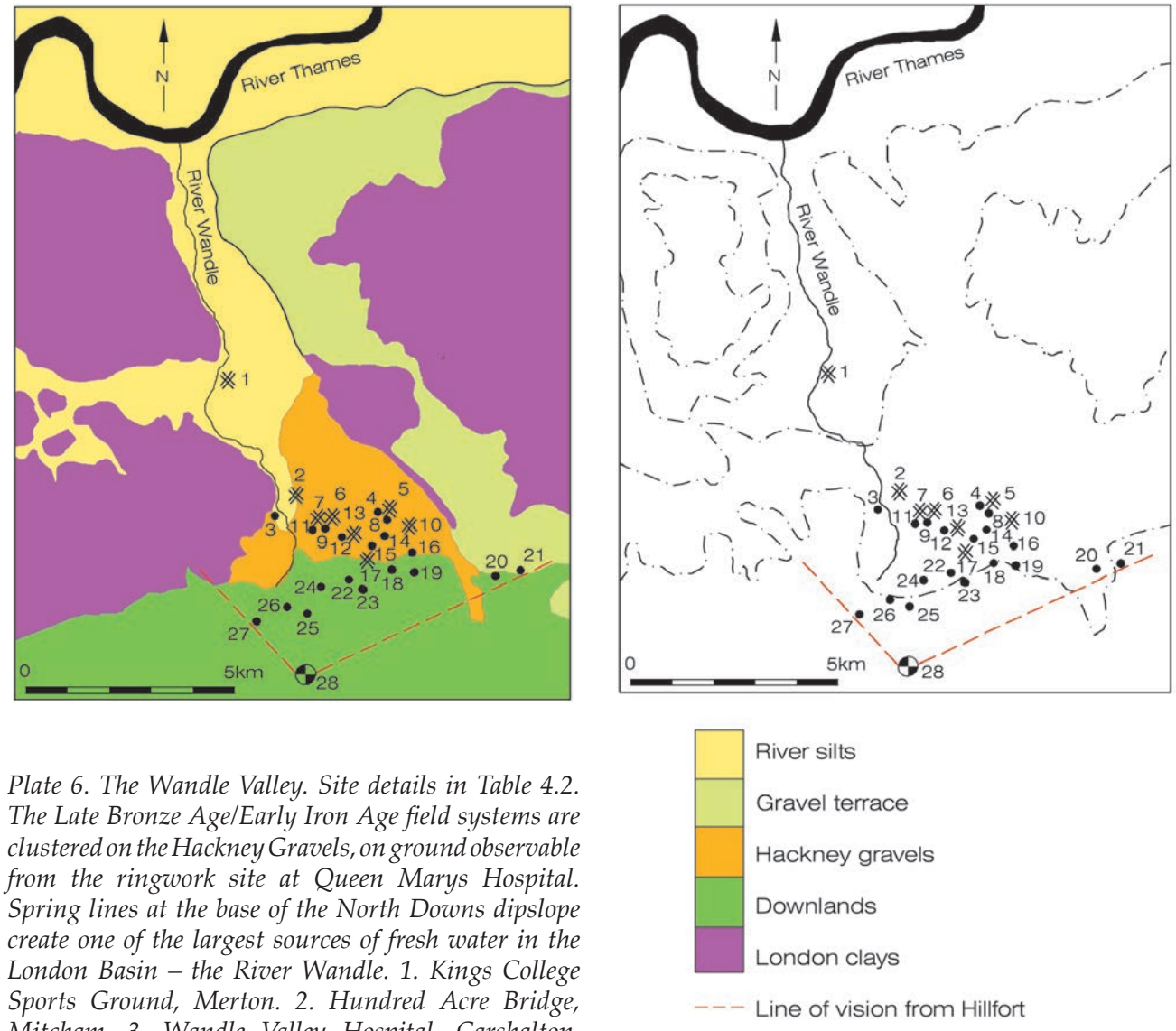


Plate 6. The Wandle Valley. Site details in Table 4.2. The Late Bronze Age/Early Iron Age field systems are clustered on the Hackney Gravels, on ground observable from the ringwork site at Queen Marys Hospital. Spring lines at the base of the North Downs dipslope create one of the largest sources of fresh water in the London Basin – the River Wandle. 1. Kings College Sports Ground, Merton. 2. Hundred Acre Bridge, Mitcham. 3. Wandle Valley Hospital, Carshalton. 4. London Carriers Ltd, Beddington Road. 5. 138, Beddington Lane, Croydon. 6. Interim Storage Pond, Beddington Sewage Works. 7. Wandle Meadows, Hackbridge. 8. Royal Mail Site, Beddington Farm. 9. Furlong Close, Sutton. 10. Valley Park Site, Purley. 11. London Road. 12. Beddington Sewage Farm. 13. Wandle Overflow. 14. Pegasus Way, Croydon. 15. Beddington Roman Villa. 16. Philips Factory site, Beddington Farm Road. 17. NRA Flood relief scheme, Beddington Park. 18. 34 Beddington Lane. 19. Aldwyk Road, Waddon. 20. Park Lane, Croydon. 21. Stanhope Lane. 22. Beddington Infants School. 23. St Mary the Virgin Church Hall. 24. Westcroft House. 25. St. Philomena's Catholic Girls School. 26. Carshalton House. 27. Kings Road and Harrow Road. 28. Queen Mary's Hospital.

Hill in Reading. The Lea Valley which once offered fairly limited evidence of formal landscape design (Yates 2001, 73), now appears to be a particularly important zone of land tenure.

4.2 Rolling down the Lea

Along the northern bank of the River Thames between the Rivers Ingrebourne and Lea there are a series of sites within the Thames alluvial margins. They suggest intensive and extensive exploitation roughly between 1600–1000 BC (Meddens 1996, 332). The construction of trackways and jetties in Dagenham, Barking and Newham reflects the importance of open river access. These raised routes increase in number close to the confluence of the Lea and Thames (Figure 4.1).

The River Lea is the largest tributary river of the Lower Thames Valley, characterised by a wide floodplain seldom less than a kilometre wide in London. In the Enfield area the Lea flows southward in a broad trench floored by alluvium, below western terraces frequently capped by loess. From the industrial revolution these fertile brickearths came under intensive cultivation as the metropolis expanded and by the early 20th century the intensification of market gardening here resulted in the greatest single concentration of glasshouses in the world. The clear waters of the Lea provided yet another valued natural resource for the expanding capital, resulting in the construction of a series of major reservoirs starting in 1862. In the creation of these public utilities and the dredging of associated navigation canals a range of high status Later Bronze Age war gear was discovered together with contemporary wooden jetties (Hatley 1933). The recovery of an array of armoury (rapiers, axes, spearheads, swords and bronze shield) and human skulls (Bradley and Gordon 1988, 508) suggests that the Lea/Stort/Granta valleys could have formed a major route to East Anglia during the late second and early first millennium BC (Hatley 1933, 16; Fox 1943; Needham and Burgess 1980, 453; Couchman 1980). These river valleys provided an avenue between the two politically dominant regions: the Thames and the Fens. Prehistorians reached that conclusion on the basis of the rich metal artefacts and wooden pilings lining sections of the Lea valley. The discovery of a Bronze Age trackway and fields at Rammey Marsh (Maloney 1999, 11) signalled that the evidence for this routeway was even greater than expected. The war gear is now accompanied by increasing evidence of settlement and formal land division. The investment exerted to gain access to the Lea waters is shown in the brushwood trackways and jetties lining parts of the lower reaches. In addition, there are now field boundaries close to the riverbanks in Tower Hamlets, Stratford, Enfield, Edmonton (especially the loess soils) and Chingford. Upstream from Waltham Abbey (which may be the site of an aggrandiser enclosure) ribbon development continues in Turnford, Wormley Wood, near to Hertford and more particularly along the Stort and on land that now forms Stansted Airport. Away from the Lea-Stort valleys there is a sharp and immediate decrease in boundary building both in Hertfordshire to the west and Essex in the east.

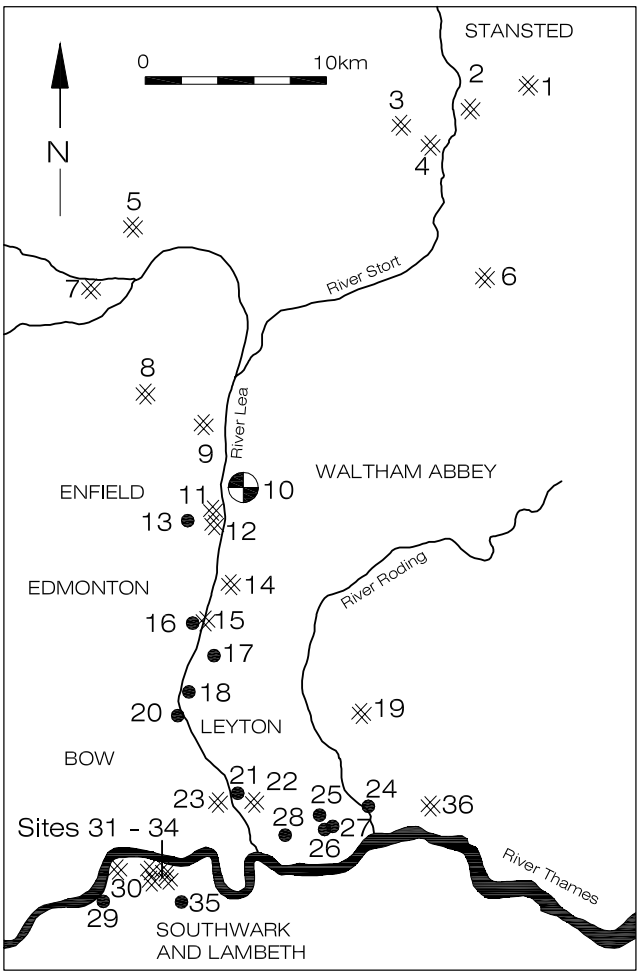


Figure 4.1 River Lea and Stort. 1. Stansted Airport. 2. Dunmow Road, Bishops Stortford. 3. Thorley. 4. Thornbera Road, Bishops Stortford. 5. SW of St John's Wood, Hertford. 6. Hatfield Heath to Matching Tye Rising main. Sites 31–35. 7. Cole Green Bypass. 8. Wormley Wood. 9. Canada Field, Turnford. 10. Waltham Abbey. 11. Rammey Marsh. 12. Innova Science Park, Enfield. 13. Aylands Allotments. 14. Chingford. 15. Montague Road, Enfield. 16. Plevna Road, Enfield. 17. Banbury Reservoir. 18. Maynard reservoir, Waltham Forest. 19. Former King George V Hospital, Newbury Park. 20. Warwick reservoir. 21. CTRL, Stratford New Town. 22. Stratford market depot. 23. Old Ford, Bow. 24. Movers Lane, Barking. 25. Vicarage Primary School, Newham. 26. Woolwich Manor Way, Beckton. 27. Golfers Site, North Beckton. 28. A13 Prince Regent Lane. 29. Vauxhall Bridge. 30. 99–101 Waterloo Road, Lambeth. 31. Bermondsey Abbey. 32. Phoenix Wharf, Bermondsey. 33. 10–16 Lafone Street. 34. Wolseley Street. 35. Bramcote Grove, Bermondsey. 36. Hays, Dagenham. Site details in Table 4.1

4.3 Lambeth, Southwark and Bermondsey

Over the river from the confluence of the Lea and Thames, excavation in Southwark and Lambeth provide the only direct evidence of Middle Bronze Age (and possibly earlier) cultivation in London (Figure 4.1). River transgression, however, occurred after a relatively short period of ground clearance (Drummond-Murray 1994) and therefore these early land plots were never fully developed. Later prehistory in this area continued to be characterised by a pattern of shifting tidal inlets and interconnecting creeks, but this part of the lower Thames still remained a fully used (if waterlogged) landscape – occupation being on higher ground with trackways joining settlements (Thomas and Rackham 1996, 250). The increasing evidence for early cultivation and land boundaries is also accompanied by the discovery of the largest Middle Bronze Age structure so far recorded on the Thames foreshore near Vauxhall Bridge; namely, a 18m long timber way leading straight out into the river (Haughey 1999, 16).

4.4 The River Wandle floodplain

Further west, still on the south bank, a dramatic development occurs along the Wandle river valley during the Late Bronze Age (Plate 6). The focus is towards Carshalton at the head of the valley. There is an explosion of activity, with metal deposition, settlements, field systems, burnt mounds and metalled droveways being concentrated near to the source of the Wandle at Carshalton. This river comprises a great outpouring of clear water from the North Downs creating rich meadowland along its course.

On the dipslope of the North Downs lies Queen Mary's Hospital, Carshalton, a Late Bronze Age ringwork site overlooking most of the surrounding area (Adkins and Needham 1985). More precisely, it overlooks the newly created landscape on the Wandle floodplain to the north of Carshalton. The enclosure's siting ensures that all the Late Bronze Age field systems can be seen from the ringwork. Three definable zones characterise this area of structured landscape: a) the small plateau on the North Downs dipslope on which is sited the Late Bronze Age ringwork; b) a belt of Late Bronze Age extra-mural settlement immediately to the north of the ringwork where the dipslope starts to level out onto the plain (the boundary of this zone may be marked by a series of metal deposits); and, c) the floodplain itself (especially the Hackney gravel terrace) where the majority of the land divisions and associated burnt mounds on the valley floor have been exposed (Yates 2001, 69). That floodplain favoured livestock management. In contrast to the intensity of Late Bronze Age activity, the Early Iron Age does not appear in the record (MoLAS 1995, 14). Fresh discoveries continue to be made along the Wandle valley. Two are of particular note. First, the discovery of Late Bronze Age chalk quarries at Queen Mary's Hospital supports the argument that the ringwork once had an elaborate revetment (Groves and Lovell 2002). Secondly, an interesting new line of environmental enquiry may help to unravel the nature of the farming regime of the regimented landscape at Carshalton. Work at the Arndale Centre in Wandsworth exposed the former Wandle channel course through which waters originating at the foot of the Downland dipslope finally joined the Thames.

It appeared to have contained fresh swift flowing water prior to the Iron Age but it became more sluggish after 850–520 BC. By the Roman period agricultural activity caused the channel to silt up (Maloney and Holroyd 2002, 28). Further environmental work of this nature is required but these preliminary finds confirm that silting of the river does not occur until the Middle Iron Age which might suggest that livestock rearing predominated in the Late Bronze Age, with a switch to intensive arable farming in the Iron Age.

4.5 The West of London gravel terraces

The West of London gravels lie on the western edge of the Lower Thames Valley close to the Runnymede-Petters riverside regional power centre which dominates the confluence of the Thames and the Colne (Needham 1991; 2000). In an area of approximately 150 sq km bounded by the rivers Thames, Colne and Crane there was an extensive zone of managed farming which proliferated in the Middle and Late Bronze Ages (Figure 4.2). A spectacular level of river metal deposition matched the intensity of agrarian activity. Communities here were exploiting the largest zone of lower terrace gravel that existed anywhere along the course of the River Thames. The pressure on available land was intense. The main gravel terrace represents the preferred

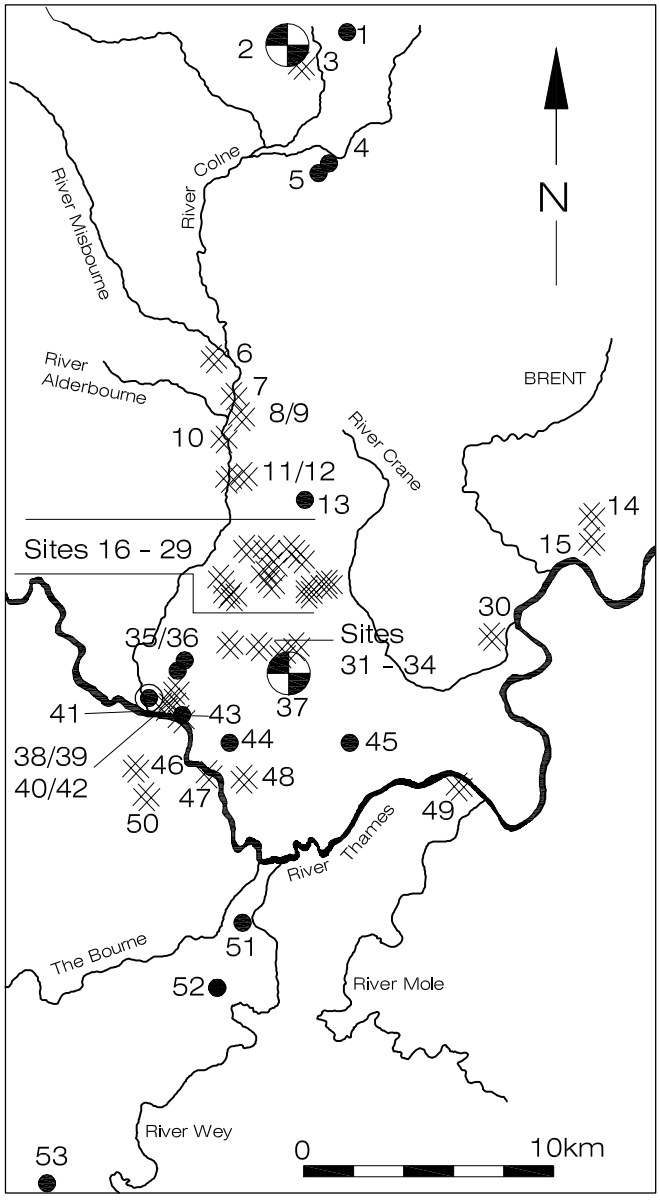


Figure 4.2 West of London. 1. Cassiobridge Farm, Watford. 2. Gravel Pit, W of Watford. 3. The Grove Estate. Watford. 4. Sandy Lodge Lane, Rickmansworth. 5. Sandy Lodge Golf Course, Northwood. 6. The Lee, Denham. 7. The Former Jewsons Yard , Uxbridge. 8. 2–3 Windsor Rd, Uxbridge. 9. 5–6 High Street, Uxbridge. 10. Try Builders Yard, Uxbridge. 11. Northolt Rd, Longford, Hillingdon. 12. Former George Hopton site, Packet Boat Lane, Cowley. 13. Stockley Park. 14. 36 Avenue Gardens, Acton. 15. Former LRT Bus Works, Hounslow. 16. Wall Garden Farm. 17. Holloway Lane. 18. M4 widening/Gas main relocation. 19. Imperial College Sports Ground. 20. Home Farm, Harmondsworth. 21. Prospect Park. 22. Home Farm, BFI Quarries, off Harmondsworth Lane. 23. Nobel Drive, North of Heathrow Airport. 24. Cranford Lane, Harlington. 25. Airport Gate. 26. Neptune Road, Heathrow. 27. Heathrow Northern Runway. 28. Heathrow Airport. 29. Perry Oaks Sludge Works. 30. Bankside Close, Isleworth. 31. Stanwell. 32. Cargo Point Development, Bedfont Road, Stanwell. 33. Heathrow Terminal 4, Remote Stands. 34. Stanwell Road, East Bedfont. 35. Lower Mill Farm, Stanwell. 36. Poyle, Stanwell. 37. Mayfield Farm. 38. and 39. Church Lammas, Staines. 40. Tilly's Lane, Staines. 41. Runnymede. 42. Staines Central Trading Estate. 43. 2–8 High Street, Staines. 44. Matthew Arnold School. 45. Vicarage Road, Sunbury. 46. Thorpe Lea Nurseries. 47. Fairyland Caravan Park, Laleham. 48. Home Farm, Laleham. 49. Hurst Park. 50. Junctions 12 and 15 on the M25. 51. Wey Manor Farm, Addlestone. 52. Broadoaks Estate, W. Byfleet. 53. Whitmoor Common. Site details in Table 4.3

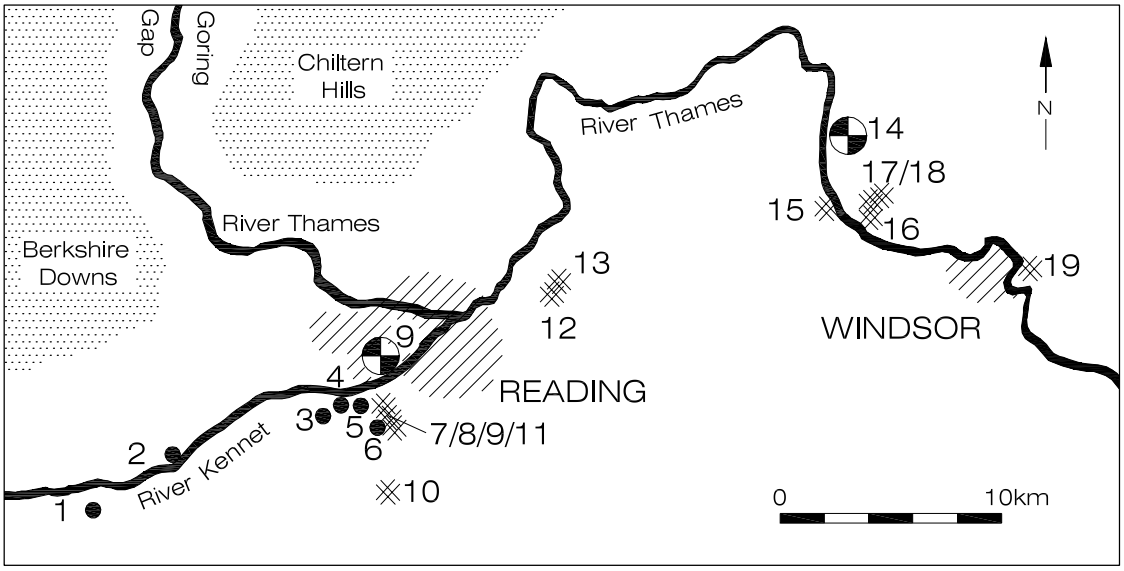


Figure 4.3 Middle Thames Valley Windsor to Reading. 1. Brimpton. 2. Aldermaston Wharf. 3. Field Farm, Burghfield. 4. Anslow's Cottages, Burghfield. 5. Knight's Farm, Burghfield. 6. Pingewood, Burghfield. 7. Moore's Farm. 8. Reading Business Park. 9. Marshall's Hill. 10. Grazeley. 11. Hartley Court Farm. 12. Land West of Park Lane, Charvil. 13. East Park Farm, Charvil. 14. Taplow. 15. Weir Bank Stud Farm, Bray. 16. Eton Rowing Lake. 17. Marsh Lane East. 18. Lake End Road. 19. Datchet. Site details in Table 4.4

prime land but in addition land divisions spill over into the flood plain gravels, brickearths and significantly, the gravel islands within the alluvial floodplain of the river Colne. The premium value attached to these islands can be seen in the construction of a Middle/Late Bronze Age flood defence bank at Tilly's Lane, Staines (Wessex Archaeology 2000c). The barrier was designed to protect the island from the scouring Thames' waters and represents but one example of the scale of labour mobilisation within the West of London gravel area.

The Heathrow terraces have the largest intensive cluster of Middle Bronze Age coaxial field divisions for the entire river valley and the lands fringing the estuary in Kent and Essex. That degree of early farming pressure is also reflected during the Late Bronze Age (Figure 4.2). The wealth of evidence suggests a fully utilised environment with coaxial land divisions, waterholes, droveways and ditched and banked enclosures with associated settlement. The zone of regimented land is largely confined to the Colne – Thames – Crane bounds. The largest excavation to date was carried out in advance of the construction of Terminal 5 at Heathrow Airport. This site, called Perry Oaks Sludge Works, confirmed the scale of Middle Bronze Age land enclosure which extended over the entire Heathrow terrace (Barrett *et al.* 2001, 222). The developing field system respected the boundaries of a horseshoe or D shaped enclosure. This structure was remodelled and re-used in the Middle to Late Bronze Age, suggesting that it may have had a special significance. Perhaps it was more important than the postulated aggrandiser enclosure at nearby Mayfield Farm. The Perry Oaks site incorporated a number of substantial double ditched trackways and a series of watering holes, supporting a pastoral interpretation for the farming regime. The deposition of a curated Neolithic polished axe accompanied by a Middle Bronze Age socketed axe haft and beater in one waterhole clearly shows a special emphasis on these purpose built water sources (Barrett *et al.* 2001, 224). The distribution of pottery and other artefacts from the primary, secondary and tertiary fills of the boundary ditches has revealed evidence for the gradual development of the land divisions. Middle Bronze Age pottery predominated in the primary fills associated with the original construction work. The virtual absence of Iron Age pottery from the primary fills suggesting little or no extension or adaptation

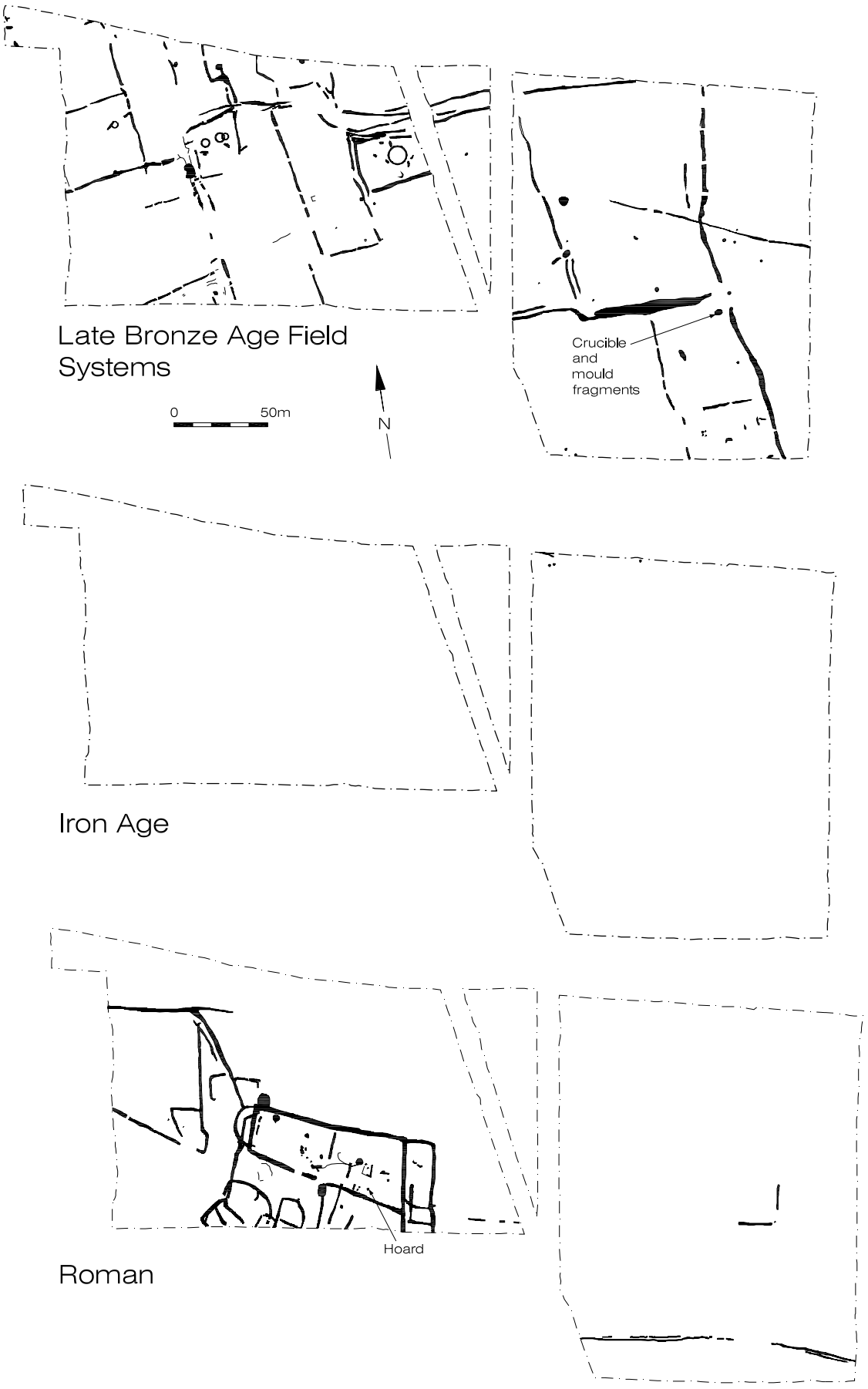


Figure 4.4 Cranford Lane, Hillingdon. Derived from Elsden 1996

took place after the Bronze Age. As the ditches silted up, Middle and Late Bronze Age pottery was incorporated into the secondary and tertiary fills (ibid. 223). The recovery of some Early Bronze Age sherds from the primary fills hints at an underlying Beaker framework for the field systems at Perry Oaks.

Recent work shows more land division sites occurring further up the river Colne, north of Heathrow. Land boundaries are evident at Rickmansworth, close to what is interpreted as another aggrandiser enclosure at Watford. The discovery of a Middle Bronze Age coaxial field system at Denham on the west bank of the Colne also suggests that both banks of the Colne Brook had been divided up for land allotments. South of the Heathrow zone there are further recorded instances of field plots along the course of the Wey.

From Staines heading west we enter the Middle Thames Valley which continues up to the Goring Gap. Ditched land divisions first appear in this section of the Thames during the Middle Bronze Age. There is a concentration from Windsor to Maidenhead, including sites at Datchet, Eton Rowing Lake, Bray and Dorney (Figure 4.3). The next grouping is centred around Reading with sites at Reading Business Park, Charvil and Grazeley. Further development and expansion occurred in the Late Bronze Age. The intensification of formal land management is accompanied by the construction of aggrandised enclosures at Marshall's Hill, the recently discovered elite compound at Taplow and the important island settlement of Runnymede (Yates 1999, 160).

One of the principal features characterising the late prehistoric vegetation of southern Britain is the importance and prevalence of lime trees (*Tilia*) over large areas. London was no exception and the dominance of *Tilia* in the natural woodland is confirmed at Runnymede, Rotherhithe, the City of London and the East End (Scaife 2000a, 113). The demise of this species is attributable to human action, reflecting increasing land pressure, especially the need for productive agrarian ground. Is it therefore possible to detect and date the first substantial reduction in woodland in central London and the wider countryside? How great was the time lag between initial clearance and the construction of field boundaries? One project within the London Basin, the London Underground's Jubilee Line, shows how significant breakthroughs can be made in addressing these questions. The project successfully examined ecological developments because geoarchaeological research aims were clearly stated and integrated into the construction work (Sidell *et al.* 2000). The Jubilee Line now links Westminster, Southwark, Greenwich and the East End – a 16km linear transect through the river frontage of the capital. Sedimentary studies and pollen sampling along this routeway confirmed that it was during the Bronze Age that major changes to the capital's woodland occurred.

Rob Scaife observed two principal phases of lime decline. Firstly in the Middle to Late Neolithic when there was localised opening of the lime rich wood canopy. Secondly, there was a significant diminution between 2000–1000 BC. The results from Southwark complement excavation findings from that part of the south bank. At Canada Water (East Southwark) an Early Bronze Age decline was associated with a sharp expansion of cereals at 2350–1700 cal. BC (Beta 122968; 3650 ± 100 cal. BP). At Union Street (West Southwark) it is thought to be of Middle /Late Bronze Age date and at Joan Street (West Southwark) after 1900–1520 cal. BC (Beta 119785; 3420 ± 70 cal. BP). In Westminster, again the decline is of Middle/Late Bronze Age date at Storey's Bar and it is attributed to the Bronze Age at St Stephen's East (Scaife 2000a, 114). The Jubilee Line pollen diagrams record not just the emergence of a more treeless countryside but also chart a rising sea level within the Thames floodplain during the latter part of the Bronze Age. Such accumulated environmental knowledge greatly helps to place the creation of a formal landscape within a changing habitat. It also can help to identify the nature of cultivation within the mixed farming economies.

4.6 Mind the gap

A pattern is already emerging along the Thames estuary and the valley corridor; that there are two phases of coaxial field construction. The first generation was created during the Later Bronze Age sequence and the second during the Late Iron Age/Romano-British era. There is often a distinctive gap between the two – shown to dramatic effect in the recording of features at Cranford Lane (Figure 4.4).

Chapter 5. The Upper Thames Valley

5.1 Worlds apart

The Thames rises south west of Cirencester near Kemble, flows eastwards through pastoral farmland and watermeadows and is joined en route by the tributaries of the Leach, Windrush, Evenlode, Cherwell, Ray, Thame and Ock. Within this Upper Thames basin late second and early first millennium BC boundary construction is confined to the immediate river frontage of the Thames (Figures 5.1 and 5.4). Two clusters of managed land have been identified. One is downstream – between Oxford and the ridgeway of the Berkshire Downs and the Chilterns. The second is upstream in the extreme upper reaches between Cirencester and Lechlade. Both have a similar ordered space but they are worlds apart. The field systems downstream originated in the Middle Bronze Age and continued to expand throughout the Late Bronze Age and earliest part of the Iron Age but their social importance then rapidly declined. In contrast, in the extreme upper reaches of the Thames, field system construction starts much later in the Late Bronze Age/Early Iron Age transition, expanding rapidly at the very time that activity downstream subsides. New land divisions were being created in the upper reaches of the Thames which had once been peripheral to the alliance and exchange system dominating the middle and lower Thames.

5.2 The new frontier

From the Goring Gap a series of coaxial field systems lined the riverbanks in the stretch of river leading up to modern Oxford (Figure 5.1). Radley is the furthest inland site along the Thames valley to reveal early (mid 2nd millennium BC) evidence of field systems. It appears therefore to be the limit or frontier of the Middle Bronze Age ditched land divisions created along the Thames valley. Below this point there are Middle Bronze Age fields at Didcot, Long Wittenham, and Abingdon. Sited on the dividing line between formal land regulation and 'free' land, it suggests that economic innovations originated downstream and that the pace of clearance and exploitation upstream was delayed.

Barrett and Bradley in 1980 analysed the nature of developments within the Thames valley during the Bronze Age. Their assessment based largely on settlement and burial activity suggested that the core area of the Upper Thames, which had been the dominant power base during the Late Neolithic and Early Bronze Age, was supplanted by the former buffer zone of the Middle Thames in the Later Bronze Age. Communities in the Middle Thames valley were well placed to benefit from agricultural exploitation of the gravel terraces. Control of these fertile habitats, which were ideally located for long distance trade, ensured growing wealth and political ascendancy. The new power centre of the Middle Thames depended on its ability to convert an agricultural surplus into wealth and status through exchange. For Barrett and Bradley the main weight of Deverel-Rimbury material is from Berkshire eastwards, reinforcing the view that the emerging buffer zone is confined to the Middle Thames area (1980c, 254). The field system evidence, however, pushes the boundary between core and buffer zone further upstream (Yates 1999, 158). The Dorchester-on-Thames complex of field systems shows that communities in this part of the Thames were also participants in a new process of agricultural intensification. This frontier zone is part of a new social order, centred on the Middle Thames valley, rapidly adopting the novel concepts of land divisions and a lifestyle that is more fixed and less mobile. In

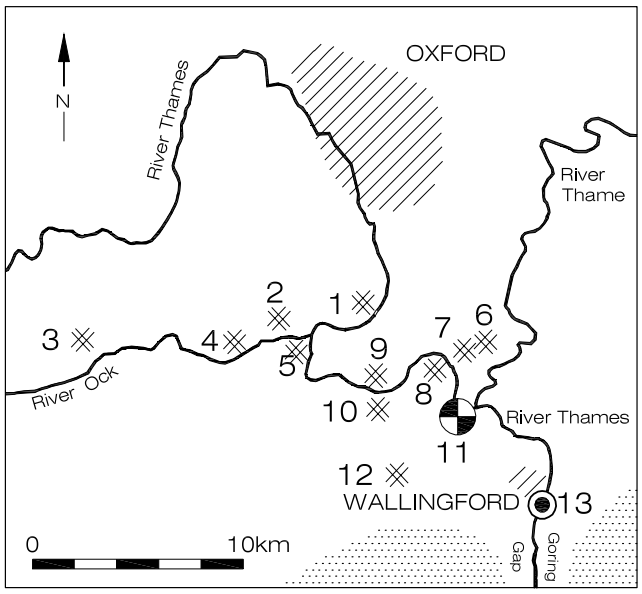


Figure 5.1 Wallingford to Oxford. 1. Eight Acre Field, Radley. 2. Ashville Trading Estate, Abingdon. 3. Sheephouse Farm. 4. Meadow Farm. 5. Corporation Farm, Abingdon. 6. Mount Farm, Berinsfield. 7. Dorchester on Thames cursus. 8. Northfield Farm, Long Wittenham. 9. Fullamoor Farm. 10. Appleford. 11. Wittenham Clumps. 12. Wallingford Road, Didcot. 13. Wallingford Bypass. Site details in Table 5.1

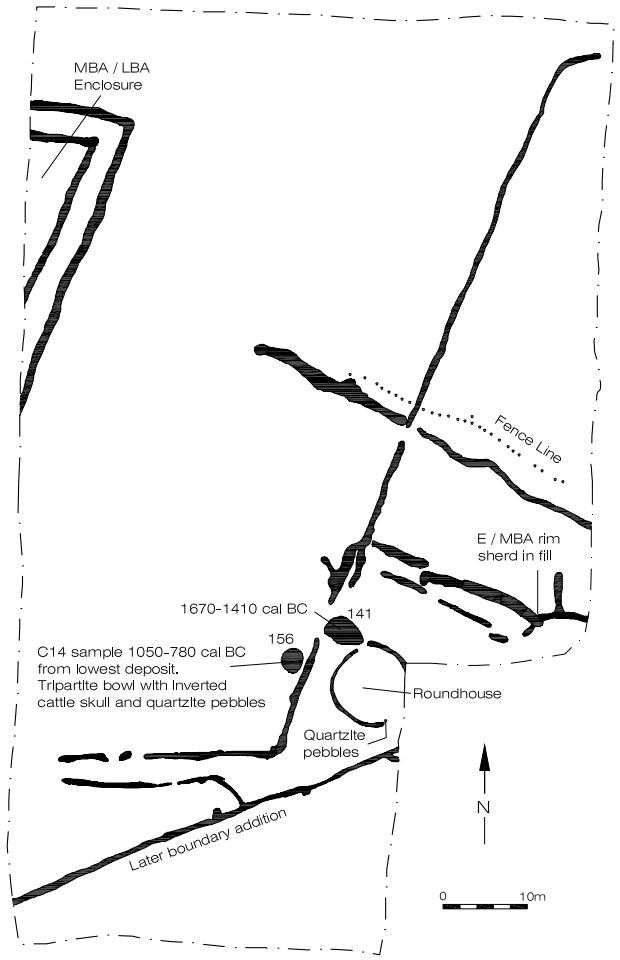


Figure 5.2 Eight Acre Field Radley. After Mudd 1995. The arrangement of ditches was laid out in the Mid-to-Late Bronze Age. The main NE-SW axis of the field system was aligned on waterhole 141. The excavation clipped a double-ditched enclosure on the western edge of the site: a compound not unlike the community stockyards of Fengate

contrast, social priorities north of Radley do not appear to change. A traditional pattern of farming, including shifting grazing, still continued (Allen, Darvill, Green and Jones 1993, 35).

As part of a frontier territory the Wallingford group (a convenient name for this concentration of coaxial lands) is particularly interesting because it provides insights into the profound changes faced by people in the area. The excavation reports for these Middle Bronze Age sites show that this is not a wave of colonisation of previously unused land. At Didcot there is evidence of a pre-existing occupation site (Ruben and Ford 1992, 27). Eight Acre Field at Radley produced Early to Middle Bronze Age pottery. It is close to the Radley barrow cemetery (Mudd 1995, 31). More particularly, the main concentration of bounded farming in this area is centred on Dorchester-on-Thames, which is rich in later Neolithic and Early Bronze Age landscape features.

The full development of this regimented landscape occurs during the Late Bronze Age. That period sees the emergence of an island settlement at Wallingford the subject of only relatively limited evaluation work, the collection of chance finds, and some rescue excavation. The true nature of the site is unknown and what remains is protected. Excavated material has included metalwork probably from 950–850 BC and the recording of an occupation horizon similar to the midden deposits at Runnymede Bridge (Thomas *et al.* 1986; Barclay, Bradley, Lambrick and Roberts 1995, 68). A similar midden spread is recorded close to Wittenham Clumps – a hilltop enclosure that has produced Late Bronze Age/Early Iron Age finds (Hingley 1980) suggesting that it too may have been the site of a ringwork.

What is the nature of the farming regime? All the excavation reports suggest livestock farming with an emphasis on cattle. The environmental

survival is poor and often no carbonised seeds are recovered. However two successive wells at Radley have yielded information to show changing land exploitation between the Middle and Late Bronze Age (Figures 5.2 and 5.3). Waterhole 141 was the earlier and devoted to domestic use. Environmental evidence from this waterhole indicated a broadly open environment with some scrub and a background presence of woodland. A radiocarbon date of 1670–1410 cal. BC (GU-3379; 3250±60 BP) was derived from an oak timber. The later waterhole 156, dated to 1050–780 cal. BC (GU-3378; 2720±70 BP) from a notched timber, indicated an overwhelming dominance of pasture. An Early Iron Age votive offering was recorded in this Bronze Age feature (Figure 5.3). This discovery in 1992 was one of the first of its kind in developer-funded work. Subsequently, Bronze Age watering holes and wells elsewhere have produced similar evidence of veneration (Barrett *et al.* 2001, 224–225; McFadyen 2000).

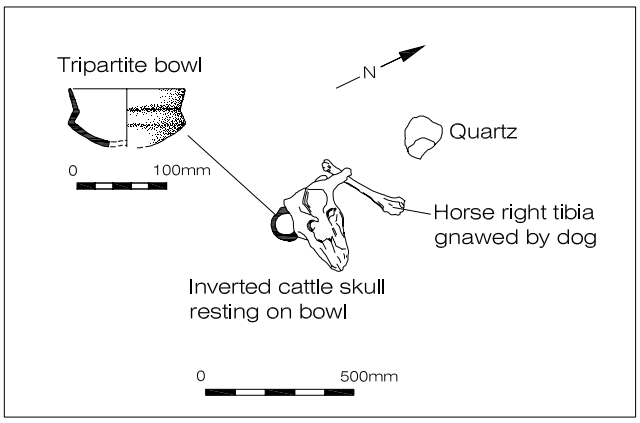


Figure 5.3 Votive offering at Eight Acre Field, Radley. After Mudd 1995. The votive deposit consisted of a small tripartite bowl which had been placed in waterhole 156 after it had gone out of use and had been partly infilled. An inverted cattle skull lay on top of the pot and quartzite pebbles were found nearby

Andy Mudd discusses the possibility that there was a less specialised and more intensive use of land in the earlier phase at Eight Acre Field and possibly exclusive stock raising as we move from the Middle Bronze Age to Late Bronze Age (Mudd 1995, 64). Adrian Parker writing in the same report notes how this pattern of increasing pastoralism in this part of the Thames Valley is reflected at other locations. At Mount Farm grassland flora dominated the vegetation by the Late Bronze Age. Close to the Radley site, evidence from Daisy Banks Fen showed an emphasis on grassland by the mid Bronze Age and at Mingies Ditch and Gravelly Guy the same progressive change to pasture occurred by the Late Bronze Age (Parker in Mudd 1995, 52). It suggests an increasing intensification of pastoralism within the Wallingford group. Stock raising is prevalent. Environmental analysis at Ashville Trading Estate produced by Martin Jones suggests free ranging pastoralism in the Middle Bronze Age denoted by the thorny scrub which regenerates after shifting grazing (Parrington 1978, 108). At Didcot bone survival was poor but the absence of carbonised seeds, despite sieving, leads Steve Ford to conclude that the presence of field boundaries implies control of stock, either to regulate grazing or to protect crops (Ruben and Ford 1992, 27).

There is evidence of increased social tension during the Late Bronze Age. Downland landscapes were reorganised including Salisbury Plain, and linear earthworks were cut across existing landholdings (Figures 12.11 and 12.12). This radical reshaping of the countryside seems to have been accompanied by the construction of a series of rectilinear enclosures – compounds or cowpens unconnected with the existing coaxial field systems (Lawson 2000, 252; Cunliffe 2004). Similar signs of claim and counterclaim are evident at the same time around Dorchester-on-Thames. At Fullamoor Farm a new barrier (traced for over 500m from air photographs) cut through existing field boundaries to form an enlarged 200 ha pasture (Boyle, Keevill and Parsons 1993). The evidence for a similar meander boundary at Long Wittenham is less conclusive because of the relatively slight dimensions of the ditch. However, if it were a dividing ditch it would have marked off 190 ha of flat ground. Both land enclosures imply either a high degree of community consensus or the forced imposition of barriers. They impeded movement and denied access to the river (Yates 1999, 167).

5.3 A polar reversal: the upper reaches of the Thames in Gloucestershire and North Wiltshire

There is scant evidence of land boundaries on the Severn levels or the High Cotswolds but settlement and associated land boundaries are prolific in the extreme upper reaches of the Thames valley. Here, the very best land is being appropriated; namely, the light fertile alluvial

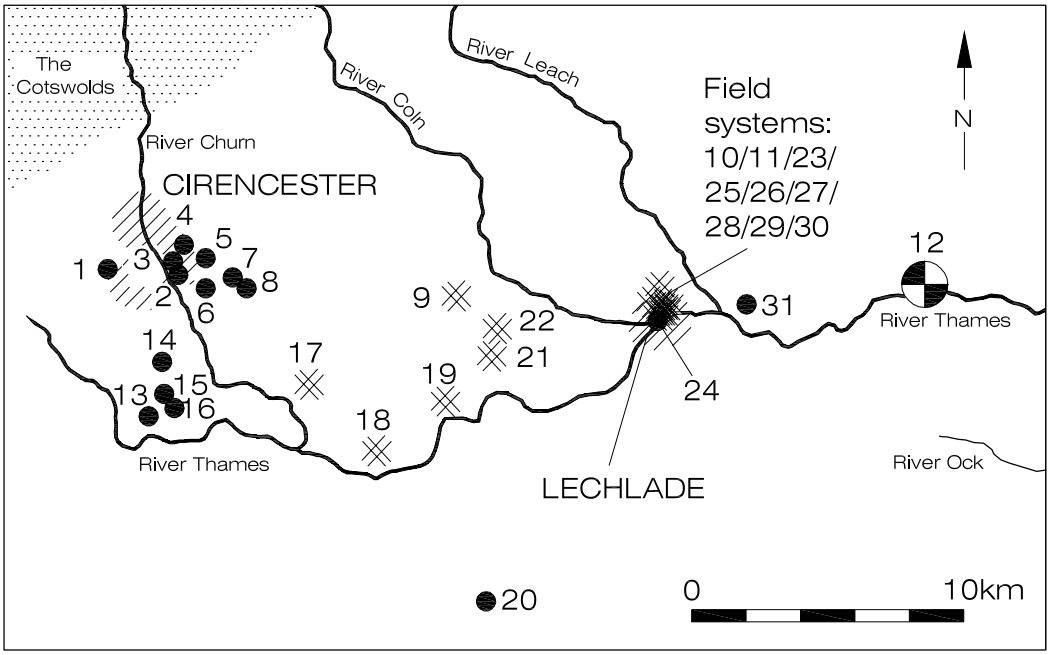


Figure 5.4 Extreme Upper Thames 1. Royal Agricultural College, Cirencester. 2. Queen Elizabeth Road, Cirencester. 3. Kingshill and Beeches Nursery Field. 4. The Beeches Playing Field, Cirencester. 5. Norcote Farm. 6. Preston Village. 7. St Augustine's Lane. 8 St. Augustine's Farm South. 9. Lady Lamb Farm, Fairford. 10. Cuthwine Place, Lechlade. 11. Gassons Road. 12. Burroway enclosure. 13. Spratsgate Lane, Somerford Keynes. 14. Dryleaze Farm, Siddington. 15. Shorncote Quarry. 16. Cotswold Community School. 17. Latton Lands. 18. Eysey Manor Farm. 19. Roundhouse Farm, Marston Meysey. 20. Groundwell, West Swindon. 21. RAF Fairford. 22. Totterdown Lane, Nr. Fairford. 23. Allcourt Farm. 24. The Loders. 25. Sherbourne House. 26. Butler's Field. 27. Clemenson Memorial Hall. 28. Recreation Ground. 29. Roughground Farm. 30. The Maples, Oak Street. 31. Leaze Farm. Site details in Table 5.2

spreads and sandy loams overlying the free draining gravel terraces. These terraces are the residues of periglacial action. Their distribution reflects different changes in the course of the river, combined with successive lowering of its bed, which left the gravel exposed in terraces isolated from the present river course. These gravel deposits have been exploited commercially. In the act of extracting the modern resource the legacy of the first farmers is destroyed. The framework of developer-funding at least records the first intensification of land appropriation.

Field system construction in the furthest reaches of the Thames does not occur before the Middle Bronze Age (Figure 5.4). Early ditched boundary features are confined to the building of enclosures. There is only one conclusively dated Middle Bronze Age enclosure in this zone in addition to a range of contemporary monuments and settlements (without associated field systems). Here, the scale of Middle Bronze Age boundary building bears no comparison to the pace of construction down river from Dorchester-on-Thames to the Greater Thames Estuary.

The firmest dating for a Middle Bronze Age enclosure is at The Beeches Playing Field, Cirencester. The site was first observed by Roger Leech in 1977 during an air reconnaisance survey of the region. It was subsequently excavated in advance of residential development. A 4,300sq m strip of the playing fields revealed a rectilinear enclosure defined by a pair of ditches. An animal burial was located inside the compound immediately adjacent to the entranceway between the ditches at the north eastern corner. A sample of bone from each of the enclosure ditches together with a sample from the double cow burial provided a closely comparable calibrated date range spanning the period 1400–1000 BC. No butchery marks were detected on the *bos* skeletons which had been buried complete. These carcasses placed in a pit had then been sealed with a fine

stone free silty loam, flecked with charcoal and crushed fired clay fragments. AMS dating of a bone sample provided a calibrated date of 1400 BC to 1120 BC (NZA 12281; 3009±45BP). There is good evidence for sheep and cattle husbandry on the site; the double cow burial may further suggest that cattle were of particular importance at this time. A single non-local pottery sherd, in a fine, flint tempered fabric, was recovered from the fill of the northern ditch and was identified as a Middle Bronze Age globular urn. No dateable features were recorded in the interior of the compound (Young 2001).

The preceding geophysical and aerial photography survey at the Beeches suggests two further adjacent enclosures of broadly similar form (Young 2001, 37). Nearby at Norcote Farm, St Augustine's Lane and St Augustine's Farm South there are components of an extended field system which may represent early land boundaries but unfortunately no conclusive dating evidence was retrieved during their excavation (Gloucestershire SMR).

For the Cirencester area generally there are further undated possible prehistoric land blocks at the Royal Agricultural College, Kingshill, Beeches Nursery and Queen Elizabeth Road. Further south of Cirencester there are more finds of Middle Bronze Age occupation and burial, particularly at a series of excavations surrounding Shorncote and Somerford Keynes. The Shorncote Quarry large area excavations are particularly significant because they reveal Middle Bronze Age activity predating both Late Bronze Age open settlement and Late Bronze Age/Late Iron Age linear boundary construction. The full extent of Middle Bronze Age activity to the south may never be known for the 8 sq km vast expanse of water making up the Cotswold Water Park is the legacy of aggregate extraction that took place before developer- funded archaeology started. Further east near Fairford there is a possible Middle Bronze Age settlement and cremation at Lady Lamb Farm. Again large-scale evaluation work proved that field systems were not constructed here until the Late Bronze Age/Early Iron Age.

Permanent land divisions appear in the Late Bronze Age/Early Iron Age transition. A second enclosure was built at the Beeches Playing Fields. Boundary ditches were dug at Dryleaze Farm, Shorncote Quarry, Latton Lands, Eysey Manor Farm and Marston Meysey. Further east a labour force was mobilised for similar work at RAF Fairford and Lady Lamb Farm. Within Lechlade excavation traced an extended meander boundary with sub divisions at Roughground Farm, Cuthwine Place, Sherbourne House, Butlers Field, Clemenson Memorial Hall Recreation Ground and The Maples. Discoveries just to the east at Leaze Farm confirm that Early Iron Age expansion is not confined solely to the meander zone defined by the linear boundary and the Rivers Leach and Thames.

The Early Iron Age "boundary boom" around Cirencester and Fairford/Lechlade is in marked contrast to the decline in land division at this time along the middle and lower Thames. Settlements with distinct boundaries (which include the new variant of pit alignments) expand along the western limits of the Thames at the very time that activity further downstream diminishes. Boundary construction is not restricted just to the Late Bronze Age/Early Iron Age. Field systems are also created in this area during the Middle Iron Age. They are extremely rare nationally (Bradley and Phillips *cf.*), occurring in parts of Cambridgeshire and Essex – again along the periphery of what had been centres of power during the Late Bronze Age. In North Wiltshire and Gloucestershire Middle Iron Age enclosures and occasional field systems are more commonly encountered. Middle Iron Age enclosures are recorded at Spratsgate Lane, Somerford Keynes, Eysey Manor Farm, Groundwell West near Swindon and Totterdown Lane near Fairford. Middle Iron Age field boundaries have been recorded at Eysey Manor Farm, and Tottterdown Lane. A Middle Iron Age ditch respects the great meander boundary ditch at Lechlade, first constructed in the Late Bronze Age/Early Iron Age. Elements of that Middle Iron Age feature were recorded in two separate residential developments (at Sherbourne House and Allcourt Farm) along the course of the major linear boundary.

5.4 Reflections on the Thames

The proliferation of client reports along the entire length of the Thames valley and its estuary confirms the importance of this major communications route between 1500–700 BC. Field systems were not introduced simultaneously, but were established at different times in the Later Bronze Age sequence. The managed farming landscape emerged fully in this lowland area during the Middle Bronze Age and continued to develop

until the end of the Late Bronze Age. In the latter period the field systems appear to form distinct clusters or enclaves, suggesting regional groups in each of which there is evidence of high status settlement and a concentration of river metalwork (Yates 1999; 2001). Settlement and field systems were abandoned or lost their social significance during the Late Bronze Age. In marked contrast, the economy of the extreme upper reaches of the Thames valley grew to prominence in the Early Iron Age at the very time that social and economic dislocation was being experienced in the Middle and Lower Thames valley. Evidence from Cirencester, Shorncote and Lechlade contradicts the argument that this part of the Thames Valley had been a cultural backwater during the late 2nd and early 1st millennium BC. As political power crumbled in the east, communities near the head of the river, unfettered by any allegiance to groups downstream, flourished. They made their mark by building formal land blocks when elsewhere that was no longer appropriate. Security of tenure was more assured deeper inland. In contrast, communities nearer the continent experienced a drastic change in the mode of production and land holding.

Commercial archaeology has helped identify distinctive enclaves along the Thames. Initially political power gravitated towards the east and the English Channel. Later there was the equivalent of a polar reversal in fortunes as the economy flourished in the western limits of the Thames and faltered in the east. The challenge now is to fine-tune the chronology of such developments by the regular deployment of absolute dating techniques. Radiocarbon dating must form an essential element in any field project.

Chapter 6. The Sussex Coast, Downlands and Weald

6.1. Introduction

Having traversed the length of the Thames valley we now examine lands to the south bordered by the English Channel. From Kent westward, developer-funded work has transformed our knowledge of late 2nd and early 1st millennium BC land exploitation in Sussex. It has shifted a once myopic interest in the chalk downlands to analysis of both the Weald and the coastal plain.

The historic county of Sussex has long attracted archaeological interest. The prehistoric earthworks on the chalk downlands have been a particular focus for survey and excavation but much less exploration has occurred in the Weald and on the Coastal Plain. In consequence investigations have left us with a research imbalance. This is being redressed by developer-funded projects. We now have the opportunity to examine the nature of resource exploitation in the heavily wooded Weald and reassess the use of intensifiable habitats along the coastal plain. The findings flowing from these commercial projects are transforming our understanding of later prehistory.

The changing pace of discovery in Sussex is best appreciated by looking back at known sites and finds in the inter-war years and then the state of knowledge on the eve of developer- funding in 1990, before exploring the contribution of commercial work. These three points in time show the very rapid increase in prehistoric discoveries. For the inter-war years E. Cecil Curwen's *The Archaeology of Sussex* published in 1937 provides an excellent synthesis of sites and artefacts for the Sussex landscape. We shall examine the Weald, Coastal Plain and Downlands in turn (Figure 6.1) starting with Curwen's 1937 baseline; then we shall look at the subsequent 50 plus years of rescue and research work following Curwen's publication before tackling the flood of data generated by commercial projects.

6.2 The Weald

We begin with the Weald, perhaps the most neglected zone in the study of Sussex prehistory. Cecil Curwen was well aware of this void in our knowledge for he discussed the paucity of information on inland exploitation compared with the Downland data. He records meticulously the known inland Bronze Age metalwork finds but can cite only one settlement at Playden near Rye which, while technically on the Weald, lies close to the coast bordering the Romney Marsh (1937, 200). That habitation was later reinterpreted as a ploughed out ring barrow (Cleal 1982) but the associated rectangular enclosure surrounded by traces of a wattle fence and a shallow ditch on the site are of interest (Curwen 1937, 201). At the time of Curwen's work, permanent Bronze Age settlements were unknown in the Weald. He could only surmise that the presence of barrows/barrow cemeteries gave some indication of Bronze Age exploitation.

Fifty years later the continuing limitations in archaeological knowledge of the Weald prompted the Historic Buildings and Monuments Commission to fund a new survey of this inland area. The resultant research and fieldwalking programme provided another review – this time on the eve of commercially funded work. Mark Gardiner in the synthesis notes again that in general the archaeology of South East England to a large degree has been written from excavation work on the North and South Downs. Whilst the coastal plain had started to attract attention, the Weald remained little studied by archaeologists (Gardiner 1990).

For Gardiner, there was growing evidence for Wealden agriculture in the Bronze Age reflected in a limited number of environmental studies (Scaife and Burrin 1983; 1985). Tebbutt's investigation of the prehistory of the Ashdown Forest offered one of the few examples of intensive

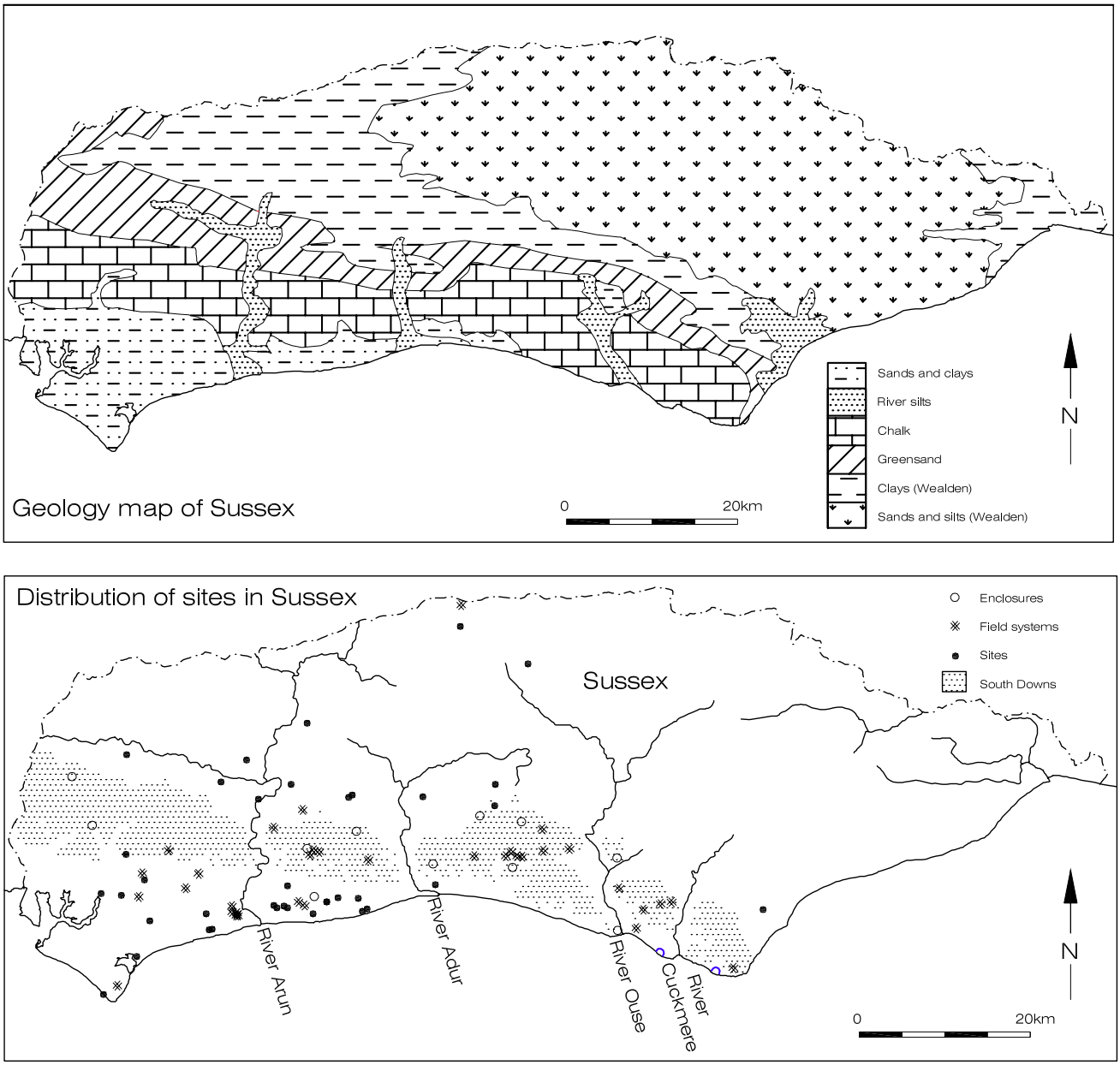


Figure 6.1 Geology of Sussex and site distribution

localised research within the Weald (Tebbutt 1974). The synthesis, by Gardiner, concluded that there is an impression of extensive Wealden use, with farmsteads being established in areas of cleared woodland (1990, 42). He suggested that the era of greatest exploitation may have been during the late Neolithic and Early Bronze Age, with settlement subsequently retreating as the soils became exhausted (ibid. 43). It is large-scale commercial work that has confirmed Gardiner's suspicions of inland exploitation during later prehistory. The increasing number of client reports and research projects which have produced Bronze Age finds now enables us to analyse the major topographical zones of the Sussex portion of the Weald. We shall start with the Wealden Greensands before examining the Bronze Age evidence emerging for both the Low and High Weald.

6.2.1 The Weald – Wealden greensands

The Wealden greensands comprise a narrow strip of land running at the foot of the steep escarpments of the North and South Downs (Figures 6.1 and 6.2). Wooldridge and Linton back in 1933 suggested

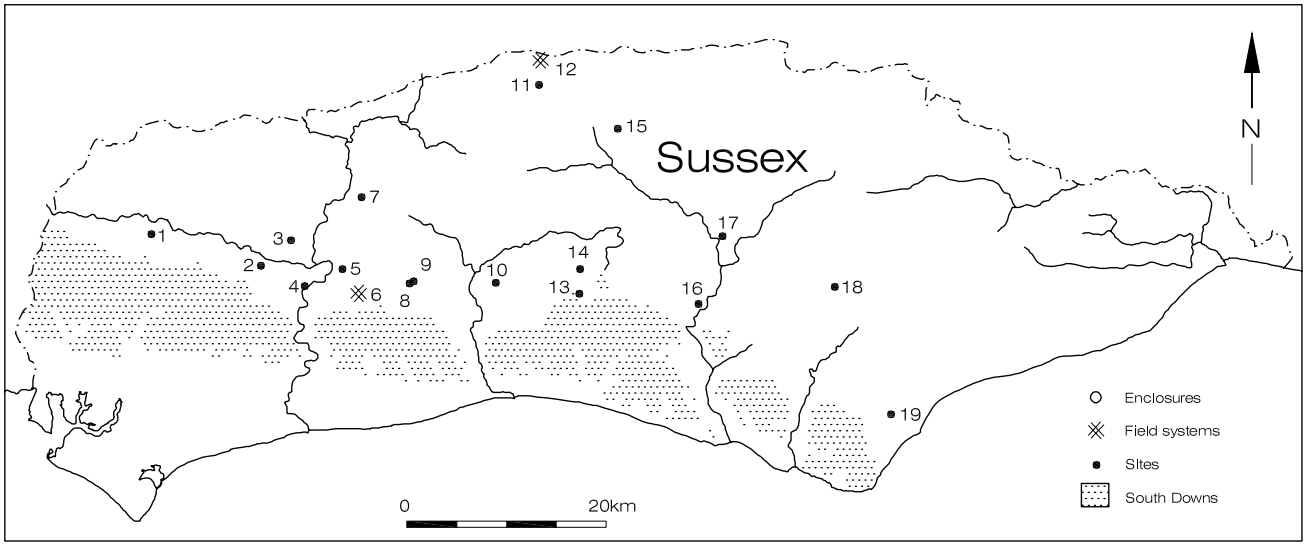


Figure 6.2 Sussex: The Weald. 1. Midhurst Pond. 2. Burton Millpond. 3. Fitzleroi Farm, Fittleworth. 4. Waltham Brooks. 5. Lickfold Farm, Pulborough. 6. Dean Way, Storrington. 7. Billingshurst Western Bypass. 8. London Road, Ashington. 9. America Wood, Ashington. 10. Furners Lane, Henfield. 11. Asda, Crawley. 12. Gatwick Airport. 13. Friars Oaks, Hassocks. 14. Hammonds Mill Farm, Hassocks. 15. Wakehurst Place, Ardingly. 16. Barcombe Roman Villa. 17. Sharpsbridge. 18. Stream Farm, Chiddingly. 19. Shinewater. Site details in Table 6.1

that these light loamy soils would have been ideal for early settled farming. Commercial work may well prove their hypothesis. The most interesting commercial site on the greensands is at Dean Way, Storrington. During Phase 1 of the site, intermittent domestic and agricultural activity occurred over an extended period and a number of linear boundary features in this phase were interpreted as being at least as early as the Late Bronze Age/Early Iron Age (Howard-Davis and Matthews 2002a, b). The dating of these land divisions is not conclusive. The site is located close to the River Stor, a tributary flowing into the River Arun. Just over three kilometres to the north-west lies Lickfold Farm, Pulborough, where Wessex Archaeology collected Late Bronze Age pottery in evaluation work. It suggested more occupation close to the River Arun (Wessex Archaeology 1991a).

Further north over the River Arun towards Petworth, again on the greensands, there has been a significant metalwork discovery at Fitzleroi Farm, Fittleworth. The rich assemblage of Late Bronze Age goldwork, scrap and pennanular rings suggests a degree of wealth accumulation off the Downs (Kenny 1995).

In addition to this riverine clustering of finds, environmental sampling also suggests that these greensands were attracting permanent settlers. Two independent researchers have noted significant woodland clearance in this zone around the River Arun during the Later Bronze Age; at Waltham Brooks (Turner 1998) and at Burton Mill Pond close by the River West Rother (Evans 1991). In both locations the felling of lime trees provided access to highly fertile soils. The environmental data, metalwork and settlement finds suggest that penetration of the rivers into the Weald is significant in some locations.

Westward along the River West Rother at Midhurst, on the greensands, Royal Holloway College sank an auger core through a 10,000 year old, 4.2m deep, pollen sequence at Peate Moore. The site provided an invaluable record of changing local vegetation and environment during much of later prehistory. Just as at Waltham Brook and Burton Pond there are very significant changes in the Middle to Late Bronze Age. Scaife records a substantial clearance of woodland, clearly marked in the Peate Moore profile from the start of zone 4 where ling and heathers became important. A radiocarbon date of 1000–400 cal. BC (RCD-2321; 2610±100 BP) has been obtained for the transformation to a heathland environment (Scaife 2001, 101). After this initial clearance there were few changes in the overall character of the local environment at Midhurst during the Iron Age and Romano-British periods (ibid. 102).

The available environmental evidence of the

woodland clearances may reflect the demand for prime land during the Later Bronze Age. That evidence, together with possible land divisions at Storrington; settlement at Pulborough; and rich metal deposition at Fittleworth, suggests that a form of farming was practiced on the greensands at the foot of the chalk escarpment (Con Ainsworth *cf.*). The siting of earlier barrow groups, for example at Duncton, reinforces this interpretation (Field 1998, 313).

6.2.2 The Weald – Low Weald

We now head deeper into the Weald, examining the evidence for both the Low and High Weald (Figure 6.2). Developer-funded work has made two critically important Wealden discoveries – a Late Bronze Age settlement at Ashington just beyond the downland escarpment and a Late Bronze Age enclosed settlement with a substantial boundary ditch at Gatwick Airport. Cremations and ceramics are also encountered on a number of multi-period projects.

In the Low Weald it was commercial archaeology that produced the first Late Bronze Age pottery assemblage. Work at America Wood associated with the Ashington by-pass discovered a small 9th century BC pit and a possibly associated small enclosure. Late Bronze Age pottery was later collected downslope in a second investigation ahead of bypass work (Priestley-Bell 1994; John Mills pers. comm.). Ashington provided the first direct evidence of apparent Late Bronze Age settlement on the Wealden clays. It is by a major modern road connecting the North and South Downs.

6.2.3 The Weald – towards the High Weald

Deeper into the Weald (Figure 6.2), a most exciting discovery has been made on the fringes of the High Weald at Gatwick Airport. Framework Archaeology excavated a 5500 sq m area within a 2.87 ha site west of the River Mole (a tributary of the River Thames flowing from Gatwick down past Box Hill towards the Thames at Hampton Court). They discovered a series of prehistoric features dating from the Late Bronze Age (Framework Archaeology 2002). An enclosed settlement, comprising a roundhouse with a curvilinear ditch, was recorded on slightly higher ground to the surrounding flat area. A group of tree throws and postholes were excavated to the NE, 27m from the roundhouse and were also dated to the Late Bronze Age. Broadly contemporary with these features is a large NNW – SSE boundary ditch. Occupation was for a relatively short period with no subsequent Iron Age occupation. This is an unparalleled discovery deep inland within Sussex showing the gains of large area excavation. In the next stage of this airport development an attempt will be made to understand both the environment and economic activities of this settlement. It is not the only evidence for Later Bronze Age people from Crawley. A Late Bronze Age sword was found just to the immediate south of the site, in close proximity to the Polesfleet Stream which runs into the River Mole (West Sussex SMR 4011). Cremations have been discovered on a number of Wealden sites including a Late Bronze Age burial on the Ardingly sandstones at the Millennium Seedbank in Wakehurst Place (Stevens 1998).

The Weald is poorly drained and the topography of small and numerous steep valleys does impede communication but it is clear that the resources of this inland zone were being exploited in the Later Bronze Age. The instances of bounded landscape gravitated south, close to the downland escarpment, but the Gatwick discovery suggests the likelihood of more settlement finds possibly of individual enclosed compounds. These results have started to transform our knowledge of lifestyles and settlement density in the depths of Sussex.

6.3 The Sussex Coastal Plain

Interesting as the new Wealden discoveries are, it is the density of occupation and occurrence of land divisions along the coastal brickearths that has surprised all archaeologists (Figure 6.3). The coastal plain comprises a strip of brickearths or loess extending from Southampton Water in the west out along the Channel coast to Brighton in the east. It is a uniformly flat landscape cut by the Rivers Lavant, Arun and Adur , and by small rivers, which in Sussex are called Rifes.

Overlooked by the downland, the plain varies in width from 15km between Selsey Bill and Chichester, rapidly tapering out at Brighton in the east. It is a line of coast with some of the best sheltered harbours in Southern England – Portsmouth, Langstone, Chichester, and Pagham. The loess deposits forming the plain are rich, inexhaustible soils – the very

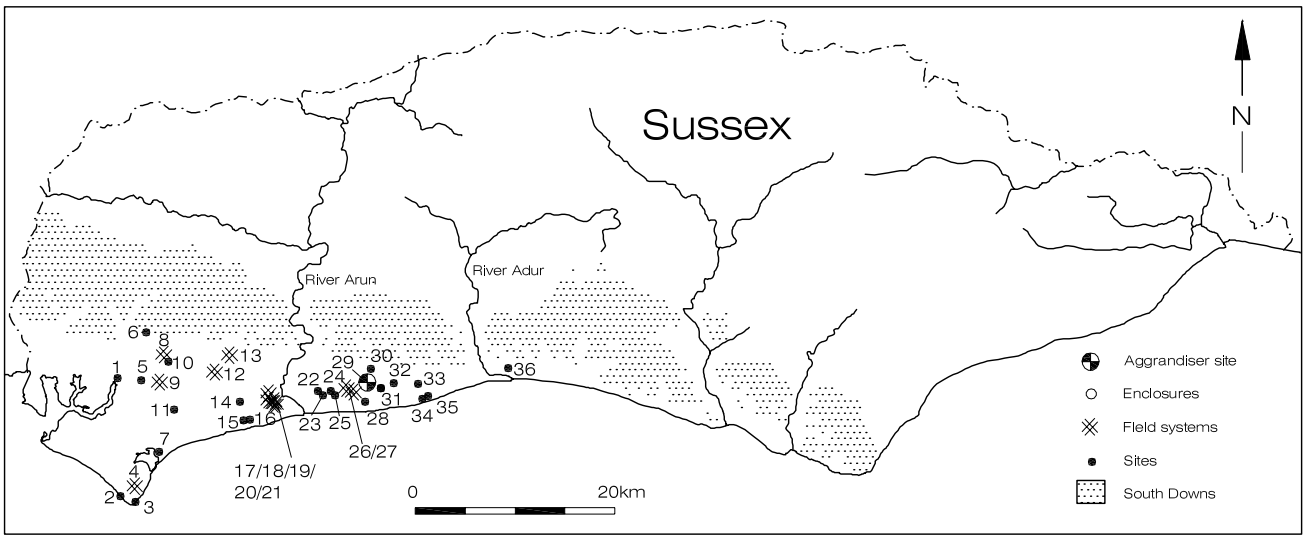


Figure 6.3 Sussex: the Coastal Plain. 1. Fishbourne Bypass. 2. Selsey Bill Foreshore. 3. Pontins, Selsey. 4. Chichester Road, Selsey. 5. Chichester Cattle Market. 6. Chalkpit Lane, Lavant. 7. Thomas à Becket Church, Pagham. 8. Claypit Lane, Westhampnett. 9. Drayton Lane, Chichester. 10. Westhampnett Bypass. 11. Newlands Nurseries, Pagham. 12. Westergate Community College, Bognor. 13. Arundel Road, Fontwell. 14. Yapton (Bilsham). 15. Middleton-on-Sea. 16. Moraunt Drive, Middleton-on-Sea. 17. Ford Aerodrome. 18. Ford Droveway. 19. Chesswood Mushroom Farm, Climping. 20. Fordacres, Climping. 21. Cropthorne , Climping. 22. Horticulture Research International Site. 23. Worthing Road, Rustington. 24. A259 Rustington Bypass. 25. Barn Nursery, Rustington. 26. Roundstone Lane, Angmering. 27. A280 Angmering ByPass. 28. Ferring Rife. 29. Highdown Hill. 30. Potlands Farm, Patching. 31. Northbrook College. 32. Centenary House, Durrington. 33. South Farm Road, Worthing. 34. St Pauls, Worthing. 35. North Street, Worthing. 36. Kingston Buci. Site details in Table 6.2

intensifiable habitat that Barbara Price identified as favouring aggrandisers (1984, 225). It is prime land that can provide a quick return for leaders wishing to reward followers and build up a productive power base. The loess deposits blanket aggregates, shingles and sands along a series of marine raised beaches. Those underlying aggregates have resulted in quarrying centred on the county town of Chichester and it is here that Bronze Age land divisions are being recorded.

In the inter-war years there were clues suggesting the prehistoric importance of the coastal plain – the discovery of Late Bronze Age settlements by workmen at Selsey Bill and Kingston Buci (Curwen 1937, 199) and chance finds of bronze hoards contributed to collections in local museums. Curwen's synthesis provides a complete gazetteer of those finds, particularly the concentration of artefacts from Sompting and Bognor Regis (1937, 218–221). The emphasis he places on these bronzes in the text and illustrations reflects his appreciation of the importance of these coastal lands. This was a view shared by Woolridge and Linton in 1933 who drew attention to the extensive tracts of loamy or intermediate soils along the coastal plain. They presented optimum conditions for cultivation (1933, 298).

In 1983 Owen Bedwin produced a more recent synthesis of known settlement patterns on the West Sussex Coastal Plain, again reflecting the state of knowledge before the advent of commercial work. Like Curwen, he noted that discoveries were confined to chance finds in which metalwork predominated over pottery. He concluded that between the Rivers Adur and Arun perhaps there was a substantial settlement shift from the chalk to the fertile Coastal Plain during the Later Bronze Age, followed by some reduction in settlement because of climatic deterioration during the Late Bronze Age and Early Iron Age.

It is therefore clear that the archaeological potential of this rich plain was realised by a succession of writers both in the inter-war years

and prior to the advent of commercial excavation. They were frustrated in their researches because data were simply not available to test their theories. Finds that had been unearthed were mainly found by chance and the area had not benefited from a succession of research orientated excavations so prevalent on the South Downs. Commercial work is rapidly filling that void and revealing the richness of this habitat throughout prehistory. Most of the investigations provide evidence for two dominant periods – the Late Bronze Age and the Romano-British era.

Let us turn now to the commercial work. In Curwen's book of 1937 only two coastal plain settlement locations are referenced – Selsey Bill, and Kingston Buci 50km to the east. It is therefore appropriate to revisit Selsey Bill as a starting point in our re-assessment of the nature of Later Bronze Age occupation of the coastal region. The Golf Links Lane site on the Bill was first discovered by Heron-Allen in 1909 and subsequently re-examined in greater depth by White (1934). She recovered a range of artefacts from a roundhouse depression including a greensand quernstone, pieces of cast bronze, pottery and fire-fractured flint. The pottery illustrated in her article suggests a Late Bronze Age date for the site. White also appreciated the wider importance of the peninsula, referring readers to a hoard from Rookery Farm Sidlesham and a gold bracelet from Selsey. The Golf Links site is not far from the present seashore. Long shore drift has greatly changed the coastline since later prehistory and it is the present day low sea cliff on the Selsey Bill peninsula which bears the brunt of prevailing wind and tide from the south west. As a result storm surges, backed by rising sea levels, are rapidly eroding Late Bronze Age features on this coastal edge. Waves are cutting sections through pits, postholes and larger depressions. Seager Thomas has recorded and monitored such exposed features (1998) and has re-examined the established catalogues of Selsey pottery published by Aldsworth in 1987. He concludes that, with the benefit of new ceramic chronologies, many of the sherds in the record formerly regarded as Late Bronze Age or Iron Age can now be assessed to be of Middle Bronze Age or Late Bronze Age origin (1998). Such individual research is now supplemented by developer sourced finds including the identification of Late Bronze Age pottery in works at Pontin's Broadreeds Holiday Camp, Selsey (West Sussex SMR 4920/5401) and more, spectacularly, the recording of land divisions at Chichester Road, Selsey (Preston 2002).

Chichester Road is the exit route from the Bill and leads out towards Pagham. Two commercial projects in this parish reflect the finds from the tip of the peninsula. At Pagham, the St Thomas à Becket Church excavation of three *in situ* Middle Bronze Age cremations and numerous sherds of pottery of similar date caused great consternation to the local vicar (Kirk 1996). At Newlands Nurseries, Pagham more Middle Bronze Age pottery was found as well as two Late Bronze Age cremations (Southern Archaeological Services 1999b).

Selsey Bill is the southernmost extent of the coastal plain. The northern limit of the brickearths from this point occurs at Goodwood, near Chichester, at the foot of the Downs. Work in advance of the Rolls Royce factory development at Claypit Lane, Westhampnett, revealed limited Early Bronze Age activity. The Middle Bronze Age was characterised by a series of pits and small barrows and the construction of a NW – SE boundary, before the establishment of a field system in the Late Bronze Age (Wessex Archaeology 2002, 11). This system created in the Late Bronze Age centred on two parallel ditches of a trackway or droveway. The central routeway was then flanked by a series of NW – SE ditches. Associated with the field system were numerous Late Bronze Age postholes and fences/palisades, all defining and redefining a parcelled landscape. In common with a pattern emerging throughout Southern England, there appeared to be a hiatus in the ceramic sequence after the Late Bronze Age and there is only a small quantity of material that can be dated as Late Iron Age or Romano-British. The droveway structures suggest animal husbandry as one component of the farming regimes, but unfortunately the total lack of palaeo-environmental potential provides no clue as to cultivation practices.

Around Chichester large-scale gravel extraction still continues and the scale of these works is now showing up palimpsests of land development. The prehistoric land divisions at Claypit Lane are not isolated phenomena on the brickearths. Gravels at Oving are being extracted on extensive blocks of land either side of the Portsmouth – Brighton railway line. Quarrying is being accompanied by a rolling programme of evaluation trenching, strip and mapping, full scale excavation of targeted zones and subsequent watching briefs of all exposed

areas. This integrated strategy is producing a remarkable insight into prehistoric lifestyles. Various competing archaeological units have worked on the site. Their discoveries add up to an interesting story of the emergence of land management in prehistory. The first permanent features on the site may be a complex of ditches and gullies, at North Drayton, running NNW – SSE which are early Neolithic in date. This initial impact was not sustained, as no lasting impression was made upon the landscape during the late Neolithic and Early Bronze Age. That lull is broken in the Middle Bronze Age with all contracting units finding cremation urns and a Middle / Late Bronze Age system of enclosure ditches and ditched trackways (John Mills pers. comm). The integration of the trackways with large scale enclosures suggests that livestock management was a major concern. That regulated system of stock movements and stock control appears to be confined to the Later Bronze Age. The next planned landscape occurs in the Late Iron Age with the establishment of a N/S – E/W grid. Just as at Claypit Lane, the Later Bronze Age droveways are a recurrent phenomenon found in the stripping of large areas on the coastal plain. It suggests that large herds were being driven through fields, across the Rifes and to and from the Downlands. Ironically, there is less evidence of Middle / Late Bronze Age settlement on the Downland block to the north. Perhaps settlement gravitated to this broad stretch of the coastal plain and there was less pressure on the uplands overlooking these brickearths.

Intensified landscaping of the coastal plain may have been so prevalent that fragments of these land boundaries can be discovered in relatively small-scale intervention work. A range of Bronze Age artefacts is encountered in most excavation work on the coastal plain. Indeed archaeological units report that Later Bronze Age discoveries are par for the course on the brickearths – the failure to recover Bronze Age artefacts and features is more notable than their discovery.

Moving east from Chichester two intercutting linear features were identified at Arundel Road, Fontwell close to the northern limits of the coastal plain brickearths. Both boundaries contained Late Bronze Age/Early Iron Age pottery and probably represent field boundaries from two separate phases of construction. The later ditch, containing daub fragments, fire-fractured flint, and pottery indicate that a settlement may be in the vicinity. The earlier ditch ran for more than 25m and was orientated NE – SW (Jamieson 2000). This isolated find on a small-scale site has greater significance when assessed with work only two kilometres to the SW at Westergate Community College. Here successive excavations by competing contract units on former playing fields and allotments, located a Late Bronze Age posthole and a boundary ditch. The disturbed brickearth on the site also produced sherds of mid to Late Bronze Age date (Hulka 1998; Stevens 2000a). Widely spaced as they were, and taking into account the Chichester finds, it raises the question of how extensive were Bronze Age coastal field divisions in Sussex?

The construction of formal land divisions along valleys, estuaries and river mouths is a recurrent pattern in this study. The River Arun is no exception. On the west bank close to the area of Middleton-on-Sea, Yapton, and Climping there is a noticeable concentration of Later Bronze Age activity related to settlement. Across the river a similar pace of land exploitation occurs around Angmering, Rustington and Littlehampton. Besides amassing a larger and larger pottery assemblage and increasing the number of known settlements, commercial excavation is now exposing a series of fixed land boundaries. Three related contracts in Climping suggest Late Bronze Age field borders. At Fordacres, Climping a narrow linear feature aligned N/S was dated to the Late Bronze Age and another, ditch 4, matched the alignment of a similar boundary on the adjacent Chesswood Mushroom Farm (Stevens 2000b). Both may represent the same field boundary of prehistoric date. This linear border corresponds closely to a boundary marked on the Climping Tithe map of 1843 and drawn on the pioneering Yeakell and Gardiner Sussex Survey of 1778 (Stevens 2001a, 10). Subsequently, further excavation in phase 2 of the Fordacres site (now called Waterford Gardens) revealed a more concentrated range of possible Bronze Age gullies and pits confirming that there were land boundaries in this area (Stevenson 2002).

The most extensive area strip to date has occurred on Ford Airfield and the civil engineering scale of work involved confirmed coaxial land division (Figure 6.4). Two related site reports record the results:– the Ford Wastewater Treatment Works (RPS Clouston 1999) and the Ford Airfield Site (RPS Clouston Consultants 2000). The Treatment Works evaluation suggested contemporary components of a Late Bronze Age/ Early Iron Age field system together with Late

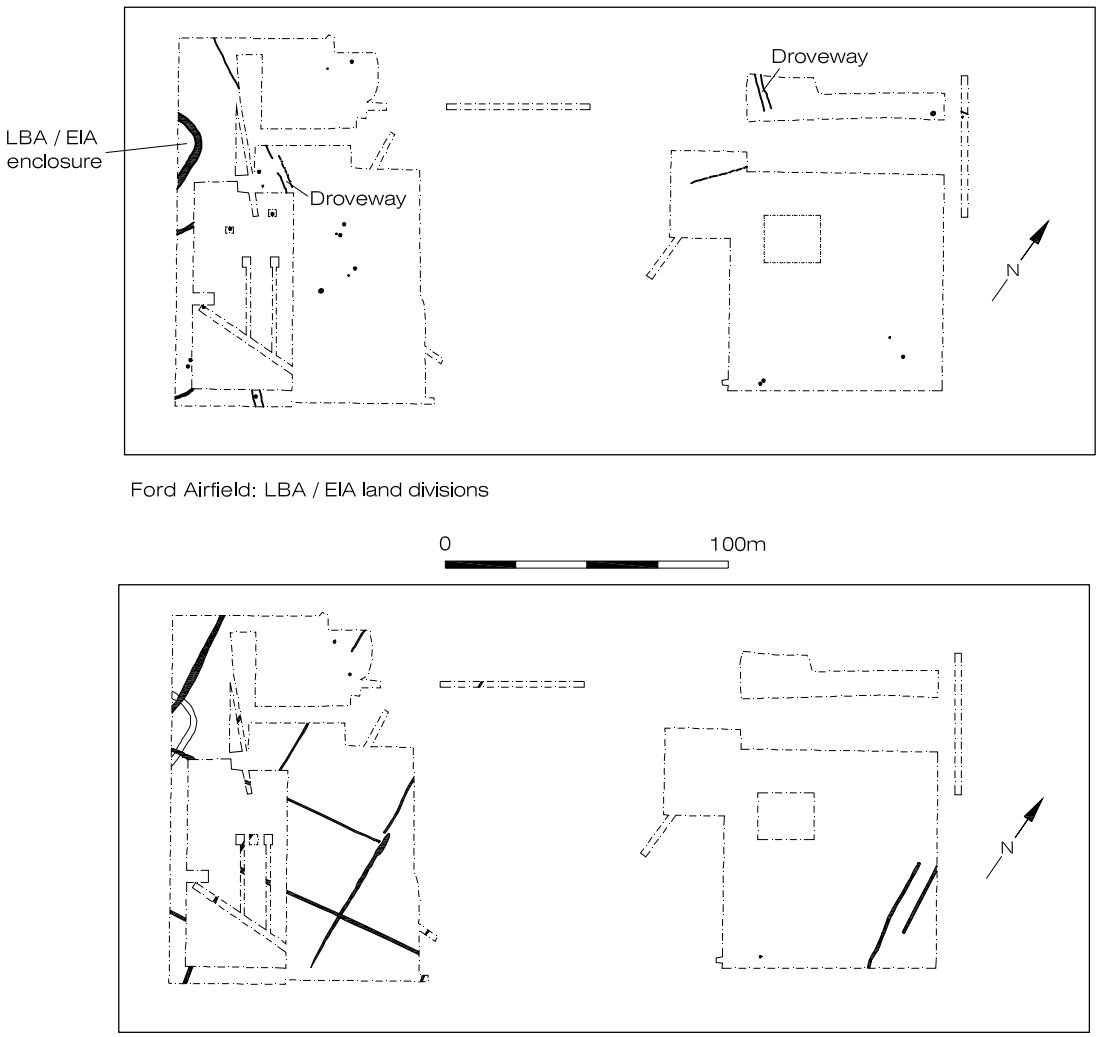


Figure 6.4 Ford Airfield near the River Arun. Two phases of formal landscaping are evident on the site – the earlier Bronze Age systems include integrated droveways. Derived from RPS Clouston 2000

Bronze Age roundhouses. A total of 154 sherds of Late Bronze Age to Early Iron Age date were recovered. The assemblage is confined to late to latest Bronze Age vessels and apparently represents the sole period of prehistoric (pre-Late Iron Age) ceramic use at the site (Clouston 1999, 25). This pottery included fine wares in the form of drinking and food serving vessels. The excavation at the Airfield (Clouston 2000) concluded that land was divided on a coaxial basis. Its digging teams also clipped the corner of what might be a large enclosure; the primary fill of this compound ditch included more Late Bronze Age finewares and the projected lines of the ditches suggested a structure with a possible diameter of 30–50m. The excavator interprets this as a possible high status enclosure (drawing a parallel to Highstead in Kent). It lies at 5–7m OD and less than a thousand metres west of the River Arun and its floodplain. A pit complex possibly overlying a double ditched trackway yielded two radiocarbon dates from charcoal in the pit fills – 1130–820 cal. BC (BETA-144445; 2820±60 BP and 1120–820 cal. BC (BETA-144446; 2800±60 BP).

The orientation of the track (predating the 9th century BC pits) was paralleled by another droveway a few hundred metres to the east. The presence of the droveways does suggest a co-axial land division, with controlled movement of grazing animals. The brickearths provided no further clue about the nature of the domesticated animals being driven through, and grazing on,

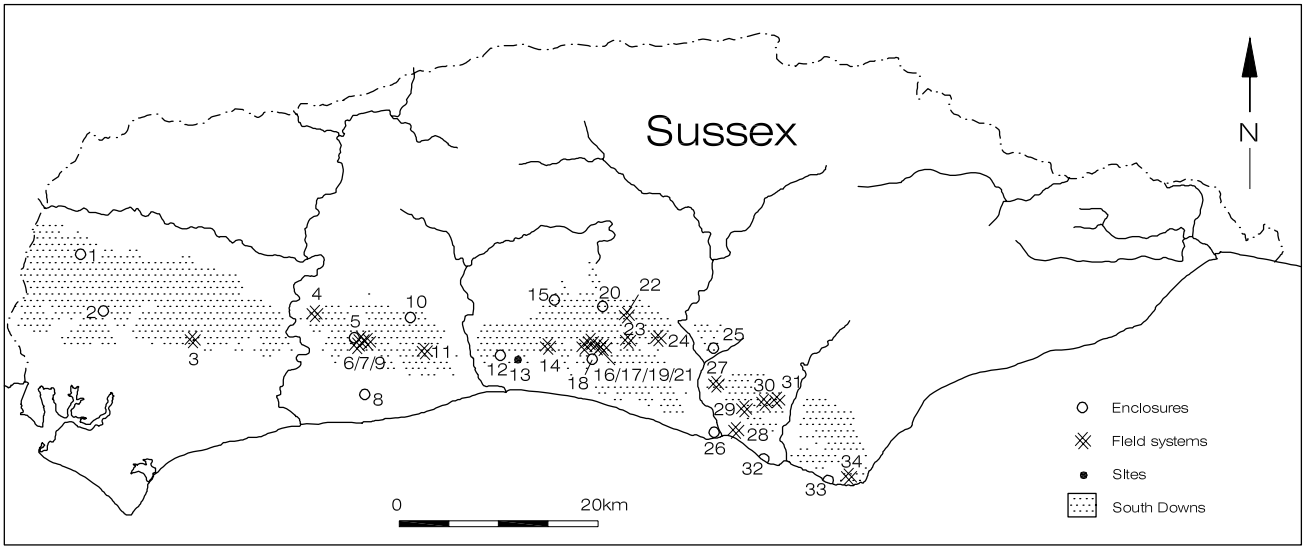


Figure 6.5 Sussex: the Downs. 1. Harting Beacon. 2. Goosehill Camp. 3. Halnaker Hill. 4. Amberley Mount. 5. Harrow Hill. 6. New Barn Down, Worthing. 7. Cock Hill, Patching. 8. Highdown Hill, Worthing. 9. Blackpatch Hill, Worthing. 10. Chanctonbury. 11. Park Brow, Sompting. 12. Thundersbarrow Hill. 13. Mile Oak Farm. 14. Offtake Gas Pipeline, Devils Dyke. 15. Wolstonbury. 16. Patcham Fawcett School. 17. Eastwick Barn. 18. Hollingbury Hillfort. 19. Downsview, Brighton. 20. Ditchling Beacon. 21. Varley Halls, Coldean Lane. 22. Plumpton Plain. 23. Balmer Farm, Falmer. 24. Houndean Bottom, Lewes. 25. Mount Caburn. 26. Castle Hill, Newhaven. 27. Itford Hill, Beddingham. 28. Bishopstone, Seaford. 29. South Heighton, Nr Denton. 30. Black Patch, Alciston. 31. France Hill, Alfriston. 32. Seaford Camp. 33. Belle Tout. 34. Bullock Down. Site details in Table 6.3

these lands, but environmentalists were fortunate to recover charred cereal remains suggesting the presence of a range of cereals including wheat (emmer and spelt) and barley. These common domesticated plants also included flax or linseed. The discovery of a potentially large domestic enclosure and the presence of fineware pottery are of considerable interest.

In addition to these confirmed Later Bronze Age field boundaries and droveways, more contemporary pottery assemblages and settlement features are being found in this rich zone including two sites at both Middleton-on-Sea (West Sussex SMR 1466) and Yapton (Rudling 1987). Ploughzone research by Dunkin has also identified burnt mounds and profuse spreads of Later Bronze Age lithic material (2000). The same zone is also long famous for its hoards. Activity does not diminish on the other side of the Arun around Rustington and Littlehampton. The demolition of the internationally famous Horticultural Research premises for a housing development exposed cremations and a probable nearby Late Bronze Age settlement. A further cremation and burnt mound were recorded on the course of the Angmering Bypass and close by there was settlement evidence at Barn Nursery (Rudling 1990) and pit structures of Middle /Late Bronze Age date at Worthing Road Angmering (Bashford 1997). The latter included a Later Bronze Age pit, which contained a Late Bronze Age dress pin together with a (possibly curated) flint arrowhead.

Highdown Hill, the site of a Middle Bronze Age enclosure, dominates this zone of flat landscape. It came as no surprise when field boundaries and stock enclosures were revealed in the Angmering bypass and associated housing development. Two phases of formal land allotment were recorded: elements of a Bronze Age rectilinear field system and the estate boundaries of the Roman villa of Angmering (OAU 2002a; Griffin 2002a). The majority of the dateable pottery associated with the first phase of land division could be assigned to the Middle Bronze Age or Late Bronze Age/Early Iron Age with the exception of one Middle Iron Age sherd. On the roadway Oxford Archaeological Unit discovered, in area 1, a large east-west Late Bronze Age ditch boundary similar in size to one previously found at the Roundstone public house

just down the road. On the western edge of this area an animal enclosure or similar structure was recorded together with a smaller enclosure interpreted as an animal pound. Area 2, 200m north, was the main focus for Middle /Late Bronze Age activity including an enclosure complex with later additions. Until recently such farmsteads have rarely been found on the coastal plain.

Commercial work at Angmering confirms the existence of controlled land, skirting the Middle Bronze Age regionally important enclosure on Highdown Hill (Ellison 1980, 134). Other contract work also reveals intense activity in the extra-mural zone surrounding the hilltop; burnt mounds at Potlands Farm (Stevens 1997a); roundhouses at Northbrook College (Stevens 1997b) and Centenary House (Simon Stevens pers. comm); environmental evidence of Middle Bronze Age alluviation at Ferring Rife (Drewett 1989, 23); and, lithic spreads and burnt mounds investigated in postgraduate research on the immediate brickearth levels (Dunkin 2000).

Highdown Hill also dominates coastal lands towards the River Adur. Commercial work is now revealing further traces of Late Bronze Age structures in the centre of Worthing; St Pauls (Priestley-Bell *cf.*) and North Street (Bashford 1996). Earlier work at South Farm Road again in Worthing also recorded traces of settlement. Worthing town and its neighbouring parish of Sompting have long been famous for metalwork hoard discoveries.

Over the Adur to the east lies Kingston Buci one of the Bronze Age settlement sites referred to by Curwen. From here the brickearths run over the county border into dense urban development and a void in our researches. However the concentration of Middle/Late Bronze Age metalwork found on the last expanse of brickearths due south of Hollingbury at Brighton suggests that all prime land along the coastal plain was utilised in a burgeoning political economy.

6.4 The South Downs

We now return to the South Downs, a stretch of chalk uplands that for so long has dominated Sussex archaeology (Figure 6.5). For E. Cecil Curwen, the South Downs once blanketed with brickearths, provided ideal conditions for early farmers, leaving widespread traces of lynchetted *Celtic fields* (1937, 182). In the inter-war years those earthworks had largely escaped obliteration and the characteristic rectilinear land plots still surrounded the settlement sites of New Barn Down, Park Brow and Plumpton Plain. Essentially this was a system of Bronze Age upland tillage with ploughing teams working the light soils (ibid. 180).

6.4.1 Downland excavations 1937–1991

Between the publication of Curwen's book in 1937 and the implementation of PPG16 in 1991, the Downlands continued to attract archaeological interest. Resumption of intensified farming on the South Downs in the immediate post war years, lead to widespread destruction of prehistoric land divisions. The remaining chalk earthworks were simply being erased. As a result of this threat, a series of rescue excavations were organised to record the few remaining settlements and boundary lynchets. Such rescue investigations included excavations at Cock Hill (Ratcliffe-Densham 1961), Amberley Mount (Ratcliffe-Densham 1966), Itford Hill (Burstow and Holleyman 1957), Bullock Down (Drewett 1982a), and Black Patch, Alciston (Drewett 1982b).

We shall examine the findings of three of these investigations:- Cock Hill, Amberley Mount and Itford Hill. At each site the teams were sectioning threatened earthwork structures. House platforms and linear boundaries or droveways were still visible but likely to be lost as a result of the agricultural revival. Financial backing for these digs was not automatic but depended on the teams raising local interest and support or arguing a case for government funding. So for example the Brighton and Hove Archaeological Society financed the Itford Hill work and the Department of the Environment backed the Black Patch excavations while associated fieldwork was paid for out of a research grant from the Sussex Archaeological Society.

A Middle Bronze Age farm enclosure on Cock Hill to the north of Worthing was surveyed and excavated by H. B. A. and H. H. Ratcliffe-Densham in the early 1950's in advance of threatened destruction. It lies close to the Late Bronze Age enclosure on Harrow Hill and the Middle Bronze Age settlements of New Barn Down and Blackpatch, Worthing. The enclosure contained three roundhouses, two semi-circular wooden structures and a pond. One hut had been used for weaving as evidenced by 10 loomweights forming a straight line in a long axis. A shuttle/bobbin of sheep bone was recovered from this textile assemblage.

The inhabitants had used whetstones of

Horsham Wealden origin and were consuming cockles and mussels. They were therefore linked with both inland and coastal communities. Three multiple cremations accompanied the world of the living, all buried close to the entranceways of two separate huts (Ratcliffe-Densham 1961, 101). No environmental evidence was recovered but grain processing and quernstones suggested that both stock farming and arable farming were practised. Any associated *Celtic fields* were presumed to have been destroyed by medieval strip lynchets, though a lynchet appeared to run eastward from the entrance to the enclosure (ibid. 95). A droveway linked Cock Hill enclosure to a cattle watering pond 100m to the north. In the Iron Age, this pond became largely filled with plough soil.

H. R. A. and H. H. Ratcliffe-Densham then turned their attention to a block of land at Amberley Mount, which overlooks the River Arun. The whole of the south slope of Amberley Mount was covered by a rectilinear field system prior to the Second World War but subsequent ploughing was erasing those earthworks. A rescue survey and excavation recorded two remaining settlement sites and surveyed the remnants of the associated field systems. The survey recorded 35 lynchets of which the majority formed rectilinear fields. These land blocks were littered with fire fractured flint and potsherds of Bronze Age and Iron Age date (Ratcliffe-Densham 1966, 9). One of the lynchets of the field system formed part of the surrounding bank of the platform that contained hut II. This lynchet was continuous with another one from the middle of which an assemblage of Late Bronze Age/Early Iron Age potsherds "entirely without admixture with any others" were recovered (ibid. 23). Recent re-classifications of pottery suggest a Middle Bronze Age date for this assemblage. Another almost obliterated field boundary appeared to join the bank that abutted the depression of hut I. The authors therefore concluded that the roundhouses were associated with the field system and were occupied while some of the lynchets were being formed (ibid. 23).

Evidence for the farming regime at Amberley Mount is based entirely on finds from the two isolated roundhouses. These two huts were alike in shape, size and structure; producing in total two to three thousand sherds of Middle Bronze Age pottery. The presence of shellfish (mussels, limpets and cockle) plus sandstone querns shows that journeys were being made between the coast and weald. One spindle whorl and possible daub loomweights also suggest textile working. The faunal analysis led to the conclusion that sheep predominated over cattle, horse and pig.

Itford Hill in East Sussex commands a magnificent view of the Ouse Valley. It was excavated over five seasons between 1949–53. Unfortunately it cannot be integrally associated with a field system though one lynchet was recorded as trailing away towards the NE from the eastern end of the site. It was probably all that remained of the original field system (Burstow and Holleyman 1957, 168). Itford has many similarities with other Later Bronze Age downland settlements. There is the 'usual' hiatus between the Late Bronze Age and Romano-British period (ibid. 171), for at Itford Hill the only evidence of Early Iron Age activity is a sprinkling of Early Iron Age pottery over the surrounding area (ibid. 171). The community here was linked to wider exchange networks, for as with Cock Hill (Ratcliffe-Densham 1961, plate IIIb), a piece of Kimmeridge shale shows contact (direct or indirect) with communities way down the Channel coast. A Lower Greensand quernstone shows links with the Weald. A total of 13 cylindrical loomweights were retrieved on site but no spindle whorls; evidently textile weaving formed part of daily life. There were more cattle remains recorded than sheep. The fame of the site is centred on the recovery of carbonised barley. It was unthreshed (ibid. 207) and this with the presence of emmer suggest a mixed farming regime. The five seasons of excavation by volunteers involved manually stripping all of the compounds and hut floors down to the solid chalk. Mechanised stripping of topsoil, possible under commercial work, would have allowed a wider area to be opened up; extending out the excavation trenches from the roundhouse confines.

These three Later Bronze Age communities (Cock Hill, Amberley Mount and Itford Hill) have much in common. The material culture on site shows that the inhabitants had access to a range of local resources from the Weald and the coast and also had much wider contacts as evidenced by more exotic finds. Mixed farming was practised though there may have been some variation in the relative importance of cattle and sheep. This is a repeated pattern also observed in excavations on Downland excavations in the 1970/80's at Black Patch (Alciston) and Bullock Down. The most noticeable difference between these two 1980's published reports and the rescue recording in the 1950's is the detail of the specialist

reports, reflecting Government involvement in the funding and backing of the investigation.

6.4.2 The start of developer-funding on Downland excavations: the Brighton Bypass

The A27 Brighton Bypass was not subject to the control and obligations of present developer funded restraints, since the road scheme was approved before 1990. The archaeological work preceding the road construction resulted from political lobbying by local societies and the Institute of Field Archaeology Unit, University College London. That political pressure was successful in no small part to the work of Ray Hartridge who instigated a sustained campaign of fieldwalking along the proposed route. Ministerial discretion granted Government funding. Subsequent English Heritage support for the fieldwork, post excavation and publication enabled analysis to be completed within a research framework targeted on investigating chalk downland settlement and land use.

Funding for the work, which depended on political largesse, heralded the political acceptance of developer responsibility for archaeological investigations on major road schemes. These obligations were to become compulsory rather than discretionary.

Discoveries along the 15km stretch of new dual carriageway identified concentrated areas of archaeology which led to further PPG16 developer-funded interventions, effectively enlarging the area of downland pasture investigated by the original civil engineering works. Four sites are of particular relevance to this research: Mile Oak, Patcham Fawcett, Downsview and Varley Halls. The bypass provided a transect across a large area of downland pasture including field system earthworks. The work confirmed that it was not until the Middle Bronze Age that there is widespread evidence for open country conditions. By the Late Bronze Age/ Early Iron Age extensive arable farming resulted in a significant increase in the deposition of colluvium. The Middle Bronze Age settlements at Mile Oak and Downsview and similar dated sites at Varley Halls and Patcham Fawcett indicate the extent of Later Bronze Age activity in a relatively small zone. These sites were grouped along higher ground straddling the north – south ridge which forms part of the link between the Hollingbury and Ditchling Beacon Hillforts. It was also an area of barrows and boundaries, possibly radiating out from Hollingbury (Rudling 2002, 144).

Mile Oak Farm was the westernmost settlement discovery along the course of the Brighton bypass. It lies on the southern margins of the South Downs at Portslade approximately 4km north of the present coastline. There are two main Bronze Age phases to the site. First, a Middle Bronze Age enclosure with three associated roundhouses and pond in the excavation trench 27. Secondly, there were two possible Late Bronze Age roundhouses in area K with five 4 post structures and a zone of Late Bronze Age metalworking. The Middle Bronze Age enclosure has close parallels to Cock Hill on the Downs near Findon. Radiocarbon determinations (OxA-5108 and OxA-5109; both 2975±50 BP) suggest a broad date range of between 1390 and 1040 cal. BC for the settlement (Russell 2002, 79). The Late Bronze Age features at Mile Oak lie 200m to the west up hill from this, on a terraced slope in an area much disturbed by machining. The discovery of a concentration of Late Bronze Age pottery from the remains of a mound instigated a thorough examination of this area. The area when stripped as Trench K, gave the first evidence of *in situ* metallurgy from any Bronze Age settlement in Sussex (Wallis 2002, 54) including one piece of a Late Bronze Age sword blade (2002, fig. 2.19). The only evidence of horse also came from this trench together with a mass of charcoal and fire-fractured flint (Russell 2002, 80).

The community at Mile Oak benefited from a wider exchange network. During the Late Bronze Age they had acquired, in addition to the fragment of Wilburton sword blade, a lead alloy ring of a very unusual form. Only one parallel find exists for the latter, from Flag Fen (Wallis 2002, 54). The Middle Bronze Age pottery assemblage also suggests more distant contacts for much of it is characteristic of East Sussex ware and there is one example of Ardleigh style decoration normally associated with finds in Essex (Hamilton 2002b, 49). In terms of local contacts the settlers were importing material with both a Wealden and coastal origin. Many pieces of stone on site were sourced from the Upper Greensands (Laughlin, Laughlin and Russell 2002, 60). Sandy clays or quartz sand formed part of the temper of some of the Late Bronze Age pottery, also from the Upper Greensand. Some of the Late Bronze Age pottery assemblage also contained iron oxide fabrics, suggesting the use of iron-bearing alluvial clays from the High Weald, such as at Wadhurst (Hamilton 2002b, 46).

Fossil shell inclusions in other Late Bronze Age sherds suggest the use of coastal shelly Eocene clay deposits located 25km to the east at Newhaven (Hamilton 2002b, 46). Coastal exploitation is also more directly evidenced by the recovery of 6,769 marine shells from the upper two phases of the Middle Bronze Age enclosure ditch (Hasler 2002, 64). The most consumed shellfish was mussel. Hasler provides an interesting comparison between the relatively smaller Late Bronze Age marine mollusc assemblage from Trench K and the much larger, Trench 27 Middle Bronze Age zone. It suggests a switch from shoreline collection in the Middle Bronze Age to estuarine exploitation in the Late Bronze Age (ibid. 65), the nearest estuary being at Shoreham-by-Sea.

This consumption of outside materials and foodstuffs at Mile Oak is very interesting but what was the nature of the farming regime? This section of the bypass route was initially targeted to sample and date a series of vaguely defined field lynchets (Russell 2002, 81). That aim was not achievable. The negative lynchets 1403 and 1401 cornered at or near to Roundhouse I of the Middle Bronze Age enclosure could not be exactly dated (ibid. 2002, 23). It was concluded that the large quantity of Middle Bronze Age pottery recovered from 1403 may have been material disturbed from House I, although one possibility is that the Middle Bronze Age settlement was placed in the NE corner of a Middle Bronze Age field system (ibid. 23). The lynchets were only investigated in the immediate vicinity of the enclosure because of the time constraint on the works and the attraction and interest in the settlement features. In area K similarly, no dating material was recovered from the lynchets terracing the hillslope.

The zooarchaeological analysis data records the major species to be sheep/goat (61%) followed by cattle (11%) with less than 1% pig present (P. Stevens 2002b, 63). There was a general background scatter of cereal grains and other seeds on the site and more specifically a concentration of seed remains apparently associated with Roundhouse III. This is of interest because they are almost entirely from cultivated food plants. No cereal chaff was present so the grain was already in prepared form. The assemblage is predominately hulled barley with a few emmer and/or spelt grains and a few beans and is very similar to much larger deposits of grain from settlements at Black Patch (Alciston) and Itford Hill, although no beans were found at the latter site (Hinton 2002b, 68). Hamilton concludes that the pottery assemblage from Roundhouse III correlates closely with the heavy duty storage jars found at hut 3 at Black Patch, Alciston (Hamilton 2002b, 40). It suggests that roundhouse III at Mile Oak was also a grain storage hut.

Like its neighbouring community at Downsview, site A at Patcham Fawcett may have been constructed in two distinct settlement phases. The Bronze Age activity was characterised by a series of pits, a large circular scoop, a fenceline, four-post structures and three possible round houses. The size of the four posters suggests that they are not above ground grain storage buildings and had more to do with hide or plant drying (Greatorex 2002, 272). Site B on the western margin of the excavation was entirely of Middle Bronze Age date. It was characterised by a series of postholes and scoops, a hearth, a 40m length of ditch and two round houses. In addition a Middle Bronze Age pit was found to contain an immature bovine skeleton (ibid 278), a form of deposition replicated at Varley Halls. Greatorex notes that Patcham Fawcett lay on the edge of a *Celtic field* system first identified by Herbert Toms in 1911. Those lynchets locate the settlement in a permanent agricultural setting. Unfortunately environmental evidence retrieved in the excavation was relatively limited but what there was suggests that grain was being stored and processed on site (ibid. 275). The interim report also records the presence of both cattle and sheep bones (ibid. 275). There is no evidence to suggest continuity of this farming settlement into the Iron Age.

The site at Downsview is the middle of the three neighbouring Middle Bronze Age settlements to be found to the north of Hollingbury in Brighton. Downsview was at least partially enclosed when first constructed. It comprised a minimum of 12 roundhouses, 8 of which yielded radiocarbon dates or ceramic finds dated to the Middle Bronze Age. The radiocarbon dating (an impressive research focus integrated into the post excavation work) confirmed two phases of construction revealing a chronological shift of occupation across the site from the earliest activity in the north to the latest in the south. It indicates that the site was an area of occupation between 580 and 860 years, probably starting between 1680 and 1570 cal. BC and ending between 1020 and 800 cal. BC (Rudling 2002, 200). Whilst there was a general paucity of finds (the flooring and ditches were remarkably clean),

there is some indication of long distance contact by the occupiers. An oolitic limestone mould for metal working originated 150km to the west and is likely to have been used in the creation of bracelets or quoit-headed pins (Needham 2002, 184; Humphrey 2002, 185). Other distant material remains included a quartzite grain rubber, copper alloy objects, a siltstone whetstone and pottery with decorative motifs that characterise Hampshire and Essex wares (including Ardleigh horseshoe bands) (Rudling 2002, 201).

The detailed post excavation work at Downsview also provides some insight into the links between this upland community and those in the Weald and on the coastal plain. Large quantities of Wealden ironstone were discovered, including pieces extremely rich in iron that may have been stored for smelting (Barber 2002, 188). Some of the pottery fabrics contained Wealden iron oxides and various types of Wealden rock were found on this chalkland site (Rudling 2002, 201). In terms of coastal imports there are beach pebbles and coastal/riverine sand fabrics in some of the pottery (Rudling 2002, 201). Some of the marine molluscs in the archive may also be Bronze Age in origin (Hasler and Rudling 2002, 191).

Insights into the economic material culture and environmental aspects of Downsview are severely hampered by the general paucity of finds. The faunal and flora results included the following observations. Land molluscan analysis showed that the site was built in open grassland. Cattle predominated amongst the animal bones (Rudling 2002, 191) matching the livestock profiles for Varley Halls and Blackpatch. This contrasts with an emphasis on sheep at Mile Oak. In terms of arable produce at Downsview, barley dominated the recovered cereals (54 grains) just as it did at Itford Hill and Mile Oak. Two grains of spelt were retrieved in flotation sieving and its occurrence at Black Patch and Mile Oak hints that this species was emerging as the principal wheat. Few of the samples for environmental analysis were in a particularly good condition and some had to be identified by characteristic texture rather than form. Whilst there was a sparcity of cereal grain, 125 estimated charred broad bean/horse beans were recorded. This species was also present at Black Patch and Mile Oak, suggesting common use in Southern England (Hinton 2002a, 197).

Varley Halls, the third of the neighbouring Middle Bronze Age settlements comprised four roundhouse platforms created by terracing on the steeply sloping chalk. The settlement appears to be situated above the north east corner of cultivated land; defined by very truncated lynchets, fencing and a timber palisaded ditch (Greig 1997, 25). The severity of the slope made the ground difficult to plough, and this provides a new insight into the pressure on land (Greig 1997, 30). During the Middle Bronze Age farming phase emmer, barley and oats were present whilst cattle, sheep and pigs made up the livestock. The Varley Hall community may well have been living on the margin – farming difficult terrain providing a low yield for all their exertions. The Middle Bronze Age pottery assemblage may reflect this degree of impoverishment for it is entirely derived from local sources and finewares are conspicuous by their absence (Hamilton 1997, 38). Greig also notes that assuming this is cultivated ground, the siting of a Late Bronze Age roundhouse in this plot suggests that cultivation had for some reason ceased (Greig 1997, 30). The Late Bronze Age occupiers seemed to fare better, for their pottery assemblage suggests wider contacts with Wealden suppliers (Hamilton 1997, 38).

Even so, there are a number of exotic artefacts in the archive, including a copper alloy awl and part of a faience ornament. There are instances of ritualised activity on the site, including a crouched inhumation dated to 1270–910 cal. BC (BM-2919; 2890±60 BP) and an articulated adult cow, dated to 1080–810 cal. BC (BM-2918; 2790±50 BP) buried next to a Middle Bronze Age hollow/pond (Wood 1997, 48).

In addition to the roundhouse discoveries to the north of Hollingbury, the bypass cut through a prehistoric field system. The earthworks, at Eastwick Barn, were just to the north of the neighbouring Middle Bronze Age settlements of Patcham Fawcett, Downsview and Varley Halls. In total 33 trenches were cut into these well-preserved boundaries. There appeared to be two horizons of lynchet formation; the Later Bronze Age/Earlier Iron Age and Romano-British era. In between there seemed to be a Middle Iron Age break in ploughing/manuring; a hiatus complemented by pottery evidence from Hollingbury hillfort which suggests desertion by the end of the earlier Iron Age (Hamilton 2002c, 121). It appears that the lynchets started to form by the earlier Iron Age and that the lack of Middle and Late Iron Age pottery suggests abandonment during this period. This is one amongst a number of explanations considered

(Barber, Gardiner and Rudling 2002, 132). The argument for abandonment is supported by the dry valley samples; middle and late pre-Roman Iron Age activity is noticeably absent in the slope wash deposits (Hamilton 2002d, 233). The worked flint scattered throughout the boundary plots also appeared to be Late Bronze Age in date (Underwood 2002, 122).

Dry valley sectioning was one of six project targets along the course of the road route. The aim was to provide a palaeo-environmental framework in order to improve knowledge of ancient farming practices. The results were very interesting, discovering short-lived clearance in the Late Neolithic and Early Bronze Age in two of the dry valleys, but all the dry valleys confirmed Late Bronze Age/Early Iron Age hillwash erosion. The deepest deposit recorded at Eastwick Barn was an accumulation of 900mm, likely to have been created by arable agriculture during the Late Bronze Age/Early Iron Age (Wilkinson, Barber and Bennell 2002, 237). In contrast, there was little evidence of colluvial deposits dated to the Middle or Late Iron Age along the entire course of the bypass (ibid. 237).

The A27 bypass provided a 15km transect through downland pasture – an unparalleled opportunity to explore the evolution of farmed land. Subsequent residential development at Patcham Fawcett and Varley Halls added to those discoveries, again showing the predominance of Middle Bronze Age settlement.

This chapter reviews one final site from Sussex. It combines all the elements of our synthesis; as technically it is in the Weald; for all intents and purposes it is on the coast but it is perhaps better understood in its siting at the extreme eastern end of the South Downs. In 1995 work on the A22 road led to the rescue evaluation of part of a series of timber causeways and a settlement platform in Shinewater Marsh (Figure 6.2) on the Willingdon Levels near Eastbourne (Greatorex 2003). This Late Bronze Age occupation again shows that Sussex Bronze Age communities participated in a much wider alliance network. The artefacts from Shinewater link that community to the rest of Southern England and further afield to Continental Europe. Only a small portion of the Shinewater complex was excavated but a wealth of exotic artefacts were retrieved. These include four amber beads, and a distinctive socketed axe that matches finds from north west Germany and northern Holland. In addition to such continental items, a fragment of a Kimmeridge shale bracelet and a distinctive Late Bronze Age bowl probably from the Thames Valley may reflect regular contact with people moving along the Channel coast and further into the Thames Valley (ibid. 89–91).

In 1980 Rowlands suggested that the south coast and downlands had a very different principle of political and economic organisation to that of the Fens and Thames valley, one in which political status and warfare were not so inextricably bound up with each other (1980, 37). The discovery of coastal land division complementing the extensive concentrations of utilitarian bronze metalwork adds a new dimension to that debate.

Chapter 7. The Solent Basin

7.1 Solent Lowlands

Vast hectares of chalk downland stretch in an arc from Portsmouth to Dorchester forming the edge of a great lowland basin whose rivers drain south toward the Solent.

These blocks of chalkland are justly famous to archaeologists for the quantity of surviving earthworks; standing structures captured with stunningly visual effect both in the collaborative air reconnaissance work of O. G. S. Crawford and Alexander Keiller (1928), and the paintings of Heywood Sumner. It was here that the first clearly dated Bronze Age field system was recorded (Toms 1925), and where the early pioneering investigations have been followed by new campaigns of fieldwork, including further research on Cranborne Chase (Bowen 1990; Barrett, Bradley and Green 1991; French *et al.* 2003), the Central Dorset Downlands (Peters 1999) and the South Dorset Ridgeway (Woodward 1991). Each of these studies, share a common approach – an overriding concern to synthesise available data on a rapidly changing prehistoric landscape and the monuments and settlements within it.

The advent of commercial work has also contributed to our understanding of this ancient upland landscape; for example, work on the cross ridge dykes at Fontmell Down (Allen 1998) and East Meon (Wessex Archaeology 1996c) and more memorably, Twyford Down (Walker and Farwell 2000). Significant as these sites are, commercial projects have made a more original contribution in opening up the sands, gravels and brickearths separating the ridgeways from the coast. We can now begin to appreciate the wider context of the upland lynchets, droveways and enclosures.

7.2 Southampton Waters

Archaeological interventions on the Sussex coastal plain since 1990 quickly increased the gazetteer of known Bronze Age settlements and contributed to the existing ceramic assemblage. Previously Bronze Age metalwork was the primary evidence. Recent large-scale excavations including strip and mapping have started to reveal a series of late second and early first millennium BC field divisions discussed in chapter 6. Such experience on the Sussex brickearths should inform mitigation work further to the west, especially on similar soils around Southampton. Perhaps the same Sussex pattern will reoccur along the Solent foreshores? Until recent years evidence of Bronze Age activity (besides metalwork discoveries) around Southampton was scattered and uncommon. That record is rapidly changing (Figure 7.1). There have been an increasing number of Bronze Age discoveries in the city including Frogmore Lane (SAS 2000), Western Hospital (SAS 1994) and Spa Tavern (Kavanagh undated)). Most of the finds are confined to pottery and a few settlement features, but the discovery of a substantial E – W ditch, interpreted to be Late Bronze Age/Early Iron Age in origin in Swaythling (Crockett 1994, 72) suggests that further evidence of land divisions has survived within the coastal conurbation. Further east a segment of Middle Bronze Age ditch was recorded during the Langstone Harbour study (Allen and Gardiner 2000) and in between these two sites undated prehistoric boundary ditches have been recorded at Fareham, again on the brickearths (Wessex Archaeology 1996a). These few finds in themselves suggest that Bronze Age activity is more prolific than previously known but do not reveal an intensively occupied coastal zone. The discoveries of Middle Bronze Age jetties at Testwood Lakes may alter that view, for this site at Netley Marsh lies close to the open waters of

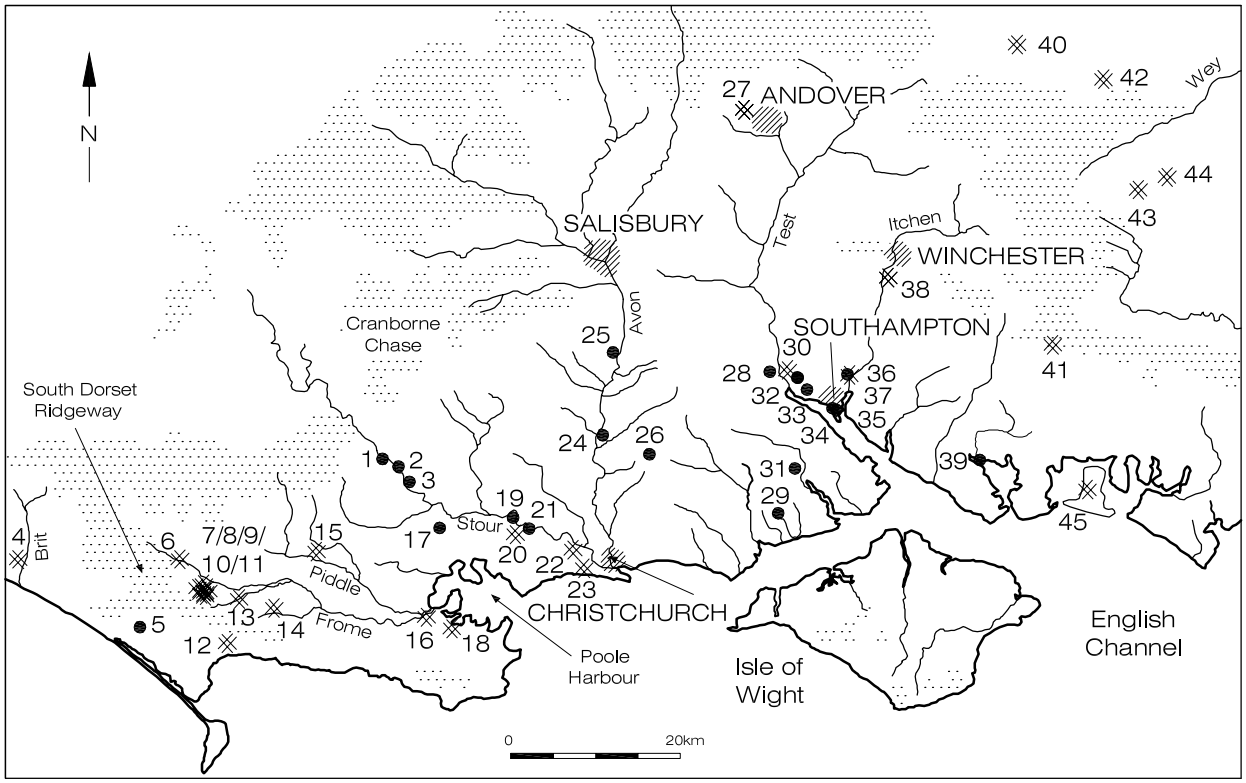


Figure 7.1 The Solent Basin. 1. Stour Park. 2. Lophill Farm, Blandford Forum. 3. Sturminster Marshall. 4. Bridport Community Hospital. 5. Manor Farm, Portesham. 6. Dorchester Road, Stratton. 7. Sports Centre, Poundbury. 8. Coburg Road Rugby Ground. 9. Maiden Castle Road School. 10. Poundbury Farm. 11. Thomas Hardye School. 12. Sutton Poyntz Waterworks. 13. South Winterbourne. 14. Warmwell Quarry. 15. Tolpuddle Ball. 16. Bestwall Quarry. 17. Henbury Pit. 18. East of Corfe River. 19. Canford Magna Golf Course. 20. Bearwood School, Poole. 21. Longham Lakes. 22. The Hampshire Centre. 23. Pokesdown. 24. Ellingham Farm. 25. Avon Valley. 26. Ridley Plain. 27. The Fairground, Weyhill. 28. Testwood Lakes. 29. Crockford. 30. Dairy Lane, Nursling. 31. Shepton Water. 32. Matchpoint Tennis Centre, Frogmore Lane. 33. Western Hospital. 34. Spa Tavern Public House. 35. Cook Street. 36. Parkville. 37. Montefiore New Halls of Residence, Swaythling. 38. Twyford Down. 39. Cams Hall, Fareham. 40. Sherborne St. John. 41. HMS Mercury. 42. Odiham. 43. Rookery Farm, Kingsley. 44. Grooms Farm, Kingsley. 45. Langstone Harbour. Site details in Table 7

the Solent and a relatively concentrated area of Bronze Age settlement and metalwork between Nursling and Totton (Wessex Archaeology 1996, figure 1). Now evidence of associated land division has started to be recorded in this part of the lower Test. Dairy Lane, Nursling is close to the lowest fording point across the Test in an area of deep well drained loamy soils. Development of this site involved topsoil stripping of approximately 3ha of ground. The excavation, post excavation and publication was entirely funded by Tesco plc and revealed elements of a probable Middle/ Late Bronze Age field system. Large conjoining sherds of a globular urn, barrel urn and a possible accessory vessel were recovered from the base of the cut features together with a radiocarbon determination of 1010–770 cal. BC (AA-14701; 2695±65 BP) based on charcoal from the ditch fill. Charred plant remains suggest limited arable activity and cereal production, mixed woodland and possible blackthorn hedgerows (Adam *et al.* 1997, 49). The recovery of residual Late Bronze Age pottery indicated activity into the early 1st millennium BC but there was no evidence at Dairy Lane from the 8th century BC to the 1st century AD when a Romano-British phase of ditched field system was established (ibid. 49). Traces of similar Bronze Age field ditches have been recorded close by at Manor Farm Stables, Franconia Drive and Nursling Gravel Quarry. One

of the ditches at the last site was recorded 'merely as a stain' (Rees 1993, 21), a characteristic often encountered in recent fieldwork on the Sussex coastal plain discussed in the last chapter.

7.3 The New Forest

The New Forest separates Southampton and Bournemouth. Selection of the area as a royal hunting forest by William I has preserved aspects of a pre Norman landscape.

In the mid 1990's RCHME carried out a survey to contribute to the wider understanding of the preserved earthwork remains (Smith 1999). The survey, confined to surface observation, recorded a number of *Celtic field* systems and numerous undated droveways to add to the wealth of known Bronze Age barrows and burnt mounds in the forest. The field enclosures observed at Crockford are of particular interest for they are sited within a notable concentration of Early to Middle Bronze Age burial mounds around the Beaulieu waters which flow into the Solent (ibid. 45). Pollen analyses from these features also support a Bronze Age date for this complex (ibid. 20). The survey concluded that there was a relative absence of later prehistoric field systems in the New Forest associated with agricultural intensification (ibid. 16) but that non-intensive small scale farming would leave slighter traces unlikely to be visible through the vegetation cover (ibid. 46). As we shall see, commercial work on the heathlands of Purbeck and along the River Frome in Dorset vindicates that note of caution. The large number of burnt mounds recorded in the New Forest (ibid. 45) also suggests intensive activity.

7.4 Christchurch Harbour and Hengistbury Head

Much prehistoric activity may have been obliterated in the congested cities of Portsmouth and Southampton, but the scant evidence does suggest that these sheltered anchorages were attractive zones for later prehistoric communities. Two other natural harbours in the Solent Basin suggest further enclaves of settlement and land tenure: Christchurch Harbour protected by Hengistbury Head, and Poole Harbour, under the lee of the Purbeck Hills.

The Rivers Avon and Stour unite just above Christchurch Harbour, a broad sheltered natural harbour in sight of the Isle of Wight. Concentrations of metalwork and cremation material have long been recognised on the western terraces at the mouth of the River Stour but there were no signs of linear earthworks or enclosures (Calkin 1962, figures 9 and 45). That is no longer the case. A reinterpretation of the Middle Bronze Age cemetery at Pokesdown suggests that it may have been at the crossing point of two field boundaries rather than holloways as originally published (Clay 1927; Barrett and Bradley 1980a, 186). Their presence has also been confirmed by commercial discoveries of field plots at the Hampshire Centre (AC Arch 2001) and a Late Bronze Age field system at Bearwood School (Wessex Archaeology 1995a). The land division finds have been accompanied by the identification of further urnfield and cremation sites at Longham Lakes (SAA 1998) and Canford Magna School (Wessex Archaeology 1996e). All of these sites lie close to the River Stour and there is similar evidence of Later Bronze Age settlement and burial around Blandford Forum, again close to the river banks (Wessex Archaeology 1995b; 1991; AC 1993).

The River Stour has long been identified as a major prehistoric route for continental trade and exchange (Sherratt 1996, 214; 217). It provides a direct link between the coast and the chalklands – the river in effect separates Cranborne Chase from the Dorset Downs. The great scheduled monuments of Hambledon and Hod Hill still dominate this point where the river cuts through the chalk escarpment. In his analysis of the Middle/Late Bronze Age in the Bournemouth area Calkin always considered the Avon to be of lesser significance than the Stour valley (1962, 4), but now commercial work at Ellingham Farm, near Ringwood (Wessex Archaeology 1992), and findings from the Avon Valley Study have revealed Middle and Late Bronze Age occupation. The river valley also has a notable concentration of metalwork. Settlement gravitates to both the rivers, which merge at Christchurch.

7.5 Poole Harbour: Corfe, Frome and Piddle

The rivers Piddle and Frome dominate the western sector of the Solent basin. They flow into Poole Harbour at Wareham: the Piddle to

the north of the burh walls and the Frome to the south. At the very mouth of these dual river systems lies Bestwall Quarry, in effect sited on a natural peninsula jutting into the waters of Poole Harbour, like the Saxon town, flanked on either side by the great rivers. Rich alluvial capping hides a gravel rich substrata and in 1969 (before the advent of planning stipulations on archaeological assessments) one hundred and fifty hectares was acquired with planning permission for gravel extraction. The site has been excavated over a 12 year period by a dedicated team of volunteers backed by the support and voluntary co-operation of the quarry company, Aggregate Industries. Excavation has shown two major periods of activity on this natural choke point; first, in the Middle Bronze Age when a substantial settlement was established, and later in the 3rd and 4th centuries AD, when Bestwall inhabitants worked in the Black Burnished Ware industry. In between those phases of intense activity there is limited evidence of pottery production and farming in the Early Iron Age and only a single feature securely dated to the Middle Iron Age (Ladle 2003).

Bronze Age permanent land division at Bestwall started with the construction of a 750m long Early Bronze Age discontinuous ditch and was followed by the construction of a Middle Bronze Age coaxial field system with storage pits being cut into the gravels (ibid. 265). The Middle Bronze Age dating evidence is all pervasive with pottery, quernstones, fire fractured and worked flint littering the site (Ladle and Woodward 2003, 270). This rich assemblage of material culture is also accompanied by individual finds of bronze metalwork (ibid. 269). The land boundaries contain Deverel-Rimbury ceramics, often with sherd concentrations towards the terminal ends of ditches. Dumps of clay in working hollows suggest pottery production into the Late Bronze Age but most of the material is attributable to the Middle Bronze Age, including quantities of shale sourced from Purbeck and granite quernstones originating from Cornwall.

From Wareham the journey out to the sea involves a further 10km of navigation across one of the most sheltered stretches of estuary on the south coast. Bestwall was ideally placed at a key flow point for wider exchange. Upstream along the Piddle lies Tolpuddle Ball, evidence here of a Late Bronze Age field system was recorded in advance of the construction of the bypass. Its discovery adds to existing knowledge of field systems on the Dorset Downs (Terrain Archaeology 1999). The Frome valley may be of greater significance. Developer-funded projects have revealed field divisions along the length of this wide river corridor. A short lived Early Bronze Age field system was recorded at Warmwell Quarry near to Moreton. The absence of ditch recutting here, together with some evidence that settlement expanded over abandoned fields suggests that initial forest clearance created a fertile terrain but that cultivation soon impoverished the light soils (Ellis 1994, 5). On the Dorset heathland, funerary sites, especially barrows, are very prominent whereas settlement and farming evidence is rare. As Ellis points out this contrasts somewhat with the situation on the surrounding chalk downs, where small settlements associated with *Celtic fields* are fairly well known. This is what makes Warmwell such a significant discovery (ibid. 6). A similarly dated Early Bronze Age site lies west, on the southern terrace of the South Winterbourne Valley near West Stafford. Here elements of a field system and possible trackway were located (Wessex Archaeology 1994c, 4).

Poole Harbour is one of the largest and shallowest natural harbours in the world. Bestwall may be one of a number of Later Bronze Age farming sites on the perimeter of the open waters. Works associated with the expansion of the Wytch Farm oilfield identified an Early/Middle Bronze Age field system around the next headland at a site named East of Corfe River illustrated in Figure 7.2 (Cox and Hearne 1991). The ditches were difficult to distinguish from the pale Eocene sands into which they were cut. They were short lived and subject to rapid refilling (ibid. 44). They were dateable in part because a second phase of Middle Bronze Age features and burnt spreads of a funerary nature capped them (ibid. 34). A burnt oak stake associated with this sealing material yielded a radiocarbon determination of 1460–1200 cal. BC (UB- 3219; 3081±51 BP). The Early/Middle Bronze Age field system appears to have extended on to the opposite bank of the river at New Mills Heath (ibid. 46). At Bestwall Quarry there was little evidence for Early or Middle Iron Age occupation. At East of Corfe River there was none. The next phases of formal landscape here were created in the Late Iron Age and Romano-British era (Figure 7.2).

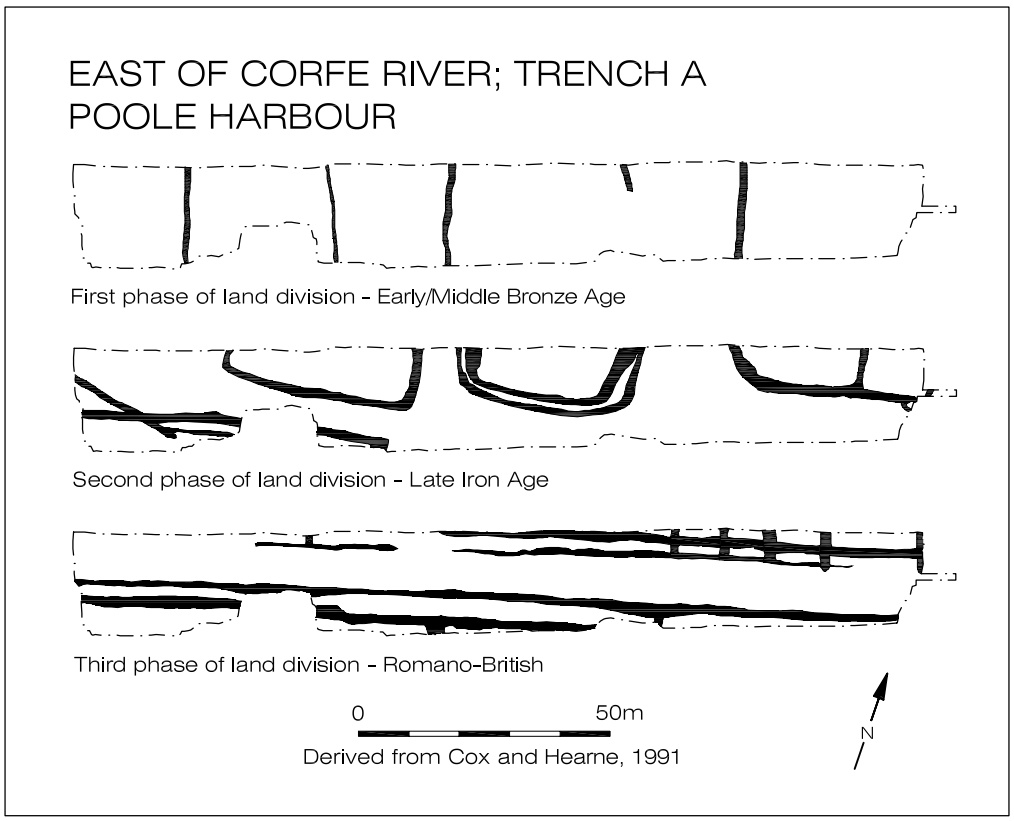


Figure 7.2 East of Corfe River. Derived from Cox and Hearne 1991, Figure 17. There are clear indications that the Bronze Age ditches were subject to rapid refilling, reflecting the rapid deterioration and displacement of the tilled soils. Such intensity of later prehistoric activity was not matched again until the first century BC, to be followed in turn by a further superimposed field system in the second century AD

7.6 Dorchester

The county town of Dorchester is 20km up stream from Wareham. It is here that commercial work is disclosing the full extent of Bronze Age land appropriation. An extensive Later Bronze Age field system was constructed on the central lowlands around the west and south of the town. Commercial discoveries started with the bypass works (Smith *et al.* 1997) and now have extended within the phased development of the Duchy of Cornwall Poundbury project.

Within a square kilometre at Poundbury, a series of excavations have recorded elements of the new permanently established farming regime of the late second and early first millennium BC. At two sites within Poundbury Farm, components of the Middle/Late Bronze Age ditched field system were recorded together with parts of a possible curvilinear enclosure of the same date (Wessex Archaeology 2001). One kilometre to the NE at the proposed Sports Centre a well defined ditched field system was again planned and sectioned. Pottery of mostly Early to Middle Bronze Age date was recovered from a NE/SW coaxial field system. An associated enclosure and building endured into the Late Bronze Age (Wessex Archaeology 1997d, 21). All of these excavations suggest a heavily utilised environment by or during the Later Bronze Age. They provide a fascinating insight into the prehistory of landscape development within this area. This is best seen in the landscape palimpsest recorded at the Thomas Hardye School in Dorchester (Smith 2000). The first construction phase comprises the sinking of a series of Late Neolithic and Early Bronze Age pits containing both material of a domestic and a ceremonial nature. This is followed by a phase of monument building; a series of at least eight Early Bronze Age barrows formed a visually spectacular

arrangement of skyline monuments ranged along the ridge linking Mount Pleasant, Maumbury Rings and Thomas Hardye School. Some of these lost barrows (hidden until commercial work revealed their remaining traces) matched in size the massive barrows that still tower above the area surrounding Maiden Castle. In turn these monuments were eclipsed by the farming grids of Later Bronze Age date: boundaries which were eventually overlain by new Late Iron Age/ Romano-British fields. The shallow ditches of the open medieval fields of the manor of Fordington or components of the post enclosure field system represented yet another form of landscaping (Smith 2000, 74). This is a remarkably interesting site because of these recorded phases. At various stages a grand design has been executed – the coaxial fields of the Later Bronze Age and then those of the Late Iron Age, followed eventually by the manorial apportionment of land and now the execution of an architectural grand design for a new Poundbury.

One component is missing from this fascinating landscape prehistory. Poundbury is within sight of the one of the largest Middle Iron Age hillforts in Europe and yet there is no evidence of Middle Iron Age *Celtic fields*. This is a consistent pattern revealed throughout this research and is confirmed with dramatic effect in the extra-mural lands of Maiden Castle.

The attraction of coastal locations is evident, particularly the river corridors of the Stour and Frome, starting at Christchurch and Poole Harbour. Further west, other indications of the preference for direct links to the sea include a Late Bronze Age occupation site at Sutton Poyntz close to the River Jordan which runs into Weymouth Bay (Wessex Archaeology 1993b). Even further along the coast at Bridport elements of a rectilinear field system were sectioned in a 1.87% assessment of land set aside for a new Community Hospital on a ridge overlooking the west bank of the River Brit (AC Archaeology 1991).

7.7 Over the rim of the basin

This chapter has concentrated on sites that have started to fill a void in current knowledge of the lowlands of the Solent Basin. That basin in turn needs to be seen as part of a much larger zone of Southern England characterised by land divisions in the late second and early first millennium BC. Northwards lies Salisbury Plain, Fyfield, Overton and the Marlborough Downs where landscape changes reflect a similar chronology to the lowlands reviewed in this chapter (McOmish *et al.* 2002, 53; Fowler 2000, 222; Cleal 1992, 153). Farming regimes in the Solent lowlands may have been integrated into cultivation and livestock management both on the surrounding uplands and beyond. An instance will illustrate potential wider links. One route out of the basin involves a climb from the Itchen valley over the downlands before descending the escarpment to emerge on the Lower Greensands at Kingsley in Hampshire. A number of Early Bronze Age round barrows are located here close to the source of the River Wey which eventually joins the River Thames, cutting through the North Downs en route. Kingsley is therefore of some strategic importance and it is here at Rookery Farm and Grooms Farm that Middle/Late Bronze Age fields and associated settlement have been discovered (Wessex Archaeology 1988a; 1999). This Lower Greensand area is also associated with the discovery of major bronze hoards at Blackmoor, Woolmer Forest and Kingsley Common (Dunkin 2000, Tables E and F). The Iron Age material at Kingsley is less well represented and this chronology suggests that the fortunes of these seemingly isolated farming communities and those in the Dorset and Hampshire valleys are linked; all being better understood within a wider regional framework.

7.8 Basin reflections

The Solent Basin has a thriving amateur tradition, a wealth of published work and an extraordinary number of field monuments. Much of its prehistory, however, is derived from the rolling downlands so long the happy hunting ground for early antiquarians and present day researchers. Commercial projects on the lowland heathlands and loess soils have now added to that legacy of upland investigation.

There is an added urgency in accounting for the prehistory of this particular lowland. One is purely pragmatic; namely, the need to record important zones rapidly being eroded by urban expansion particularly around Southampton and Bournemouth (especially expansion impinging on the Stour valley with the construction of shopping malls, health and leisure infrastructure to meet the needs of an expanding population). The second,

revolves around long standing questions about the area – in particular the remarkable eclipse of the Wessex Culture. This is a question that can be better addressed, as more coastal information becomes available, for example around the rich Christchurch enclave (Groube and Bowden 1982, 39).

The existence of late second and early first millennium BC field systems on the lowlands is adding a new dimension to understanding the farming landscape of Dorset and Hampshire. Communities here were witnesses to a developing land boundary system resulting in changes in land tenure and social organisation. Future research and commercial work should clarify the scale and extent of this particular form of landscape management and how this wider Wessex region fared compared with the astounding levels of formal land appropriation evident along the Thames and in the Fenlands of East Anglia. What has already emerged is a remarkable story in its own right – apparent ribbon development along the Frome and the Stour, with land tenure being defined by permanent boundaries. These two key river corridors linked the rich swathe of downland with the coast. It has also shown the value of involvement in new town initiatives (Poundbury). Dorchester, so long synonymous with Iron Age Maiden Castle, appears to have had an earlier strategic importance in the Bronze Age. During the second and early first millennium BC this area was blanketed by an extensive field system, possibly evidence of social tension in an era that eventually sees the emergence of a new scale of collaborative farming effort and wider continental alliances.

Chapter 8. The West Country

8.1 Introduction

Striking further west from Dorset we enter the south west peninsula. Over 400 km from the Thames estuary, the critical question is whether the regimented land divisions so prevalent on the eastern seaboard were adopted on territories fronting the Atlantic.

8.2 Devon – off the Moors

Andrew Fleming's re-discovery of the Bronze Age origins of the Dartmoor land boundaries and subsequent campaign of survey and excavation was a major breakthrough in prehistoric studies. The characteristic moorland reaves date to the 18th and 17th centuries BC around the time that houses on Shaugh Moor were being built (Fleming 1988, 105; Wainwright and Smith 1980, figure 23). Fleming's eloquent, humorous and enthusiastic account of the reaves placed Dartmoor centre stage in Bronze Age studies and encouraged a new generation of landscape archaeologists (1988). The National Park is a fascinating place. It is the best preserved late second and early first millennium BC landscape in Europe and visitors are able to walk the droveways, explore the associated settlements, cattle pounds and linear boundaries. Not surprisingly, therefore, the moorlands act as a research magnet and continue to be the focus for landscape study in Devon.

However, despite renewed research on the moors, the study of that landscape has progressed remarkably little since Fleming's breakthrough in the 1970's and 1980's. The reason is simple. To some extent concentration on the National Park legacy has overshadowed interest in the contemporary lowlands but, more crucially, data on this area off the moor has remained largely unavailable. Such a research imbalance is a serious impediment in trying to unravel the social significance of the reaves. Fleming was acutely aware of this problem in the early days of his work, suggesting that a second breakthrough was necessary if research in Devon was to progress. The secrets of contemporary settlement and land management in the surrounding river valleys and coastal foreshores needed to be unlocked (1988, 122). Fortunately contract archaeology is now beginning to provide that much needed insight (Figure 8.1).

Recent commercial work has uncovered further sections of the stone boundary walls of the Bronze Age reaves on the fringes of the moorlands, to the north at Sourton Down (Weddell and Reed 1997) and possibly to the south at Ugborough (Reed undated). More significantly, traces of ditched and banked field boundaries have been found to the east in the Exe valley (Reed 2001; Barber 2000a, b) and at Castle Hill at Feniton overlooking the River Otter (Butterworth 1999a). The Feniton site (Figure 8.2) was a particularly important discovery, one of a number of Bronze Age sites recorded during the A30 Honiton to Exeter Road improvement works. Castle Hill comprises a Middle Bronze Age coaxial field system dated both by radiocarbon determination to 1440–1120 cal. BC [AA-30671; 3060± 55 BP] (Butterworth 1999a, 28) and by the significant number of Middle Bronze Age diagnostic sherds. This ceramic material is important:

a) because it is the first assemblage of its kind from east Devon, and because
b) Castle Hill is located in a zone where two ceramic traditions merge. In consequence the locally made pottery is influenced both by the Deverel-Rimbury Wessex tradition and the Trevisker style of the south-west (Laidlaw and Mepham 1999, 47).

The Castle Hill coaxial field system is sited 450m to the north west of Fenny Bridges and there are

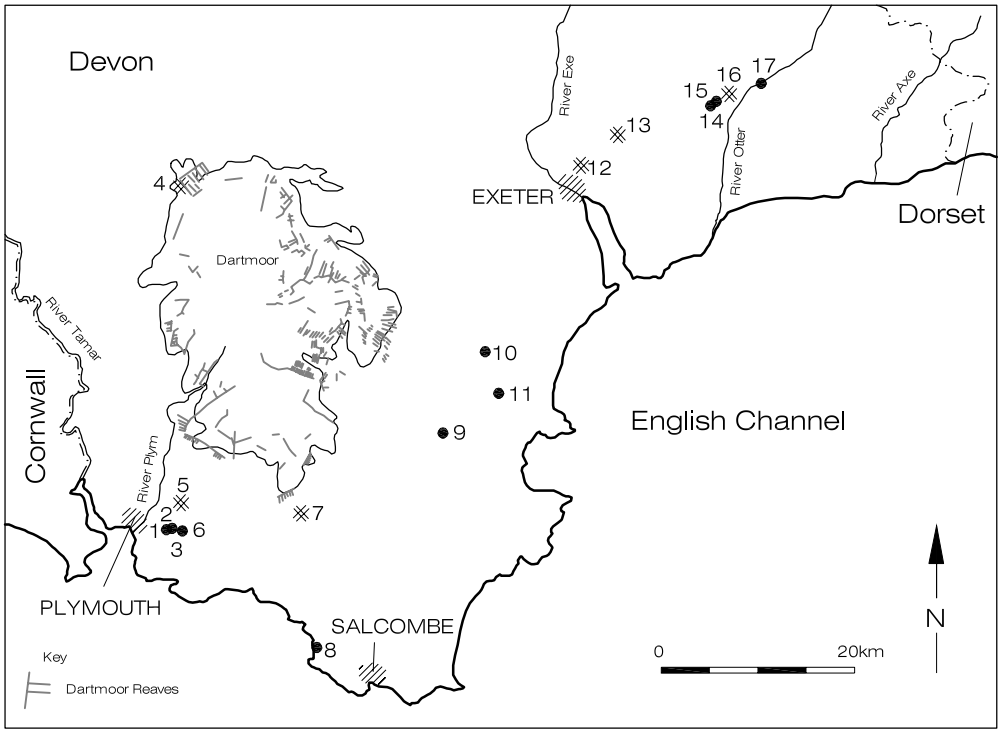


Figure 8.1 South Devon. 1. Alexandra Close. 2. Hazel Grove. 3. Sherford Road. 4. Sourton Down. 5. Station Road, Plympton. 6. Martin Deane Nursery. 7. Ugborough. 8. Thurlestone Sands. 9. Parsonage Cross. 10. Jetty Marsh Link Road, Newton Abbot. 11. Kerswell Down and Whilborough Common. 12. Digby. 13. Hayes Farm, Clyst Honiton. 14. Langland Lane. 15. Patteson's Cross. 16. Castle Hill, Feniton. 17. Hayne Lane. Site details in Table 8.1

some indications in the A30 findings to suggest that Castle Hill is not an isolated instance of Bronze Age land appropriation along the River Otter valley. Nearby to the west at Langland Lane a Middle Iron Age enclosure appears to be sited within an earlier coaxial field system (Butterworth 1999c, figure 66. Fitzpatrick 1999c, 90). 250m to the east of Langland Lane lies the Middle Bronze Age settlement site at Patteson's Cross which again has possible elements of a prehistoric field system (Butterworth 1999d, 80). Finally, further upstream at Hayne Lane an enclosed farmstead of Middle/Late Bronze Age date was also excavated (Butterworth 1999b). The A30 developer-funded work therefore suggests that the valley corridor of the Otter was a focus for more extensive settlement and farming. That realisation has implications for any further works in the area and raises the intriguing prospect that the nearby Axe valley on the eastern boundary of the county may also have similar landscapes. The surprises do not end here. Immediately adjacent to the road route near Exeter at Clyst Honiton, another portion of a Middle Bronze Age field system has been recorded (Figure 8.3) and the pottery, dating from the thirteenth century BC, closely resembles similar Trevisker styles found on Dartmoor and further west (Barber 2000a, b).

Clyst Honiton is located near the River Exe. A recent investigation on the Exe gravel terraces of the lower reaches indicates that the most significant period of landscape change was during the Early to Middle Bronze Age (Fyfe, Brown and Coles 2003, 179).

If we switch now to the opposite end of the county there is again mounting evidence of lowland settlement and possible land division contemporary with activity on Dartmoor. In Elburton there are recurrent finds of Bronze Age activity including a remarkable Early/Middle Bronze Age flat cremation cemetery at Alexandra Close (Watts and Quinell 2001); prehistoric linear boundaries at Sherford Road (Reed and Watts 1998), Hazel Grove (Sage and Rance 1994; Gent 1996) and Martin Deane Nursery (Watts 1995). The dating for these land divisions is sparse but their clustering is of considerable interest. Further to the north in Plympton at 'Trevanion', Station Road, reave-like

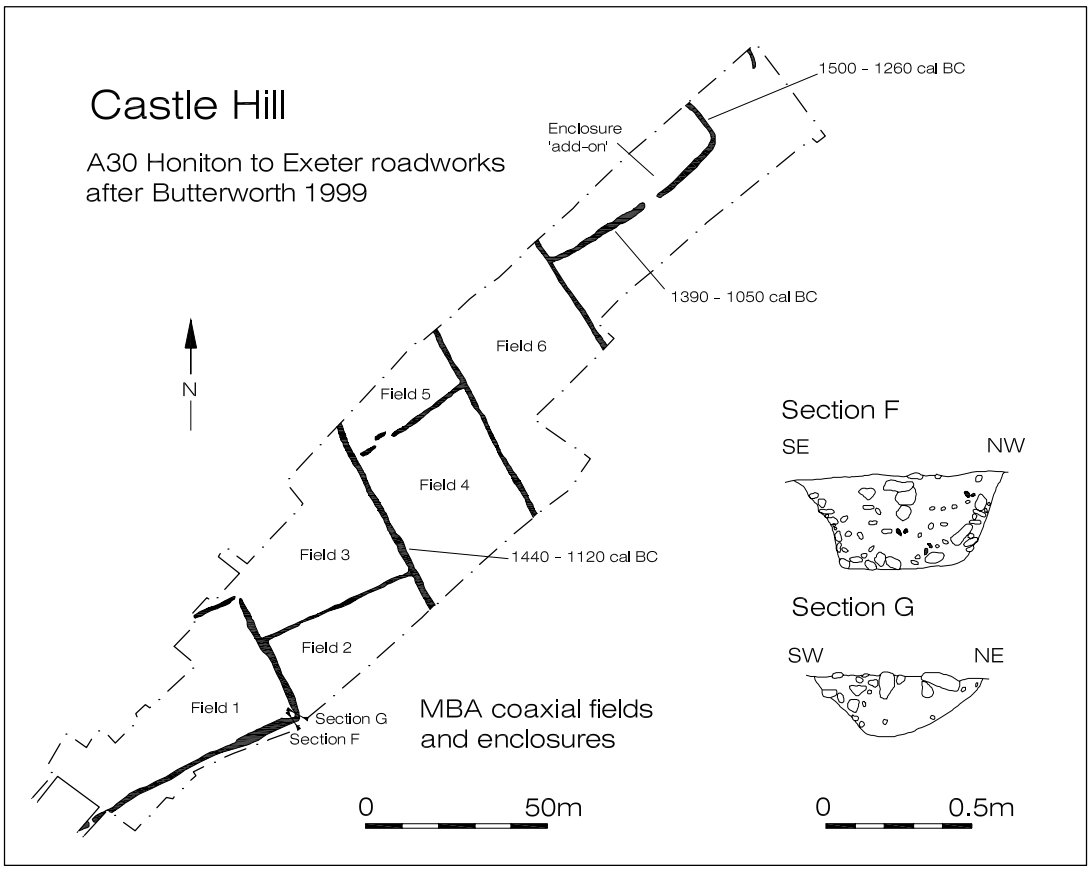


Figure 8.2 Castle Hill. A30 Honiton to Exeter roadworks. Derived from Butterworth 1999a. The Middle Bronze Age coaxial field system appears to have been dug in sections. This is shown most clearly in the south-west corner of the main block of fields where a steep sided flat-bottomed ditch (section F) met a shallow, V-shaped ditch (section G) less than half its size. Construction gangs may have worked on the boundaries

boundaries and a possible trackway have also been recorded (Wessex Archaeology 1995c).

The pattern emerging so far suggests that settlement and land tenure is concentrated in the southern half of Devon from Dartmoor down to the sea. If that is the case then Dartmoor is one part of a wider division and land was exploited from the channel foreshores up onto the moorland heights. The Plymouth finds from Plympton and Elburton together with palaeo-environmental evidence from Thurlestone Sands and Newton Abbot support this line of reasoning. At Thurleston the winter storms of 1998 exposed a 500 sq.m. area of intertidal peat deposit which had started to accumulate between 1890–1630 cal. BC (A-10006; 3445±50 BP) and 1870–1520 cal. BC (A-10005; 3370±50 BP). The presence of dung beetles and species associated with pasture suggest increasing human influence on the landscape in the upper peat levels (Reed and Whitton 1998, 3). Palaeo-environmental evidence from Newton Abbot also suggests coastal Middle Bronze Age open grassland and cereal type pollens (Reed 1997, 3). The discovery of the Salcombe hoard, off Moor Sand (Muckelroy 1981), also adds weight to the coastal orientation of these communities.

Relatively few Devon lowland sites have so far been discovered, so any conclusions are of course tentative. However, one intriguing characteristic of the Devon valley and coastal sites is of particular interest. The social significance of these farming boundaries, in common with rectilinear land blocks throughout the study area, declines during the first millennium BC. This lowland picture enables us to start to address the issue of why the Dartmoor Bronze Age land system reached such a peak of activity and then development stopped. One recurrent explanation is that the prehistoric landscape was left intact

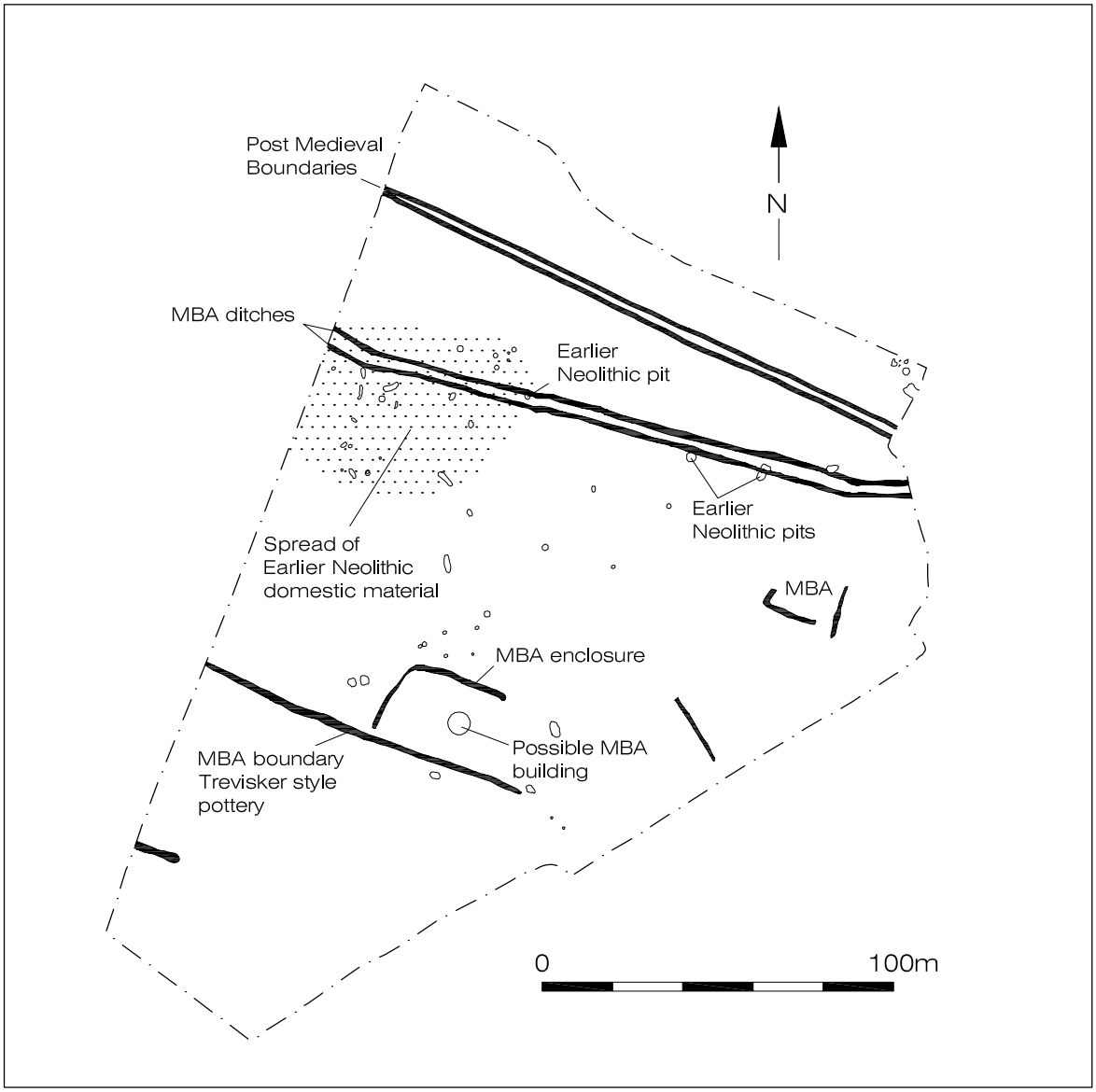


Figure 8.3 Hayes Farm, Clyst Honiton near Exeter. Derived from Barber 2000b. Middle Bronze Age land divisions were discovered on a sand and gravel river terrace to the east of the River Clyst. The overlying soils of the Bridgenorth series were well drained and easily cultivated. Limited evidence of post-Bronze Age activity was encountered. The pottery assemblage mainly dates to the 13th century BC

because environmental change caused the reduction in activity. Caseldine and Hatton have questioned that interpretation (1994). Excavations on the Southern English lowlands indicate that a decline in field construction was more to do with socio-political change with a switch to a new form of food production and social ownership of land (Bradley and Yates in press). That is what makes further commercial work in Devon so important in helping to explain the remarkable end of the Dartmoor reave system.

8.3 Cornwall

Across the Tamar lies Cornwall and, further west, the isolated archipelago of the Isles of Scilly. Here we are far removed from the political economies of the East Anglian Fenlands and the Thames Valley but still according to Rowlands inexorably part of that alliance and exchange network comprising the Atlantic Region (1980).

Any fears that the phenomenon of permanent boundary construction would run out in these westernmost limits of Southern England are soon

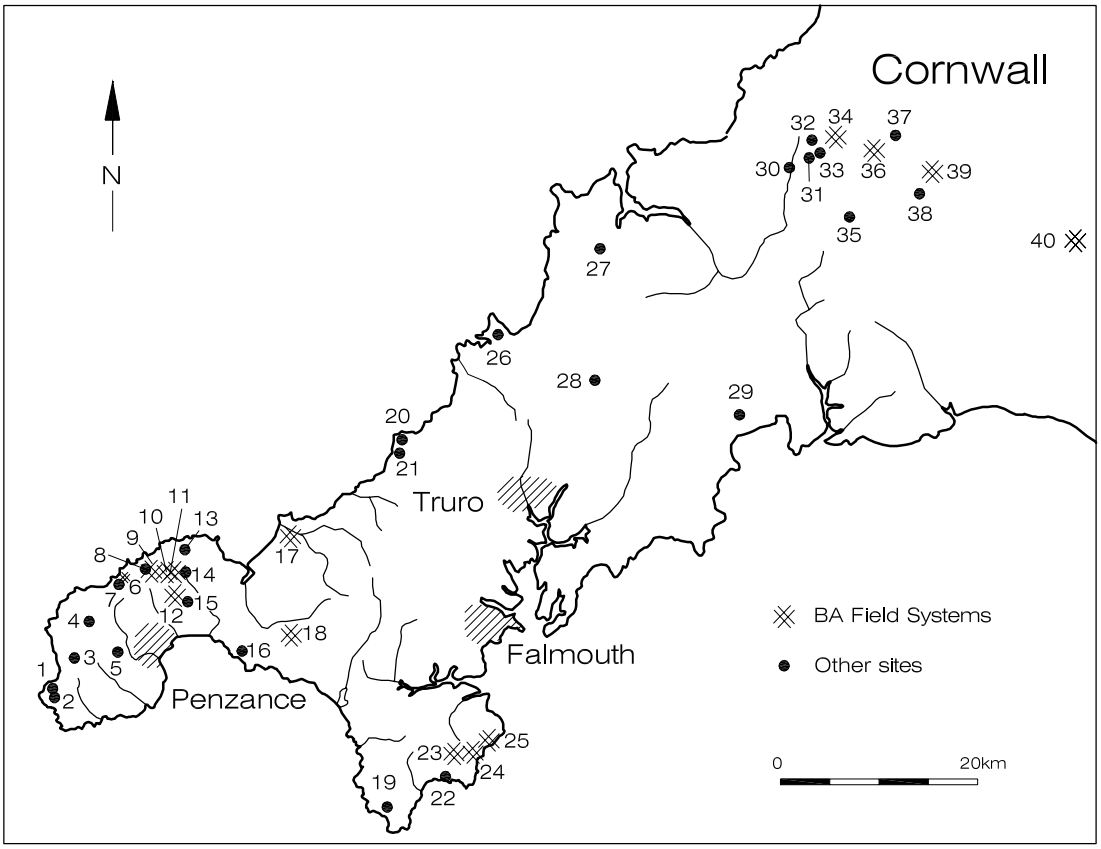


Figure 8.4 Cornwall. 1. Maen Castle. 2. Cornish Way, Lands End. 3. Nanquidno Downs. 4. Kenidjack. 5. Sancreed Beacon. 6. Bosigran. 7. Rosemergy. 8. Boswednack Farm. 9. Pennance. 10. Trewey-Foage. 11. Wicca. 12. Chysauster. 13. Trevessa Farm. 14. Amalveor. 15. Pig Moor. 16. Perranuthnoe. 17. Gwithian. 18. Godolphin. 19. Kynance Gate. 20. St. Agnes Head. 21. Wheal Coates. 22. Poldowrian. 23. Kestlemerris. 24. Polcoverack. 25. St. Keverne. 26. Trethellan Farm. 27. Trevisker. 28. Penhale. 29. Trenowah. 30. Hamatethy. 31. Rowden. 32. Watergate. 33. Stannon Down. 34. Roughtor. 35. Blacktor Downs. 36. Leskernick Hill. 37. Carne Down. 38. Smallacoombe. 39. East Moor. 40. Kit Hill. Site details in Table 8.2

dispelled, for there is an abundance of prehistoric field systems in the area (Figure 8.4). Increasing in density towards the end of the peninsula, many are recorded as being of Bronze Age origin. However, the nature of these boundaries differs radically from those encountered in the central southern and south eastern counties. They are dominated by a bewildering array of freeform styles, unhindered by predetermined conventions of linearity or accepted orientation. The variation in these enclosing barriers is reflected in the rich and diverse nomenclature used by archaeologists in their field notebooks – "round, hybrid, nested, straggly, accreted, radial, spider's web, cells, cellular, organic, molecular and irregular" to name but a few. These different terms mask their essential unity: namely, that they are piecemeal creations evolving without adherence to imposed conventions of regimented land design. They are customised to suit local conditions and local communities. That legacy of individualistic expression is seen to best effect in the enclosed lands of West Penwith.

Within this rich matrix of enduring forms survey work reveals that there are sporadic instances of coaxial and linear boundaries – the familiar straight-sided coaxial and rectilinear fields which prevail towards the east. They are not as prevalent as those on Dartmoor (Smith 1996, 214) and are in part hidden or partially obscured by succeeding land management systems, but they exist. It is therefore possible to conclude that the concept of coaxiality was adopted at various places along the entire southern shoreline between the gateway island of Thanet and Land's End. In Cornwall those coaxial land blocks include:-

i. In West Penwith; Pennance (Herring 1990a), Wicca (Herring 1986b) and Chysauster (Smith 1996, 170);

ii. inland from Mounts Bay; Godolphin (Cole *et al.* 2001);
iii. on the gabbro rock of the Lizard near to St. Keverne, the sites of Kestlemerris and Polcoverack (Johnson 1980, figure 8), Trebarveth, Trevalsoe and Trevean (Johns and Herring 1996);
iv. on Bodmin Moor; a major coaxial junction at East Moor (Brisbane and Clews 1979) and fragments including Roughtor, Carne Downs, Watergate, Smallacoombe and Hamatethy (Johnson and Rose 1994 map 1; Herring *cf.*); and,
v. close to the Tamar; Kit Hill, providing a visual link between Bodmin and Dartmoor (Herring and Thomas 1990).

One thing that Cornwall does not lack, therefore, is prehistoric boundaries, and camouflaged amongst them are linear elements. The difficulty is in determining the precise age of both the cellular or organic boundaries and the more mechanistic linear land blocks. Most of the dating has been determined by meticulous survey which has established the relative dating of boundaries compared to monuments and settlement in the immediate locality, with final interpretation often reliant on analogy to comparable structures on Dartmoor. Where small-scale excavation has accompanied survey, again dating has been hampered by the paucity of material culture associated with the Bronze Age upland sites in Cornwall. Only rarely are diagnostic artefacts discovered, for example metalwork incorporated into the field banks at Amalveor and Kenidjack (Johnson 1980, 149).

The prehistoric farming sequence on the peninsula is long and complicated, combining pre-enclosure clearance, different phases of boundary construction and modification, abandonment phases and often later re-occupation. With such long chronologies the Cornish farms require extended excavation to gather enough material to determine precise sequencing and the nature of the farming regimes. Two sites on the north coast, Trethellan Farm near to Newquay and Gwithian close to Hayle Sands, show what is possible.

Shortly before PPG16 was implemented, a well preserved Middle Bronze Age settlement with contemporary field boundaries was recorded at Trethellan Farm, overlooking the Gannel. This is a site of national importance for prehistorians, famed for the discovery of ritualised practices associated with the life of the occupants and decommissioning rites accompanying the abrupt erasure of the settlement when all signs of habitation were concealed. For our purposes Trethellan Farm is important because it illustrates the gains of larger scale excavation. The range of dating evidence included sixteen radiocarbon dates from Bronze Age sealed contexts (most fell within a time band of 1500–1200 BC); a very substantial pottery assemblage comprising 5,795 sherds of Trevisker style pottery including 25 or so heavily abraded pieces found scattered in the matrix of one of the linear stony field boundaries (Nowakowski 1991, 82); and the find of a bronze ferrule and spearhead on the mid slopes of the scarp at the foot of the northern field boundary (ibid. 84). Investigation suggested that the first major field boundary edging the southern side of the settlement had been of earth, later consolidated in stone. This was possibly faced by a retaining fence (ibid. 82), just the kind of detail that survey alone cannot reveal.

Trethellan Farm provided a rare insight into Middle Bronze Age land division in lowland Cornwall. Subsequent laboratory work on lipid residues on the pottery found that animal fats characterise the assemblage. This suggests that despite limited evidence for husbandry practices on site – mixed farming at Trethellan Farm was highly probable (Copley 2001; Nowakowski *cf.*).

Along the coast towards St. Ives an aggregates levy funded re-investigation of the field system and settlement at Gwithian, currently in progress, has confirmed that the first land boundaries were built in the 2nd millennium BC. The research investigation has discovered plough and spade marks together with evidence for the artificial creation of soils – a mixture of pot, animal and human bone. People here were farming a very precarious environment which was susceptible to major sand blows from the beach (Nowakowski *cf.*). Gwithian was eventually overwhelmed by sand drift and the site became protected by the towans (dunes) formed at the base of Godrevy Point.

Inland, commercial projects have provided the opportunity to investigate prehistoric landscapes at Penhale, Trenowah and Tremough (Nowakowski 1998; Johns 2000; Gossip 2003). In each case the ditched field systems encountered were of Later Iron Age date. The Middle Bronze Age open settlement recorded at Penhale was associated with post fencing but again lacked more permanent boundaries.

One further observation is worth making; Cornish coaxial land divisions often enclose prime farming land. For example, Chysauster once benefited from a capping of over 600mm

of brickearth (Smith 1996, 215); East Moor incorporated all the better drained areas (Brisbane and Clews 1979, 46); and, Kestlemerris, Polcoverack and the St. Keverne sites rest on the deep yellow fertile gabbro soils (Johns and Herring 1996).

Social standing in the Later Bronze Age was perhaps defined in terms of long distance alliances and the ability to compete for prestigious possessions. The occurrence of Trevisker pottery outside of Cornwall provides one indication of that extended contact. ApSimon and Greenfield catalogued the wide dispersal of Trevisker pottery and their gazetteer included finds from Norton Fitzwarren overlooking the Vale of Taunton, Dalkey Island in Co. Dublin and Hardelot in the Pas de Calais (1972). Recently, similar ceramics have been recorded at Monkton in Kent (Peter Clark *cf.*), confirming contact between the extreme limits of the southern shoreline. One recent site, however, stands out. The discovery of a Later Bronze Age field system and settlement near to St. Vaast-la-Hougue, is unparalleled in French archaeology (Marcigny and Ghesquière 2003a). These Normandy field boundaries (Figure 8.5) on Ile Tatihou are remarkable in themselves, but the finds of Trevisker and Deverel-Rimbury pottery in the settlement have much wider implications. They provide dramatic evidence of cross channel exchange within an extended regional economy.

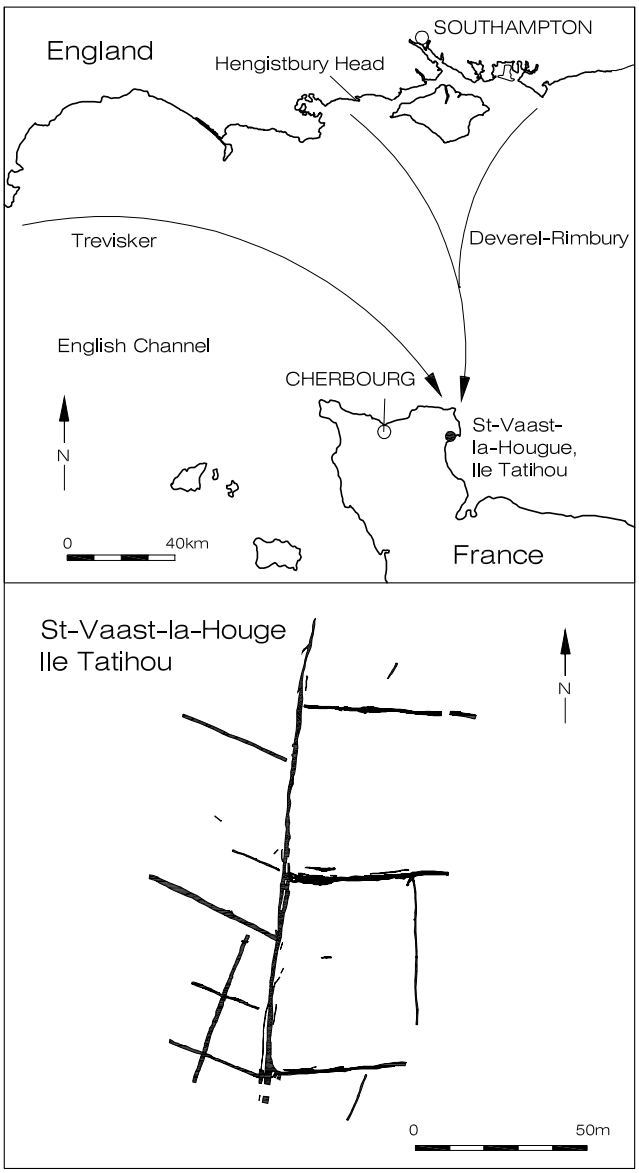


Figure 8.5 St Vaast-la-Hougue, L'île de Tatihou. Derived from Marcigny and Ghesquière 2003a

8.4 St George's Channel towards Bristol

The English Channel Coast has so far largely dominated our analysis of Southern England. What of those zones bordered by the Bristol Channel? Are there further land blocks along this coast similar to those encountered at West Penwith? Yes, there are – for the records confirm that there are sporadic instances of land division along the Bristol Channel approaches, on Exmoor, inland on the fringes of the Somerset levels and along the Avon river valley near to modern Bath and Bristol (Figure 8.6). Whilst the frequency of finds do not compare to the enclaves of the fenlands and the riverine niches along the Thames, communities were adopting the distinctive linear form of land architecture. The southern lands below the Thames valley therefore share a regional tradition.

English Heritage's investigation of the Exmoor National Park is particularly informative but because there is no excavated evidence for field systems it is entirely reliant on survey (Riley and Wilson-North 2001, 46). Fieldwork on the moor recorded ten prehistoric field systems and a further twenty fragmentary field banks, many clustered close to Dunkery Beacon (one of the last surviving unimproved areas). Most were coaxial with associated hut circles. In total 45 hut circles were plotted, and because most are found within the planned field systems, as at Chetsford Water, it supports the argument that the Exmoor co-axials are of second millennium BC origin (ibid. 44). Riley and Wilson-North discuss the relative scarcity of such prehistoric features compared with those found on Dartmoor and Bodmin Moor suggesting that this is partly accounted for by the

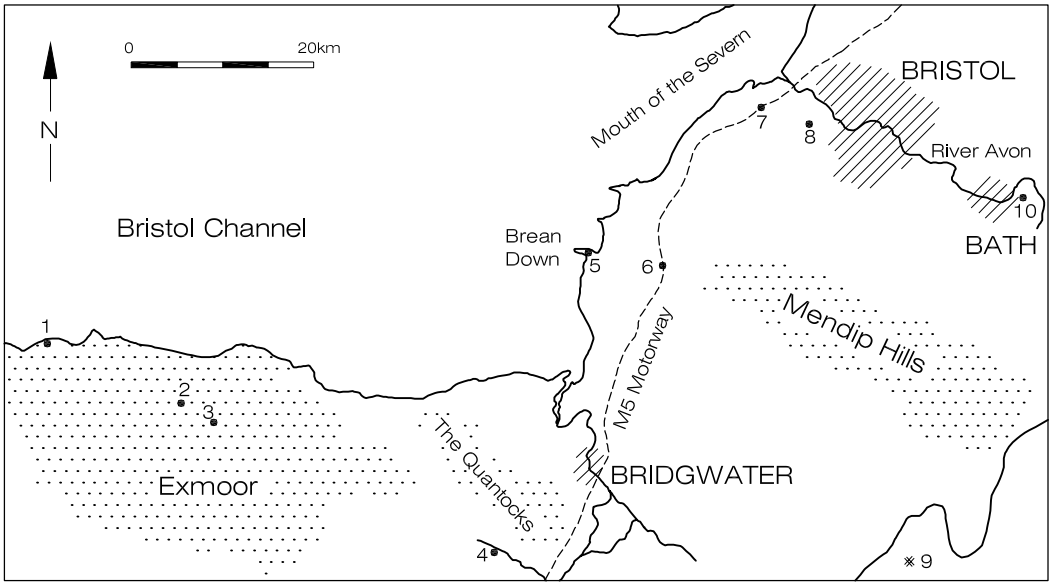


Figure 8.6 St. George's Channel towards Bristol. 1. Valley of Rocks. 2. Chetsford Water. 3. Codsend. 4. Norton Fitzwarren. 5. Brean Down. 6. Axbridge. 7. Portbury. 8. Durnford Quarry. 9. Sigwells. 10. Claverton Down. Site details in Table 8.3

lack of available freestone on Exmoor (ibid. 42). They also suggest that the evidence from Exmoor supports the conclusion that the south-west generally appears to have experienced a time of change by the end of the second millennium BC. The beginning of this stressful time is reflected in an adaptation of existing settlement and land use at sites such as the Valley of Rocks and Codsend (ibid. 47). Further along the coast on Brean Down promontory, field systems may have had their origins in the Bronze Age but there is no direct evidence (Riley RCHME 1995; Bell 1990, 261).

Somerset is famed for the wealth of prehistoric finds both from the reed marshlands of the levels and major sites on the edge of the Somerset basin *e.g.* Norton Fitzwarren and South Cadbury. The environs project at South Cadbury is notable for its expansive use of geophysical prospection and associated test pitting including coverage of a 18ha block of land at Sigwells, Charlton Hawthorne (Tabor and Johnson 2002). The research identified distinct episodes of the landscape's architecture. The first permanent boundary constructions appear to be of Early/ Middle Bronze Age date, orientated NE on a prominent barrow. The succeeding phases spanning the Late Bronze Age comprised a number of additional isolated enclosures which were replaced by two major realignments of the land, first in the Late Iron Age and secondly a more radical break in the Romano-British era when a framework was stamped over all previous property lines (ibid. 12). Phased development of land is typical of the pattern encountered in many parts of Southern England. There was a complete lack of Early and Middle Iron Age evidence from ploughsoils and pit sampling (ibid. 8). Along the Avon valley there are field systems at Durnford Quarry, Long Ashton (Avon SMR 7811) of probable Bronze Age date, and at Claverton Down near Bath (Russett 1990; Lewcun 1998) of possible Bronze Age date.

The M5 motorway runs through Somerset. A number of sites were discovered between 1971 and 1975 following rescue archaeology in the immediate advance of the construction of the highway. Predating developer-funding the collaborative effort of volunteers and professionals identified a number of sites between Avonmouth and the Devon border. Those results published in 2003 included two instances of Celtic fields – one at Portbury near the Avon (Dawson *et al.* 2003, 40) and the other close to Axbridge (ibid. 43). Both were broadly dated as prehistoric. Construction of motorways in the present era of development planning laws would now attract greater funding (particularly for post-excavation analysis and publication) and would be integrated into the construction scheduling.

Chapter 9. The North Sea Coast

9.1 The Eastern Seaboard

Our investigations have established that communities in the Thames Valley and lands further south of that great communications route constructed linear land divisions. We will now focus on the evidence for lowland field systems north of the Thames towards the Scottish borders. This chapter examines the eastern seaboard starting from the Thames estuary and then sweeping through central and eastern Essex, Suffolk, Norfolk, Lincolnshire and beyond. Chapter 10 investigates the eastern Midlands, particularly the Fens, and Chapter 11 the western flank of England from the Severn estuary northwards.

A trawl through all available data for the lands fronting the North Sea coast reveals that formal land divisions are confined to prime coastal ground flanking major river mouths. In addition to the maritime enclaves of Eastern Kent and the Southend peninsula, there are land boundaries on the Lower Blackwater and the Tendring peninsula (commanding both the Rivers Colne and Stour). The linear land blocks in these parts of Essex do not match the scale and sophistication of land appropriation evident along the Thames, and as we proceed further north crossing the Stour the evidence of land boundary digging becomes much weaker. By the time we reach Norfolk and Lincolnshire this form of countryside architecture virtually disappears.

In terms of chronology, field systems/ enclosures were not introduced simultaneously, but were mainly built at different times in the Later Bronze Age sequence. There are a few early field systems. If we include the site at Holywell Coombe, Folkestone there are four examples along the eastern seaboard, of field enclosure assigned to the Early Bronze Age; Hill Farm, Tendring (Heppell *cf.*), Chigborough Farm (Waughman 1998a) and possibly Sutton Hoo (Hummler 1993; Copp 1989). As elsewhere in Southern England the remarkable level of activity changes dramatically during the Late Bronze Age/Early Iron Age transition. The system of food production may have altered at the end of the Bronze Age, possibly reflecting changes in the culture of exchange.

9.2 The Lower Blackwater

Travelling from the Thames estuary along the North Sea coast it would be possible to land on the foreshores of the Lower Blackwater estuary; an area with one of the largest and most complex concentrations of cropmarks in Essex. Land pressures around the mouth of the Blackwater appear to have been intense, for permanent land divisions were established here (Figure 9.1). Wallis and Waughman studied a zone of 200 sq km surrounding this estuary and excavation work provided an important picture of the nature of early agriculture (1998, 1). The results, derived from this intensive study, show the potential for further research (Williams and Brown 1999, 30).

Stockraising compounds are interpreted to have been first created in the Lower Blackwater by the Neolithic or Early Bronze Age. By the Late Bronze Age there were strong indications of agricultural intensification with local communities exploiting the river terraces for stock grazing. Wallis and Waughman suggested that they were not self-sufficient entities but embedded in a wide-ranging and interdependent gift exchange network (1998, 212–212). This Late Bronze Age landscape may have been planned to a certain extent, with traces of field boundaries or enclosures at Slough House Farm, Chigborough Farm, Rook Hall, Tolleshunt D'Arcy and Heybridge Basin, The details on each of these sites (especially the environmental data) is discussed below.

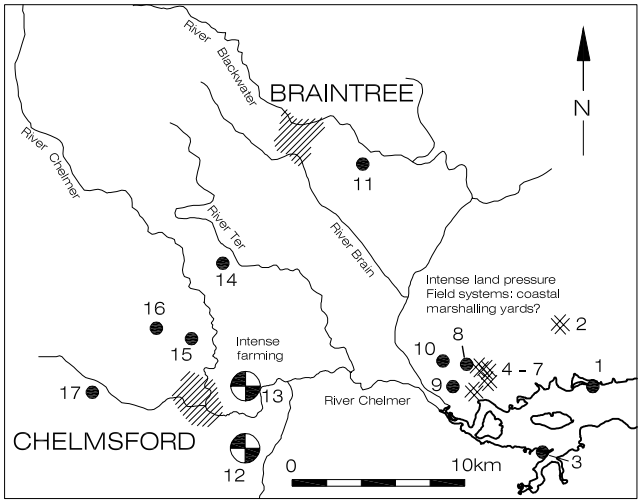


Figure 9.1 The Chelmer and Blackwater Farming Sites. 1. Blackwater site eighteen. 2. Hill Farm, Tolleshunt D'Arcy. 3. Blackwater site three. 4. Chigborough Farm. 5. Rook Hall Farm. 6. Slough House Farm. 7. Blackwater Sailing Club, Heybridge. 8. Lofts Farm. 9. Crescent Road. 10. Howell's Farm. 11. Bradwell. 12. Great Baddow. 13. Springfield Lyons. 14. Little Leighs. 15. Windmill Field, Broomfield. 16. Broads Green. 17. Roxwell Quarry. Site details in Tables 9.1 and 9.2

Slough House Farm lies 2km north east of Heybridge on gently sloping land between 5 and 10m OD. The subsoil, up to 2m thick, consists of silty gravel and patches of brickearth. The south eastern area of the site included finds of ditches, gullies and pits. Several of the latter contained hearth debris (Wallis 1998b, 14). The published report makes no mention of formal land division but the site plan in figure 11 suggests traces of a rectilinear Late Bronze Age field comprising three linear ditches. Two of these boundaries, 190 and 99, are at right angles to each other (ibid. figure 6) and are also associated with a watering hole. The environmental analysis of this feature is revealing.

The watering hole had silted up by the close of the Bronze Age. The fills suggested oak and scrub encroachment into parts of the surrounding area suggesting abandonment by the Early Iron Age (ibid. 55). The lowest fill of the well, context 126, was waterlogged and included branches and leaf mould. Wiltshire and Murphy produced an exemplary microfossil and macrofossil analysis of the 35cm of organic material at the bottom of the feature. The waterhole had been cut 2m through gravel into the subjacent London Clay. Samples from the 21–35cm levels (the bottom of the waterlogged part of the feature) suggested constant disturbance caused by water extraction or trampling by stock animals. The find of a single egg of a whipworm parasite might also indicate that stock had access to the water. Wiltshire and Murphy concluded that grassland was extensive and probably heavily grazed around the waterhole (1998, 177). Samples 9–19cm (the middle of the organic part of the feature) suggested abandonment, with either oak woodland or scrub being allowed to colonise and grow on the site or that coppicing/pollarding was neglected. The spread of ruderals including stinging nettles also suggested that land was falling into disuse. The authors, however, noted that this neglect may relate entirely to the immediate area of the waterhole rather than the entire site since cereals continued to be processed or grown in the area to the same extent as before (ibid. 177). The upper layer, samples 1–7cm, indicated that the site had become closed and dominated by trees.

Chigborough Farm is wholly below the 5m contour and comprises poorly drained sandy loam brickearth, at best 0.3m deep and often only being a superficial covering over the gravel subsoil (Waughman 1998a, 59). At the time of publication a fenceline and rectilinear structures on the site were dated to the Neolithic/Early Bronze Age. That interpretation is questioned in chapter 14 of this book. More convincingly, Middle Bronze Age pastoralism was evident by the construction of a watering hole 645. Steps had been cut into this feature to gain access to the lower section as water levels fluctuated during the seasons. Repeated animal trampling was evident on the edges of the structure. The end of this feature is signified by the placement of a near complete Deverel-Rimbury bucket urn on the top of the waterlogged layer (ibid. 69) and it is thought that the top fill may have been a deliberate capping. The contents of the watering hole included brushwood, radiocarbon dated to 1420–970 cal. BC (HAR-1099; 2980±80 BP) and a wooden structure variously interpreted as parts of a cart, wagon or boat transom (Isserlin 1998, 168).

Wiltshire and Murphy undertook the micro and macrofossil analysis on the watering hole. Samples were taken from the exposed lowest organic fills. The upper sample 756 and lowest 808 represented two phases of sediment accretion, but unlike Slough House Farm there was no

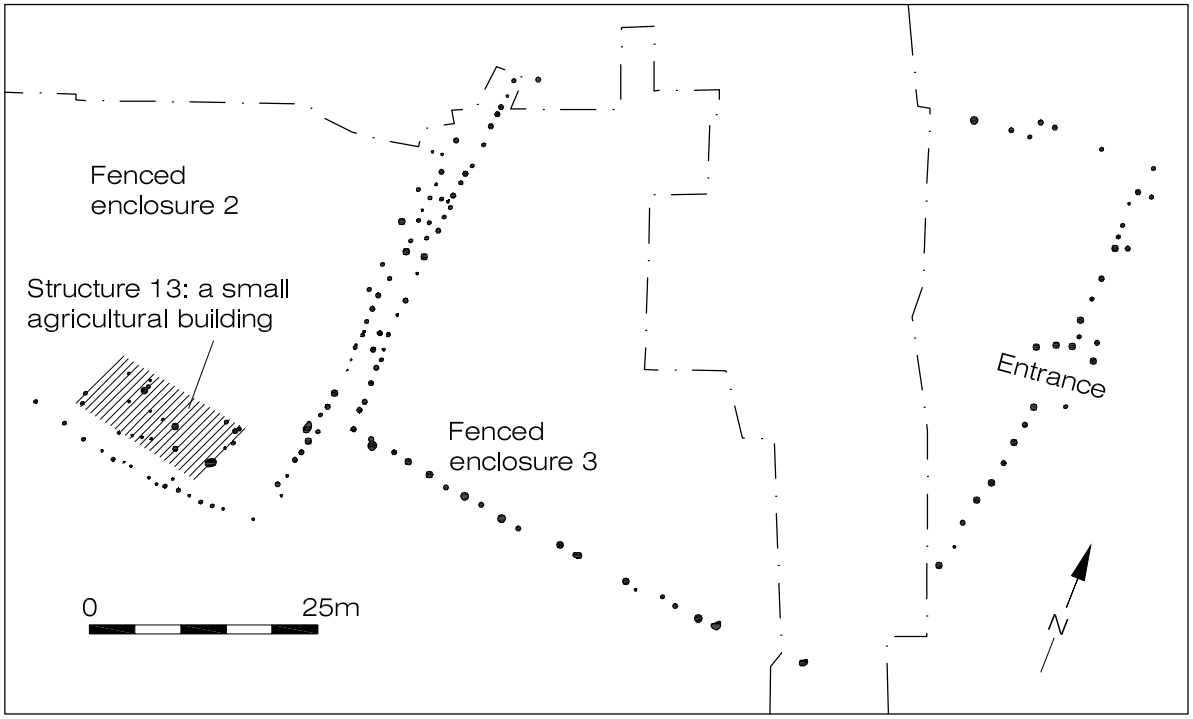


Figure 9.2 Chigborough Farm LBA/EIA enclosures 2 and 3. Derived from Waughman 1998a, 70. This site was located on a brickearth capped gravel terrace only a short distance away from the Blackwater estuary. The posts defining the Late Bronze Age enclosures were removed when the fields fell into disuse

marked vegetation changes. In each, the locality was dominated by weedy, grazed grassland and waste ground. The only significant change in the pollen spectra in the two phases was in the slight decline in grasses whilst other herbs increased. Wiltshire and Murphy suggest that this could indicate increasing grazing pressures (1998, 178). An open landscape was evident in the area throughout the Middle Bronze Age (ibid. 194) and it is possible that this pastureland may have been exploited by the Rook Hall settlement to the north. The presumed settlement at Rook Hall was associated with Deverel-Rimbury pottery and a rectilinear field system for stock management (Wallis and Waughman 1998, 222). Several fragments of cylindrical loomweights had also been recorded from the Middle Bronze Age well at Rook Hall (Brown 1988a, 295).

In the Late Bronze Age/Iron Age phase at Chigborough Farm rectilinear enclosures were constructed. Enclosure 1 had ditched boundaries (Waughman 1998a, 75) and a possible associated well, 205. This probable stockyard was interpreted as providing a well-drained corral during seasonal waterlogging (ibid. 104). Enclosures 2 and 3 were fenced areas suggesting that drainage (and therefore cereals) was not a priority. Their size, relationship and associated fenced trackway led the excavators to draw parallels to a similar construction at Hunstanton (Bradley *et al.* 1993). The narrowness of the connecting trackway and the relative sparcity of waterholes was interpreted as likely to be associated with the large scale management of sheep (Waughman 1998a, 104) or movement of small numbers of cattle, but this seems unlikely. Within enclosure 2 a small rectilinear structure 13 may have provided a possible refuge for people minding the livestock (Waughman 1998a, 104). Enclosures 2 and 3 are illustrated in Figure 9.2.

Whilst Enclosure 1 may have been earlier or later than the other stockyards, all were aligned on a broadly similar axis. The structures were likely to have been constructed during the Late Bronze Age/Early Iron Age with a greater probability of its being closer to the beginning of the range (Waughman 1998a, 75). The Chigborough fields shared the same alignment as the fields associated with the Deverel-Rimbury settlement at Rook Hall, and Late Bronze Age burial evidence and

metal depositions there suggest that Rook Hall communities persisted into the Late Bronze Age. The lower land at Chigborough may have been adversely affected by rising sea levels in the Bronze Age, which might explain the virtual absence of late 2nd and early 1st millennium BC pottery (Brown 1998b, 139).

Hill Farm, Tolleshunt D'Arcy was a site investigated by P. Adkins in a watching brief during which a ditched field system thought to belong to the Bronze Age was observed (Waughman 1998b, 233). Limited information is presently available but the plan suggests a timber building within a series of linked enclosures (Adkins 1983, figure 1).

Heybridge Blackwater Sailing Club is adjacent to an upstanding mound. The gravel here was capped by a clay layer possibly the result of coastal flooding after the Bronze Age. Fourteen Late Bronze Age features were dated by pottery and artefacts; the most important for this study being two parallel ditches F252 and F283 which ran east – west (approx. 64m spacing) with two certain watering holes and two further possible wells. The prehistoric features were recorded under difficult conditions and the simplified site plan showed a number of undated ditches, which suggested further elements of a field boundary, together with an associated 7–8m diameter timber structure. Brown and Adkins concluded that the Heybridge Basin site was an unenclosed Late Bronze Age settlement with a system of east – west land divisions (1988, 248). Bone survival was poor because of the acidic gravels but identifiable fragments of cattle bone were recovered from the two wells (Brown and Adkins 1988, 247). The discovery of a finely perforated clay plaque and a possible unperforated clay loomweight were also of interest.

There was one settlement site of particular interest in the Lower Blackwater: Lofts Farm. It was 2km north of the Heybridge Basin just below the 10m contour line on poorly drained land (Brown 1988a, 249). It appeared to be a form of Late Bronze Age aggrandised enclosure with associated extra mural settlement. It may have been supported by a primarily pastoralist economy: a conclusion reached on the basis of the environmental sampling from a waterlogged-well nearby and the absence of the earliest stages of crop-cleaning among carbonised plant remains from features within the enclosure. The enclosure structure suggested a direct involvement in livestock. The two ditches formed a sub-rectangular enclosure and the creation of a low mound/hedge between them would have provided an effective barrier for keeping animals inside or outside of the compound (ibid. 257). The interior had a number of possible stock management features including a fence line (ibid. 260). Animals temporarily housed within the enclosure may have been associated with feasting activities in the compound (ibid. 296). The Lofts Farm location would have enabled the community to exploit the grassland of the surrounding gravel terrace, as well as the pasture of the salt marshes fringing the Blackwater estuary (Brown 1988a, 295). The economy of the Lofts Farm area in the Late Bronze Age may have been strongly pastoral but the cereal evidence also demonstrated that the principal crops of the later first millennium BC (spelt, emmer, wheat barley and beans) were already being cultivated in this area (Murphy 1988, 283).

9.3 Inland from the Blackwater Estuary

Travelling further inland from the Blackwater, we enter the Chelmer Valley which dissects the boulder clay plateau (Figure 9.1). A series of river valleys branch off from the Chelmer and Blackwater providing access routes to the interior of Essex.

It is in the Chelmer valley that new forms of Late Bronze Age/earliest Iron Age settlement including ringworks were centred (Figure 9.1). Recent evaluation work on the valley slopes indicate the presence of extensive Late Bronze Age occupation and fields contemporary with the Springfield Lyons ringwork (Brown 2001, 97). The quality of the environmental evidence collected from the Late Bronze Age enclosures provides valuable information on the economies supporting these forms of occupation. Springfield Lyons was a single phase Late Bronze Age aggrandised enclosure with an extra-mural settlement. It occupied a commanding position overlooking a large part of the fertile lower Chelmer Valley. An arc of metalworking appears to mark a south eastern outer boundary (Buckley, Brown and Greenwood 1986, 263, figure 13). The enclosure itself had the largest Bronze Age mould assemblage in the country, possibly representing specialist sword production.

How far did territorial control for this elite centre extend? For many ringworks in the SE

control appeared to be confined to observable ground. Perhaps this is not the case in South East Essex. No identifiable ringwork to date has been identified on the Southend peninsula despite the evident scale of activity. Wymer and Brown have therefore suggested that perhaps the outer estuaries along the Essex coastline were organised in a way that they did not require such sites. Possibly Springfield and Mucking controlled land right out to the outer estuaries (1995, 157). For Springfield this would have included the managed land on the north bank of the Blackwater estuary. Further clues support the notion of intensified land use, for colluviation did occur in the Bronze Age in the Chelmer Valley perhaps indicating early land pressure (Buckley and Hedges 1987, 32).

The interim report for Springfield Lyons (Buckley and Hedges 1987) provided some provisional tantalising insights into the local environment of the time; 163 samples were taken from Late Bronze Age confirmed or likely contexts. The plants identified included: barley, emmer, spelt, horse bean and bread wheat. The weed species found in some of the contexts with the cereals suggested that whatever the origin of the harvest, some cultivation extended down to the edges of a floodplain (Murphy 1987, 12). Murphy also noted that through time there might have been an extension of cultivation onto heavy clay soils during the Late Bronze Age (Murphy 1987, 12).

The Great Baddow enclosure stood on glacial sands approximately 3km south of its "partner" ringwork at Springfield Lyons. These paired aggrandised centres offer two viewpoints: Springfield Lyons offers command of land to the east and Great Baddow may have dominated land to the west (Lavender *cf.*). Springfield Lyons also differed in that it may have been occupied to a later date. The compounds were both approximately the same size and in both plain hooked rim jar wares appeared in the lower fill of their respective ditches. The Great Baddow excavation did not match the near complete excavation of Springfield Lyons, consequently the environmental information was sparse.

Along the Chelmer River above Chelmsford is Windmill Field, Broomfield. This sub-rectangular enclosure first identified from aerial photographs was originally thought to be of Iron Age date. Significantly its subsequent excavation in advance of residential development confirmed a total of four phases of occupation from the Late Neolithic to Roman periods of which the Late Bronze Age was the most important. The enclosure was interpreted as a small farmstead occupied during the ninth century BC, in effect a Late Bronze Age small-holding operated by a single family unit (Atkinson 1995, 22). Evidence of cereal processing, stock management and limited storage suggested to the excavator that the occupants were self-sufficient, operating a mixed farming economy under subsistence conditions (ibid. 23). There are reasons to believe otherwise; there are aspects of the site which suggest that the occupants had greater aspirations. A number of features in the compound and its location suggest that it might have been built by an ambitious family or individual – an aggrandiser as defined by Clark and Blake (1994, 18). The site commands extensive views over the terraces and river flood plain, just as at Great Baddow, Springfield Lyons and Lofts Farm. Its topographic position provided access to what might be termed *social resources* – notably people moving along the natural river valley. The interior was dominated by a central roundhouse whose architecture provided an impressive alignment with the substantial gated entrance to the compound. That gateway had been embellished by the deposition of pottery, particularly on the northern terminal in accordance with probable local conventions. The enclosure ditch was widest and deepest at the terminals of that entrance but the dimensions of the ditch contracted noticeably in both width and depth away from that point of ingress. An imposing entranceway suggests that the architectural design aimed to impress visitors.

At Windmill Field, just as at Springfield Lyons and Lofts Farm, areas in the interior may have been set aside for craft activity. For all three sites, occupation was confined to the Late Bronze Age with no subsequent Early Iron Age dwelling. The pottery assemblage at all three locations included fine wares associated with eating and drinking.

West of Chelmsford a series of small rivers and brooks branch out into the Essex interior. These natural communication channels were the focus for open farming. Recent excavations are revealing a much greater level of exploitation and settlement of the heavier clay lands of Essex than was once thought likely. It also confirms that formal land partition was confined to the major communication routes including the east coast.

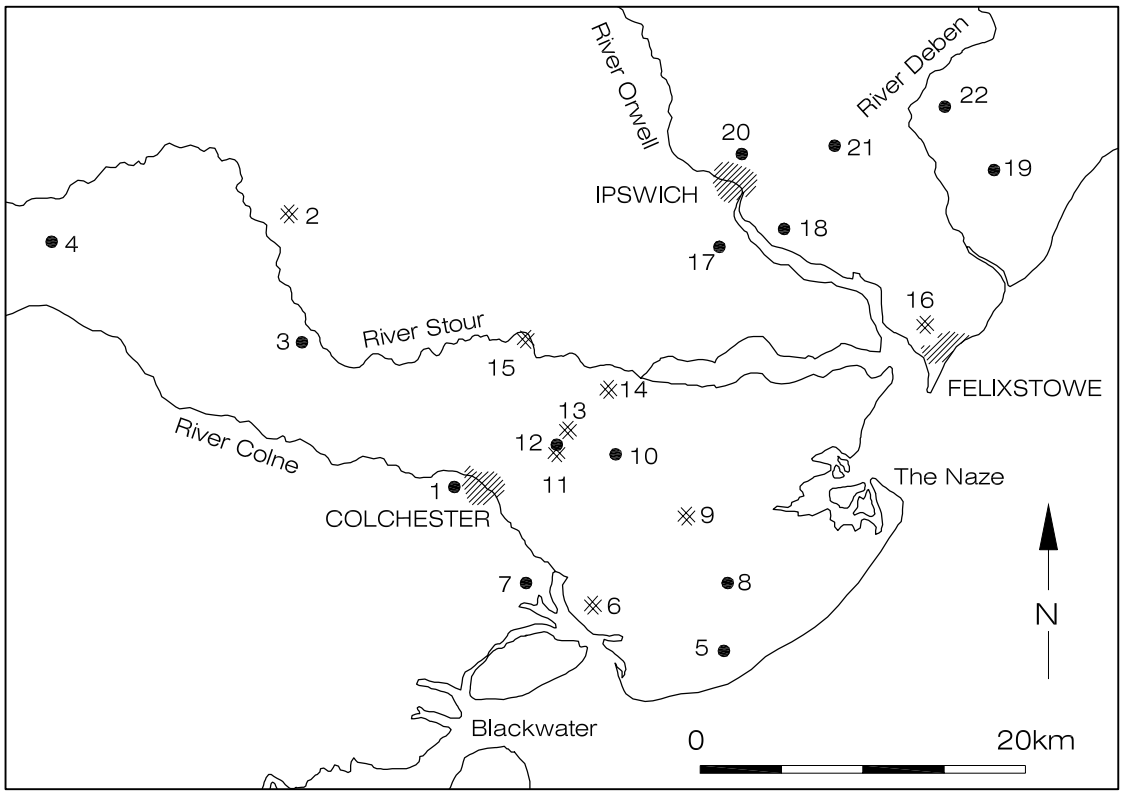


Figure 9.3 Colchester to Ipswich. 1. Sheepen. 2. County Farm. 3. Ferriers Farm. 4. Ridgewell Hall. 5. Rush Green, Clacton. 6. Moverons Pit, Brightlingsea. 7. Frog Hall Farm, Fingringhoe. 8. Montana Nursery, Little Clacton. 9. Hill Farm, Tendring. 10. Little Bromley. 11. Martell's Quarry. 12. Martells Hall. 13. Vince's Farm, Ardleigh. 14. Lawford. 15. Langham. 16. Blofield Hall, Trimley St. Martin. 17. Wherstead. 18. Ipswich Airport. 19. Shottisham. 20. Victoria Nurseries. 21. Kesgrave. 22. Sutton Hoo. Site details in Table 9.3

9.4 Colchester, Clacton and Tendring

We now move to North East Essex and the River Stour (Figure 9.3). The modern administrative divide between Essex and Suffolk has obscured the prehistoric canvas and a regional approach currently being developed will provide a clearer insight into early farming expansion.

Developments at the end of the first millennia BC have been the focus of much research around Roman Colchester. What of settlement and land use during the Bronze Age? Philip Crummy believes that the Bronze Age artefacts from Colchester suggest farming. The Sheepen bronze cauldron, with a capacity of approximately 15 gallons, implies a special and high status site. It is directly comparable with one from Feltwell Fen in Norfolk, an area notable for its burnt mounds (Crummy *cf.*). The feasting implications of these elaborate vessels suggest that agricultural surpluses may have been a priority (Clark and Blake 1994).

Bronze Age occupation (possibly high status) around Colchester is apparent but we are largely ignorant of the underpinning economy. This is possibly the result of excavation techniques used in the 1930's (trenching) which failed to identify post built structures let alone linear field boundaries in the area. In addition to exotic finds, the scale of Bronze Age funerary monuments also suggests the importance of this area. Large ring ditches exist at Sheepen, Lexden and Chitts Hill; and, in addition, a number of major urnfields have been found. Practically every large area excavation in the Colchester area produces residual prehistoric material. Davies makes the interesting observation that while the distribution of finds suggest fairly dense occupation around Colchester in the Bronze Age it is not so noticeable in the Early Iron Age. He cautions, however, against any suggestion of major discontinuity (Davies 1992, 7).

A site just to the south of Colchester may confirm that intensive farming had been established in the Bronze Age**.** An excavation at Frog Hall Farm, Fingringhoe uncovered a small

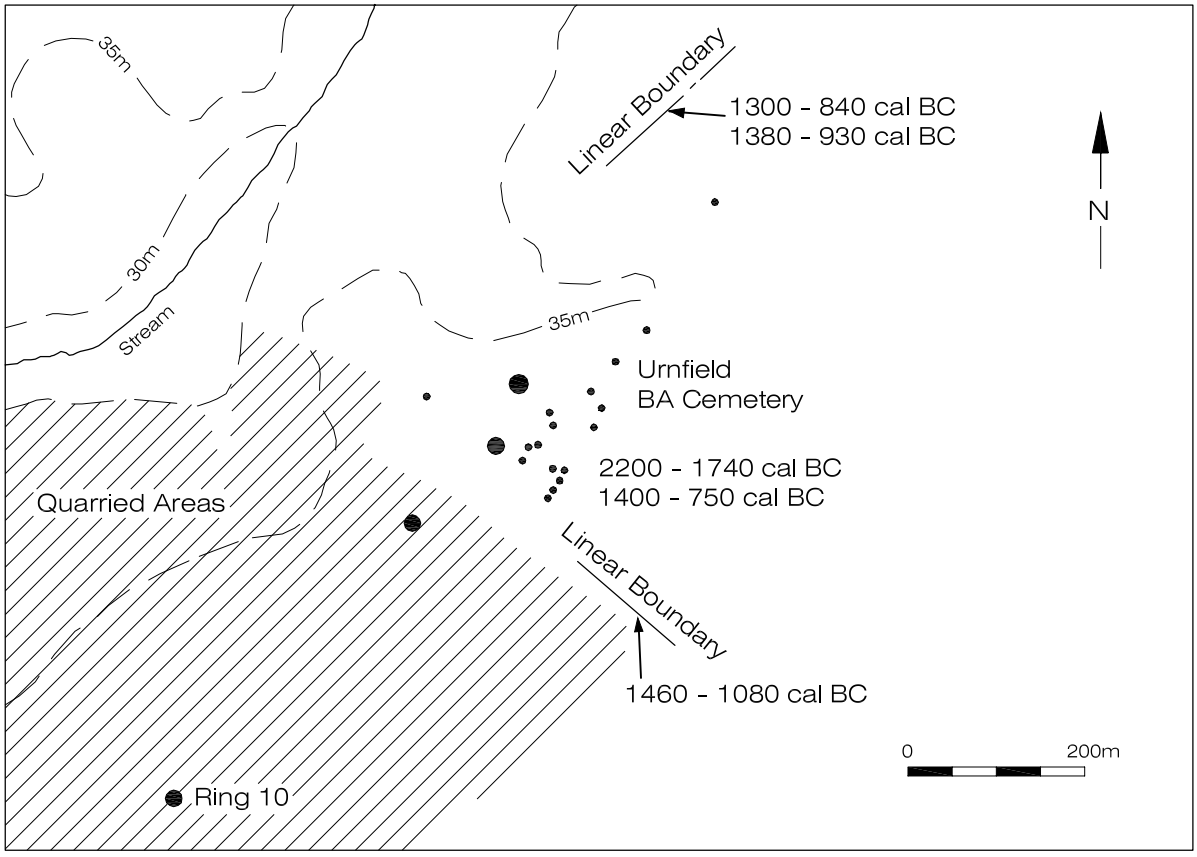


Figure 9.4 Vinces Farm, Ardleigh Essex. Derived from Brown 1999, figure 104. A large area of flat land was marked out in the Middle Bronze Age by a boundary that incorporated natural stream valleys, and two large ditches aligned on an earlier ring-ditch cemetery

Late Bronze Age occupation site with a post built oval structure within a ditched enclosure. This settlement was associated with a complex of cropmarks. Burnt seeds of horsebean *(Vicia faba L.*) were dated to 1130–790 cal. BC (HAR-2502; 2760±80 BP). This working landscape may again have been defined by metal deposition, for at nearby Plane Hall Farm, Fingringhoe a Late Bronze Age hoard was recovered comprising 28 items, including a bronze sickle (Sealey 1991, 4).

Moving east onto the Tendring Peninsula, agricultural intensification is well represented in the archaeological record. The earliest land division to date occurred at Hill Farm, Tendring. Cropmark plots for this site revealed a series of trackways, field systems and enclosures. Broadly assigned to the later prehistoric period, on excavation some of the features suggested a much earlier date with the possibility of an Early Bronze Age form of land division. Provisional findings include two parallel boundaries of Early Bronze Age date running NE – SW, 22m apart. Land use here was confined to the Early /Middle Bronze Age with no subsequent Late Bronze Age evidence to date. The north east orientation of the fields appeared to determine the orientation of the landscape in both the prehistoric and Roman times (Bennett 1998, 210. Heppell pers. comm.).

The early land divisions at Hill Farm are remarkable, suggesting that finds from the Tendring Peninsula are of critical importance. The work at Vince's Farm, Ardleigh ensures that status. It is one of the few sites in the country where absolute dates have been obtained for both land divisions and the cemetery complex on which they were aligned (Figure 9.4). Two large ditches were constructed, one tracking away to the north east and the other to the south east from the area of the cemetery. Three radiocarbon dates were extracted from these linear boundaries, producing dates of 1300–840 cal. BC (HAR-5126; 2870 ± 80 BP) 1380–930 cal. BC (HAR-5128; 2940±70 BP) and 1460–1080 cal. BC (HAR-5129; 3050±70 BP) (Brown 1999, 177). The earliest cremation in the cemetery

was dated by radiocarbon determination to 2200–1740 cal. BC (HAR-3908; 3600±80 BP) and the youngest 1400–750 cal. BC (HAR-5745; 2810±120 BP) (Brown 1999, 16 and 172). The burials were predominantly orientated NE – SW and this is a pattern repeated at the cemeteries of Brightlingsea, Little Bromley and Thorpe-le-Soken (Brown 1999, 176). The cemeteries also suggest another regular relationship for each may be located to the south east of Neolithic ceremonial monuments (ibid. 175).

The land divisions that were apparent at Vince's Farm and Martell's Hall may extend further to the south. Evaluation work at Martell's Quarry has identified a Bronze Age boundary (ditch 13) which ran on a NE–SW alignment (James 2000, 6). The formal landscape around Ardleigh may therefore have been extensive.

Over the river from Fingringhoe further discoveries have pinpointed a regimented landscape. At Moverons Pit, Brightlingsea a Middle/Late Bronze Age enclosure surrounded three round houses. The enclosure was morphologically similar to those at Broomfield and Lofts Farm. It was sited on mixed sands and gravel overlooking the Colne estuary at approx 21m OD. The field system and trackways recorded in the vicinity may belong to the complex since they share a common axis and are aligned on the Middle Bronze Age cemetery. An Early Bronze Age sickle was found in the topsoil on the site. The orientation is not mirrored in the layout of later field systems (Clarke 1996, 30). Significantly no Early Iron Age material was identified in the post excavation work.

Two other sites on the Tendring peninsula are possible rather than certain Bronze Age field systems. At Little Clacton Montana Nursery, work in advance of the construction of the Little Clacton and Weeley Heath bypass lead to the discovery of an unenclosed Late Bronze Age settlement (Essex SMR 3001). The preparatory fieldwalking at plots 21, 22 and 14 suggested that the field systems were multi period but were associated with ring ditches in the area (Essex SMR 3135).

At Clacton Rush Green, environmental evidence suggested cereal cultivation. Sewer trenching was only the start of threats to this area. A rectilinear field system has now been partly destroyed by a housing development (Couchman 1976, 147; Priddy 1983, 122). The archaeological work associated with the residential development was carried out in less than ideal conditions. Excavation concentrated on a ring ditch to the SW of the rectilinear land division. Two radiocarbon dates were obtained, placing the funerary monument in the Early to Middle Bronze Age. Environmental sampling from the ring ditch produced a mixture of cereal remains with seeds from tall weed plants interpreted as species found along hedgerows on the margins of arable fields (Priddy 1983, 127). Re-examination of the remaining segments of this field system should be included in any regional research brief. These two possible sites are cited to stress the potential of this area as a zone of extensive land clearance and land division.

Finally, there is the River Stour Valley which had all the preferred attributes for early farming: fertile glacial sands and gravels; fresh running water; location on a traditional routeway (Dymond and Martin 1989); and, direct maritime access to a wider world. There is a high concentration of barrow cemeteries along the valley from Lawford (Strachan, Brown and Knopp 2000), and the field systems are found at the river mouth.

9.5 Orwell and Deben

The clear-cut linear boundaries on the Tendring peninsula (Figure 9.3) have a special significance: the retrieval of the distinctive Ardleigh style pottery and radiocarbon samples leave no questions as to their dating. North over the River Stour such clarity is lost. The evidence becomes fragmentary (Figure 9.3) and the dating uncertain: a possible earlier origin for the Iron Age enclosure and associated trackway at County Farm near Sudbury (Abbott 1998); a possible Late Bronze Age/Early Iron Age droveway at Wherstead (Suffolk SMR WHR 021); fragments of Bronze Age boundaries at Trimley St Martin (Sommers 2000); a hint of possible Bronze Age boundaries at the former Ipswich Airfield (Meredith 2000); and, traces of prehistoric fields at Kesgrave (Suffolk SMR SF18505) and Shottisham (Suffolk SMR SF 17947) to accompany an interim interpretation of Early Bronze Age fields at Sutton Hoo (Hummler 1993; Copp 1989). The paucity of dateable land blocks in this area is a surprise. Logic would suggest that the Orwell-Gipping-Lark routeway identified by Cyril Fox (1934, 152) would have formal land divisions to accompany the density of metalwork finds near this part of the coast. The reduction in evidence in Suffolk gets progressively worse as we move north. Norfolk appears at first sight to be devoid of any dateable late second /early first millennium BC land divisions. The adoption of

rigidly divided landscapes in effect fades away. North of the Wash in Lincolnshire they are also entirely absent – a void that continues right up to the Scottish border. One site breaks this pattern – the discovery of an outlier site at Hibaldstow connected to the Humber estuary. It had both distinctive field ditches and Middle Bronze Age pottery (Allen and Rylatt 2001).

9.6 Lowestoft and Great Yarmouth

It is said that whilst the evidence of the Bronze Age population of Norfolk may be imperfect it points nonetheless to an extensive and industrious farming community (Lawson and Wymer 1993, 30). Norfolk boasts a remarkable wealth of artefactual evidence especially metalwork and a remarkable absence of Bronze Age settlement and land division. Developer-funded work requires a clear research orientation in trying to establish whether there is evidence of large-scale Bronze Age land division concealed below modern arable fields (Ashwin 1996, 59). The pattern of early land allotment elsewhere in Southern England offers some ideas of where Bronze Age land divisions may occur: prime land, preferably flat, close to the lower reaches of a major river and the sea. These areas are characterised by settlement density, concentrated metalwork deposition and evidence of earlier monuments. The area around Lowestoft and Great Yarmouth fits this profile where the Waveney meets the North Sea (Figure 9.5). It is a testable model. If late-second early-first millennium BC land divisions occur anywhere in Norfolk then this zone should be a prime target for research.

The evidence on the ground immediately looks hopeful, for this area has cropmark evidence of rectilinear field systems that enclosed 35sq km of sandy loam topsoil (Edwards 1978). It is an area with numerous barrow and ring ditches; rich in Bronze Age weaponry; ploughzone lithics of Middle/Late Bronze Age date; and small dimension palisaded ditches not unknown on other Bronze Age sites.

A number of excavations on these features have produced no dateable evidence. That initially depressing news does not, however, rule out a prehistoric date. Indeed the absence of Roman material collected in field walking and ditch sections may be of more significance, for if these fields were Romano-British we would expect to retrieve pottery from manuring spreads. Such paucity of dateable material suggests the need for a different research strategy in this area (Timms and Ashwin 1999).

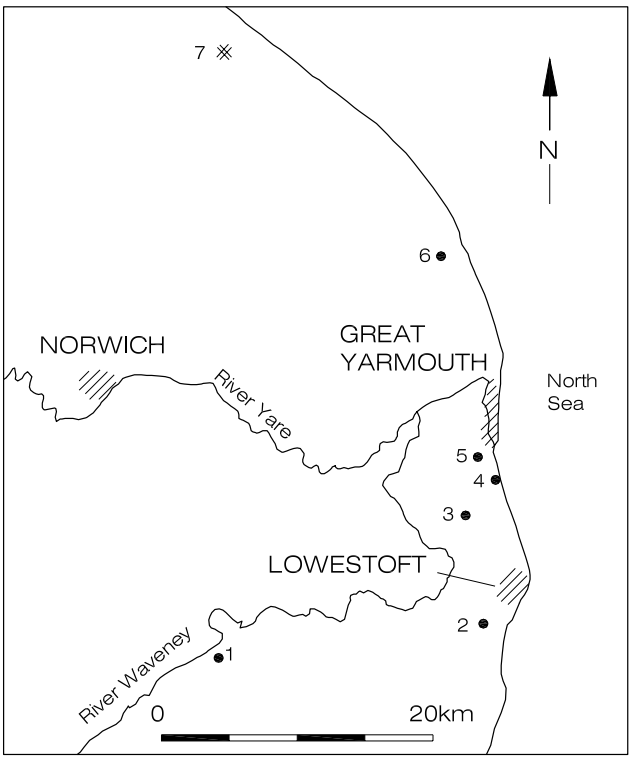


Figure 9.5 East Coast: Lowestoft and Great Yarmouth. 1. Stow Park. 2. Bloodmoor Hill. 3. Somerleyton. 4. Hopton-on-Sea. 5. South Gorleston. 6. Hemsby. 7. Witton. Site details in Table 9.4

Beyond the mouth of the Yar there may be prehistoric land boundaries at Hemsby (Bown *cf.*) and further north at Witton (Lawson 1983). Both are sited within a noticeable block of brickearth on the NE Norfolk coast and that prime land (Figure 9.6) would normally be characterised by intense Bronze Age land appropriation. From this point along the North Sea belt the field divisions so elusive in Suffolk and Norfolk completely disappear, except for one last outlier further north at Hibaldstow (Figure 12.2) where commercial work has unearthed a small scale Late Bronze Age settlement consisting of five phases; the third of which involved the construction of segmented enclosures. The occupation site benefited from a patch of well-drained land close to a spring line and access to an inlet off the basin of the River Ancholme; essentially part of the tidal waters of the Humber estuary. The community therefore had direct access to the North Sea and were sustained by a mixed economy of cereals, horticulture and livestock (Allen & Rylatt 2001).

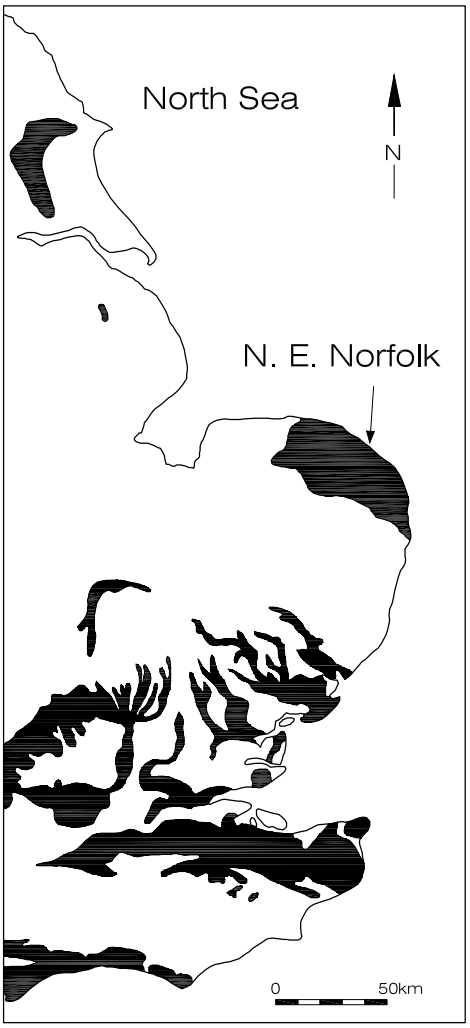


Figure 9.6 Distribution of loess along the North Sea coast. Derived from Catt 1978. Norfolk is metal rich but field poor despite an extensive stretch of loess – the most valued farming soils – located in the north eastern part of the county

9.7 Land division north of the Wash to the Scottish borders

Examination of all available excavation reports including 'grey' literature generated in developer-funded projects has established that along the North Sea coast, Later Bronze Age rectilinear fields are found in a compact area extending from the shore of Kent to the border between Cambridgeshire and Lincolnshire. Since '*Celtic fields*' were long thought of as a feature of the Chalk, it is particularly interesting that they were not identified in recent surveys of the Yorkshire or Lincolnshire Wolds (Stoertz 1997; Boutwood 1998). The English data available, including finds from the northern most counties of Cumbria and Northumberland, show that Later Bronze Age coaxial field systems with their elaborate sub divisions are confined to southern England . Starting in the Midlands of England (Clay 2002; Mullin 2003; Knight and Howard 2004) and extending north of the Wash a different pattern of land tenure dominates the archaeological record for the 1st millennium BC – a practice of enclosing large tracts of land with linear boundaries and pit alignments. In Yorkshire they are part of a system of enclosed territories, not fields (Bradley and Yates in press). Whilst Hibaldstow is the northern most instance of rectilinear land division, the discovery of a ringwork at Thwing provides a link with the English Channel–North Sea economic region (figure 12.2). The earthwork enclosure is located on a chalk ridge providing an extensive view east across the Great Wold valley toward the North Sea (Manby 1980, 321).

9.8 Changing times: the Early Iron Age along the North Sea coast

The rarity of the Hibaldstow enclosure fields (the northernmost example referred to in this research) makes it stand it out from other sites in this study area but it is no different in one important respect. Following abandonment in the Late Bronze Age there is relatively little evidence for continued occupation or land division until renewed activity in the Roman period. Along this windswept coastline there are signs of a social change. On the Tendring peninsula social dislocation may have occurred, for at Moverons Pit a busy Bronze Age landscape had no subsequent Early Iron Age material culture. At the same time activity appears to decline around Colchester (Davies 1992, 7). Late Bronze Age exploitation along the Chelmer valley also appears to change. Each of the enclosures at Windmill Field, Great Baddow, Springfield Lyons and Lofts Farm may have been formally decommissioned. Further downriver in the Lower Blackwater a settlement shift may have occurred in the Early Iron Age (M. Brown pers. comm). For Essex, the system of food production may have altered and the associated social change may in part be signalled by acts of decommissioning – often this was done by sealing the once vital watering holes (Brown 1988a, 271).

Chapter 10. Into the Fens

10.1 Fenland research

The Fenland of Eastern England was once the largest single area of wetland in the United Kingdom, covering one million acres. This distinct geographical zone has rightly attracted much archaeological interest, including the pioneering work of the Fenland Research Committee between 1932 and 1940 and its successor the Fenland Project which co-ordinated archaeological surveys, developed environmental studies of the Fenland deposits and made available the data collected (Hall and Coles 1994, 8). The main prehistoric occupation deposits recorded in the Fenland Project were found on the fen edge which runs for over 250km around the rim of this enormous geographical region. This boundary between dry upslope and wetland provided "an environment offering a variety of opportunities and problems to early groups" (ibid. viii).

Ground breaking as the survey was, its very success created a research imbalance. The richness of available Fenland data (particularly on the fen edge) was in marked contrast to the relative ignorance of patterns of settlement and land use in a much wider catchment area surrounding the Fenland basin, creating a major problem for studies of the late second and early first millennium BC. For this was an age of politicised economies; where ideas, people, livestock and other produce were moving within an extended realm of exchange. In consequence the economy of the Fens and its wider political control could not be fully assessed on the basis of the data available.

Some indication of the wider economy of the fens may be seen in the clustering of earlier barrows and ceremonial monuments lining the banks of the main feeder rivers into the wetland basin; particularly along the valleys of the Welland, Nene and Great Ouse. Burial concentrations intensify as we drop down to the fen edge, but also occur in the depths of the Fens. These linear patterns suggest that the rivers may have functioned as corridors for communities driving their livestock to summer pastures. Without full knowledge of sites along the entire route we cannot, as Evans observed (1987, 34), assume that the fen edge communities represented the home base of transhumant communities, for their dwellings may have been one portion of an extended drove route. Herders practising limited transhumance may well have occupied the hinterland behind the Fen Edge (ibid. 33). It is this type of information that we need if we are to fully analyse livestock management, which is only one aspect of a subsistence economy.

Writing shortly before the start of commercial archaeology, Evans observed that there was another developing research problem; namely, the promotion of all-embracing explanations of prehistory in the fens (1987). These were pan-regional models, as he called them, which had begun to be applied universally to the widely separated parts of the wetlands, the idea being that land and resources were being used identically in different sectors of the fens even though, a) they are separated by vast distances and b) have catchment areas with entirely different pre-histories of their own. Rather than assuming a prehistoric unity for this defined study area, Evans argues that our concepts of grand, region-wide patterns of land use and migration may be inappropriate. For example, he noted that much more localised land use patterns were already being observed in excavation in the lowland reaches of the Welland and the Ouse rivers (1987, 35). He concluded that such instances of local diversity would be better studied in relation to the river systems of which they form a part, rather than seeing each as necessarily relating directly to the Fens (ibid. 35).

These two particular concerns – a) limited

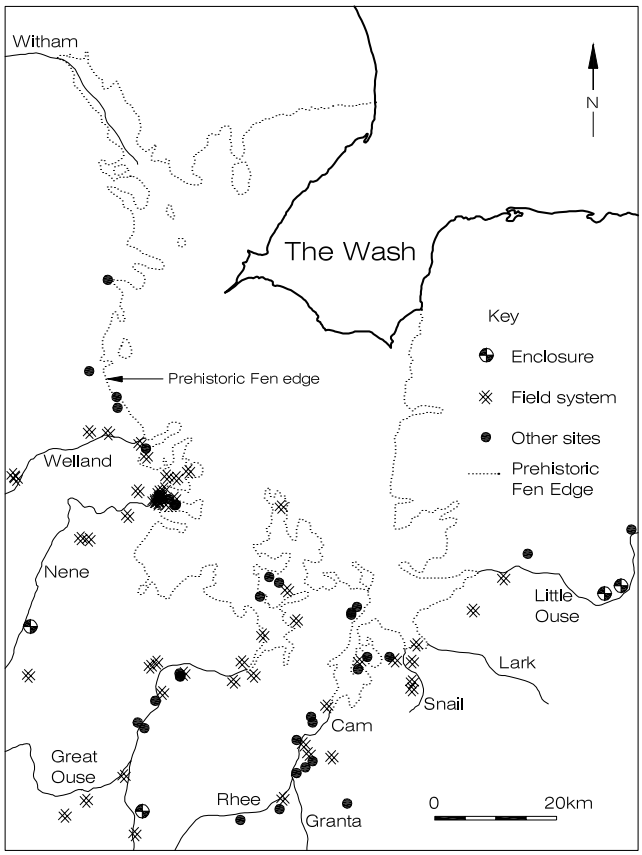


Figure 10.1 The Fens and feeder rivers

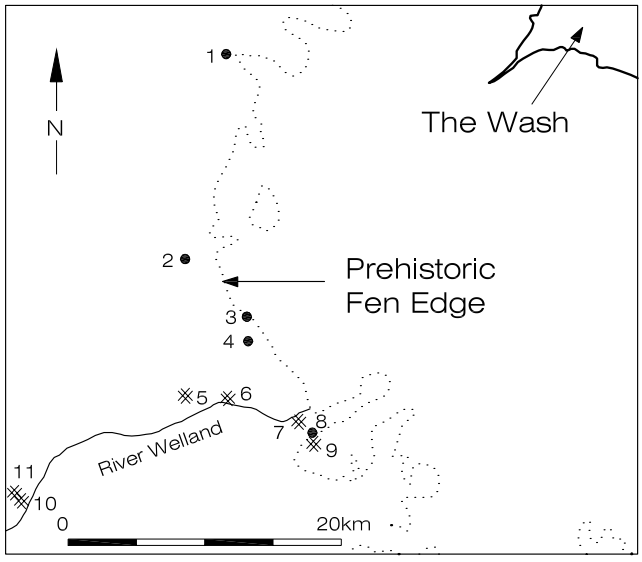


Figure 10.2 Northern Fens and Welland sites. 1. Billingborough. 2. Meadow Drove. 3. Cross Drain. 4. Langtoft. 5. Rectory and Stowe Farms, West Deeping. 6. Market Deeping Bypass. 7. Welland Bank. 8. Borough Fen Ringwork. 9. Borough Fen. 10. Tixover. 11. Ketton. Site details in Table 10.1

archaeological investigations away from the fens, and b) the need to recognise local differences – can be directly addressed by commercial archaeology. Developer funded investigations for the East Midlands and East Anglia are producing new insights into the emergence of political economies during the late 2nd and early 1st millennium BC. Project work in all the counties surrounding the Fenland sphere of influence (including Northamptonshire, Leicestershire, Rutland, Bedfordshire, Cambridgeshire, Lincolnshire, Suffolk and Norfolk) is beginning to offer a broader perspective for the wetland communities that came to dominate East Anglian prehistory. The information from sites and monuments records suggests that the river valleys were the foci for early farming, settlement and the construction of the first permanent land divisions (Figure 10.1). There is a recurrent pattern along the great East Anglian rivers just as with the Thames itself; communities were appropriating the most valued land. Contract work is providing the necessary finer detail of local variation, revealing the complexity, phasing and decline of the first wave of prehistoric field designs.

Such detailed local knowledge helps to improve and develop local models of land use within a broader pan-regional framework. It provides an opportunity to improve the effectiveness of planning interventions and sharpen the research focus for those field archaeology units endeavouring to unravel the fascinating prehistory of this area.

This chapter synthesises available information on each of the major feeder rivers that discharge into the Fens (Figure 10.1). In so doing it aims to link widely dispersed finds and integrate the wetland evidence with events inland. Developer-funded work in this sense has ended an unintentional segregation of Fenlander communities from the wider world they inhabited.

10.2 Northern Fens

We start first in Lincolnshire in the Northern Fens where the available information derived from client work appears to show a different kind of Bronze Age land use from that in other Fenland areas (Figure 10.2). Settlement evidence for the Later Bronze Age is sparse, and large-scale land division is singularly absent. This is despite the

profusion of metalwork deposition and causeway construction along the River Witham. Almost all of the recognisable votive offerings of metal weaponry in Lincolnshire come from the river valleys and mostly from the Witham between Lincoln and Tattershall. But despite this zone of war gear, there are no signs of any large-scale land appropriation or evidence of rectilinear field systems.

The association between weapon deposits and field systems is a recurrent pattern along the Thames, the South Coast and the eastern seaboard, but that pattern is not repeated here. The apparent absence of fields is common to almost the entire county of Lincolnshire. This situation is matched by their absence in Nottinghamshire, Rutland, the entire Trent valley and all points north. A line drawn between the Bristol Channel and the Wash effectively defines a frontier separating the regimented south from the "freer" countryside in the north. The phenomenon of a boxed landscape is simply running out. As we move down the western edge of the Fens we soon encounter Middle /Late Bronze Age settlements at Billingborough (Chowne 2001), Meadow Drove, Bourne (Cope-Faulkner 1999), Baston Cross Drain (Herbert 1998) and Langtoft Quarry (Lane pers. comm.). Cattle seemed to play a part in the daily living of these communities. At Langtoft the Late Bronze Age settlers had invested time in digging deep wells to guarantee water supplies. These wells, plus the occurrence of briquetage debris and burnt stone, suggest salt production to aid meat curing.

10.3 The Welland

This increase in settlement activity suggests that we are on the margins of a more intensively used landscape. It becomes apparent as we progress further south for we soon encounter the Welland valley and it is here that we see the remnants of an organised landscape designed in part for the selective breeding and nurturing of successive generations of domesticated livestock (Figure 10.2). The character of the prehistoric countryside has changed beyond recognition, compared with evidence on the northern sector of the fens. Here there is a communal level of investment of an entirely different nature. Before analysing the bounded lands on the fen margins, we shall go way upstream to the source of the Welland and then move back, recording the changing nature of the archaeological record for the Later Bronze Age. It will then be possible to start to see how appropriate a model of riverine farming regimes may be, and its social implications.

The River Welland rises in Leicestershire over 50km inland from the Fens and for part of its course marks a significant modern political boundary separating the counties of Rutland and Northamptonshire before flowing east through Stamford. With its source in Leicestershire it is interesting to question how much Bronze Age evidence exists for that county. The answer is not a lot. For the Midlands generally Bronze Age settlement is sparse and until recently in Leicestershire no Middle Bronze Age settlements were known (Clay 1999). Commercial work in advance of the construction of a new Tesco store, 5km to the east of Leicester city centre, unearthed a Middle Bronze Age enclosure the first to ever be excavated in the county (Charles, Parkinson and Foreman 2000). This ditched compound associated with sheep and cattle husbandry was open for a relatively short time and was replaced by an Iron Age settlement characterised by pit groups. Otherwise, Leicestershire has no known Bronze Age coaxial field systems or rectangular enclosures.

Along the Welland, however, just upstream of Stamford there is some indication of land boundaries. A series of linear ditches forming part of a managed landscape were investigated at Tixover and Ketton (Mackie 1993). While limited in the area investigated, the team did discover Late Bronze Age pottery within the fills of one section of a triple ditch dug tangentially from the river; in effect providing a barrier to movement along the north bank. Other components of a subdivided landscape were also observed but not investigated. The pipeline was diverted to avoid archaeological features and so preserve them in situ.

The river course downstream from Stamford is significant because in addition to the known burial clusters found along the river valley as it approaches the Fen edge (Malim 2001, fig 6), there is increasing evidence of Later Bronze Age settlement and land divisions. The first block of regimented landscape is recorded at Rectory Farm, West Deeping, just on the edge of the Welland floodplain marked by the 10m contour. It originates in the mid second millennium BC and, as we shall see, in common with other land blocks

in the Fenlands loses its importance by the Early Iron Age. The excavator observed that in terms of planned space the Bronze Age field system has a greater regularity of space and size than may be found from any comparable situation until the Parliamentary enclosures of the 18th and 19th centuries (Hunn 1994a, 45). A coaxial field system consisting of major parallel ditch alignments orientated NNE – SSW dominates the landscape. It appears to be a sophisticated system of stock control; for in addition to parallel droveways running tangentially down to the water frontage there appear to be elements of lateral droveways regulating the movement of livestock across the land block, permitting movement parallel to the river course (Hunn 1994a, 44).

The landscape architects at West Deeping may have been influenced by other 'practices' in the Fenlands for there is one particular element of layout at Rectory Farm that has interesting parallels to the famous site of Fengate. At both West Deeping and Fengate the field systems incorporated a major series of droveways designed to head livestock directly down to the water's edge. Those trackways were almost identically spaced. At Fengate the trackways were 270m and 380m apart compared to intervals of 260m and 370m at Rectory Farm (Hunn 1994a, 47).

Covering an area of 255ha, the ordered space at Rectory Farm respected numerous ring ditches and barrows joining the world of the living with the world of the dead. It was a ritualised working landscape where the daily routines of a farming lifestyle were given added emphasis. The fields and droveways provided an effective system for the selective handling of large herds and flocks (Pryor 1998, 112). In terms of absolute dating a sample from the lowest fill of one ditch in the coaxial system gave a radiocarbon date of 1210–790 cal. BC (Beta-69345; 2780±90BP). Perhaps only one element of the Bronze Age grid may have been incorporated into land boundaries of the Iron Age/Late Pre Roman Iron Age (Hunn 1994a, 49). Because of its siting on the 10m contour zone its demise as an effectively functioning farming system cannot be ascribed to the usual explanation that rising water levels halted its use by the Early Iron Age. This is a reason often cited for the demise of the field systems at Fengate and Welland Gate. To the immediate west of Rectory Farm work has also preceded quarrying at Stowe Farm. A prehistoric rectilinear field system is being recorded here. The paucity of finds has hampered the dating of phases of the site but the land divisions are broadly dated to the Later Bronze Age. Environmental evidence suggests that wet conditions prevailed during its period of use and may have suited a pastoral economy (Kemp 2000; Kiberd 1996). The excavators observed a sharp contrast between the regulated Bronze Age land divisions and the Iron Age scheme of smaller fields which replaced them. The latter may have been utilised by individual household groups. Kiberd observes that the formal grand scale of managed land was not matched again until the imposition of boundaries associated with Roman land tenure (1996, 39).

Further east, the prehistoric boundaries of a rectilinear field system were first revealed in evaluation on the Market Deeping A15/A16 by-pass. They were sealed by clay alluvium and were interpreted as prehistoric in origin and possibly Bronze Age (Trimble 1999). This initial investigation involved the direct recording of a Bronze Age barrow cemetery: one of several along the Welland valley and adjacent fen edge (Cope-Faulkener and Trimble 1999). The reliance on evidence derived from small scale linear trenching to explore the proposed by-pass route provided a partial insight into prehistoric land tenure developments.

The large area excavated at Welland Bank provides a much clearer idea of the scale of landscape exploitation along this valley. Land divisions extended to the fen edge at 2–3m OD. The Middle Bronze Age site had been preserved over the centuries by the accumulated clay alluvium resulting from flooding of the Welland. That event occurred in the Roman period, blanketing the features and providing a dateable horizon for sites in the vicinity. The ditches at Welland Bank were cut into the flatlands of the wide floodplain and were characterised by larger ditches (best suited for cattle corralling) and fewer droveways than at Fengate (Pryor 1998, 116). Phased evaluation and excavation of the area continues to add to the archaeological record including the recording of 'infield' plant cultivation close to settlement compounds and domestic evidence of small scale salt making (Mouraille *et al.* 1996.; Mouraille 1996). Like West Deeping it went out of use in the Early Iron Age.

The Welland Bank land block is twinned with the Borough Fen coaxial field system that lies one and half kilometres away to the south on the other side of the Borough Fen Ring Work. This

enclosure dominated the neck of the Crowland peninsula. Assigned a Middle Iron Age date on a limited excavation, this structure may have had much earlier origins (Tim Malim *cf.*; Pryor 1998, 118). Late Bronze Age ringworks elsewhere offered viewing points for the observation and control of people and animals. Borough Fen was also a major strategic location for movement along the Welland and in terms of exchange contacts it was a prime site for access to an outside world.

10.4 The River Nene and Flag Fen Basin

The Welland data indicates that land pressure and control stretched up the river valley from the land holdings on the immediate Fen edge. The evidence along the River Nene is much more conclusive: the activity around the Flag Fen basin is clearly better understood as part of an extended river system (Figure 10.3A).

The entire Nene river corridor is the focus for Bronze Age activity throughout the counties through which it passes. Near its start, there are signs of Late Bronze Age occupation and metal deposition on Borough Hill, Daventry (Jackson 1997) and below Wellingborough a coaxial field system was constructed at Stanwick. Further land boundaries were also dug to the immediate west of Peterborough, but the greatest concentration of land divisions occur on the fen edge. In reviewing this rich and growing seam of Bronze Age activity we look first at the work at Flag Fen, the benchmark for all Bronze Age landscape investigations in lowland England (Figure 10.3B).

Flag Fen was a breakthrough for Bronze Age studies. Here on one site are all the elements of intensified spiritual and economic endeavour characteristic of an emerging complex society. Fascinating as that prehistory is, the saga of archaeological discovery at Flag Fen is equally of interest as it offers an insight into the changing national framework of excavation in Britain. The Basin has been the subject of continuous archaeological inquiry since the end of the 19th century. Local antiquarian enthusiasts collected much of the earlier material. The principal threat then was in the expansion of small-scale privately owned gravel pits and over a period of 75 years many highly significant discoveries were made (Pryor 2001, 7). This slow pace of economic growth changed significantly in the late 1960's when Peterborough was designated as a new town. The historic medieval city was to be transformed with a greatly expanded population, vast arterial roads and industrial zones. In the absence of policy planning rules to ensure commercial funding of archaeological investigation, the rich prehistory of the fen area was seriously at threat. The Royal Commission for Historical Monuments in England (RCHME) undertook a special survey of the heritage threatened by the city expansion and, on publication (Taylor 1969), a Fengate rescue project was organised by the Nene Valley Research Committee. This piecemeal work was bolstered by political lobbying resulting eventually in a long term Royal Ontario Museum/ Department of the Environment Fengate project. In effect this involved funding by a Canadian museum and monies dependent on the largesse of British central government. That state funding was not as of right and, in the absence of determined pressure from academics and the general public alike, there was no safeguard that the prehistory of the region would be examined. The combined rescue and research ROM/DOE Fengate programme driven by Francis Pryor ran from 1971 to 1978. The programme resulted in the discovery of the second millennium BC organised landscape, the first of its kind in the British lowlands. Subsequent work at Fengate continued for a further four years without central funding, dependent again on dedicated teams reliant on the generosity of the landowners, visitor income and university training excavations (Pryor 2001, 7). The discovery in 1982 of the Flag Fen causeway, a kilometre-long timber post alignment which crosses the wetlands separating Fengate and Northey Island (Figure 10.3b), set off a chain of events resulting in a second English Heritage project in partnership with the Fenland Archaeological Trust.

Two extensive commissioned English Heritage projects might at first sight suggest that the Flag Fen project is complete but, as Pryor notes, commercial developer funded work is making its own significant contribution to unravelling third, second and first millennium BC developments in the Flag Fen Basin (2001, 6). In a review of recent research in Fengate (Evans and Pryor 2001; Evans and Pollard 2001) it becomes apparent that the initial fragments of the field system discovered at Flag Fen now appear as a tiny piece cropped from an infinitely larger fabric. The commercial work is providing greater detail of features within the

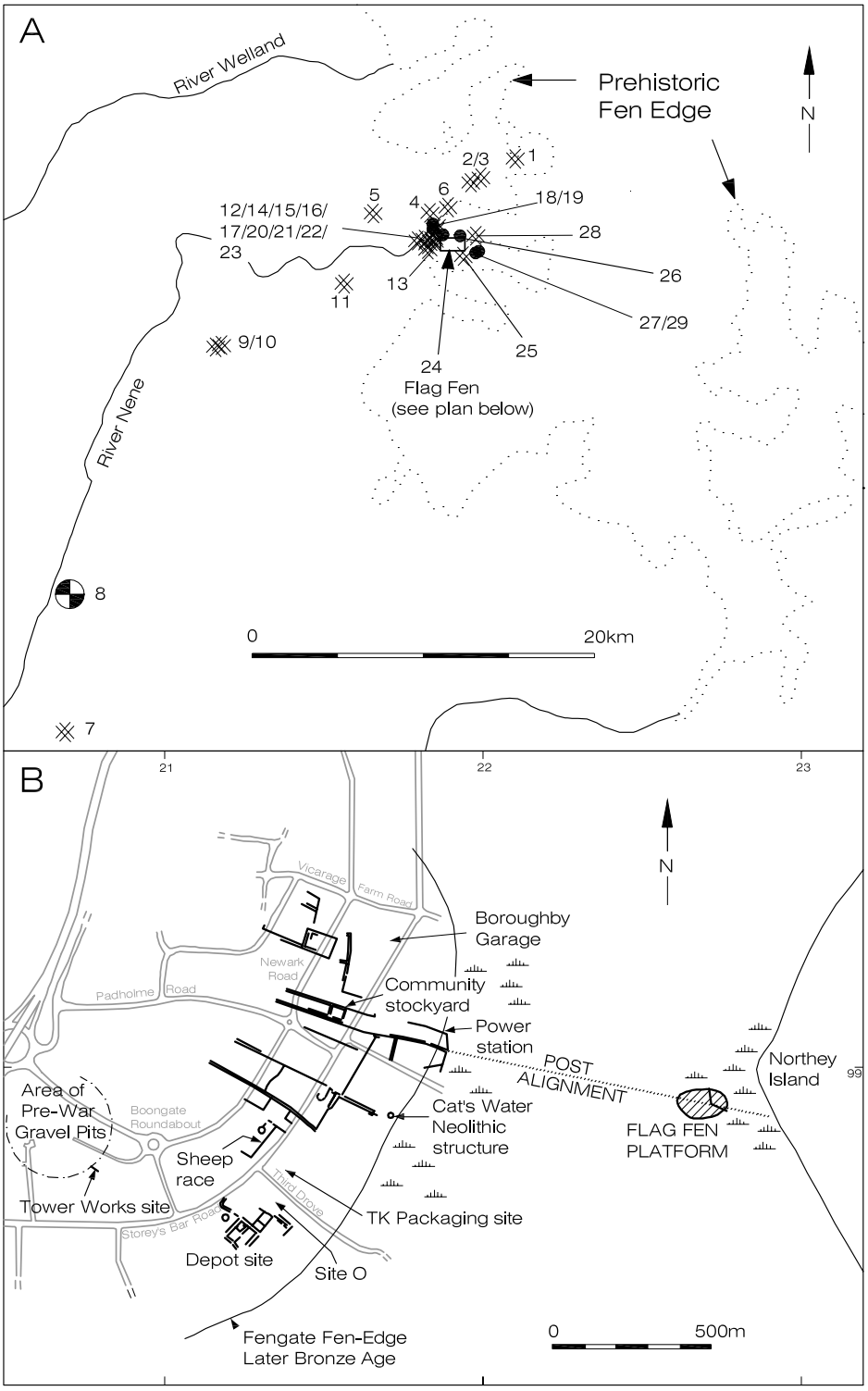


Figure 10.3 A: River Nene sites. 1. Pode Hole Quarry. 2. Eyebury Quarry. 3. Eye Quarry. 4. Oxney Road. 5. Peterborough Prison. 6. The Broadlands. 7. Raunds. 8. Thrapston. 9. Dog Kennel Field. 10. Charlie's Close Field. 11. Orton Longueville School. 12. Tower Works. 13. Boongate Roundabout. 14. Fengate Depot. 15. Third Drove 16. Storey's Bar Road. 17. Padholme Road. 18. and 19. Newark Road. 20. Cats Water Co-Op site. 21. TK Packaging Plant. 22. Boroughby Garage. 23. Land off Vicarage Farm Road. 24. Flag Fen. 25. Northey Island. 26. Greenwheel Cycle Way. 27. King's Dyke West, Whittlesey. 28. Bradley Fen. 29. Stonard Field. Site details in Table 10.2. B: Flag Fen post alignment and principal Fengate sites. Derived from Pryor 2001. Fig 1.4

field grid, clarifying earlier findings, extending the 'site' and recording even more features of Neolithic and Early Bronze Age origin. The Fengate Basin Report includes a reassessment of the dating of the Storey's Bar Road field system. Originally thought to be Late Neolithic, Evans and Pollard argue that its construction should now be placed in the early to mid second millennium BC. They maintain that the small and apparently weathered Grooved Ware sherds found in ditch fills, were residual (Evans and Pollard 2001, 25–26).

The commercial work reviewed in the Flag Fen Basin Report shows that finer detail is available for these structured landscapes. For example, at the Depot site, ditches with surviving upcast banks and cultural strata were still present and the use of micromorphology (now more widely available) also suggested the presence of tillage in those buried soils which were subsequently capped by a burnt spread during the Early Iron Age. This south Fengate site had a more obvious coaxial pattern than the main Fengate system and it appeared to be short lived; apparently replaced in part by a settlement compound in the Late Bronze Age/Early Iron Age transition (Evans and Pryor 2001, 19 and 24). Similarly, work at the Third Drove revealed more settlement structures and at the Tower Works, settlement may have included a longhouse similar to one discovered at Barleycroft on the Great Ouse River.

Developer-funded work has also provided more evidence of Neolithic and Early Bronze Age activity in the form of probable early Neolithic settlement at Boongate Roundabout (Evans and Pryor 2001, 32); Late Neolithic pit groupings at Third Drove site 0 (ibid. 30), TK Packaging Plant (ibid. 32) to add to those known at Storey's Bar Road (ibid. 25); and a Neolithic structure at Cats Water Co-op site (Pryor 2001, 47) as well as earlier discoveries at Padholme Road (ibid. 11). Despite the profusion of pit clusters, settlement spreads and mortuary enclosures, the Neolithic landscape appears to have been open and devoid of permanent field boundary features (Pryor 2001, 407). Even the parallel ditches at Vicarage Farm (Pryor 2001, fig 18.1) are better interpreted as flanking ditches to another funerary structure rather than a Neolithic droveway. The commercial work cited in the 2001 report also confirms the diminished level of Early Iron Age activity compared to the flurry of boundary construction characterising the Later Bronze Age.

As Pryor observes, there can be no final definitive Flag Fen monograph and the pace of development has already overtaken the 2001 synopsis, just as this attempt will be buried by the continual flow of new site reports. These additional client reports (available since the work on the 2001 Flag Fen Basin report) are extending the Fengate 'site'. They are also beginning to suggest that Beaker pits mark out the earliest boundaries. Beaker pits have been found at a number of pivotal or nodal points around Fengate. They may have been dug and filled as part of ceremonies associated with the marking out of farms or territories (Pryor 2000, 7). For example, Pryor notes their presence on either side of the Vicarage Farm Road, which suggests that lands to the north toward Eyebury formed a separate zone to the fields around Fengate (Pryor 2000, 7; Britchfield 2002, 32).

The northern zone includes Eyebury Quarry, which lies 1km SE of Eye and 4km NE of Fengate. Here the Cambridge Archaeological Unit is involved in a phased excavation project, working in advance of aggregate extraction. In each phase of contract work to date they have discovered two peaks of human activity; namely, the Late Bronze Age/Early Iron Age and the Romano-British. During the Late Bronze Age/Early Iron Age the community maintained a mixed economy though livestock were central to their livelihood, particularly cattle. Certain aspects of the field design are noteworthy: the occurrence of 90m spacing between ditches (an interval also observed at Barleycroft on the Great Ouse) and the incorporation of large wells and drinking points (Gibson and White 1998, 4). The overall field layout seems to set it apart from the rigid axial alignment at Fengate, for a more fluid approach was followed, creating an overall curvilinear field system. This long arc enabled each land block to bend with the prevailing local topography. So variability in ditch orientations means that some are pointing ENE – WSW and others NE 0 – SW. In phase one of the excavation, land block dimensions were observed to be 135m NE-SW and 70m NW – SE, similar to the Romano-British system which measured 135m N – S and 80m E – W (Patten 2002, 5). The dimensions of the Late Bronze Age rectilinear plots were also similar to those at Barleycroft where the enclosures were 125m × 75m to 130m × 80m (ibid. 11). Work to date has confirmed Late Bronze Age settlement but the team is surprised at the paucity of material culture despite the recording of 56 pits pock-

marking the site. An impressive Late Bronze Age wooden bowl was retrieved from one well however – and it suggests that mainly organic deposits were placed in the landscape (Garrow 2000, 14).

The design differs from that at Fengate in its curvilinear placement in the landscape and, unlike Fengate, there are no regular paddocks, yet, observed on site. McFadyen (2000) writing of the Phase II work at the quarry records that the creation of the coaxial land blocks, representing a new form of monumental architecture, preceded any habitation of that land. Settlement came later and the only roundhouse (structure 7) recorded in this phase of the project was located just by a small pit alignment; a class of monument normally associated with an early to mid 1st millennium BC date (McFadyen 2000, 9).

McFayden suggests that the alignment of the field system was not, as normally assumed, on prominent barrows, but on less conspicuous Collared Urn pits and upright timbers in postholes (ibid. 15). This is a view first proposed by Pryor at Fengate. It suggests that standing markers and cremation pits represent an earlier form of boundary (R. Bradley pers. comm.). The incorporation of orthostats (this time granite standing markers) in the Dartmoor Reaves suggests a similar link between coaxial field construction and the land plots preceding them.

Within the framework of the land blocks, deposition activity occurred, including the placement of a token human cremation together with skeletal remains (McFadyen 2000, 15; 40). This ritualised behaviour has also been observed at Whittlesey and Site IV at Colne Fen, Earith. Deposition at Eye was not confined to organic material, for in one pit a Late Bronze Age pin was found in association with a large piece of slag – possibly from the base of a furnace for iron smelting. Such deposits represent different ends of the spectrum surrounding the creation of metalwork.

There were two areas of well digging, features 334 and 346. In both areas larger wells were eventually replaced by what the excavator terms "bucket size aperture wells". The grouping of F334 comprised a sequence of three larger wells, two of which functioned to extract clean drinking water. A wooden bowl cloven in two and a wooden stave from a very large barrel was recovered from a portion of one these wells where the sides had collapsed. The bowl, turned and hand hollowed from alder was interpreted as a special deposition. It resembled a carinated form characteristic of Post Deverel-Rimbury pottery (see also Yarnton and Buckbean Pond). The third well in this group (F334) was different. Its uneven base suggests severe trampling or poaching by animals. In the second grouping of well digging (F346) a large well was replaced by two bucket wells. A barrel lid was recovered from the large well; suggesting the need to extract large volumes of fresh water (McFadyen 2000, 10).

Divided lands at Eyebury Quarry differed in character to those at Fengate. The Fengate fields were much smaller, resembling a compartmentalised patchwork in comparison to the larger blocks at Eye. In some respects they were similar, for they both incorporated three way gaps between the corners of enclosures and they both had droveways (McFadyen 2000, 13). The ceramic assemblage at Eye also matches the predominance of Post Deverel-Rimbury plainware found at Langtoft, Flag Fen and particularly Welland Bank (ibid. 36).

Within 2km to the east of Eye lies Pode Hole Quarry, Thorney. This site was characterised by a series of intercutting pits and rectilinear ditches. The field system could be dated as Early to Middle Bronze Age in origin (Network Archaeology 2002, 2). The teams here encountered a similar paucity of artefact finds to that encountered on the phased work at Eye.

Returning to Fengate, we can now direct our attention to the east, out along the post alignment on to a route which linked a string of interconnected islands: Northey to Whittlesey; Whittlesey to Eastrea; and Eastrea to Eldernell (Malim 2001). Insights into the nature of land exploitation on the eastern dryland at Northey are essential in understanding the cultural context of sites around Peterborough (Pryor 2001, 74). By the 1970's components of a Bronze Age landscape had already been recognised where the Fengate post alignments made their landfall on Northey (ibid. 74). It was apparent that the causeway route running from Northey through Whittlesey and on to the outer islands passed through zones of settlement and coaxial field systems. The route would have facilitated the further movement of people, produce and ideas, possibly extending a social corridor originating deep inland along the Nene valley.

Recording ahead of quarry working has confirmed the importance of settlement and land

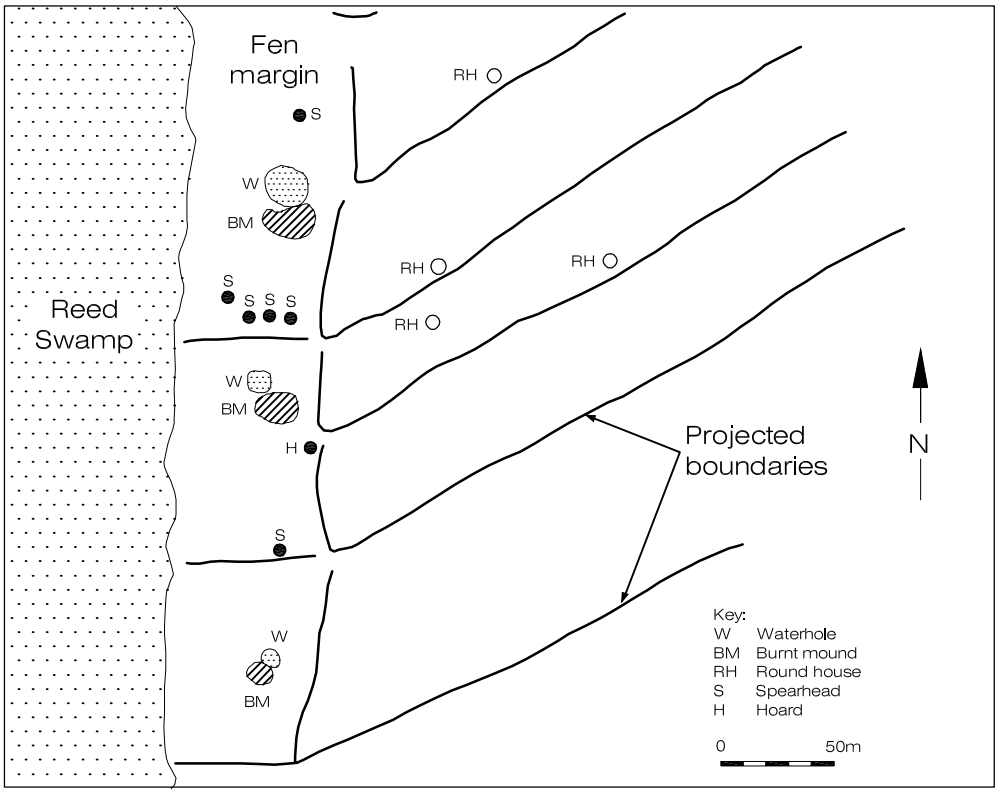


Figure 10.4 Bradley Fen. Data supplied by Mark Knight. A schematic plan of patterned metalwork deposition in relation to fields, burnt mounds and water holes. The discovery of designated work zones for farm production and "industry-scale" processing shows the full nature of regimented land management

management. Near Moreton's Leam (opposite Fengate) an unenclosed Late Bronze Age settlement had been established. One of the buildings at King's Dyke West, produced evidence of episodic feasting where the remains of many butchered lambs had been buried in a cluster of pits. The ceramics there were dominated again by Post Deverel-Rimbury plainware, just as at Eye and Fengate. Thirty two pit features were scattered over the entire site including some evidence of token animal and human cremation (Knight 1999, 17). At Stonard Field nearby, the finds were even more impressive for this site was on the line of the fen causeway on a small land bridge linking Whittlesey with Northey. This constrained location produced an intricate pattern of prehistoric use; – a wooden circle and henge which became the foci for subsequent burials and cremations; a place that attracted Early Bronze Age settlement and then the permanent features of post built roundhouses typical of Later Bronze Age occupation (Gibson and Knight 2002).

The Fengate Basin has always been full of surprises. Spectacular as these two sites are on Whittlesey they are surpassed by the discovery of an elaborate field system with associated burnt mounds and metal deposition at Bradley Fen (Figure 10.4). Here on the fen edge the full complexity of Bronze Age land use is revealed.

Here was an ordered world of gridded space embellished by metalwork deposition (Knight 2000; Mark Knight *cf.*). Capped by alluvium much of the metal is intact, placed in a recurrent pattern in relation to the burnt mounds and formal field boundaries. This convention is repeated on the Sussex Coastal Plain (Dunkin 2001).

Managed blocks of land therefore exist to the north, south and east of the original Fengate discovery. What about to the west? The discovery of an upland land division at New Prison, Peterborough has caused quite a stir. Middle Bronze Age boundaries were dug in a landscape marked by Neolithic and Early Bronze Age pits. The Middle Bronze Age fields were accompanied by large wells (just as at Eye Quarry), burnt stone

pits, hearths and a four post structure. There were also two watering holes, each was filled by a bottom layer of Early Bronze Age material and a Late Bronze Age topping, separated by edge-collapsed material. The field orientations lead to speculation that this was a pivotal point between two land blocks. It also raised the question as to whether the Fengate land clusters extended all the way up slope to the limestone ridge separating the Nene and Welland valleys, a distance of 5km (Knight 2002). The superimposition of regimented Middle Bronze Age field boundaries on a landscape occupied by pits containing Early Bronze Age deposits appears to fit a pattern in the Fenlands. It suggests that the rectilinear fields of the Later Bronze Age represent the formalisation of earlier land claims and agreed access points (Knight 2002; Chapman *et al.* 2005, 19).

Also west of Peterborough, at Orton Longueville School, a small-scale excavation revealed complex phases of land use from the late Neolithic to Roman times. This area is situated to the south of the Nene on the third terrace gravels, again like the Prison effectively an upland location at 16m OD. Casa-Hatton recorded some evidence of livestock management dated to the late Neolithic /Bronze Age period, suggested by a series of enclosures. Some were ditched, others were bounded by a combination of palisade stakes with double ditches. A portion of a droveway was also recorded (Casa-Hatton 2001).

Further west, a survey and excavation along the A605 Elton-Haddon bypass route in 1989 led to the discovery of a rectilinear Bronze Age field system. It had been constructed at right angles to a small tributary of the main river, which lay 1km to the west. An integrated droveway and corner entranceways featured in its design. It was located on the western end of the bypass route in the Elton estate at Dog Kennel and Charlie's Close fields; an area of permanent pasture since the late 1790's (French 1994).

The trail does not run cold here, for within a relatively short distance upstream a Late Bronze Age ringwork has been recorded at Thrapston (Hull 2000/1). This is a pattern already encountered on the River Colne, which flows down to the largest concentration of coaxial fields on the Thames at Heathrow. The Fengate Basin offers the closest parallel to the Heathrow socio-economic enclave, and the Nene, like the Colne, is an important feeder into a productive habitat.

Barrows and ring ditches are recorded on almost every outcrop of gravel in the middle and lower reaches of the Nene valley, reflecting the importance of this waterway for prehistoric communities. The floodplain around Wellingborough would have been an especially rich resource area, with settlement established on its well-drained terraces overlooking the lush water meadows bordering the river marshland (Gibson 1995). Early evidence for the domestic scale of animal husbandry comes from a barrow at Irthlingborough. This artefact rich Early Bronze Age grave was capped by a primary cairn almost entirely constructed from *Bos* crania fragments (Davis and Payne 1993). At least 185 skulls from prime beef animals marked this honouring to the dead. Intensive clearance of these floodplain zones occurred in the Bronze Age (Brown and Meadows 1997).

The gravel-rich terraces have long been the foci for aggregate extraction and concern over threats to a site at Raunds led to a large-scale rescue excavation carried out between 1985 and 1992 *i.e.* straddling the start of commercially funded archaeology. Funded largely by English Heritage in the early years, it shows the gains of large-scale recording of landscape sites (Harding and Healy forthcoming). Two field systems of Middle to Late Bronze Age date were discovered at Stanwick. These field blocks were 30km upstream from Fengate, but despite this geographical distance they were remarkably close in terms of conception and design. In effect there were two overlapping field systems, referred to as North Block and South Block, each with distinctive orientations. It has not been possible to determine which was constructed first. It may have been that they were broadly contemporary but that one expanded at a time when the other was retracting. The North Block was orientated on the River Nene, with the major field boundaries placed at right angles to the watercourse creating a NW to SE axis. These land divisions running away from the river were spaced at 110 to 130 m intervals. A droveway was integrated into the system to enable livestock to be driven directly to the unenclosed river pastures. The known area of this land block covers approximately 15ha. A range of fourth to second millennium BC monuments preceded the establishment of these new field boundaries.

The known extent of the South Block is 25ha. It may have been larger. If fragments of a similar field system showing up in the excavations at Redlands Farm over a kilometre away to the south

west were part of the same system, the area could be hundreds of hectares. The South Block had an entirely different alignment to the North Block. Its initial difference was, however, deceptive, for each was designed on common principles. Just as with the North Block, the river course provided the baseline. A series of major land boundaries ran east directly at right angles to the river course at this point. These boundaries spaced at 140–130m were not dissimilar to those in the North Block. One of the defining boundaries coincided with the discovery of a Middle Bronze Age spearhead (Harding and Healy forthcoming). This bounded landscape replaced one with a range of fourth to second millennium BC monuments. Again a droveway (slightly wider this time) provided the quickest route from the river pastures to upland land holdings.

Some of these ditched boundaries were often so narrow, steep sided and flat-bottomed that they were recorded as palisaded trenches. It suggests that they originally held fences. The layout of both blocks may reflect animal management, for there were entranceways typically sited at the corner junctions, and integrated droveways. One observation during the excavation may suggest that the Bronze Age field system went out of use. One part of the droveway in the North Block when fully silted up, was cut by an Early Iron Age pit. An inverted adult cranium was also recovered from the top of the ditch fill of a droveway in the South Block.

10.4.1 Reflections on the Nene and Flag Fen Basin

There seems to be no end to the number of finds made along the Nene. It seems justified to treat the Later Bronze Age developments as part of an extended river system with intense "congestion" on the fen edge backing up along the extended feeder river. The level of survival permits not only a detailed examination of the nature of the permanent field boundaries constructed in the Later Bronze Age but also the earlier monuments, burials and transient settlement that it overlay. It confirms the distinctive nature of an open landscape compared with the New World order of gridded space. By the Early Iron Age there is a decline in their use, maintenance and construction. Communities in the Fen Basin and along feeder rivers, which had participated in a dynamic exchange network, appeared to experience a form of economic recession and social upheaval affecting much of Southern England.

Within the Flag Fen Basin, the most spectacular discovery remains the post alignment linking Fengate to Northey Island (Figure 10.3B). The causeway forms an extension of the axial arrangement of the Fengate fields. The Fengate dry ditch boundaries and waterlogged Flag Fen causeway boundary are in part contemporary. In terms of the state of their preservation they are radically different. The exceptional preservation of the timber causeway provides precise evidence of when the structure was built, how ritual deposits were incorporated, the wood working techniques used and how long it was maintained. This information will be useful when carrying out further research into the fen edge field blocks. The post alignment did not come about in a haphazard or unplanned fashion (Pryor 2001, 157) and the timbers were felled specifically for use within the alignment (Pryor 2001, 423; Taylor 2001, 167). It suggests that the farms and the post alignment were under the control of a single authority (Pryor 2001, 423). Dendrochronology has shown that construction work on the causeway peaked in the first half of the thirteenth century BC, which suggests that the political economy was particularly powerful at that time. Once maintenance of the timbers had ceased around 950 BC, the post alignment was visited episodically, mainly for ritual purposes (Pryor 2001, 164). The final demise of the causeway and associated field systems may reflect wider political and social changes.

Certain of the constructional techniques employed on the Flag Fen causeway may explain the nature of coaxial boundaries. Throughout this study several field boundaries have been observed to be insubstantial – shallow in depth and lacking associated banks. Some may have been foundation trenches for a system of wattle fencing (see reconstruction drawing Figure 12.13). The discovery of tightly woven wattle fencing propped up by stout oak posts within the post alignment at Flag Fen (Pryor 2001, figures 19.2 and 19.3) supports that interpretation. A number of the earthfast posts at Flag Fen had morticed joints (Taylor 2001, figure 7.33). It is a form of construction used to erect rail and post fencing. This type of stock barrier may also have been used within field systems.

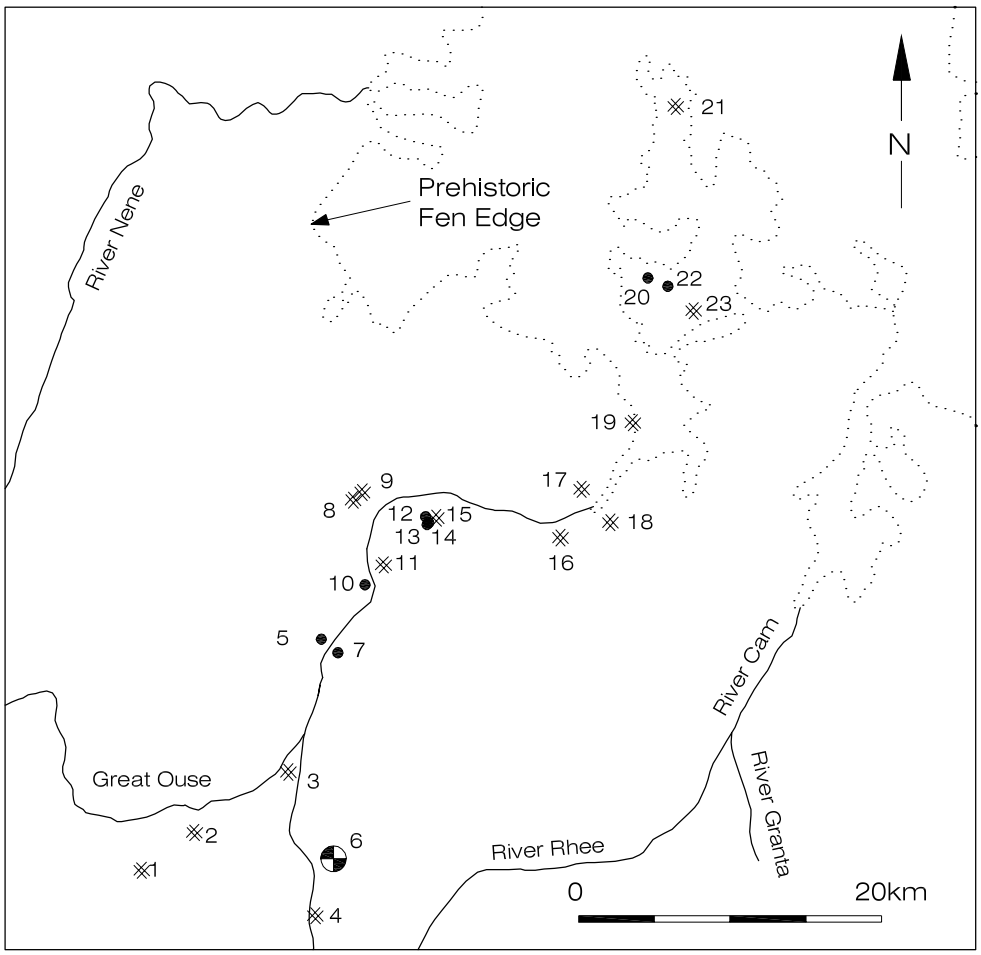


Figure 10.5 Great Ouse sites. 1. Bunyan's Farm. 2. Octagon Farm. 3. Roxton Quarry. 4. Broom. 5. Little Paxton. 6. Sandy Lodge. 7. Huntington Road. 8. Thrapston Road. 9. Huntingdon Racecourse. 10. Diddington. 11. Offord Cluny. 12. St Anne's Street, Godmanchester. 13. London Road, Godmanchester. 14. A14/A604 junction. 15. Cardinal Distribution Park. 16. Low Fen. 17. Barleycroft Paddocks. 18. Lowland, Over. 19. Colne Fen, Earith. 20. Chatteris Parish Church. 21. Northern Office, March. 22. Langwood Farm West. 23. Block Fen, Mepal. Site details in Table 10.3

10.5 The Great Ouse

The Great Ouse snakes across much of the Midlands, passing by Milton Keynes and Bedford before draining out towards the Wash (Figure 10.5). We shall start with the last landfall before the great river heads seaward.

The Ouse watercourse, in terms of known Bronze Age fen and drainage patterns, flowed past and possibly around the islands of March and Chatteris. Evaluation and excavation work on these islands is adding to the known Late Bronze Age settlement and farming evidence. March is the northernmost limit of raised ground alongside the old Ouse watercourse. Prehistoric boundary ditches recorded at Northern Office, March may be Bronze Age in origin (Casa-Hatton and Macaulay 2001). Lithic assemblages recovered from the marsh margins also suggested Bronze Age activity (ibid. 3) and the parish of Chatteris had an armoury of Bronze Age metalwork (Cambridgeshire SMR records). The individual pieces recovered include shields, spearheads, rapiers and axes. Settlement was recorded at Chatteris Parish Church and in Bridge Street. On the southern tip of the island opposite the confluence of the Ouse and existing fen a complex field system, ring ditch and barrow landscape with droveways suggested Bronze Age pastoralism. These structures were recorded in

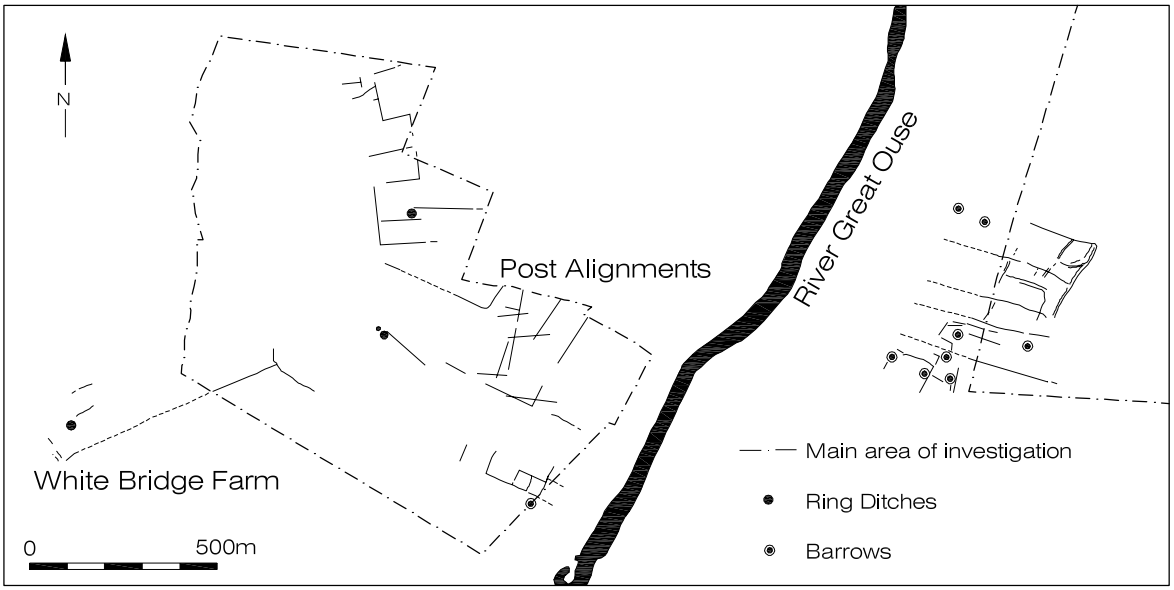


Figure 10.6 The Barleycroft/Over Bronze Age landscapes. After Evans and Knight 2001, figure 8.2. Bronze Age field systems have been traced across more than 350ha on both sides of the river. Sealed by up to 0.75–1.5m of alluvium they generally lie below the maximum depth of aerial photographic detection. Among the highlights of the excavation has been the recovery of a longhouse set in a separate ditched compound

advance of gravel extraction at Block Fen Mepal. A ring ditch on this site was found to post date an earlier field system (Hunn 1992).

Close by lies Colne Fen at Earith. On these first and second terrace gravels an enclosure has been discovered with associated Late Bronze Age settlement. The enclosure appeared to be the focus of a wider paddock/field system since several ditches radiated from the corners of this rectilinear structure. Late Bronze Age pottery was recovered from the upper fills of the ditches, so this compound might have been of Middle Bronze Age origin. Despite the relative abundance of Iron Age settlement to the east, the excavators retrieved no Iron Age material from their work which preceded the southern extension of the Earith Quarry (Regan 2001; Evans and Patten 2003).

The Barleycroft/Over investigations will eventually cover 700ha on both sides of the Ouse at the point where the fresh waters discharge into the peat fens and the Great Ouse flows towards Haddenham and Earith and past Chatteris. To date, a number of Later Bronze Age field system blocks have been recorded. Each follow different alignments, with ring-ditch monuments/barrows serving nodal points (Figure 10.6).

In scope and execution this land use was of a type analogous to pre-modern agricultural communities. In style and scale it contrasted starkly with the impermanence of the Neolithic and Earlier Bronze Age (Evans and Knight 1997b, 63). The professional investigations at Barleycroft, in partnership with the aggregates enterprise, are providing one of the most important fenland sites to date. The field system lost its significance by the Early Iron Age. Like West Deeping, the demise of these land boundaries at Barleycroft/Over is not explained by flooding. Evidence that, once cut, the ditches were simply left to silt up brings into question the longevity of such prehistoric field systems. These land blocks did not show up in air photography surveys since alluvial deposits masked the features. These river-washed silts have ensured a high degree of preservation but at the same time hide the land boundaries from air reconnaissance. Again large area stripping proves its worth. Their discovery in association with house structures refutes again the once held view that Bronze Age occupation does not occur along the Great Ouse (Fox 1923, 62). To date the northern and southern extent of this land division has yet to be determined. What is certain is that the land structures suggest a seamed landscape, with different land blocks joined together to form an infinitely larger fabric. Those joins are focused on known areas of earlier monumental construction. Radiocarbon determination dates the boundary

constructions to the mid-later second millennium BC. Droveways are noticeably absent except in the south-easternmost portion of Barleycroft (Evans and Knight 2001, 85).

For Evans, the field landscape offers a new form of social arena. Grids now frame settlement whereas previously people gravitated toward the burial places of their ancestors. For Evans these regulated lands offer a residential framework for groups whose previous life had revolved around the veneration of the dead. The grid therefore becomes a new emblem for permanent living for people tied to their lands. We now have a designed space – an ordered world which sets it apart from everything that had gone before.

The Barleycroft and Over land blocks have produced one particularly interesting act of deposition; namely, the recovery from two adjacent pits of the apparent separated left and right sides of the skeleton from the same young horse. The skull, hindquarters and lower feet bones did not accompany this act of burial (Evans and Knight 1997a, 81).

The monumental scale of Barleycroft and Over – effectively appropriating the entire lands at the mouth of the Great Ouse – implies either co-ordination at a community level or an imposed act of regulation by centralised authority. The site had one novel element to add to this continuing debate; the discovery of a longhouse. For Evans and Knight this possibly reflects evidence of emergent power. It is a line of argument supported by the high degree of on-site weapon production (ibid. 91).

Upriver (but only just) of Barleycroft and Over lies Low Fen at Fen Drayton. Sand and gravel have been extracted here just west of the point where the river empties into the Fen. Settlement was somewhat unstructured but part of a Later Bronze Age field system underlay a Middle /Late Iron Age enclosure structure. While Neolithic features and material were present, it is in the Bronze Age that the first organisation of the land was executed. Overlying the whole of this rich prehistoric palimpsest there was an intricate Romano-British system of land plots probably representing a portion of villa estate designated for either horticulture, orchards or a vineyard (Mortimer 1995).

The continued expansion of Godmanchester has revealed traces of Bronze Age land division despite the relatively small scale of excavations on the fringes of the town. At Cardinal Distribution Park, Late Bronze Age/Early Iron Age pits and NE/SW and NW/SE ditches were sectioned in an area where air reconnaissance failed to detect any archaeological features (Murray 1998). Within a kilometre to the west of this area of light industrial development a further SW/NE prehistoric ditch was exposed in St Anne's Lane which suggests that early landscapes are traceable around Godmanchester (Hinman 1998).

Work around Brampton and Huntingdon Racecourse suggests an earlier start for boundary construction. At Thrapston Road, Brampton probable Neolithic ditches were recorded ahead of housing development (Malim and Mitchell 1993). To the north over the Alconbury Brook at the racecourse a coaxial field system dating to the Early Bronze Age was laid out interspersed with evidence of occupation (Malim 2001, 15).

At the confluence of the Ivel and the Great Ouse lies Roxton Quarry. Ancient ploughsoils recorded on site were ascribed to the Early /Middle Bronze Age since they were overlain by ring ditches of Middle Bronze Age date and the team recorded elements of a Middle Bronze Age field system. The excavators also noted a large meander boundary effectively cutting off a zone of land on one bend of the Great Ouse (Kiberd 1995).

From this confluence the main river valley heads up to Bedford. Commercial work in Bedfordshire produces relatively few Bronze Age find spots except for activity directly along the Great Ouse and its feeder river, the Ivel. Work on the Bedford bypass, which skirts the town in a wide arc to the south, suggests two possible areas of Later Bronze Age field division in the form of rectilinear enclosures at Bunyan's Farm and Octagon Farm. The evidence for land divisions is better if we head along the Ivel rather than proceed to Bedford. There is an important site at Broom Quarry on the Ivel close to Sandy Lodge, an early hillfort of Late Bronze Age date (Knight 1984). The work at Broom is a phased programme of excavation on the river gravel terraces in advance of a 10 year programme of quarrying which started in the mid 1990's. The early phases concentrated on a sequence of Neolithic and Bronze Age monuments visible from the air as cropmarks. Phases 4, 5 and 6 looked at a largely blank landscape where no clear cropmark features were evident and no archaeological finds were known. The surprising discovery of a large-scale coaxial field system of Middle /Late Bronze Age date highlights the contribution of commercial work in investigating the wider landscape near to monuments of an earlier epoch. The work

continues on this site and to date the coaxial boundaries extend over more than 150ha on both riverbanks. This farming system comprises single and double ditches together with pit alignments. Early work suggests a break in occupation during the Early Iron Age.

The Great Ouse is the focus for Bronze Age land appropriation as it approaches the Fenlands, having passed through much of the Midlands, which are devoid of such land divisions.

10.6 River Cam

The River Cam is formed from a number of tributaries and brooks running off the spring line of the chalk downlands. It flows through the historic university town of Cambridge, alongside Waterbeach, out into the fens and past the eastern side of the Isle of Ely. This route marks a concentrated band of Later Bronze Age settlement and increasing evidence for the partitioning of land (Figure 10.7).

Starting at Ely we shall review that evidence heading back up the river towards the Chilterns. A number of excavations have been carried out on the island of Ely and generally there has been a scarcity of prehistoric finds compared to the abundance of medieval artefacts. But that picture is now changing. Work on the A10 Ely Bypass recorded a single pit containing two Late Bronze Age Post Deverel-Rimbury plainware vessels and these finds may be associated with nearby ditches (Robinson and Bray 1998). Bronze Age features around Ely may be buried under a thick cover of colluvium and this might account for their virtual absence in work to date. A Late Bronze Age pond and wells were deeply buried by hillwash at West Fen Road and St John's Road in the town. It led the excavators to suspect that much of Ely's prehistory may previously have gone unnoticed (Masser and Evans 2000).

Upriver on the fen edge the evidence of habitation and construction of land barriers is much more definite. Wicken Fen is located 800m east of the Cam on a narrow limestone promontory. The valuable stone has been quarried for many decades and 1992 was the first time archaeological recording occurred. The overlying preserved Late Bronze Age landscape is now being investigated in a phased programme as the quarry expands eastward. The teams have discovered to date a series of parallel ditches, fence lines, and posthole structures (Bray 1994).

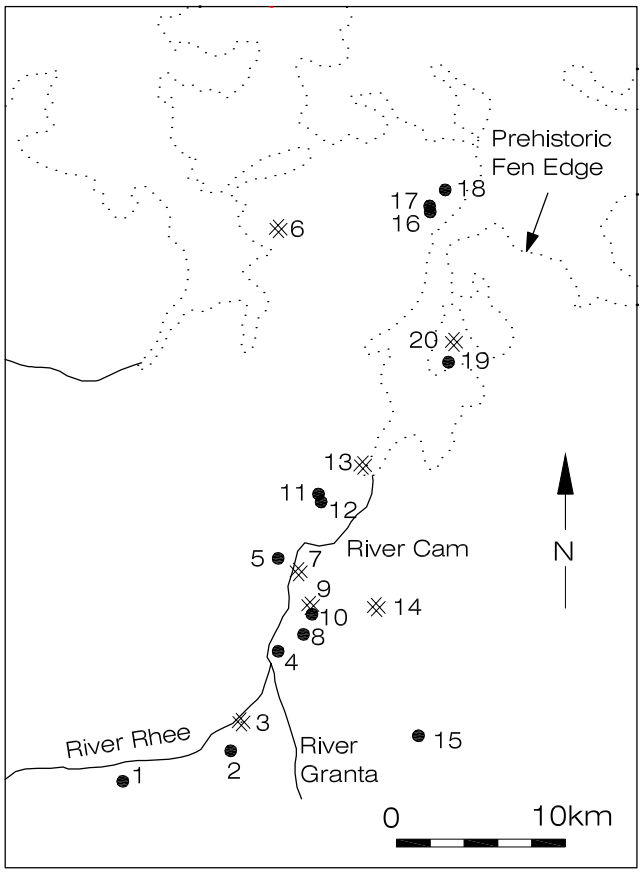


Figure 10.7 Cam, Rhee and Granta. 1. Town Farm, Whaddon. 2. Foxton Recreation Ground. 3. Manor Farm, Harston. 4. Edmundsoles. 5. New Hall, Cambridge. 6. Sutton. 7. Jesus College. 8. Long Road Sixth Form College. 9. Former Charrington Oil Depot. 10. Homerton College. 11. Milton Landfill Site. 12. Butt Lane. 13. Cambridge Centre for Recycling. 14. Fulbourn Hospital. 15. Granta Park, Great Abingdon. 16. West Fen, Ely. 17. West Fen Road. 18. A10 Ely Bypass. 19. Lingwood Farm, Cottenham. 20 Dimmocks Cote, Wicken. Site details in Table 10.4

Work at Waterbeach on the new Cambridge Centre for Recycling revealed a small Late Bronze Age settlement and an element of Late Bronze Age/Early Iron Age field boundary within a Roman field landscape. The Late Bronze Age ditch was interpreted as an outlier of a larger field system (Masser 2000). Further toward the city at Milton there has been a rare discovery of Middle Bronze Age roundhouses at Butt Lane, Milton (Connor 1998) and nearby on the landfill site a pattern of Late Bronze Age/Early Iron Age shifting farmsteads was recorded.

The City of Cambridge itself seems a particularly unlikely candidate for discovering

the boundaries of early field systems. Large excavation work on a scale to match the quarrying activities on the gravel terraces deep in the fens will never occur. But while the scale of open excavation is lacking, the frequency of interventions even on a small scale is adding up, producing a convincing account that land boundaries are detectable. There is now a strong case that Bronze Age formal land divisions exist under the urban confines. In the city a substantial Later Bronze Age settlement presence has been located at New Hall (Evans 1996), and Jesus College may have a remnant of a possible Bronze Age field system (Whittaker 1999). Land divisions of the same date have also been observed at the Former Charrington Oil Depot and at Homerton College (Kenny 2000). The potential for further discovery remains, including the recording of more extensive landscapes. For example, a coaxial pattern of boundaries has been observed in commercial work at Long Road Sixth Form College. While at present these regimented lands are interpreted as Late Iron Age/Romano-British it shows the possibility of detecting formal land blocks or their absence under the foundations of the university town (Abrams 2000).

South east of the city later prehistoric activity was also abundant. An enclosure was recorded in the grounds of Fulbourn Hospital. The excavation revealed a Middle to Late Bronze Age ditched enclosure and a series of posthole fence lines creating a funnel-like structure likely to have been designed for livestock management. Neolithic flint and Beaker pottery was residual within the Late Bronze Age features. The compound structure was used for a pastoral economy but these boundaries had lost their significance by the end of the Later Bronze Age when the ditches were infilled (Brown and Score 1998, 42).

One rescue site south of the city is of particular interest. The construction of the M11 predated the new philosophy of developer responsibility for archaeological intervention and resulted in a frantic scrabble to record a Flag Fen type timber structure at Edmundsoles, Haslingfield (Britnell 1984; Miller and Miller 1982). Amongst and alongside the earthfast wooden platforms a rich variety of Late Bronze Age artefacts were retrieved including antler bridle cheek pieces. This site is close to the Cam or Rhee, a stretch of brook which has produced a range of Middle/ Late Bronze Age metalwork finds (Mark Hinman pers. comm.). Elsewhere on the southern outskirts of the city further Late Bronze Age evidence lies alongside the various feeder streams of the main Cam river.

A multi-period cropmark site at Manor Farm, Harston on the east bank of the Hoffers Brook included two ring ditches and traces of Bronze Age field boundaries (Malim 1994). This brook flows down from Foxton where a possible prehistoric boundary ditch was recorded on the recreation ground (Roberts 1998). To the south east of Cambridge lies Granta Park, Great Abington (Kemp 1999). It is situated on a palaeochannel, which ran towards the River Granta. The excavators exposed 61 pits of Bronze Age or Iron Age date. Two of the pits are of particular interest. One contained the remains of a Bronze Age semi-articulated sheep/goat that had been reassembled after consumption (Kemp 1999, 13 and figure 7), and was possibly an act of absolution to ensure the regeneration of that on which human life depended (Ingold 1986, 247). Another contained 22 sherds of Late Bronze Age pottery, a bone awl, lithics with cow, pig and deer bone in the upper fills.

Bronze Age land tenure was not confined to rectilinear enclosures and field systems. Malim suggests that the South Cambridgeshire dykes that straddle the chalk belt south of the city up towards Newmarket may have an earlier origin. He cites the cluster of barrows and ringditches around the Bran Ditch as one example which might suggest that these major land divides reinforce territorial blocks of Bronze Age origin (Malim 2001, 15–16).

Commercial work along the River Cam has supported Fox's assertion that settlement in the Bronze Age tended to avoid the barren areas of the gault or chalky boulder clays: "heavy soils unbelievably sticky in winter, caking into iron hard clods in the summer"(Fox 1943, 56). Settlement and managed lands did gravitate to the islands of gravel terraces along the rivercourse, tending to avoid the clay lands (Last 2000b). Commercial work has now shown that settlement occurs within a gridded landscape.

10.7 River Snail – River Lark

We now turn our attention to rivers flowing into the eastern perimeter of the fens; an area previously lacking Bronze Age land divisions but where commercial work has started to record land enclosure (Figure 10.8). Investigation at Fordham Road Allotments in Soham defined an area of

Late Bronze Age/Early Iron Age settlement made up of wooden roundhouses with accompanying pits filled with occupation debris. In the northern portion of this site, the permanent zone of settlement merged into a Late Bronze Age system of fields, ditched enclosures, droveways with temporary shelters and farm buildings (Connor 2001, 25).

SE along the River Snail valley, trial trenching ahead of the new A142 works for the Fordham by-pass revealed a similar pattern. As at Soham, a Late Bronze Age/Early Iron Age settlement and accompanying field system were recorded all on the southern limit of the by pass at 15m OD. The ditches were orientated NE – SW and NW – SE and it may be that the Fordham Road with its axis NW – SE was once part of this layout. The fields are possibly Bronze Age because they are similar to those found nearby at Landwade Road – an enclosure within a field system. Burnt flint was scattered across the entire site near the Late Bronze Age/Early Iron Age farming areas and may represent the vestiges of burnt mounds that have become scattered by subsequent medieval ploughing (Casa-Hatton and Kemp 2002, 48). The Bronze Age enclosure at Landwade Road, Fordham overlay an earlier field system and there was some evidence of infilling of Bronze Age boundaries during the Early Iron Age (Connor *cf.*).

Isleham lies due east and is well known for the discovery of one of the largest Late Bronze Age hoards in Western Europe now displayed in Bury St. Edmunds museum. The metalwork was recovered from a ditch abutting the fen edge (Malim 2000). For Cyril Fox, the Lark – Gipping linked valleys formed one of the significant prehistoric routeways between the North Sea and Fens (Fox 1934, 152). It is interesting to recall the profusion of metals at the entrance to the Wantsum Channel. Metal concentrations marking the start of the Wantsum Channel and the Lark – Gipping corridor may have signified the importance of these routeways.

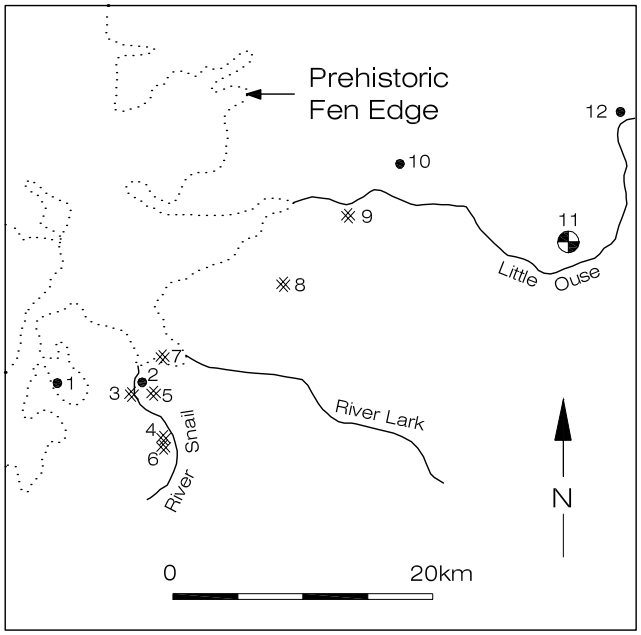


Figure 10.8 Snail, Lark and Little Ouse. 1. Soham. 2. St. Andrew's House. 3. Fordham Road Allotments. 4. Fordham Bypass. 5. Isleham. 6. Landwade Road, Fordham. 7. Prickwillow Road, Isleham. 8. Lakenheath. 9. Game Farm, Brandon. 10. Grimes Graves. 11. West Harling ringwork. 12. Shropham. Site details in Table 10.5

10.8 Little Ouse River

Originating close to Bury St Edmunds, the Little Ouse flows down through Thetford before streaming west into the Fens (Figure 10.8). There is no evidence to date of large-scale land blocks to match those on the Great Ouse, Nene or Welland on the western side of the Fen margins. However there are indications that this was once another important communications corridor linking the basin to inland activities.

At Brandon, a Later Bronze Age field system and enclosure complex alongside the river has been recorded approximately 3km SW of the Grimes Graves complex in Norfolk. A few dispersed gullies, post holes and small pits were located, mainly in the central southern portion of the site and are dated to the Mid/Late Neolithic or Early Bronze Age. Land boundaries were cut into the compacted sands during the Middle Bronze Age and four distinct phases were identified. The nature of the sandy soils would have required constant maintenance, recutting or fresh boundary construction. The number of phases does not therefore imply a particularly long period of occupation (Murray 2000; Gibson 2004, 10). These construction phases included the cutting of droveways, building of roundhouses, rectangular enclosures and larger boundaries. The roundhouses were close to the major boundary ditches or in the 'doglegged'

corners of the enclosure boundaries (Gibson 2004, figure 31). The excavators draw attention to similarities to other sites in the Lakenheath area to the south west of Brandon, particularly those recorded by Lady Briscoe. The surface spreads at Lakenheath and burnt patches were not unlike those at Brandon (Murray 2000, 6). It raises the interesting possibility that the Lakenheath sites may also possess settlement clusters forming part of managed landscapes. The Brandon developer-funded work recovered a relatively large assemblage of pottery: 1380 sherds in total (Last 2000a). The vast majority of sherds consisted of Post Deverel-Rimbury plainwares though there was an element of decorated ware of this period with a number of rim forms that were also found at Lofts Farm in Essex. The complex sequence of Middle/Late Bronze Age activity appears to have lost its significance and became sealed over time by an overburden of wind blown sands and colluvium (Gibson 2004).

Nearby across the river lies Grimes Graves. This site, famed for its Neolithic flint mining, has provided an insight into the nature of Bronze Age subsistence. In 1971, a new, completely concealed flint mineshaft was discovered during surface cleaning. Upon excavation in 1972 considerable amounts of Middle Bronze Age occupation debris were found to fill the upper layers of this shaft. Substantial flint working debris accompanied this midden together with a considerable concentration of burnt flint. It was concluded that the Grimes Grave site was an ideal one for a mixed farming subsistence economy (Legge 1981, 38). The chalk waste created by the Neolithic miners improved the soils and in effect created a 'micro-environment' favourable for arable farming. This very specific niche of well-balanced soils in the otherwise acidic soils of the Brecklands was set in areas of pasture. The site itself was just near enough to the Little Ouse Valley to allow this pastureland to be used effectively (ibid. 38). Legge argues that, while cattle husbandry was concerned with dairy farming, the slaughter pattern of the sheep with a high rate of cull in their second year of life reflects effective exploitation for meat. In this respect the cattle and sheep were managed in an opposite but complementary fashion (Legge 1981, 90).

Further upstream, the Little Ouse continues its course in the approximate direction of Bury St Edmunds. If, instead of following that water-course, we branch up the River Thet tributary more Bronze Age occupation and activities are encountered. The siting of ringworks at West Harling marks the importance of this route. Apling discovered two apparently contemporary enclosures in 1932 sited on Micklemoor Hill, a gravel island dominating the surrounding area (Clark and Fell 1953, 1). Each compound enclosed a substantial roundhouse. The general design of these ringworks is very similar to those encountered in Kent and along the Thames valley.

Interestingly, Harry Apling found these important riverside enclosures while field walking in his quest for burnt mounds (Apling 1932). One of his survey reports published in the same year shows over 50 recorded burnt mound sites up river, including clusters at Shropham and Snetterton. Here commercial archaeology can contribute because at Shropham there is some evidence of pre – Iron Age fields recently observed in commercial work (Bown *cf.*). This and another contract project at Hemsby on the Yarmouth coast contribute to the very limited evidence for Bronze Age land partitioning in Norfolk.

Chapter 11. The Severn and Avon Vales

11.1 From Bredon to the Breiddin

We now examine the evidence for land divisions north from the Cotswolds, in North Gloucestershire, Worcestershire, Herefordshire and Shropshire – in effect a transect along the western edge of England from the Bristol Channel towards the Irish Sea. The records continue to confirm that later prehistoric settlement and land division is centred on the gravel terraces and floodplain of the lower Severn and Avon. We shall examine each in turn.

11. 2 The Severn Vale

The Severn is the longest river in England, originating beyond the Welsh borders and ending its journey in the vast expanse of floodplain near to Gloucester where the outpouring freshwater fights the surging Bristol Channel tides (Figure 11).

In the lower reaches reddish fertile soils fill the valley terraces and two sharply defined upland zones overlook this prized agricultural land: to the south-east, the limestone scarp of the Cotswolds and, to the north-west, the Malvern Hills. The Bredon and the Herefordshire Beacon are key points effectively dominating the floodlands below. Together they straddle the communications route offered by this river system. Way upstream, the Breiddin on the borders is a major Late Bronze Age enclosure dominating the upper reaches (Musson 1991).

There is scant evidence for Bronze Age field systems along the upper reaches of the Severn. There is one site upstream of Wroxeter and another close to Worcester itself. The Sharpstones Hill site near to Wroxeter was the first lowland prehistoric site to be located and explored in Shropshire (Barker, Haldon and Jenks 1991). It had

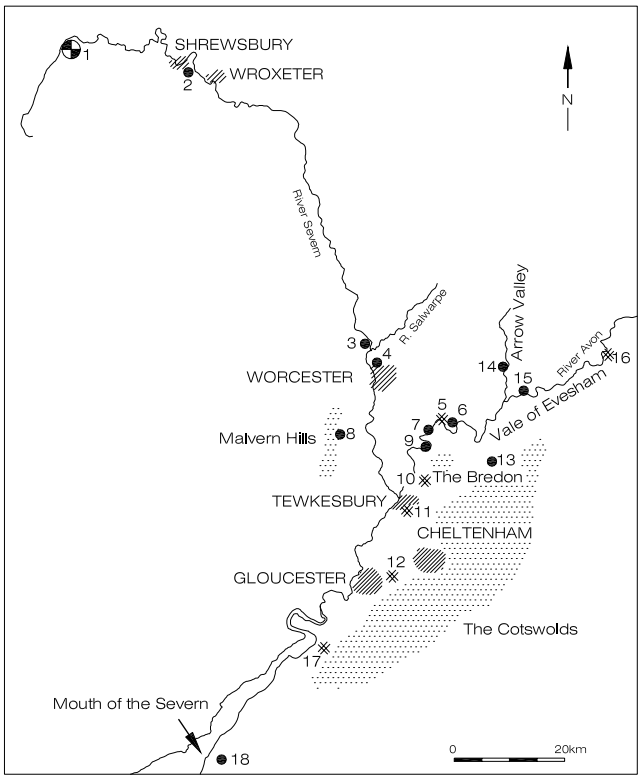


Figure 11. The Severn and Avon Valleys. 1. The Breiddin. 2. Sharpstones Hill. 3. Holt-Grimley. 4. Perdiswell Park and Ride, Worcester. 5. Wyre Piddle Bypass. 6. Fladbury Sports Ground. 7. Pershore Youth Hostel. 8. DERA Malvern. 9. Gwen Finch Nature Reserve, Birlingham. 10. Huntsmans Quarry, Kemerton. 11. Tewkesbury Eastern Relief Road. 12. Gloucester Business Park, Hucclecote. 13. Perrin's Farm. 14. Arrow Valley. 15. Pilgrim Lock. 16. Wasperton. 17. Frocester. 18. Second Severn Crossing. Site details in Table 11

a set of rectilinear field boundaries inadequately dated (ibid. 42) but they were thought to be Late Bronze Age/Early Iron Age (ibid. 27). Those ditches enclosed light, easily cultivated, well-drained loamy soils situated on fluvio-glacial sands and gravels close to the River Severn. The pottery assemblage was similar to that recovered from the Breiddin hillfort (ibid. 36). A second site at Holt/Grimley, this time close to Worcester, was again centred on prime soils on level ground close to the Severn watercourse. The scale of sand and gravel extraction around the village of Holt and Grimley, in a band of extensive cropmarks, might help determine the nature of Bronze Age land use and, more particularly, whether field boundaries were being constructed so far north. Irrespective of the archaeological evidence, the topography of the area is of interest. It is an almost level plateau of third river terrace overlain by well-drained coarse loamy sandy soil. Land of this nature is relatively scarce in this region. The plateau terrain is approximately 6 sq km in total extent, hemmed in by the steep valley of the Severn to the north and east, and at Holt Fleet Bridge and the Grimley Brook to the west and south. The favoured location of managed lands elsewhere would suggest that the Holt/Grimley parishes could also be likely candidates for early formal land appropriation. The existing archaeological record strengthens this argument. There are several ring ditches in the immediate vicinity, in addition to the findspots of two Middle Bronze Age rapiers and a socketed axe, all close to the confluence of the Salwarpe and Severn (Shelley 1989). The ideal farming soils, flat terrain, scarcity of prime land, barrow concentration, metal deposition and river confluence match patterns elsewhere. However, while commercial excavation has not ruled out associated field divisions, that proof to date is far from conclusive.

Rescue work in this Holt/Grimley zone is limited in terms of firm dating evidence. Shelley in his work at Top Barn Quarry, Holt recovered two sherds of BA pottery in topsoil stripping and Roman pottery from the upper fills of ditches (Shelley 1989). Investigations at Retreat Farm, Grimley (Jackson 1991) and Church Farm Quarry, Holt (Edwards 1991) were hampered by the limited linear archaeology; a 7m wide trench in advance of a conveyor belt construction and a 5m wide trench for the footprint of an access road. Despite this, Edwards recorded a number of prehistoric pits and one N – S ditch, together with a possible prehistoric boundary, which may have been marked by a series of regularly spaced trees. Broadly dated prehistoric features were also recorded by Jackson at Retreat Farm, including boundary ditches and a possible entrance to an enclosure which may be related to stock control. Jackson concludes that the construction of agricultural boundaries at Holt began in the Bronze Age (Jackson 1991, 8).

The next site of interest is in Worcester at Perdiswell Park and Ride: a circular palisaded enclosure recorded on a site previously interpreted as a ploughed out round barrow. Dated to the earlier Middle Bronze Age on the basis of the pottery and radiocarbon samples, this unusual structure is tentatively interpreted as of ceremonial or funerary function. It would have comprised a tightly packed contiguous 4.5m (possibly) high timber palisade with an internal diameter of 27m. Only 280 gms of dateable pottery were recovered from this careful excavation which may explain the difficulty of dating more open sites such as have been encountered at Holt and Grimley. The authors suggest that the enclosure was erected in a relatively open landscape (Griffin *et al.* 2002, 20) by different construction gangs (ibid. 7). A programme of radiocarbon dating was undertaken, which showed that the lower fills of the palisade trench dated to the mid-second millennium BC (Griffin *et al.* 2002, 6). The three samples produced date sets of 1630 to 1410 cal. BC (Beta-152193; 3240±50 BP), 1610 to 1260 cal. BC (Beta-149926; 3150±70 BP) and 1420 to 1130 cal. BC (Beta-149927; 3040±40 BP) (ibid. 11).

The excavators discuss whether the palisaded enclosure represents a long lived funeral monument but note that its architecture fits rather awkwardly into known types of ceremonial monument. Whether Perdiswell is entirely ceremonial in design or another type of aggrandised compound (with attendant ceremonial functions) might not be resolved. But the construction of this grand compound confirms that modern Worcester and the confluence of the Severn and Salwarpe was a place of some importance during the Middle Bronze Age – the very time when there were far reaching changes in the local landscape.

South of Worcester the Severn valley starts to open out into a wider flood plain. Here are the richest soils overlying gravel terraces. The flat plain alongside the feeder rivers into this zone has a level of Bronze Age activity unmatched

upstream. It is close to the two flanking uplands, effectively on strategic points overlooking the valley, that we at last have conclusive proof of Later Bronze Age intensive settlement and elements of formal land division. On the Malverns there are sites either side of the Wyche Cutting, a natural crossing point through the Malvern Hills (Herefordshire SMR 3759 and 6715, Griffin *et al.* 2000) and out towards the Cotswolds around Bredon Hill there are further field boundaries and integrated trackways of Middle Bronze Age date. The evidence suggests that this part of the Severn valley including the zones around Tewkesbury and modern day Cheltenham represent a concentration of settlement and resource exploitation. Significantly this intensification occurred during the Middle Bronze Age.

11.3 The Vale of Evesham and the Avon

Tewkesbury is where the Severn and Avon meet. There is growing evidence from developer-funded work to show the importance of the river valleys feeding into this confluence at Tewkesbury (Figure 11). The Avon lies to the NNE, flowing by Fladbury, Wyre Piddle, Pershore, Birlingham and Kemerton – all locations suggest Middle Bronze Age intensified farming activity. This is flattish open countryside dominated by the Vale of Evesham where few crop marks are detectable because this is England's leading fruit-producing and market gardening area. The orchards and horticultural beds, however, have preserved the remains of much earlier farms.

Starting at Fladbury Sports Ground there is evidence of Bronze Age settlement (Cook and Buteux 1998). Next downriver is the Wyre Piddle Bypass where, unexpectedly, round barrows and cremations were unearthed together with the southern side of a Middle Bronze Age rectilinear ditched enclosure and associated land division (Jackson *cf.*). The level of feature recording and artefact collection at Wyre Piddle provides a very real contrast with the usual paucity of artefacts in Worcestershire (Napthan *et al.* 1997).

At Pershore Youth Hostel the observable natural flood deposits of red alluvium suggest prehistoric forest clearance and a marked change in agricultural activity (Pearson 1994, 7) which corresponds to similar changes recorded along the lower Severn/Avon valleys. Shotton suggested that such sudden rapid alluviation was dateable to the 10th century BC (1978, 31) but Brown has questioned that conclusion (1982, 103). Next down the Avon is Gwen Finch Nature Reserve at Birlingham. Environmental evidence gathered here enabled further comparison with pollen assemblages from sites along the River Avon valley. It suggests that livestock farming predominated, with limited arable cultivation in the later prehistoric period, tentatively dated to the Later Bronze Age (Bretherton and Pearson 2000). The evidence for cereal cultivation was slight at Birlingham, as was the case for Beckford until the Iron Age (ibid. 8).

We are now at the southern limits of Worcestershire and for some time as we have journeyed further south the imposing hill at Bredon, rising abruptly from the surrounding floodplain, will have drawn our attention. Any remaining doubts about Middle Bronze Age land appropriation in the lower Severn – Avon now dissipate. The nationally important site of Huntsmans Quarry at Kemerton, SW of Bredon Hill was dug between 1994 and 1996. Developer-funded work in advance of further quarrying unearthed 2,522 features where Bronze Age structures had once covered the entire 7ha site. These features are a legacy of an increasingly complex society with extensive domestic settlement, textile production and metalworking. Four thousand and ninety eight sherds of pottery weighing 33kg, over 30 loomweights of a variety of forms seldom found in association, and an impressive collection of bulk soil samples, rich in animal bone, molluscs and insects were recovered (Jackson and Napthan 1998). There was also evidence of Middle Bronze Age weapon manufacture including 200 ceramic mould fragments used in the casting of mid ribbed swords, socketed spearheads and palstaves. What a contrast to other sites reliant on one or two pieces of pottery to help date events. The number of features recorded and quantity of artefacts retrieved reflects the true scale of activity in these flourishing communities. Preservation of the core of the site in situ meant that the busiest part of the ancient settlement remains. Dating of the Huntsman's Quarry site is based on 31 radiocarbon determinations mainly derived from charred residues on pottery. These give a date range of 1210–1040 cal. BC for the sinking of waterholes and the establishment of the field system. Disuse of this gridded landscape

(derived from material dumped in the top of the waterholes) falls between 1140–1010 cal. BC and 1050–960 cal. BC (Jackson *cf.*).

Besides the wealth of domestic data, the area strip showed up coaxial field systems with integrated trackways. Provisional environmental evidence provides some clues as to the nature of the farming regime. It suggests that the Kemerton communities were living in an open landscape with plenty of grazed pasture. Despite extensive sieving of bulk samples, only one Late Bronze Age pit produced an abundance of charred plant remains. This result suggests that cereal processing was carried out only on a small scale and that crop growing was not an important part of the economy. Griffin et al, citing an unpublished environmental analysis by Pearson, concludes that the Kemerton settlement was more likely to be concerned with shepherding and stock herding (Griffin *et al.* 2002, 16).

The interim report on Kemerton has an interesting twist. The community here flourished over a relatively short period of time. By the Late Bronze Age it was no longer socially important and there was no continuity into the Early Iron Age. The Time Team confirmed that finding when they also encountered a marked absence of Early Iron Age settlement in the Carrant Valley (Terrain Archaeology 2001).

Clearly Kemerton is an important Middle Bronze Age settlement area, fully justifying the English Heritage programme of post excavation analysis. Recent air photography reconnaissance suggests that the planned landscape may extend much further. Glyde has observed that the slopes of Bredon Hill have now been seen to contain a complex system of boundary banks, terraces, droveways and settlement remains. The Bronze Age field system at Kemerton appears to form part of an extensive formal land block orientated north west – south east and north east – south west (2000). This grid was replaced during the Late Iron Age / Romano-British era with a comprehensive reorganisation with a new north south/ east west axis.

The similarity of Middle Bronze Age Kemerton to other enclaves in the South East is worth stressing in one other regard. Here we can turn to the eloquence of Thalassa Hencken (1938). In her preamble to the excavation report of Bredon Hill Iron Age hillfort she reminded her readers of the importance of this isolated but strategically placed outcrop. She suggested that the Bredon was in ancient times in an enviable position since its towering eminence provided both security and domination of a multitude of key communication routes. Communities here had the benefit of controlling passage through the lower Severn and Worcestershire –Avon valleys and were in touch with traffic along the Cotswolds to the north east and traffic moving north west up the Severn Valley into the Herefordshire hills. It also served as a connecting link between areas of the Cotswolds and the more inaccessible highland areas to the west. Topping it all was the strategic link to the open sea south-west down the Severn valley and estuary (ibid. 3). In effect the Bredon communities were stationed on critically important strategic routeways which attracted a burgeoning population and corresponding demarcation of the surrounding land. The relative lack of Late Bronze Age material and total absence of Early Iron Age finds to date suggests that those communications routes had declined in importance by the start of the first millennium BC. It is a testable hypothesis for future commercial work in the area.

Developer-funded projects are proving that the area of southern Worcestershire around the lower Avon and Vale of Evesham is of high archaeological potential. Woodland clearance occurred here much earlier than along the Severn, at least by the Early Bronze Age (Greig and Colledge 1988; Greig 2000). Research projects upstream of Evesham also confirm the importance of the Avon. Palmer's work along the Arrow Valley and Hingley's investigation of the meander meadows at Wasperton provide examples of outlying settlement and land appropriation (Palmer 1999. Hingley 1996). Wasperton spans two landscaping eras, for a long ditched territorial boundary and associated rectilinear field system dated to 1300–850 cal. BC is replaced by a pit alignment between 850–650 cal. BC. Osborne's research investigation at Pilgrim Lock near to Bidford on Avon demonstrates the importance of environmental sampling. A section of the organic sediments exposed in the construction of the new lock were dated to the Late Bronze Age. He concluded that the local countryside was open grassland grazed by large animals. The radiocarbon determinations were 1400–800 cal. BC (Birm 632; 2890±100 BP), 1400–800 cal. BC (Birm 651; 2880±100 BP) and 1500–900 cal. BC (Birm 247; 3006±117 BP). The beetle species almost all live in the animal droppings of sheep

and cattle. This livestock was grazing along the riverbanks when the waters were still clear and running over a clean stony or gravelly bottom, free from any mud or silts (Osborne 1988).

11.4 Gloucestershire north of the Chilterns

We now cross the border into Gloucestershire starting with Tewkesbury situated at the confluence of the Severn and Avon. From this southern point Middle Bronze Age activity and settlement prevails.

The construction of an eastern relief road and subsequent commercial work has added to the accumulating evidence of Middle Bronze Age activity around the medieval town of Tewkesbury. The scale of excavation following extensive fieldwalking has provided a wider landscape understanding. In area D of the relief road works, topsoil stripping led appropriately to the recording of a D-shaped enclosure with possibly associated curvilinear ditches and a group of pits, assigned a Bronze Age date (Walker *et al.* 2004, 35). This was located on the eastern side of a slight promontory jutting out into the modern flood plain. A Middle Bronze Age bronze casting site (in area F) was located nearby, perched on the end of another minor but significant eminence on slightly higher and drier ground within what is now a flood-prone environment. 18 mould pieces were retrieved and identified with the casting of spearheads (ibid. 40). Nearby at Rudgeway Lane (also part of the eastern relief road works) a NE – SW Middle Bronze Age land boundary showed up, exceeding 100m in length and recut at stages during its use (ibid. 41). At the Gastons, four linear ditches were recorded in plan, one of which, when sectioned produced 33 fragments of Middle Bronze Age bucket urn. The arrangement of these features suggests that they are the surviving parts of a field system or enclosure (Walker, Thomas and Bateman 2004, 41). The quality of material recovered on this Tewkesbury site contrasts sharply with the ephemeral data being collected further up the Severn valley. With no paucity of pottery or features, the site is more remarkable for what it lacks: any Late Bronze Age, Early Iron Age, Middle Iron Age or Late Iron Age features (Darvill 2004, 87). Until the discovery of Late Iron Age enclosures and boundaries at Land to the East of Rudgeway Lane (Coleman 2002), it looked as though the Iron Age was entirely absent from the environs of Tewkesbury.

The Tewkesbury Relief Road findings are significant, for this developer-funded investigation has added to the accumulating evidence of concentrated Early/Middle Bronze Age activity at the confluence of the Severn and the Avon. Valley floor sites had previously come to light at Saintbridge, Barnwood, Frampton on Severn and Cam. All equate to the Early Bronze Age phases for the Relief Road (Darvill 2004, 85). The scale of this civil engineering project provides one glimpse of the formal demarcation of land accompanying settlement expansion along the valley and levels.

At Hucclecote, excavation preceded the construction of a link road near the city of Gloucester. Here cremations associated with a flat cemetery had been established on top of a 1–2m band of alluvium (Thomas *et al.* 2003, 8). Two radiocarbon dates for the cremation material provided a rare absolute terminus ante quem date for the onset of alluviation. The dates are 1420–1120 cal. BC (AA-33584(GU-8275); 3040±50 BP) and 1390–1010 cal. BC (AA-33583(GU-8276); 2965±60 BP) (ibid. 30). The dates indicate clearance and agricultural activity on the Cotswold escarpment and higher reaches of the Horsbere Brook prior to or during the Middle Bronze Age. Four, and possibly five Late Bronze Age/Early Iron Age roundhouses, the largest of which was 14m in diameter, subsequently overlay the Middle Bronze Age urnfield. To the south and west were two 45m long parallel sinuous gullies following the same orientation as three other land boundaries revealed in geophysical survey (ibid. 11). Once again on this site just as elsewhere in the lower Severn, the relative absence of Iron Age activity is noteworthy.

Timothy Darvill draws attention to the recurrent discovery of metalworking sites along the Severn/Channel margins (2004, 86). He argues that the area was an early focus for metalworking because of its relative ease of access to ore supplies in central and west Wales. There have been a number of recent discoveries of metalworking sites along the Severn/Bristol Channel margins. A stone mould from Walleybourne and metalworking tools from Westbury-on-Trym reveal Early Bronze Age forging. That smithing tradition is also continued into the Middle Bronze Age at the Tewkesbury Relief Road site (ibid. 86–87).

Whilst there are a number of Middle Bronze Age sites along the Severn and Avon Vales, Late Bronze Age boundaries are rare and Early Iron Age settlement or land division is noticeable by its absence. The same is true for the Avon levels further along the Bristol Channel coast. Gardiner *et al.* (2002) in recently published work on the construction of motorway links for the second road bridge across the Severn estuary conclude that the first clear archaeological evidence for human exploitation of the Levels occurs in the Later Bronze Age associated with clear stabilisation horizons (ibid. 20). The developer-funded study investigated an area of 54 sq kms between Avonmouth and Oldbury. The authors present a model for the prehistoric exploitation of the Avon Levels, suggesting a peak of activity in the Later Bronze Age, including summer grazing on the fen islands contrasting with limited land clearance for arable crops in the preceding Neolithic era. The area was abandoned during the subsequent Early Iron Age following large-scale inundation of the levels (ibid. figure 9). Derived from contract archaeology, the model can help to improve the research focus of future commercial work.

We have examined here the block of land north of the Cotswolds incorporating North Gloucestershire, Worcestershire, Herefordshire and Shropshire. This synthesis concludes that land appropriation and permanent settlement is concentrated in the lower Severn and Avon valleys. Permanent land tenure claims start in the Middle Bronze Age when livestock rearing appears to be a priority. New land boundary construction is noticeable by its near absence in the Early Iron Age. Land blocks appropriated prime territories in advantageous points in the countryside; where the communities could produce, accumulate and distribute surpluses through exchange. The lower Severn also appeared to be a focus for metalworking, a tradition starting in the Early Bronze Age and was probably a legacy of smiths able to draw on ore supplies from Wales (Darvill 2004, 86). What is notable is the Middle Bronze Age peak in land tenure claims, compared with their relative scarcity in the Late Bronze Age and absence in the Early Iron Age.

Chapter 12. Patterns in the land

12.1 Economic growth in the second and early first millennium BC

Both the Late Neolithic/Early Bronze Age and Early/Middle Bronze Age transitions have been characterised as marking significant changes in economic tempo and the way that society was controlled (Thorpe and Richards 1984; Barrett and Bradley 1980c; Bradley 1991, 45). Thorpe and Richards examined two alternative trajectories for agricultural societies, the 'ritual authority structure' and 'the prestige goods economy', in their study of Late Neolithic societies and the social context for Beaker introduction (Thorpe and Richards 1984, 67). The essential features of the ritual authority structure are the close relations between the world of the living and that of the ancestors and supernatural beings, and a rigidly ranked structure linking members in terms of seniority of descent from a common ancestor. It is a relatively closed and rigid system. In a prestige goods economy, the world of the ancestors is broken and replaced by a more direct politico-economic means of determining rank. This growth-orientated economy is characterised by the formation of opportunistic alliances, seeking competitive advantage over rivals. Power depends on direct control over resources and the production and circulation of wealth. Such economies are relatively fluid and open (ibid. 67–68). Using those two polarised models, Thorpe and Richards sought to analyse the extent to which ritual authority was challenged by what they interpreted to be an emergent prestige Beaker goods economy linked to a continental exchange network (ibid. 79).

The use of those two reference models is also appropriate to a discussion of changes starting in the Middle Bronze Age where the pace of economic and social transformation was even more marked. Barrett and Bradley observed that there was a critical switch in political power away from the traditional hierarchies of Wessex to emergent eastern lowland centres with structures incongruent with ancestral practices (1980c, 249). The debate on the two alternative trajectories is especially relevant to the consideration of social dynamism evident in the Later Bronze Age archaeological record (Bradley 1991; Rowlands 1980, 47–48). Prestige goods systems are essentially active growth-driven economies, replacing low growth domestic modes of production. The systems depend on continued economic success and within them the conflict between secular power and ritual authority may never be completely resolved. Leaders maintain the prestige goods system by controlling access to imported goods or raw materials and if the supply is cut off or suddenly expands there may be a collapse or decimation of political power (Thorpe and Richards 1984, 68; Prentiss and Chatters 2003, 44). New data enables us to reconsider the nature of Later Bronze Age 'legitimate' authority within an age of spiralling economic needs, and the interplay between prestige goods economies and ritual authority structures. The apparently rapid disintegration of the full range of socio-economic and political structures during the first millennium BC raises further questions about the eventual demise of political economies within an extended exchange network.

Profound politico-economic changes occurred in the second and early first millennium BC. A major phase of economic expansion was accompanied by a fundamental shift in regional power and wealth towards the lowlands of eastern England. Limited knowledge of the lowland farming practices associated with these dramatic social changes and reliance on extrapolated models derived from upland excavations have, until recently, hampered

research in Later Bronze Age studies. Theoretical debates have also been restricted. For example, both the original discussion of the association between field systems and agricultural intensification and subsequent critiques of that interpretation refer to the upland data set and hillside cultivation alone (Barrett 1994; Brück 2000, 276). Excavation findings from lowland projects now enable us to:–

a) determine the geographical distribution and age of some of the rectilinear land divisions
b) discuss the wider role of land divisions within a prestige goods exchange system
c) re-address the issue of intensification and,
d) examine alternative explanations of the social significance of the field systems.

All of these questions are important in determining the nature of farming regimes associated with the expansionist political economies.

It is now possible to compare the distribution of lowland field systems and their upland counterparts against concentrations of prestige goods (metalwork deposition) and settlement. Twenty eight thousand archaeological investigations were carried out in England during the first ten years of developer-funding (Darvill and Russell 2002, 66). A significant proportion of that work involved large area excavation and in consequence we now have sufficient data to discern the spread and broad dating of both lowland and upland prehistoric rectilinear field systems. It is apparent that the vogue for this form of linear land division occurred in two episodes, first during the Bronze Age/Earliest Iron Age and, secondly, in the Late Iron Age/Romano British era. The distribution of the first series of *Celtic fields* is confined to Southern England; later Roman systems cover a wider area. This research has concentrated on that first wave of permanent farm construction and in this chapter we discuss the social significance of that form of land management.

12.2 How representative are these data?

The conclusion of this synthesis is that Bronze Age rectilinear fields systems are almost entirely confined to Southern England, south of a line stretching between the Bristol Channel and the Wash. This is the pattern apparent in the national archaeological records, but is this picture truly representative of the prehistoric distribution of field systems? Perhaps it just reflects differential rates of developer-funded work throughout the country. The answer, however, is no. We can be confident about the general pattern established for the following reasons:–

1. Nearly 15 years of developer-funded work has produced a remarkable database including several hundred sites where Bronze Age field divisions have been exposed. The accumulated evidence continues to reaffirm a series of Southern lowland niches and upland spreads of formal land allotment. The proliferation of archaeological interventions is graphically portrayed in Figure 12.1 which shows the near blanket coverage of England. Admittedly the south west and north west are relatively under represented, but the Midlands and Northern England are not and continue to confirm an absence of Bronze Age field systems. Ireland, Wales and Scotland fall outside the scope of this research.
2. The outer limit of the linear land blocks can be clearly defined. It is marked by a sudden and dramatic absence of field systems along its north west frontier. Field systems are noticeable by their absence in the Northern English Midlands (Mullin 2003); around Milton Keynes, despite the thorough archaeological recording accompanying the development of that new town (Zeepvat 1993 Williams, Hart and Williams 1996; Zeepvat, Roberts and King 1994; Williams 1993; Croft and Mynard 1993; Ford 2000b); and, most significantly they are totally absent along the Trent valley, in effect the next valley north of the River Welland (Knight & Howard 2004, chapter 5).
3. Lowland prehistoric coaxial fields in Southern England exhibit a repetitive stratification. Hidden by hill- or river-wash or backfill, the first formal Bronze Age land blocks are invariably succeeded by a later phase of Late Iron Age/Romano-British fields. Both can be seen in large area investigations. Outside of Southern England there is no such succession. The Late Iron Age ditches do not overlie or cut Bronze Age coaxials. That is very telling evidence.
4. Perhaps a lack of familiarity with Bronze Age field systems in the north explains this void? This is a weak argument since career moves for individuals and competitive tendering ensures a marked degree of mobility within the profession. The absence of Bronze Age field systems outside of Southern England is a nationally recognised research issue – so teams working in the north spend – if anything – a disproportionate amount of time looking for them.
5. What if the pattern results from inadequacies in the national system of Sites and Monument recording? This is not the case because the SMRs are only one of the sources consulted in this research. Much

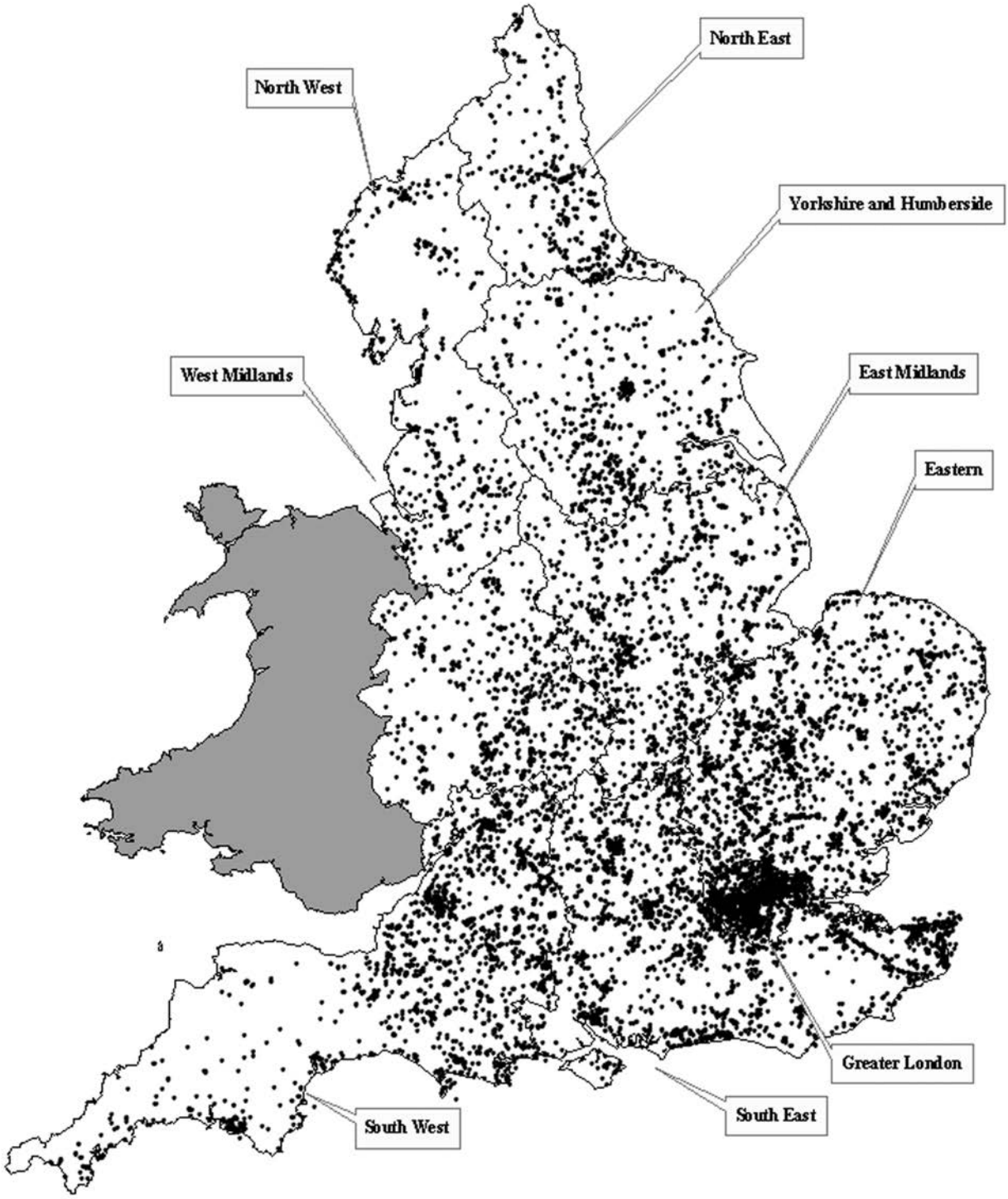


Figure 12.1 Distribution of field evaluations undertaken in England 1990–2003. Data supplied by B. Russell and T. Darvill, Archaeological Investigations Project, University of Bournemouth

time has been spent talking to field archaeologists, paid and unpaid alike, as well as extensive desktop research of the existing corpus of published material, aerial photographic records, post excavation material and field walking results. The comprehensive AHRB Prehistoric Project directed by Richard Bradley and Tim Phillips has identified the void in the north and west.

This is not to say that the sampling of developer-funding is entirely uniform. *Realpolitik* in local government development control may allow building without archaeological investigation. Similarly, individual curators with varying degrees of vigilance can distort the national record.

12.3 Where and when?

A marked contrast is apparent in the archaeological record. The records show a relative inertia in economic development during the Neolithic, compared to a quicker pace of change during the Bronze Age. It suggests that an old order resistant to new land/livestock relationships was swept away when economic intensification became the new driving force.

First we shall examine the broad distribution and chronology for Bronze Age field systems – a general overview of when and where – before re-examining their distribution in relationship to metal concentrations, intensification and location preferences. That will enable us to reconsider the type of societies and political economies that developed. The biggest revelation from the increase in commercial fieldwork has been the suggestion that in lowland and upland England regular field systems of the kind once referred to as *'Celtic'* were mainly a Bronze Age phenomenon. They were not a major feature of Iron Age agriculture, but were again in vogue late in that period and increased in importance after the Roman Conquest (Bradley and Yates in press).

The Bronze Age examples are found in a compact area extending along the North Sea shores from Kent to the border between Cambridgeshire and Lincolnshire and along the English Channel out towards Cornwall and the Isles of Scilly. Although there are other isolated examples, they do not extend much further north than the Cotswolds and the Chilterns. Not only are they confined to Southern England and especially the South East, their occurrence is also restricted to particular parts of this area (Figure 12.2). This is less true of the earthwork sites than it is of the lowland field systems. Much of Southern England was not enclosed by such land allotments and in the lowlands regimented land divisions are restricted to distinct enclaves or clusters commonly found on the coast, in estuaries or along major rivers and their tributaries. Some of these regions seem to have been used so intensively that Bronze Age land divisions extend into adjacent areas with heavier, poorer soils. In Kent for example, coaxial land divisions were constructed around Ashford on heavy clayland and, further west, people settled on the poor acidic soils at Blackheath.

One of the key areas defined by recent fieldwork was the Thames valley and its estuary approaches. Land divisions have been found on the shores of the navigation route through the Wantsum Channel, on either side of the estuary, and the river mouth at Mucking and Gravesend. Upstream, groups of fields were found at the river's confluence with its tributaries, for example the Lower Kennet at Reading. Other important groups of fields occur away from the Thames itself, for example in the Medway and Great Stour valleys in Kent. They are also found on the River Wandle at Carshalton and on the River Lea at Enfield. These were on major routes, communicating with the North Downs and East Anglia respectively, and each is located in an area that has produced a significant number of metal finds, particularly war gear.

Similarly preferred locations are apparent for lowland field systems along the south coast with increasing evidence of land divisions on the Sussex coastal plain clustering around the River Arun and the natural harbour of Chichester. Further west, the river mouths of the Test (to the west of Southampton) and the Stour (to the east of Bournemouth) attracted settlement. Around the natural harbour at Poole land was appropriated, with a particular demand for ground on the river mouths of the Frome and Corfe rivers.

Along the East Coast, land fronting the rivers Blackwater and Colne was parcelled up, especially on the Ardleigh peninsula which dominates the final approach to the Stour river that separates modern Essex from Suffolk. Inland, the Fenlands were important at this time, although it is clear that the field systems are associated with the lower reaches of major rivers as well as the wetland

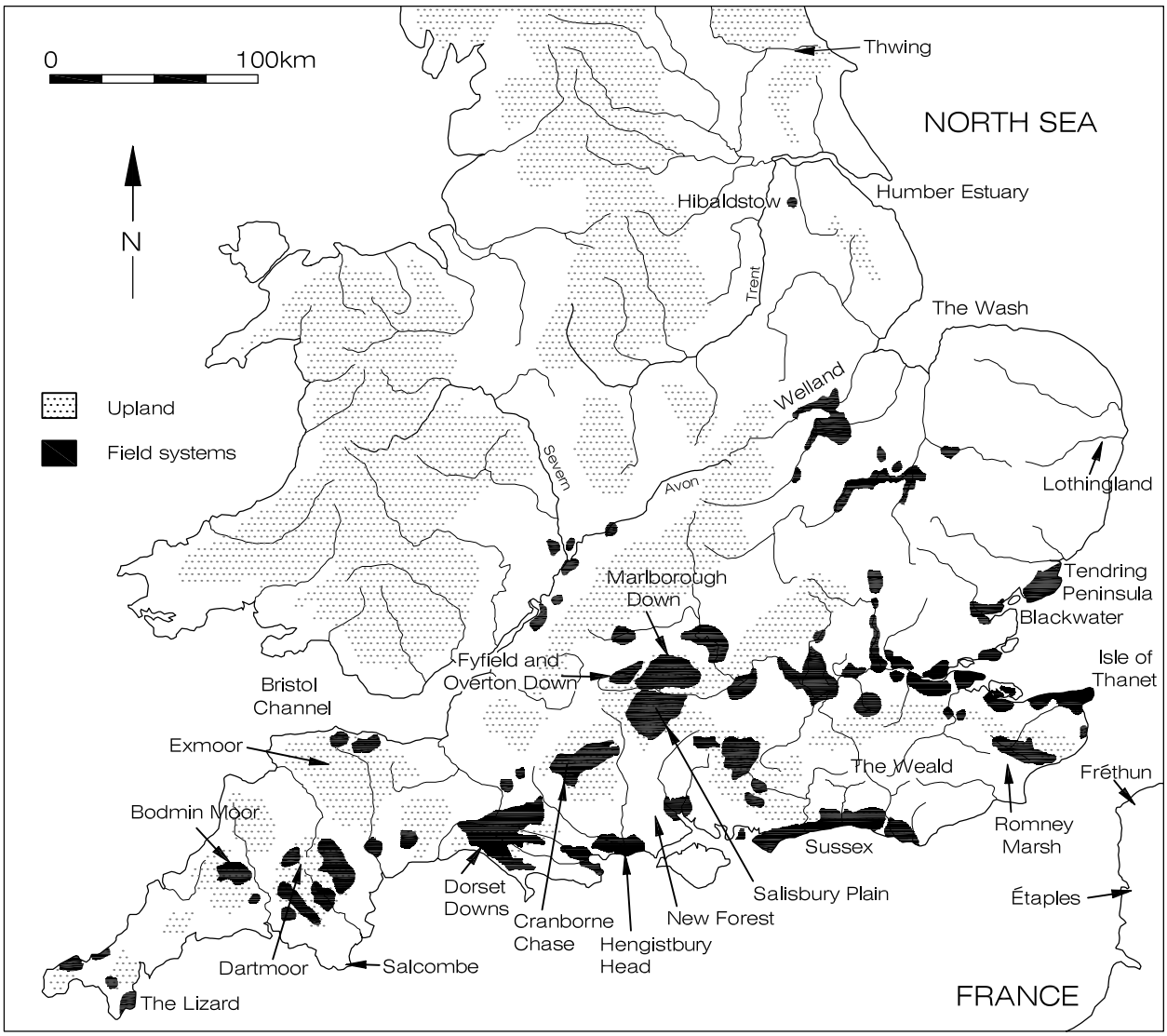
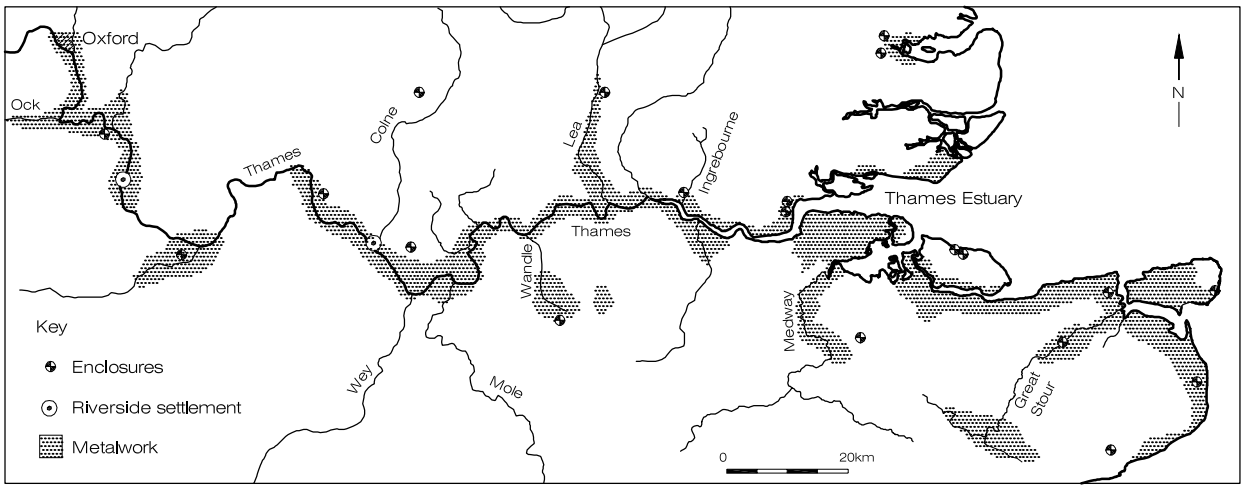


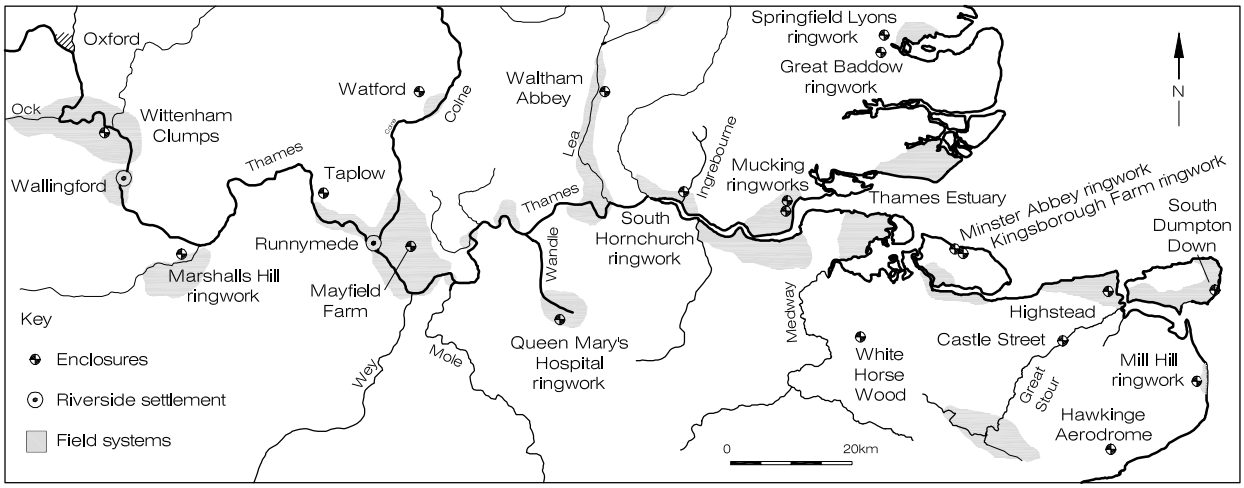
Figure 12.2 Distribution of late second and early first millennium BC linear field systems

itself. Concentrations of coaxial fields, droveways and enclosures can be found where the Welland, Nene, Great Ouse, Rhee/Cam/Granta, Lark and Little Ouse join the Fens. To the far west at Bredon Hill, a strategic point in the Severn valley, land was also being controlled. Throughout Southern England people were exploiting environments rich in natural resources. These were habitats capable of sustaining a growing population. On the river terraces west of London almost all the available land seems to have been appropriated. In addition, land divisions spill over onto alluvial deposits and are found on areas of brickearth and even on gravel islands within the River Colne floodplain. Indeed, there is one instance in which flood defences were constructed on the river edge to safeguard an area of farmland from the scouring waters. The recent discovery of similar land divisions within the rich agricultural lands of the Vale of Evesham adds to the evidence of social change being enacted through the new medium of economic intensification.

Not all upland field systems can be dated in the absence of excavation, but those that can are confined to Southern England, all south of the Thames. The most convincing evidence of Later Bronze Age field systems comes from Dartmoor, the Marlborough Downs, South Dorset, Salisbury Plain, Cranborne Chase and the South Downs. Similar land divisions occur on Bodmin Moor and Exmoor but there the evidence is less conclusive.



River Thames: Metalwork



River Thames: Enclosures and Settlements

Figure 12.3 Later Bronze Age metalwork, fields and enclosures along the Thames Valley. Metalwork distributions derived from York 2002, Ehrenburg 1980, Needham and Burgess 1980. Greater London Sites and Monuments Record

There is little to suggest that the upland systems were laid out before the Middle Bronze Age (except on Dartmoor). Some of these systems were abandoned when new individual enclosures or boundary ditches were cut across them. A number of the earthworks date from the Middle Bronze Age, whilst others can be assigned to the Late Bronze Age or Early Iron Age (Cunliffe 2004, 64 and 74).

The dating evidence from lowland field systems is broadly similar. In certain cases it seems as if Middle Bronze Age field systems went out of use in the Late Bronze Age and that some of the Late Bronze Age systems were established in different positions from those of their predecessors. There is little evidence that they were used or maintained far into the Early Iron Age. Many of the associated settlements seem to have gone out of use, although they were sometimes relocated nearby. More importantly, there is little to suggest that similar land divisions were newly established during the Early Iron Age. In lowland England the creation of *'Celtic fields'* may have lapsed for several hundred years.

12.4 Metal concentrations and land divisions

Timothy Earle, in his book *Bronze Age Economics,* discusses the nature of political economies and prestige goods exchange. For Earle, exchange valuables are key items in status rivalry, in which a person's renown is frequently established by the

quality and quantity of valuables received and given in competitive exchange events (Earle 2002, 21). They are generally used to meet social and political obligations. Well-known ethnographic examples cited by Earle include *kula* and *potlatch* valuables, East African cattle, salt and imported pottery. Typically these are high value, scarce but durable items. The iconic British bronzes will have been central to a prestige goods system, but there may have been other prestigious possessions less likely to survive in the archaeological record. They may have included fine textiles, organic arms and armour including quilted cuirasses and woodcraft ranging from finely crafted wooden bowls to sea going craft. Prized livestock, hunting dogs and horses may also have formed part of the repertoire of impressive gifts. It is, however, the bronzes that have survived so well and whose distribution can be compared with field system concentrations. This is examined in this section, to be followed immediately by an assessment of whether the field systems were purposefully designed to intensify output. If a link between field systems, metal deposition and hierarchical settlement is established, then we can be more confident in pinpointing the centres of political economies; power bases where labour forces had been mobilised to maximise production.

Three major concentrations of metalwork stand out in the archaeological record; the Thames valley, the fen edge of East Anglia, and Channel coast. We shall start with the Thames and then examine the relationship between land divisions and metal finds in East Anglia, before looking at the record along the English Channel.

12.4.1 Metalwork, land division and enclosed settlement along the Thames

Figure 12.3 shows the distribution of metalwork, field systems and enclosures along the Thames Valley and its estuary approaches. These maps plus the detailed findings from chapters 3, 4 and 5 enable us to reflect on the nature of the gift exchange system operating along this arterial routeway.

In terms of metalwork the River Thames has a marked concentration of ostentatious weaponry, partly matched in the Fenlands of East Anglia but with no other equivalent elsewhere. The finds are concentrated in clusters along the course of the main river, its major tributaries and the estuary foreshores (Figure 12.3). Between the Upper and Middle Thames valley there is a marked increase in metalwork downstream (York 2002, figure 2). York has recently re-examined 302 accessible and provenanced Bronze Age metal artefacts from the non-tidal river upstream from Teddington, including a collective armoury of 250 spearheads and swords. York's work suggests that much of the weaponry entered the rivers from the later Middle Bronze Age onwards (York 2002, 81), at the same time a divided landscape emerged. She was able to show that the proportion of fine metalwork deliberately damaged before it entered the river increased sharply by the end of the Later Bronze Age (ibid. 87). Three quarters of the artefacts had been used – displaying nicks, notches, chips, bows and tears caused by metal striking metal (ibid. 80). That percentage of use was similar throughout her study area (ibid. 83). Spearheads and swords had been heavily used and of these a significant proportion had been subsequently destroyed (ibid. 84, 86). Sword destruction increased from the Middle Bronze Age, peaking in the Ewart Park phase (ibid. 87). The data suggests escalation in overt conflict in an area of economic competition (*cf.* Price 1984).

Both York's work, and that of Ehrenberg, shows the close association of prestige goods and the river communications route (York 2002; Ehrenberg 1980) in the Middle Thames zone. Further downriver, the Lower Thames basin has yielded one of the richest assemblages of Later Bronze Age metalwork in the country, including a mass of complete weapons (Needham and Burgess 1980, 437, 446). Needham and Burgess concluded that these concentrations were related to the region's position within long distance exchange networks and fluctuations in status based on agricultural production (ibid. 466). The discovery of field systems in the Lower Thames valley since 1980 provides an opportunity to reconsider political changes in relation to the patterns of metal finds.

At the time of escalation in overt conflict in the Thames valley identified by York, there were distinct shifts in the pattern of metal deposition. Needham and Burgess analysing the Ewart Park phase dated to 1020–800 BC (Needham *et al.* 1997, 93), show the shift in deposition to the Brentford-Syon Reach (the south-eastern exit point from the Heathrow terraces); along the River Lea; and in the upper reaches of the Wandle river. Each of these, were key routes out of regimented land holdings. The pattern is particularly clear along the rivers Lea and Wandle where there was an extension of land allocation (Figure 4.1 and Plate 6) at the same time that prestige metalwork

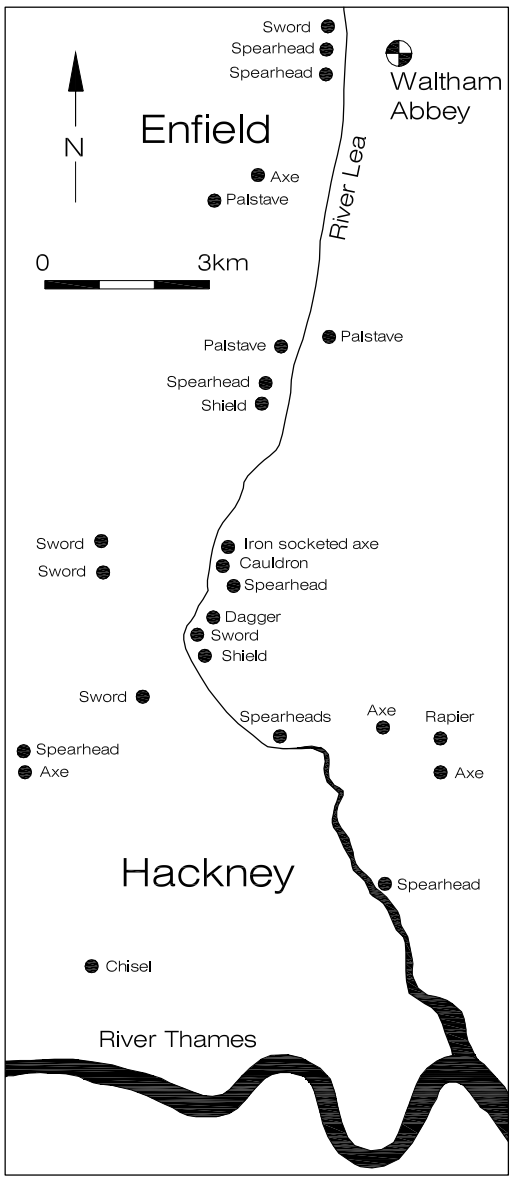


Figure 12.4 An arsenal of war gear along the River Lea. Derived from GLSMR data

was being deposited. It suggests the political ascendancy of these areas.

The nature of that metalwork is illustrated in Figures 12.4 and 12.5. Along the Lea there is a rich mixture of wargear including shields, swords and spearheads (Figure 12.4). While that arsenal is not matched along the Wandle, the watercourse south of Wandsworth has produced rich hoards, particularly at the foot of the scarp below the large Late Bronze Age ringwork at Queen Mary's Hospital (Figure 12.5). One find in particular epitomizes the nature of a prestige good as an icon (Figure 12.6). Coleman in 1901 reported the discovery of a basal looped spearhead, 33 inches long (nearly a metre in length) in the valley of the Wandle. He reported

> *My first thoughts on seeing this spearhead were what an unwieldy implement it must have been, on account of its great length, and that it required a long shaft to properly balance it; and on examining the socket found it to be so small in diameter that it seemed hardly possible that it could have been used for attacking an enemy, because if there were much force the shaft would have been liable to break off short in the socket (Coleman 1901, 353).*

Coleman notes the discovery of similar, but smaller, versions of this looped spearhead at Lakenheath Fen and Datchet. The map of finds along the Wandle (Figure 12.5) also shows the concentration at Battersea, which was once discussed as a possible Middle Bronze Age fording place (Rowlands 1976, 207).

Figure 3.1 shows the accumulating scale of metal deposition and the importance attached to key routeways along the estuary shoreline of Kent, particularly the Wantsum Channel. The relationship between metalwork and field systems appears close in north Kent (Figures 3.1, 3.3). Inland the occurrence of both Middle Bronze Age implements and land boundaries around Ashford suggests a similar direct link. The finest bronze prestige items, the weaponry, are confined to the immediate coastal fringes. A total of ten Middle Bronze Age spearheads and rapiers have been recovered from the final approaches to the Thames river mouth. About thirty Late Bronze Age swords and spearheads have been found along the entire shoreline of Kent, from Gravesend, out to the Isle of Thanet and around to Folkestone (M. Barber *cf.*). In the main river channel itself metal finds at Dartford mirror a similar concentration on the opposite bank, although the Grays – Thurrock hoard of over 200 pieces is exceptional (Couchman 1980, 45). Field systems are found on both banks of these lower reaches (Figure 3.3). On the opposing estuary shore, the Leigh-Shoebury-Southchurch area has produced the largest concentration of hoard finds in Essex. Here, there is also an enclave of regimented field systems. Along with Middle Bronze Age rapiers, Essex Late Bronze Age sword and spearhead finds are almost entirely confined to the Thames and its tributaries.

There is a lack of comparable metalwork clusters away from the main river valley, even

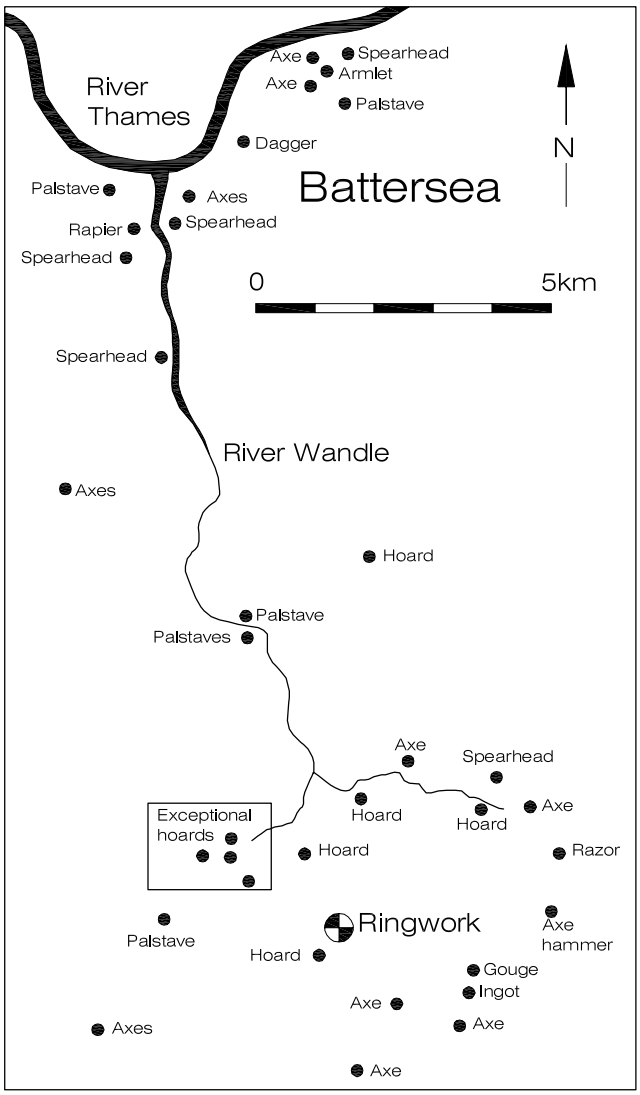


Figure 12.5. Later Bronze Age metalwork along the Wandle Valley. Source derived from GLSMR data

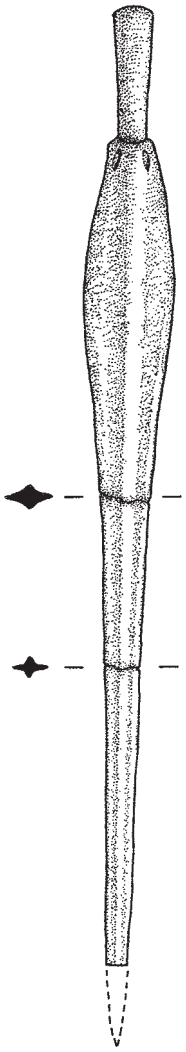


Figure 12.6. Ceremonial spearhead from the Wandle Valley. Source Coleman 1901 (1/6 actual size)

in upland zones having Later Bronze Age field systems. This can be illustrated from the record around Avebury and the Marlborough Downs (Barber 2005, figures 13.1–13.3). The metalwork from the Middle Bronze Age here is sparse, including a complete absence of Middle Bronze Age metal finds from Fyfield and Overton Downs, despite the extensive contemporary coaxial field layout. A few Middle Bronze Age spearheads have been found, but such weapons are entirely absent in the Late Bronze Age.

There are no recorded Middle or Late Bronze Age sword finds from these uplands or the Avebury basin, but the Late Bronze Age is noticeable for actual metalworking from Bishops Canning Down and Burderop Down. The only cluster of Early, Middle and Late Bronze Age finds came from Tan Hill where a network of cross ridge dykes and other linear earthworks meet, restricting access in various directions (ibid. 147).

The distribution maps (Figure 12.3) also plot settlement enclosure along the Thames. They take a variety of forms including ringworks, D-shaped enclosures, enclosed farmsteads and palisaded riverside habitation. Each form of architecture suggests, what may be called, a social dynamic of enhanced visibility and social

exclusion (Needham and Ambers 1994, 237). They are sited on strategic points within the Thames Basin and Upper Thames routeways, dominating the movement of people, livestock and produce. The ringworks in particular are a distinctive type of site originating in the 10th and 9th centuries BC, characterised by circular, ditched enclosures, some of which have two circular enclosures. They are an eastern England form of monument with Irish parallels (Bradley 1996).

The distribution maps (Figure 12.3) show the relationship between the ringworks, areas of metalwork concentration and field systems. Until recent years we have been largely ignorant of the direct link between field and ringwork construction. For while there has been over a century of investigation into ringworks, they have often been undertaken under rescue conditions, with excavation mostly confined to the circuit ditches and enclosure interiors, to the exclusion of the immediate environmental setting of each compound. Two Thameside ringworks provide some insight into the nature of the construction work. At South Hornchurch three successive ringworks/circular enclosures were built. Each time a new compound was created it appears that the local labour force was also mobilised to re-orient the land boundaries in the vicinity. The original ringwork encroaches on an adjacent droveway creating a funnel or control point for stock moving along the track and therefore served to control movement through the landscape (Guttmann and Last 2000, figure 7, 353). That original compound and its contemporaneous field system was imposed on and replaced existing farm boundaries. Later the first ringwork was recut and these alterations were accompanied by a further re-landscaping of the fields. Eventually the original ringwork was replaced by another form of circular enclosure. A construction phase, which again involved changing land boundaries (but only in the immediate vicinity). Each enclosure therefore was set in its own contemporaneous field system integrating the structure into the routines of everyday life (ibid. 356).

Our knowledge of Mucking North ring is more limited but it has some parallels to developments at South Hornchurch. Like South Hornchurch it is strategically placed near to the Thames routeway, for it lies on the Boyn Hill terrace overlooking the head of the Thames estuary immediately above Mucking Creek which might have provided a natural landing place (Bond 1988, 3). Excavations at both sites revealed a number of phases of ringwork construction. Both the original ringwork at Mucking and that at Hornchurch are associated with Post Deverel-Rimbury plainware pottery *i.e.* firmly dated to the Late Bronze Age. Compared with subsequent rebuilds both structures were the most elaborate form of ringwork on their respective sites and both were sited in a divided landscape axially aligned north-east/south-west. We know a little more about the construction at Mucking, where construction gangs were possibly employed to dig the original north ringwork circuit (Bond 1988, 18).

In addition to the distinctive ringworks, other forms of settlement are found along the Thames valley. Each again is sited in an eminent position, in areas known to be metal and field rich. Amongst these are two Thames riverside settlements, Runnymede Bridge and Wallingford, Oxfordshire which are of Late Bronze Age date, sited to access the social and political relations that went with exchange (Needham 2000, 242). Waterlogged sediments surviving on these bankside settlements can allow sampling for palaeo-environmental study. For example, Robinson was able to demonstrate from the insect fauna collected at Runnymede an increase in the intensity of grazing during the early first millennium BC compared with the late second millennium BC (Robinson 2000, 154). That study and similar environmental analyses confirm that the enclaves of metalwork, enclosure and land division represent areas of productive intensification.

12.4.2 The Fenlands and Feeder rivers

Figure 12.7 shows the distribution of field systems, concentrations of metal finds and enclosures in the Fenlands. Pendleton's research into the Later Bronze Age metalwork of Suffolk, Norfolk and Cambridgeshire recorded over 11,000 artefacts including a dense band of metal along the eastern Fen edge from the River Snail up to the River Wissey (Pendleton 1999). A number of field systems have now been found in part of the area of the Snail and Lark waterways (Figure 10.8). Malim has also recently reviewed the metalwork evidence for Cambridgeshire (2001). He notes a distinct zone along the Rhee/Cam valley route as well as concentrations at crossing points to the Isle of Ely. Malim, like Pendleton, notes the frequency

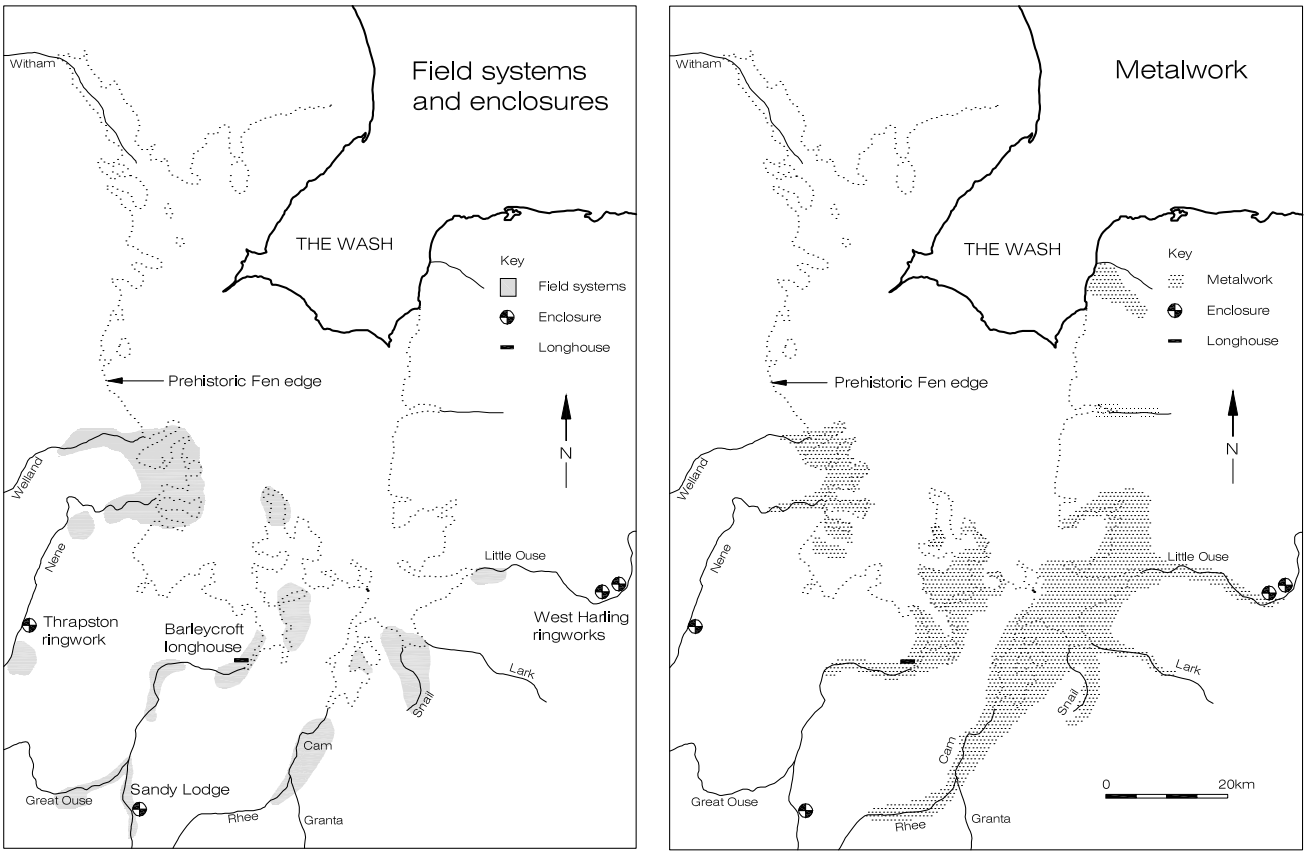


Figure 12.7 Fenland field systems, metalwork and enclosures. Metalwork distributions derived from Pendleton 1999, Malim 2001

of their occurrence on the south-eastern fen edge (including the large hoard collections at Isleham and Wilburton) and through the fen islands to the edge of the contemporary coast immediately north of the islands of March. The find spots equate well with the increasing evidence of land divisions along the feeder rivers into the Fens *i.e.* Lark/Snail, Cam, Ouse, Nene and Welland (Figures 10.1–5). Recent weaponry discoveries around Peterborough also suggest a density of concentration to match that of the south-eastern fen edge. Further north into the Vale of Trent the pattern matches in many respects the metal-rich but field-poor profile of Norfolk and Suffolk.

There are only a few clearly dateable Late Bronze Age/Early Iron Age enclosures in the Fenland archaeological record compared to that of the Thames valley. At Micklemoor Hill, West Harling, there are two ringworks, each encircling a single substantial roundhouse. They rise above the surrounding marshland and are sited alongside the River Thet, which flows by way of the Little Ouse into the Fenlands (Clark and Fell 1953). Thrapston ringwork, with a diameter of 110–120m, lies on a relatively high point overlooking the Nene Valley, another feeder river into the Fens. Pig bone from the primary ditch fill of the enclosure provided a radiocarbon date of 910–760 cal. BC (BM-3113; 2630±50) and it was generally concluded that it was dug between the 10th and mid 8th centuries BC. A deliberately broken large vessel may form a structured deposit at a gang junction in the ditch (Hull 2000/1). In addition to the ringworks, a longhouse was recorded at Barleycroft Farm. It was located alongside the Great Ouse, set in a separate rectangular ditched compound, alongside a settlement of roundhouses and an associated field system (Evans and Knight 2001, 86). Along the River Ivel, an enclosure at Sandy Lodge, Broom, which overlooks a field system, may also be dateable to the early first millennium BC (Knight 1984, 178).

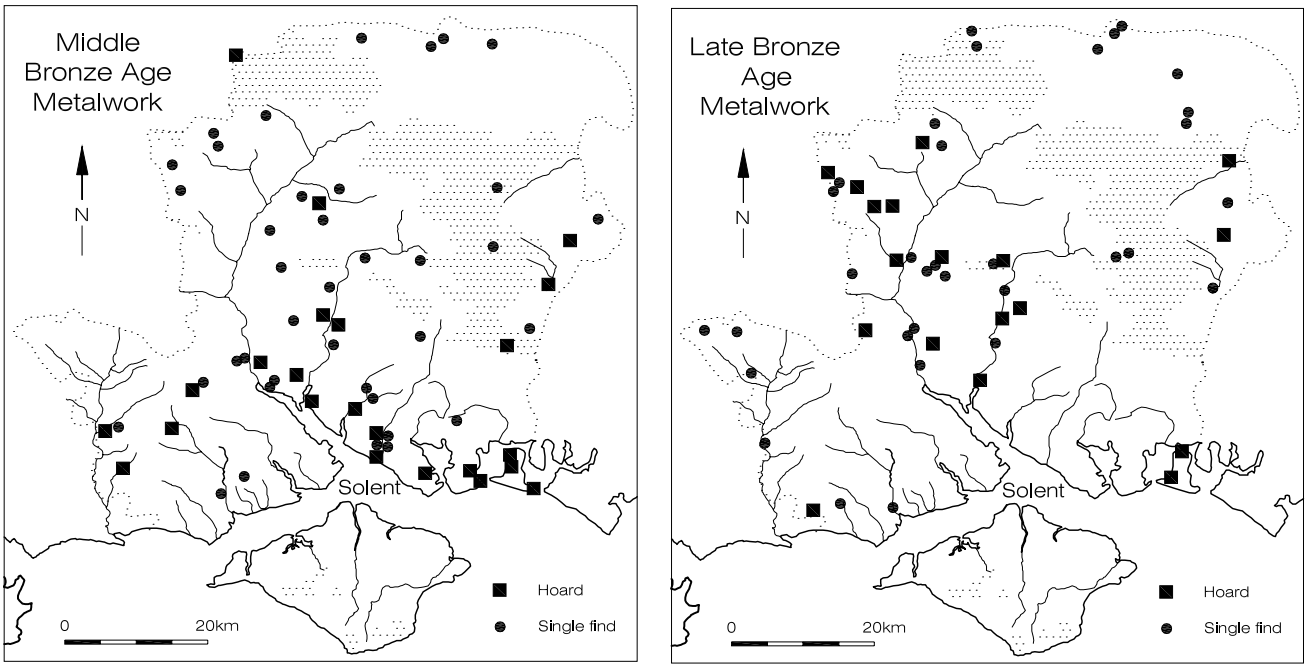


Figure 12.8 Distribution of Middle and Late Bronze Age metalwork in Hampshire. Source: Dunkin 2000 Figs 6 and 7

12.4.3 The South Coast: Sussex and Hampshire

Metalwork records for the South Coast from the Solent waters towards the Straits of Dover show different patterns of artefact deposition. They suggest regional differences between communities in Hampshire and those in Sussex. The distribution maps for Hampshire show a change in the pattern of deposition between the Middle and Late Bronze Age. Middle Bronze Age hoards cluster both on the coastal plain and also generally south of the chalk within the Solent basin (Dunkin 2000, 21). There is a close affinity between many of these hoards and those in Northern France. The riverine association is strong with a clustering of deposits on the mouths of the Meon, Hamble, Itchen and Test as well as significant finds from Hayling Island and Langstone Harbour. Many of these strategic locations also had Middle Bronze Age land divisions (Figure 12.8; Figure 7.1). In the Late Bronze Age there appears to be a move away from the coast up the main rivers and onto the Chalk Downlands. That apparent retrenchment is marked by the discovery of the rich hoards deep inland at Ashley near Winchester, Danebury, Andover and Blackmoor (Dunkin 2000, Table F1). The only significant hoard on the coast was found at Hayling Island close to the West Sussex border, and it is from this point eastward that there is a different pattern of metal deposition and land division (Figure 12.9; Figure 6.3).

Hampshire experienced a 20% reduction in metalwork deposits from the Middle to Late Bronze Age (Lawson 1999) compared with an 80% increase in Sussex (West and East combined). The dramatic reduction in finds from the Hampshire coastal plain also contrasts sharply with the doubling of the number of deposits on both the Sussex Coastal plain and South Downs (ibid. 39). If the artefact record is representative of economic changes along the south coast it suggests the growing importance of Sussex political economies along this stretch of the English Channel. The majority of land divisions (many of them of Late Bronze Age date) have been found on the coastal plain of West Sussex, a broad zone of brickearths (Figure 6.3). In East Sussex no land division discoveries are recorded on the loess strip. This is partly explained by the tapering out of the brickearths but, more significantly, the noted paucity of PPG16 interventions in East Sussex and the City of Brighton and Hove, compared with West Sussex. The cluster of metal deposition to the immediate north-west of Lewes and on the west side of the River Ouse is suggestive of intensive activity. Weaponry is noticeable by its relative absence in the Sussex record (assuming

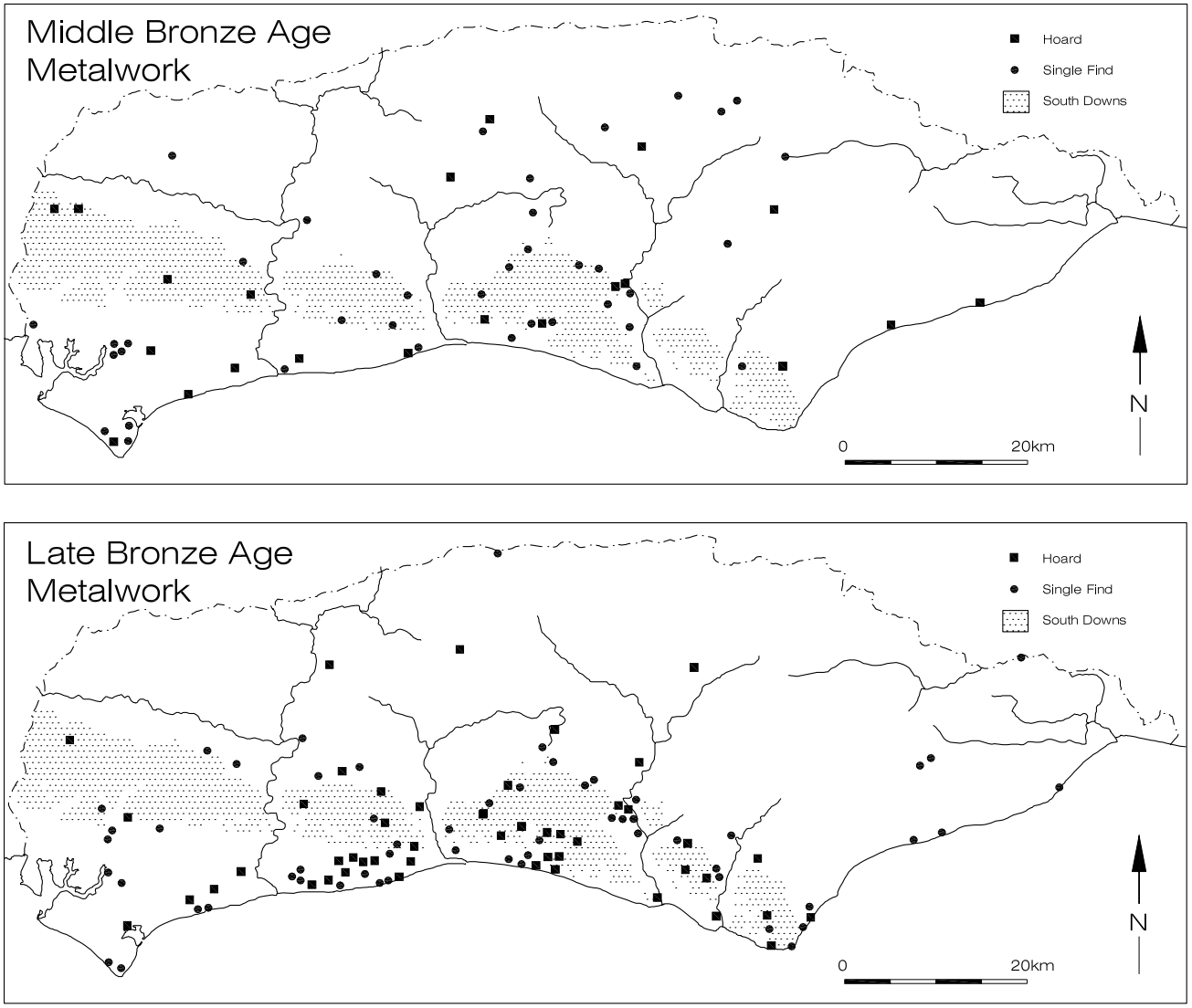


Figure 12.9 Distribution of Middle and Late Bronze Age metalwork in Sussex. Source: Dunkin 2000, figs 13 and 14

that the axes were not intended for armed conflict). The assemblage is overwhelmingly composed of utilitarian artefacts and ornaments.

Rowlands therefore suggested that there was a different principle of political and economic organisation in Sussex, in which political status and warfare were not so inextricably bound up with each other (1980, 37). The coastal zones lack known enclosures, but several exist on the downlands nearby.

In conclusion, the richest concentrations of larger and technically superior metalwork are accompanied by field systems in the eastern lowlands. Along the Thames valley, the Fens and Sussex Coastal Plain prominent enclosures are associated with these areas of intense metalwork activity. The ritual deposition of the finest crafted bronzes may have been one means to reduce 'scalar stress' (*i.e.* social strains caused by increasing numbers of people). The combination of fear, belief, supernatural sanctions and fines accompanying such ritual events can secure compliant behaviour and resolve disputes (McIntosh 1999, 12). In upland areas metal deposition occurs but is far less prolific (in the present records). Away from Southern England, metal depositions occur in metal-rich but field-poor terrains. The occurrence of pit alignments and linear earthworks in the northern region of England suggests a different form of land management to that of Southern England (Bradley and Yates in press).

The unified picture that emerges reveals the growth of a politically dominant English Channel-North Sea region – a distinct cultural zone with ease of access to the adjacent continent. This view is of a course a gross oversimplification. The quality of the data now available shows the degree of local variation within this very broad pattern: namely, differences in the form and density of high status settlement: the non-synchronous construction of field systems; shifting settlement patterns in the region; and differences in metalwork deposition over time. Now it is beginning to be possible to identify local prehistories – how the pace of social and economic transformation affected local communities and what their role was in an extended prestige goods economy.

12.5 Farming intensification?

The preceding section has established that intricately enclosed lands were associated with concentrations of metal deposition and new forms of segregated settlement in the lowlands. The pattern suggests the formation of politicised economies concerned with the production, display and consumption of prestige goods. Theoretical models suggest that they were expansionist economies, but does the new evidence clarify whether fields systems were designed primarily to intensify production?

This section discusses the concept of farming intensification, the likely pressures leading to its adoption and how it might be recognised in the archaeological record. Discussions on agricultural intensification in respect of the British Later Bronze Age have narrowly focused on the upland evidence of cultivation (Barrett 1994; Brück 2000). The arable record, derived from chalk downland excavations, had up to recent years dominated thinking. The pace of discovery now permits a broadening out of discussions to look at the pressure on total resources, not only ploughed land. This is necessary because this research has shown that for lowland England stock rearing predominated within a mixed farming regime, and it is clear that a wide range of natural resources were being exploited, including woodland management and horticulture within farming regimes.

Intensification of production describes the addition of inputs up to the economic margin, and is logically linked to the concept of efficiency through consideration of marginal and average productivity obtained by such additional inputs. For land intensification, it is measured by increasing inputs of capital, labour and skills in relation to a given area of land. The primary purpose of intensification is to gain more production from a given area, use it more frequently, and hence make possible a greater concentration of production. Its simplest form is fallow shortening (Barrett 1994), but it also involves diverse tactics some of which require technological changes (such as the plough) and landscape modification (terracing or lynchetting, irrigation, improved drainage, flood defences and fertilising) and changes in the type and scheduling of tasks (Stone 1994, 317). Capital improvements are not confined solely to arable farming. Livestock management during the Later Bronze Age entailed investment in metalled trackways, batching systems, sequential grazing, drafting gates and stockproof boundaries (Yates 2001, 66). Those improvements would enable more animals to be kept within confined (and defendable) ground. The organisation of the farm itself is an important aspect of intensification, aiming to fit more people and more production onto the land. That entails fitting the pieces of the farming system together more closely, minimising the costs of separation from residence to the more intensively used sections (Brookfield 1972, 32). This is best seen in the incorporation of watering holes within the coaxial fields. It has been suggested that pit-wells were amongst the major 'inventions' of the 2nd millennium BC, ensuring a water supply within a settlement, and reducing arduous off site 'tasking' in the landscape (Edmonds *et al.* 1999 Evans and Patten 2003, 62).

Farming intensification, in particular, is equated with the appearance of field systems. The fixing of such boundaries for long term use characterises a fully agricultural society. Throughout the study area the integration of droveways and waterholes within the field systems suggests an emphasis on livestock management within a mixed farming regime. For parts of the Thames pastoralism may have become the paramount aim (Yates 1999, 167). Permanent field construction in this respect represented one response to the pressures of intensification since animals only have to be kept in fields when their population reaches a point where existing grazing land is under strain (Pryor 1998, 82). The increased scale of animal husbandry is also reflected in the construction of

elaborate trackways including metalled surfaces as at Cranford Lane (Elsden 1996) and Hays, Dagenham (Meddens 1996, 326). At the latter site environmental evidence of poaching (severe trampling by animals) supports the interpretation that such routeways were designed to handle the passage of large herds (Meddens 1996, 326). The use of what are interpreted as community stockyards (Pryor 1996) and evidence of drafting gates (Elsden 1998, 6) also reflect the sophisticated and intensive style of livestock rearing.

In respect of arable farming, a similar link between intensification and boundary construction can be argued (rather than being assumed). The construction of land allotments creates in effect a series of diverse micro-environments (Halstead and O'Shea 1982, 93; Pryor 1998, 79) in which a wide variety of crops can be grown. The fields therefore offer a strategy of diversification which is one of the buffering mechanisms used by farmers to guard against total crop failure (Halstead 1981, 191). Field system construction is not confined solely to pastoral and arable intensification. For example, the communities at Reading Business Park may have constructed small fields for growing flax and there was some evidence for leguminous crops, both of which represent highly intensive forms of cultivation (Moore and Jennings 1992, 120).

The wealth of information is considerable and still of course being added to the record. For example, Serjeantson in continuing work on the faunal remains from Runnymede has recently noted a dramatic and rapid fall in the stature of cattle in the early part of the Later Bronze Age sequence. That change reflects an increase in herd size (D. Serjeantson *cf.*). This is a significant finding since the Runnymede herd increase may reflect a drive to livestock intensification at this important social hub.

The use of the term productive intensification (in many ways conspicuous production) encompasses all forms of national output; salt extraction (which takes off in the Middle/Late Bronze Age) would represent one particular form of exploitation (Morris 1994, 384). Pryor has suggested that this mineral might provide a supplement in animal husbandry, particularly with large herds and flocks (1998, 113). Such sophistication in livestock care represents a technological innovation just as the creation of field blocks and the introduction of new cereal species. As Clark and Blake observe, aggrandisers capitalise on innovation (1994, 19). New methods raise output and confirm success – so evidence of manuring at widely dispersed sites such as Gwithian in Cornwall (Nowakowski *cf.*) and Cole Green in Hertfordshire (McDonald 2004, 36) represent part of this drive.

Theoretical models of the adoption of farming and the move to intensification suggest three primary influences: – push, pull and social stimulus (Bogucki 2000, 188). Push or stress models emphasise that a rising population propels societies to intensify output (Boserup 1965). Pull models suggest that populations become reliant on a new resource base. The social production model explains a drive to maximise output that is quite independent of population pressure. Intensified production is adopted to increase the amount of food available to meet social demands for feasting, exchange, bridewealth and alliance formation. Much of that production is for off-farm consumption. Fierce competition between political economies puts pressure on the most valued land *i.e.* that ground with the greatest fertility or strategic advantage. It is in these locations that innovations in livestock management and plant species were pursued. It is this social dimension of intensification that was central to prestige goods economies.

But, as Brück cautions, the appearance of archaeologically identifiable fields and farmsteads at the start of the Middle Bronze Age can lead to a presumption that economic maximisation is the main purpose of the new infrastructure. Brück suggests that the elaborate boundaries have as much to do with the construction of new social identities and a desire to control space and time rather than being solely driven by the dictates of modern notions of resource exploitation (Brück 2000). Brück acknowledges that the appearance of field systems represents a change in the mode and organisation of production, but that it does not necessarily imply any enhancement in productivity per capita. Social units may simply have produced the same amount from a smaller area of land (Brück 2000, 277). In other words intensification was achieved, but there was no change to national 'output'. Different cultural values and aspirations may also confound modern expectations about economic rationality (ibid. 280).

Rather than placing intensification centre stage, the primary purpose of enclosure may have indicated the development of power and prestige (Bowen and McOmish 1987) and a desire to control

social reproduction within a fixed setting (Barrett 1994). The divided landscape may represent a new pattern of ownership in which portions of the natural world were assigned or traded off for labour and staple materials. Leaders may have built up a following because they had the power to allocate land to new settlers (McIntosh 1999, 6). The new grids or farming arenas offered an opportunity for intensification and improvement with the livelihood of the community safeguarded by allegiance to an armed elite (Earle 2002, 246).

12.6 Social implications

Ancient landscapes intrigued early antiquarians. Present day researchers not only have the benefit of that inherited knowledge but also access to a continual flow of new site data from contract work. Such information can help refine social models of prehistory, particularly for the late second and early first millennium BC. The flood of data enables us to look at the power base of those societies. It also enables us to examine the lives of 'ordinary' people, normally lost sight of when we label such societies 'elitist' and fail to look at competing interests shaping any community. The data are so good that there is an additional benefit. They can contribute to the international debate on what propels societies into greater social complexity and resultant social inequality. We shall now discuss these interesting concerns.

12.6.1 Southern England: the prestige goods exchange model revisited

We started this study by wondering about the lives of people in Scandinavia and Britain. They were essentially 'offshore people' within a wider cosmopolitan Bronze Age. Rowlands offered an absorbing picture of life in Southern England. He suggested it was a highly competitive and politicised scene in which different communities vied with each other to gain political and economic advantage. He suggested that these were economies in which political power ultimately depended on the ability to accumulate, display and distribute wealth. His analysis relied on the best available evidence at the time; metalwork, pottery and burial distributions. It is a model in which seaboard and river elites controlled densely populated enclaves defined by bronze weaponry concentrations. He admitted that there was little evidence besides the metalwork to gain any firm insight into the nature of long distance alliance formation and exchange other than that they must have been producing some kind of surplus in exchange. He theorised, however, that the better soils around enclosures and evidence of production tasks suggested livestock rearing and the processing of animal products (1980, 33–34). Unlike Rowlands, we now have the benefit of vastly increased data with considerable advances in palaeo-environmental sampling and large area excavation. Those advances provide five key findings on the economies of lowland England: –

1. The adoption of linear field systems in a series of lowland enclaves defining a Southern British region. The construction of these agrarian innovations accompanies a distinct phase of intensified land clearance and exploitation in the Middle Bronze Age shown up in the palaeo-environmental record. Livestock rearing was a major priority within the mixed farming regimes.
2. We now have a greater range of evidence for both waterborne traffic (staithes, jetties, riverside settlement, and utilisation of natural harbours) and land traffic (long distance droveroads, trackways and elevated walkways).
3. Land division and enclosure comprised a non-synchronous development. They were built at different times during the Later Bronze Age sequence, suggesting a degree of fluidity in local political fortunes within the region. For example, ditch digging on the West of London terraces started much earlier than those close by along the Wandle valley.
4. There are enclaves or niches of intense settlement characterised by metalwork concentrations and new forms of segregated enclosure, including the ringworks along the East Coast.
5. Despite wide variations in times when field systems were first constructed, this form of land tenure lost its social importance at the same time. By the end of the Late Bronze Age/earliest Iron Age the regional economy disintegrated. Far from experiencing social upheaval, people on the fringes of that once powerful zone made an increasing impact on the landscape.

The key patterns emerging from commercial excavation support Rowlands's model of the nature of political economies within Southern England. In attempting a synthesis of landscape development his work is especially useful because it offers: –

a) a broad regional perspective
b) the suggestion that corporate power systems operated within an expansionist economy
c) an interpretation that farming priorities were set by a political agenda, and
d) an inter-regional hierarchy based on relative strategic advantage.

The national pattern, of rectilinear field systems, provides a new indicator for plotting the expansion of the regional economy. It supports Rowlands' notion of an Atlantic economy, but it is should be more accurately referred to as the English Channel and North Sea or La Manche-mer du Nord economy. For Rowlands, the region comprised a geographic division of labour with interdependent communities exchanging produce to ensure prosperity (1980, 87). Regional fortunes were affected by wider continental changes, ultimately causing the collapse of the heavily extended and highly fragile economic system (ibid. 40, 41, 45). That theoretical aspect of the model provides one clue to the cessation of field system construction by the close of the Late Bronze Age.

His model also envisages a highly expansionist social network, led in part by elites commanding extensive socio-political groups (ibid. 35, 37). Such corporate power systems may have mediated relations between competing interests regarding land use. The construction of integrated long distance droveways and uniform land allotment shows a degree of agreement or consensus. It reminds us that the scale of capital investment was reliant on a degree of economic stability and confidence in the future. Rising prosperity would have encouraged more local leaders to be incorporated into the system (ibid. 39).

The record to date has shown the predominance of livestock rearing within the lowland mixed farming regimes. In this respect Rowlands' model predicted a form of upland-lowland interlinked pastoralism (ibid. 35). Those beasts may have been circulated as units of value, part of an internal network of prestations. In receiving gifts of cattle from subordinates, leaders may have held more animals than they needed for their own consumption (ibid. 35).

Another aspect of the model, of use to researchers, is Rowlands' identification of a strict hierarchy of exchange relations – in descending order a) cross channel twinned communities b) coastal and riverine communities c) inland exchange networks and d) hinterlands (1980, 38). Settlements at the top were those best positioned to benefit directly from long distance trade. That would explain why demand for land was governed as much by the strategic value of the ground as its inherent fertility. Evidence for political zones is given added weight by these research findings which suggest population movement towards the south-east, undermining older centres of power. In consequence the Thames valley and Fenland local political leaders would have had increasingly larger support groups (ibid. 35), which is borne out by the density of settlement now being discovered.

Rowlands' theoretical model suggests further research projects. The success of British archaeology has created its own research imbalance, for while we are now more aware of events in Southern England, we have little information about the cross channel component of the Atlantic region. For Rowlands, the new outward looking coastal provinces on both sides of the channel effectively formed a single regional economic system. The evidence is still limited, though settlement in the Pas-de-Calais (Clark 2004a, 7) and field systems along the coast of Lower-Normandy (Marcigny and Ghesquière 2003a; 2003b.) supports that theory. Further cross channel research is needed. In one respect there is concern over the descending pecking order from the coast to inland areas. The largest recorded aggrandised enclosure at Queen Mary's Hospital, together with the greatest concentrations of fine weaponry from the Thames and Lea rivers also signifies the importance of the Middle and Lower Thames. This contradiction might be explained in part by marine flooding. Large stretches of the North Kent coastline, the choicest area for settlement and land division, have simply disappeared beneath the estuary waters. The present record might suggest that the Middle Thames, the former buffer zone which supplanted the political power of Wessex, continued to dominate the expanded region until the ultimate demise of this extended and integrated social network.

Recent excavation has substantiated many of Rowlands's predictions, showing the importance of commercial work as a research tool. There is one key aspect, however, that remains unresolved – the basis of power. It cannot be disputed that artefacts and architecture confirm that social inequality characterised these farming regimes. Was it inherited or achieved status? For

Rowlands, it was inherited. Bronze Age societies were descent-orientated systems in which categories of power and the resources needed to legitimise power were indissolubly bound. Political hierarchies were regulated by grades of title and positions, which were maintained by 'correct' claims to proper descent and rightful inheritance (Rowlands 1980, 49). Within that rigid framework however wealth accumulation formed the basis for competition and status rivalry between kinship groups (ibid. 36).

12.6.2 Power bases in the prestige goods economy

Internationally, there is considerable interest in the emergence of ranked societies and the transegalitarian stages marking the end of the 'politically simpler' lifestyles of early hunter-gatherers. Much of that work was published during the 1990's and provides a developed framework for this research. We can now consider the British evidence within a broader international debate on emerging inequality. Some of the international theorists suggest that surplus production significantly undermined inherited power, providing opportunities for a breed of entrepreneurs who were responsible for a new economic dynamism. In other words, farming offered the chance to achieve status because there was a new freedom of association. That model of self-made leaders directly challenges the notion of lineage descent. We shall now explore the social models offered by a series of recent theorists alongside Rowlands's work, discussing the nature of individualism, productive intensification and inter-regional exchange. The observations made here are derived from the following social models:– the aggrandizer model (Clark and Blake 1994); the accumulator /feasting model (Hayden 1990; 1995; 1996 plus Hayden and Gargett 1990); the productive intensification model (Price 1984); and, the patronage and clientship model (Harrison and Martín 2000). All of the new writers, just like Rowlands, propose elitism as leading the pace of change towards emergent complexity. They nearly all suggest that productive intensification became the driving force, which unintentionally led to greater inequality in society. All conclude that inter-regional exchange propelled competitive agriculture, spread new technological innovations and supported a degree of regional specialisation akin to comparative advantage in modern international trade. However they reject the notion that kinship continued to dominate social relationships. The opportunities offered by farming intensification gave self-made individuals the chance to dominate through economic means. Ties of lineage could be broken by the offer of material advantage supplanting respect for one's elders by honour and allegiance to a patron. In the process archaic religious festivals lost their vitality.

The framework of emergent complexity offered by our writers is one where new political actors emerge who, through purposeful motivated action, were able to manipulate the given. All our writers (including Rowlands) state that the elite must continue to succeed – success after all breeds success. For Rowlands, these elites building on success in productive intensification are still kinship based, but the rest of our writers conclude that kinship and descent are not critical to the rise to power of individuals in the new consumer society. In simple terms they are suggesting what we might dub a *nouveau riche*.

How does this individualism work? Hayden calls it the triple "A" personality type (1996, 54) within his accumulator/feasting model. The key players can be variously called aggrandisers, acquisitors or accumulators. Leadership depends on having a following of supporters. The people are not coerced – they voluntarily attach themselves to the new communities. They tag along because of the personal advantage they themselves can gain. One strategy contributing to team building is competitive feasting which provides the followers with an attractive package of food, drink and entertainment (Hayden and Gargett 1990, 15). Feasts, in which prestige food vessels were used, created a degree of social indebtedness in the guests (Plate 7). Various additional strategies can be deployed to achieve the same effect, including child growth and bridewealth payments (Hayden 1995, 31). In promoting indebtedness and hence loyalty the leader may display a frenzy 'to give away' in the process of building long term contractual debts. Conspicuous destruction of wealth by the aggrandiser also marks their economic strength. Clark and Blake's aggrandiser model emphasises competitive feasting, as one means of gaining indebted followers, and they suggest, as does Price, that the redistribution of surpluses is the key weapon in competition over the scarce supply of labour (Clark and Blake 1994, 17. Price 1984, 212).

Harrison and Martín advocate a patronage

Plate 7. Arriving at the feast. Reconstruction painting by Casper Johnson. Feasting and the exchange of social valuables are a means by which prestige is built and reciprocal obligations established

and clientship model that follows the same line of reasoning. It differs in suggesting that patronage arises as a route for self-promotion through the greater accumulation of livestock in the hands of a few individuals. In the Iberian Atlantic Final Bronze Age the most important part of the productive process was pastoralism and not cereal cultivation (2000, 136). The patron would secure indebtedness in the followers through bride payment loans, cattle loans in times of need and livestock giving to outsiders (ibid. 135). This model based on livestock accumulation may have relevance to Southern England. Harrison and Martín suggest that livestock provide the main route for individual accumulation and the meat surplus helps to build a tight knit band in which honour becomes supreme above kinship (2000, 135). Weapons and horses might be a bonus to followers in this essentially militaristic group of fighting companions. Evidence for hunting dogs and the stabling of horses at Runnymede together with the finds of harness and rein fittings in hoards reflects some of the Iberian pattern (Needham and Spence 1996). Generally, the emphasis on pastoralism in the British record also accords with their view that this is the fundamental basis of patronage relationships (Harrison and Martín 2000, 135). It is also noticeable that specialist craft activities are again mainly associated with the ringwork and riverside structures in Southern England.

What is the general evidence for this self centred aggrandisement and patronage in Southern England? It is principally marked by a high degree of segregation in settlement hierarchy, a uniformity of weapons that appear to have played a symbolic role in mediating relationships between rivals, together with craft patronage and feasting centred on the ringworks and rich river-side settlements. The Late Bronze Age ringworks display segregation at two levels; firstly, in the architecture of the enclosure where segregation

is achieved with elaborate entranceways and interior screening, and secondly, in the existence of extra-mural settlements congregating around the principal ringwork enclosure (Yates 2001). Extra-mural evidence has now been discovered for Mucking, South Hornchurch (Merriman 2000; Needham 1992), Carshalton (Yates 2001), and possibly Highdown Hill (Griffin and Stevens pers. comm.) and Springfield Lyons (Brown 2001, 97). Ceramic assemblages may adhere to this zoning pattern with a possible fine – coarse ware divide between the aggrandiser centre and its extra-mural residents. For example, there is some evidence for a ceramics hierarchy in the Wandle Valley (Birley 1993, 13; *cf.* Adkins and Needham 1985, 33). Metals provide more substantial proof of social stratification, with the most ostentatious weapons deposited close to the aggrandiser centre. The nature of conspicuous consumption of such war gear is apparent in the noticeable trend toward the destruction of increasingly fine weaponry by the end of the Late Bronze Age (York 2002).

In respect of feasting activity there is both direct and indirect evidence in Southern England. Traces of communal feasting in the form of cooking pits have been excavated at Perry Oaks and large groups of smashed pottery have been recovered at Sipson Lane and Thorpe Lea (Cotton 2000, 24). Environmental analysis at Runnymede suggests the ingress onto the site of dependants from a 'hinterland' (Needham and Spence 1996, 247). The regular entry of such visitors would include those bringing meat as a contribution to the feeding frenzy. Feasting paraphernalia includes cauldrons, flesh hooks and fine ware bowls. Enigmatic burnt mounds and burnt flint spreads on sites may also directly reflect conspicuous consumption. Alcoholic beverage may have been important in imbibing a sense of indebtedness.

12.6.3 Political dynamics in a competitive world

Does kinship have any role in the new social order and did correct claims to proper descent and rightful inheritance still establish some control over resources and communities? Whilst patronage and aggrandisement appear to mark a new social parity, kinship ties do figure in the discussion of our writers. Much of that debate centres on the system's inherent instability because it disperses wealth to unrelated people. Elite consolidation is thereby obstructed as others become socially mobile. Succession poses another problem for the aggrandiser. For Harrison and Martín, there is a certain inevitability about the return of kinship into social relationships. Matrimonial endogamy between elites stops the dilution of wealth (cattle) and eventually such linkages reinforce kinship ties. This in turn supports the eventual hereditary position of emerging elites (Harrison and Martín 2000, 136). They observe that the final stage in the re-emergence of kinship brought an end to the practice of ostentatious display (2000, 148). For Clark and Blake, constant gift credits by the aggrandiser can secure institutionalised inequality (1994, 21) and the passing on of accumulated wealth (craft production) can help the succession of blood relatives (ibid. 1994, 21). The results of this research reveal some instances of genealogy underpinning new patronage relationships. Several Middle Bronze Age/Late Bronze Age field systems are aligned on earlier cemeteries. At Eton Rowing Lake the field boundaries are deliberately tied into the structure of a large barrow (A. Barclay *cf.*). At nearby Datchet a field system again was constructed using an earlier barrow group as a referent for its coaxial alignments (J. Kennish *cf.*). The desire to re-assert genealogical origins or a new dynasty may also be detected in the occurrence of Late Bronze Age cremations within ringwork interiors, as at Kingsborough Farm (Dyson *et al.* 2000).

Ringworks were a relatively transient phenomenon; for instance, the North and South Mucking ringworks were occupied for relatively short durations, as was the South Hornchurch compound. Ringworks generally appear at the end of the Bronze Age lasting into the earliest Iron Age. Most were abandoned at the same time as the construction of new fields ceased. The attempts of aggrandisers to establish new kinships and lineages may have failed. At the end of the Bronze Age a change in the culture of exchange may have caused widespread social dislocation.

The distribution of economic hot spots confirms that positioning was everything in the new conspicuously consuming societies. These enclaves are characterised by concentrations of both endeavour and weaponry. For Barbara Price, productive intensification can be an antecedent to warfare (Price 1984, 211) so the combined concentrations of field systems and weaponry in the British lowlands are of importance in a

wider international debate on competition and intensification in ranked society. The enclave siting is consistently estuarine, riverine or coastal. A pecking order may also be apparent. The coastal communities along the South Coast, NE Kent and East Anglia were strategically positioned for maximum advantage. For Rowlands, riverine/ coastal elites were involved in long distance exchange, and here we encounter a centralisation of wealth and power (1980, 34). For Clark and Blake, aggrandisers become more competitive at home if they traffic further afield for resources and knowledge. In this endeavour they seek to monopolise such access (1994, 19) to what Mary Helms sums up as "all exceptional outside things and events" (Helms 1988, 264). Away from the coasts, points of social contact were funnelled along ridgeways and major river links. Such social resource pathways, including the Rivers Lea, Wandle and Kennet, would have been exploited by aggrandisers.

Location on river mouths or confluences and estuary foreshores or cross channel transit points were not the only consideration in siting an accumulating society. These communities also needed intensifiable habitats able to sustain a rapidly growing labour force (Clark and Blake 1994, 18). After all, labour is more likely to be attracted to areas offering immediate rewards (Price 1984, 225). The brickearth and river terrace locations of all the aggrandiser cores in the research match that criterion, because this is the very best ground, able to give competing farmers a head start in their drive to outclass their rivals.

There is something about the Later Bronze Age that is reassuringly or frighteningly familiar to the modern observer (Plate 4). The struggle for subsistence had been replaced by a struggle to keep up appearances. Just as in modern western societies, growing affluence, associated with economic dynamism, provided a new freedom of association where people gained status through consumption. Individual image projection was central to this new creed. Part of this ostentatious display may have been to rub home the lesson of a new parity. In this new culture, admiration for economic success and displays of wealth won the respect of others in an increasingly cosmopolitan world. Social and geographic positioning were closely bound by considerations of productive intensification and inter-regional exchange. The dynamism of this competitive society meant that all that power and wealth was, in the end, sucked into the Thames estuary and the cramped space along the Thames Valley. It is in these zones that the social cachet of luxury goods appears in the archaeological record. A desire for the uncommon drove the leaders to maintain and control outside links (Helms 1988, 1992) and they, as predicted by Rowlands, were strategically placed to tap into a wider inter-regional exchange network (Rowlands 1980, 39). Emulation motivated the drovers, herders, harvesters and artists to work harder. Social indebtedness effectively harnessed people as a means to greater productivity and affluence.

The wealth of data emerging in British commercial archaeology may eventually enable the investigation of some of the detailed pathways in transegalitarianism (Hayden 1995). Thus it may contribute to the development of social models relevant for international studies of emergent complexity. That contribution should not be underestimated for most of the social models examined in this chapter are theoretical constructs often dependent on ethnographic observations. Very few nations have the accumulating database on emerging complexity that we have in Britain.

This study started by recounting that European Bronze Age societies experienced the first golden or international age. Remarkable as that pace of change was, social evolution did not progress in a unilinear fashion from simple to higher forms of social organisation, nor was state formation achieved (Kristiansen 1998, 417). Kristiansen suggests that competing economic and social strategies undermined the formation of more rigid, larger polities. In effect there was a cyclical trend of evolution and devolution during the second and early first millennium BC. The oscillations were caused by the interplay between different ideological strategies; one directing investment towards land improvement and fertility and the other diverting investment into portable wealth whenever new warrior elites overthrew the established order (ibid. 414). His analysis, based on European data, suggested regular variations in the respective political fortunes of cores and peripheries as varying factions sought, but failed, to achieve lasting legitimacy (ibid. 413).

A similar state of flux is likely to have existed in England, for developer-funded archaeology has revealed a diversity of socio-economic organisation. This research has explored the nature of rectilinear land division, and its association

with prestige goods and segregated settlement. Different regional prehistories are apparent in the record. Ditched linear land divisions are rare in much of 'Northern' England. Similarly in the Southern British region most of the land also lacks formal demarcation and deep in the West Country non-linear field plots developed. Where formal landscapes were created, they were a non-synchronous development. Such geographic diversity and different construction phases within Southern England suggests a marked degree of fluidity in political development. It is likely to have been a political arena in which farming offered the chance to achieve status but one in which that new freedom of association was still subject to oscillations between traditional and emergent authority structures (Rowlands 1980, 47).

12.6.4 Social implications: ordinary folk

While there is every likelihood of shifts in power bases, it is apparent that a more stratified-elitist society developed during the Later Bronze Age. There is a danger in using that generalised label 'elitist' when building a model of Later Bronze Age England. To call a society elitist or hierarchical curtails discussion of the differing interests and priorities within a community. Its masks the likely complex and counterpoised expression of ritual and secular power in daily life (McIntosh 1999). The term 'elitist' concentrates research attention on the ostentatious lifestyles of a few, missing out on the more colourful lives of all the diverse people who inhabit the new competitive farming world. Writers such as Elizabeth Brumfiel (1992) and Carole Crumley (1995) suggest that heterarchy is a better term to use when investigating emerging non-egalitarian societies. Heterarchy can be defined as the relation of elements to one another when they are unranked or when they possess the potential for being ranked in a number of ways (Crumley 1995, 3).

By regarding societies as heterarchies rather than hierarchies it is possible to recognise the creativity of individuals and groups within populations and how the daily interactions between each help to fashion the livelihoods and wellbeing of all. It also reminds us that society is a continually shifting patchwork of diverse interests in which conflicts have to be resolved by social negotiation. Fleming, for example, in his research on Dartmoor, reflects whether it is not necessary to choose between the polar extremes of autocratic 'top down' land management and the 'bottom up' arrangements of self-organising communities. A predatory elite may govern a society, but that does not preclude land use solutions being made lower down the social hierarchy. Permanent land divisions allocating out land might be organised by communities which had to cope with the pressure from an exploitative elite – rulers who have no interest in land management provided they were able to extract tribute from productive farming (Fleming 1994, 64).

The new theoretical approach of heterarchy has a number of additional implications as to how solutions are agreed. It suggests, for example, that leaders and followers in the lowland enclave economies would have needed to strike a bargain to harness collective effort so that they could dominate and exploit outsiders (Brumfiel 1992, 557). Status is also likely to fluctuate within a society composed of differing factional interests. In agrarian regimes seasonal priorities would change the relative pecking order between herders, shepherds and cultivators. The model in effect emphasises the normality and ordinariness of fluctuation and change in economic and political relationships (Crumley 1995). It suggests that the hierarchy of exchange might not be as fixed as Rowlands contemplated, and that we should expect to recognise archaeologically changes in the respective fortunes of the power centres along the Thames.

So has archaeology produced any new insights that can bring the past of ordinary folk back to life, ending an approach that tends to reduce them to invisible abstract units of labour? We shall look at a number of specialised work groups to show how advances are being made; namely, the daily toil of ditch diggers, seafarers, herders and metalsmiths.

A ditched landscape has to be dug. Work gangs were employed. We know that because there are a number of sites now where it is apparent. Four sites, amongst others, have provided some insight into the organisation of boundary workforces. At Castle Hill on the A30, although the field system was part of a planned layout, differences in size and profile showed that the ditches were dug in sections suggesting construction by gangs (Butterworth 1999a, 28). The same piecemeal construction is also apparent at another Devon site, Shovel Down (Brück 2003).

At Townmead School site, West Drayton, the ditches on either side of a trackway were irregular in construction. However, certain defined ditch sections demonstrated strikingly similar profiles at several points along the 25m length of the routeway. It appears that an individual or team having dug one short section of the ditch to their own customised design then repeated this shape as they moved to the next section of ditch allocated to them. In other words, it was not the case that one gang was systematically digging the entire length of the droveway (Masefield 2000, 169). Finally, at Roughground Farm, Lechlade, paired teams of constructors were operating in tandem respecting each other's work as they constructed two parallel boundaries 300m apart (Allen *et al.* 1993, figure 7).

The first observation of gang construction was actually made in the uplands, on Dartmoor. The social organisation of the reave builders is shown up in gang junctions, where approaching lengths of reave do not join properly, being slightly out of alignment (Fleming 1978b, 100). In addition each offset reave segment was built to different standards and on excavation the difference in workmanship can be clear and striking (ibid. 102). Within the remarkably well-organised Dartmoor prehistoric landscape there are also instances of infilling parallel reaves linking separate blocks of neighbourhood tenure. For Fleming the neighbourhood gangs responsible for building and maintaining individual sections of reaves around the settlements and the community gangs working on the linking reaves represented a volunteer workforce (1983, 199; 1985). In lowland England volunteer local community groups may also have dug the ditched boundaries, but Brumfiel suggests a gloomier option – one of coercion. Drawing on ethnographic parallels, she argues that enclave economies such as slave villages in former African Kingdoms depended on unfree labour that had become separated from the protection of their kinship groups (1992, 557). There is no proof of that in the British Later Bronze Age but the notion cannot be dismissed even for societies based on the free movement of labour /supporters between aggrandised centres (*cf.* Kristiansen 1998, 116; Harrison and Martín 2000, 135).

In respect of seafarers, the discovery of a Middle Bronze Age enclosure at South Dumpton on the Isle of Thanet is of interest because it is interpreted as the shore base for specialist maritime communities offering cross channel pilotage (D. Perkins 2000). The settlement consisted of a substantial ditched enclosure, which may have acted as a stock marshalling point. Mariners on this Kent cliff site may have had their own realm of supremacy just like their compatriots on the other side of the Channel in the Pas-de-Calais (Clark 2004b, 7). These communities in France were also located by the safest anchorage best placed to take advantage of cross channel currents. Mariners in contact with geographically distant regions might have been regarded as exceptional persons since they could obtain politically and ideologically useful materials from afar and knew more of a wider world (Helms 1988, 79). Associations with distant powers enabled leaders to stand apart or above the general population and therefore they may have had a special relationship with the channel pilots.

This chapter has touched on the issue of livestock being one of the chief avenues to wealth creation. Herding may have guaranteed a special status well before the emergence of permanent field systems (Fleming 1971; Peters 2000). The architecture of the regimented landscapes reflects the interests of the herders. Much of it, after all, is purpose built for livestock management, suggesting that their needs were a primary consideration. Francis Pryor paints a vivid picture of the nature of exchange of animals between one community and another. The arena for these transactions would have been the Bronze Age equivalent of a livestock market. A series of stock compounds at Fengate formed what have been interpreted as 'community stockyards' in which negotiations for the transfer of breeding cattle was witnessed and recognised (Pryor 1998, 129). Social negotiation was not confined to the eventual 'sale' of the steers and heifers. The herds were moved through the landscape, possibly driven great distances during the seasons. Passing through settled lands would require permission from the occupiers, including possible tolls for passage through their territory (Hayden 1995, 57). The construction of a chicane in the droveway alongside the South Hornchurch ringwork may have been designed to collect a form of tribute from drovers heading down to the Thames foreshore. The scale and widespread nature of seasonal droves to fresh grazing is becoming evident. For example seasonal pastoralism is evident in the Welsh and English saltmarshes of the Severn

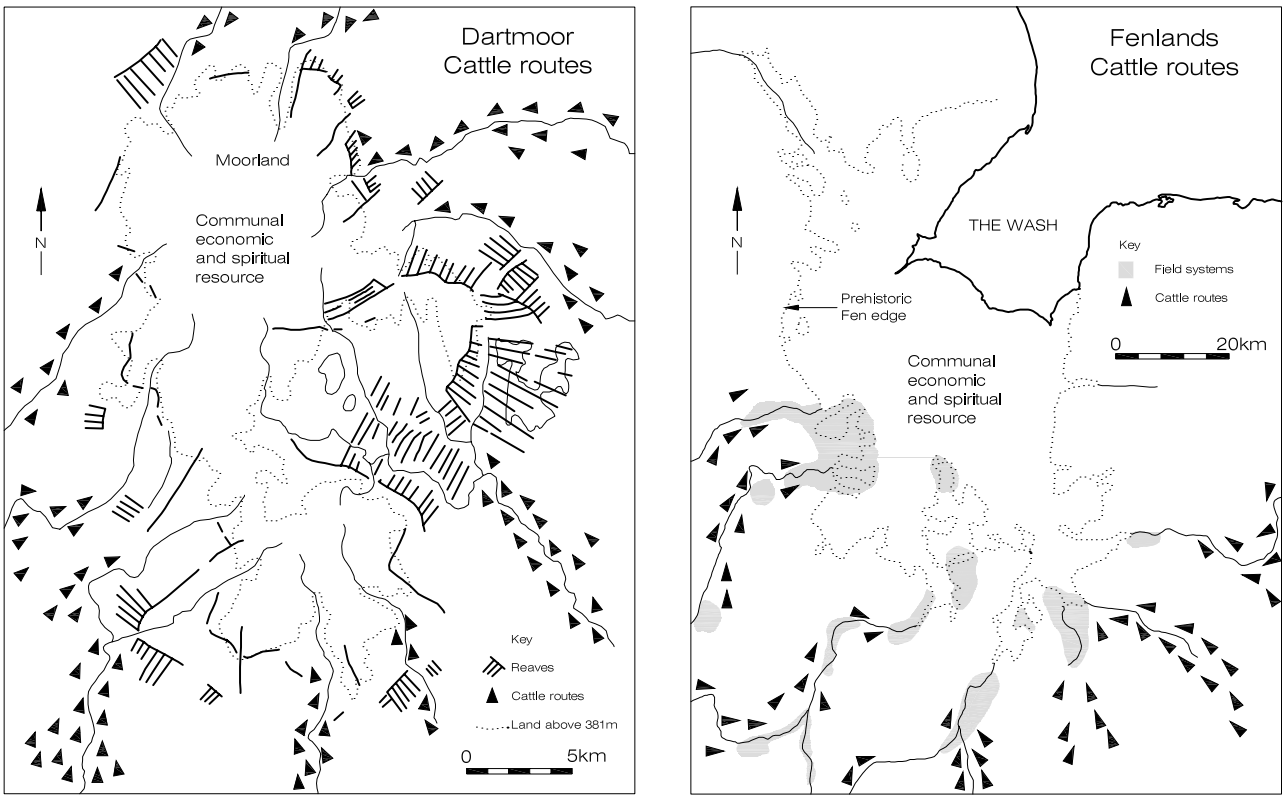


Figure 12.10 Dartmoor and the Fens. Outsiders increasingly struggle to maintain grazing rights as blocks of land under the ownership of "locals" restrict access

estuary (Bell *et al.* 2000; Locock 2001; Gardiner *et al.* 2002). Elsewhere cattle may also have been driven down to summer pastures ringing the Fenlands and up to the large common of Dartmoor (Fleming 1984, 12; 1985). Communal grazing on Dartmoor may once have resembled a relatively disorganised casual regime of intercommoning, but it appears to have been replaced during the Later Bronze Age by a more rigidly controlled system (Fleming 1984, 13). Fleming suggests that 'local' users of the moor, under pressure from growing numbers of intercommoners, settled for well-defined, better-managed land bounded by the parallel reave systems. By contrast the 'outsiders' or intercommoners, increasingly had to struggle to maintain or establish access to grazing land (Fleming 1994, 70). There may be very close parallels between Dartmoor and the Fenlands, for in each distinct area, land claims were staked around the large (but threatened) expanse of the communal (and spiritually rich) resource. French suggests that the great explosion of land enclosure on the lower-mid slopes of Dartmoor and the first gravel terraces around the Fenlands resulted from a desire to exploit the best remaining land as seasonal pasture declined (2003, 77 and 150). Figure 12.10 compares Dartmoor to the Fens, showing for each the zoning of land divisions in relation to possible river valley communication routes. Rustlers may have benefited from the seasonal droving season; Harrison and Martín suggest that war bands may therefore have accompanied the movement of herds (2000, 135).

Just as the herders may have a special status in society, the metalworkers may similarly have been a breed apart. It was their skill that created the enduring artefacts that continue to symbolise this age. These forgers (possibly a guild equivalent) were the keepers of metallurgical secrets. The heterarchy approach encourages researchers to question the interplay between different competing social factions. What was the relationship between the patrons and the smiths? How successful were the aggrandisers in restricting access to the technology? One other question is even more intriguing. It concerns the adulteration of the metalwork during the Late Bronze Age on this side of the Channel. More lead was being added to the

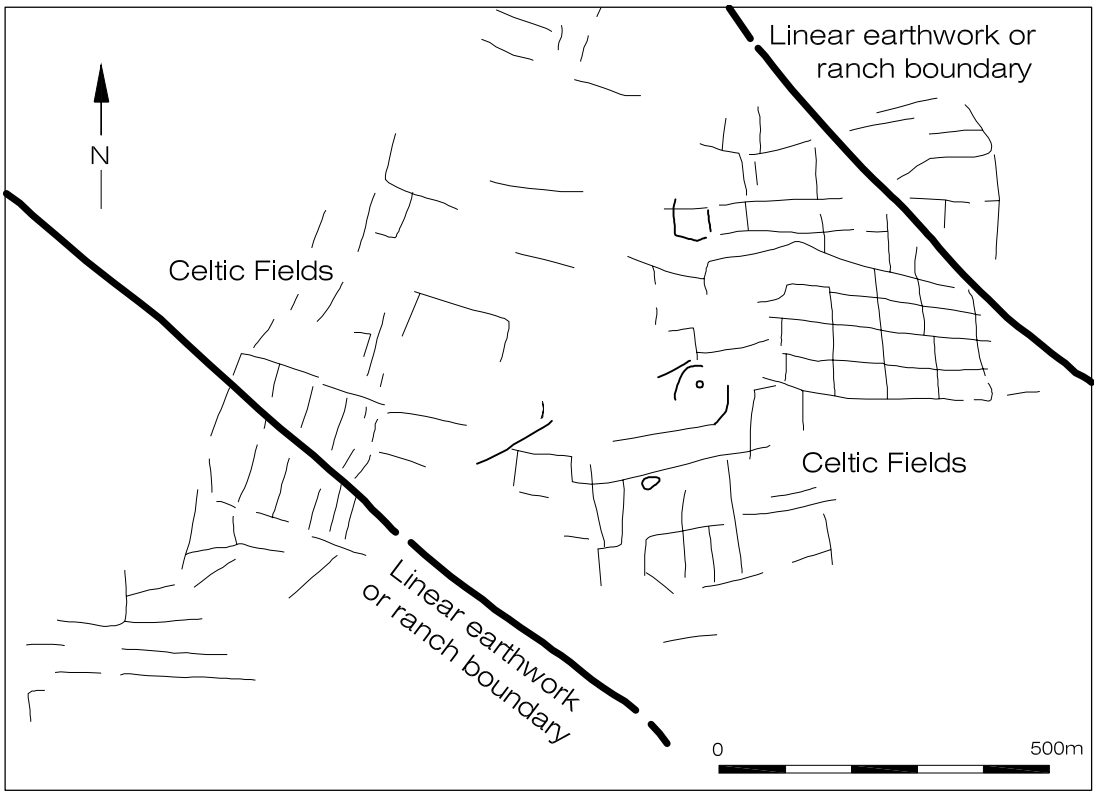


Figure 12.11 The Celtic Field *system and linear earthworks at Down Barn, Cholderton. Derived from Cunliffe 2000, fig. 4.18. Down Barn in Cholderton parish presents an example of early coaxial field systems pre-dating Late Bronze Age linear earthworks. The unconformity between linear ditches and the* Celtic Fields *in general implies that earlier systems of land ownership were in some ways overturned (Cunliffe 2004, 74)*

mix, softening the metal strength, resulting in an inferior creation. The economist Roger Mason has reviewed the nature of conspicuous consumption and social emulation in modern societies observing that the thriving trade in counterfeit products best demonstrates the existence of an economically significant market for status goods. The profitable counterfeiting of luxury goods offers robust evidence of a demand for status on the part of consumers. These counterfeits deceive not the individual who acquires the item, but rather the observer who sees the good being consumed and is duly (but mistakenly) impressed (Mason 1998, 155). This raises questions about use of a higher lead content in bronzes, which metallurgists acknowledge may have been a significant factor in extending the metal supply in an industry largely dependent on imported scrap (Northover 1982, 63; *cf.* Earle 2002, 324). The 'visible consumption' of fakes then, may still have bestowed a real or imagined status on the possessor just as now, but was this collusion between the patrons and the craftspeople or a widespread deception on the part of the smelters?

Each of these groups was actively involved in social negotiations. If the ditch diggers were volunteers, their willing co-operation had to be gained and the construction project of field systems seen to be in their interest. If unfree, the inducements to their owners to allow their mobilisation would also have had to be negotiated. The coastal navigators were key players linking the geographically isolated communities, judging safe 'sailing' times, cargo and passenger priorities and deciding the schedules of what to carry upriver and what ports of call to visit. All of these players were performing within a new arena, a new regimented landscape formally marking out zones created by intense competition. Those land blocks also provide clues to claims and counter claims between competing interests (Figures 12.11, 12.12 and 12.13). Different phases of boundary construction, including the development of linear divisions and meander boundaries, are the

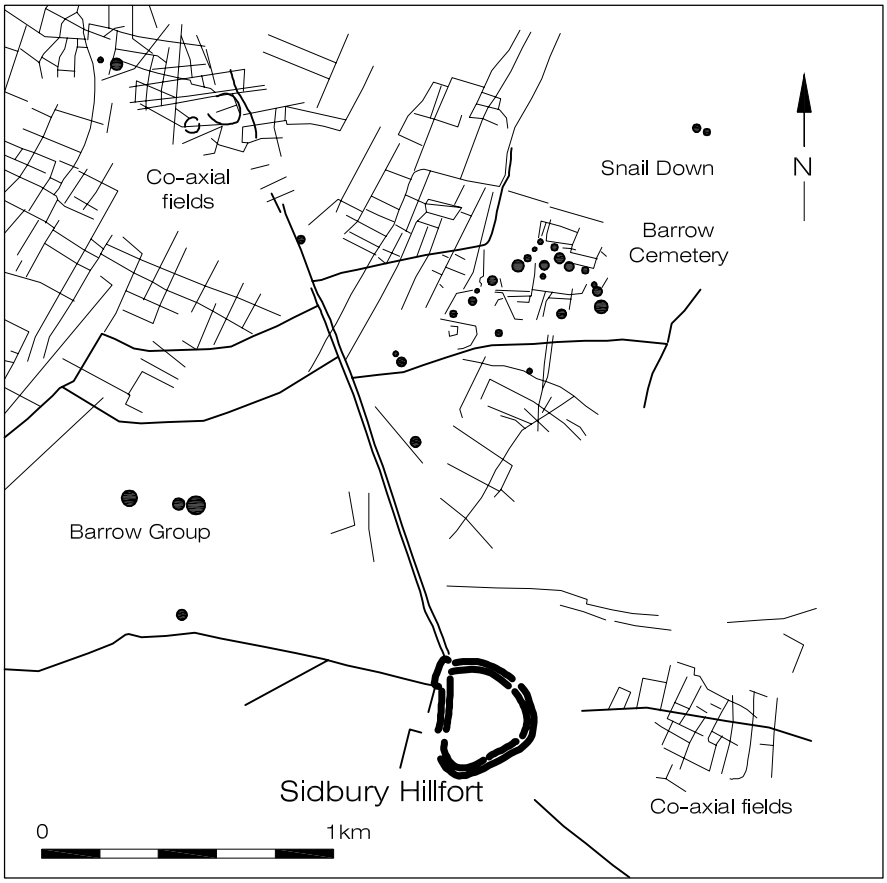


Figure 12.12 Sidbury Hill linear boundaries post-dating the Celtic fields. *Derived from McOmish, Field and Brown 2002, figure 3.6. Linear boundaries can be seen approaching the hill from a number of directions; all post date the '*Celtic fields*'. Land tenure has been "renegotiated"*

legacy of social negotiations (most negotiations may of course have been one-sided) in a dynamic society.

There is one further example that can make visible the contribution of individuals or a group of people. The layout at Rectory Farm, West Deeping, has interesting parallels to the famous site of Fengate because both field systems incorporate a major series of droveways designed to head livestock directly down to the water's edge, and those trackways were also almost identically spaced. (Hunn 1994a, 47). The use of identical designs for the regimented lands suggests that the West Deeping landscape architects may have interchanged ideas with others in the Fenlands or were part of a group who designed, surveyed and oversaw the construction of most of that landscape.

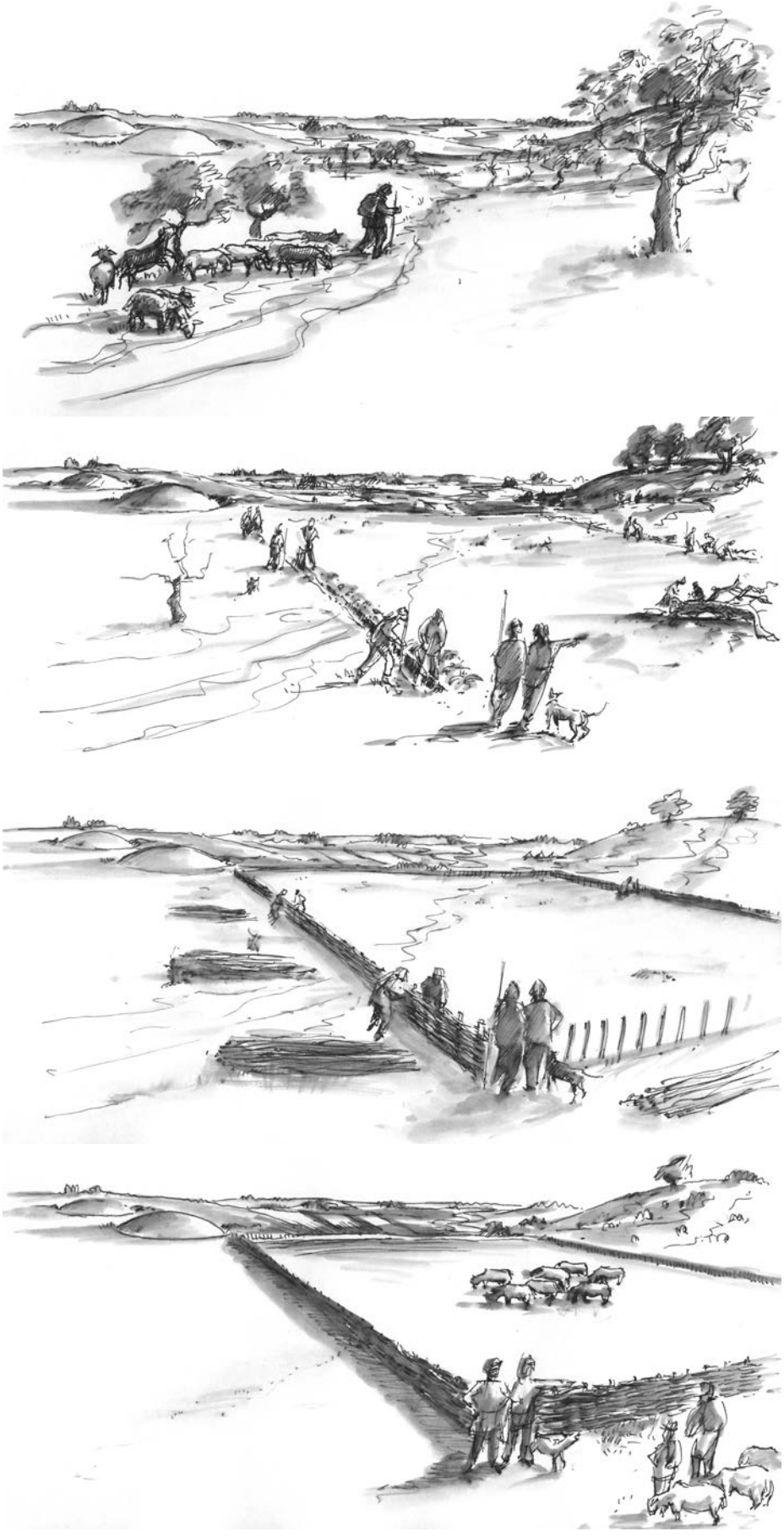


Figure 12.13 Creating Barriers. Drawing by Casper Johnson. Teams of builders transform an open landscape into an enclosed space, creating social barriers in the process

Chapter 13. Symbolism and Subtleties

13.1 The grid

The adoption of farming was a significant development in prehistory, opening up social options for exchange and alliance formation. The environment became transformed through land clearance and systematic tillage and the human population became reliant on domesticated plants and animals. Construction of a gridded landscape with rectilinear field systems marks a key stage in the drive towards sedentary food production. The grid, a thing of fence posts, hedges, palisades, ditches, drove roads, gates and hurdles, represents a new farming mentality. Grids are practical. They bring together and they divide. They impose efficiency within the farms, carrying with them a sense of order, protecting the crops, separating out the breeding herds and parcelling out land ownership. They seem to be the ultimate symbol of farming intensification – but they represent much more than that. The gridded frames reflect confidence in the future and sign that people were there to stay. These grids were also once full of life and within them there is evidence of ritualisation – actions which reflect some of the dominant concerns of society, in which certain parts of life are selected and provided with an added emphasis (Bradley 2003, 12). This chapter explores just some of the wider symbolic meanings of the new linear field systems and some of the subtleties or aspects of life within the grids, not immediately obvious but now becoming apparent.

13.1.1 Acknowledging the past

Changes in the social order would not have been instantaneous with the adoption of farming. New settlement patterns would have changed over a number of generations, as status differences emerged. In the same way, the ideology of fertility and land tenure would have developed over time when respect was still paid to existing social norms, particularly veneration for ancestors and the symbolism of ancient monuments. Certainly from 1700 BC a new order was imposed in specific enclaves of Southern England. The circles, rich burials and sacred landscapes were gradually replaced by land boundaries on an enormous scale (Parker Pearson 1993, 132). There was a period of transformation in which past monuments influenced the orientation of the new boundary works: a time when the builders acknowledged the existence of monuments and a time when attempts were made to protect them within the field systems. The respect shown to the old monumental landscapes may have been on the grounds of pragmatism, representing the expeditious use of a cleared area or trackways leading up to the monuments (Bradley 1978, 268). Alternatively, there could have been a mixture of motivations in respecting the monuments in terms of signposting existing land tenure (Johnston 2005), showing respect for ancestors and possibly maintaining social standing by association with famed individuals (Yates 1999, 64).

13.1.2 A new intent

In terms of structural design the rectilinear land blocks or grids were entirely new. Nothing like them had been built before and their design reflected a radically different attitude to land and nature. The grids imposed a new sense of order on the land. The repetitive field blocks were marked out by unswerving linear boundaries which criss-crossed the ground, allowing in many cases no variation for geological or natural obstacles. The enclosed land was cleared of obstructive trees and natural growth creating a flattened space totally under human direction. As Rosalind Krauss points out, a grid is inherently anti-natural, and in the deployment of that design form we turn our backs

on nature (1985, 9). The construction of coaxial fields incorporating terrain oblivious boundaries therefore signalled a new intent. The grids may have functioned to declare the modernity of the occupiers; people who had embraced a new ideology, which put them above nature and in which they displayed a new found assurance in the management of a valued resource. In that sense the grids represented emblems of a new mentality.

13.1.3 Social identity in enclosed worlds

The psychological significance of planned landscapes is not confined to attitude changes in regard to nature. Barrett and Brück suggest that land demarcation lines signal a more profound mind-set change and an altered sense of social identity (Barrett 1994; Brück 2000). In effect, a landscape of movement between places loaded with special and religious significance, had been replaced by one viewed from the centre of a domain (Barrett 1994, 147). The enclosed worlds meant that daily lives were lived out in spaces closely categorised, defined and organised, giving people a place-bound sense of being (ibid. 147). The settlements within those enclosed lands became the loci for material and ideological investment (Brück 2000, 285). For both writers, the Middle Bronze Age marks a move to localised fixed groups and identities, creating fragmented communities (Barrett 1994, 151; Brück 2000, 290). That interpretation suggests a fragmentation of landscape and a shift from large-scale to small-scale communities (Barrett 1994, 150; Brück 2000, 290). The evidence from lowland excavation suggests, in contrast, that inter-group alliances were much stronger than any desire to create independent co-resident entities (*cf.* Brück 2000, 291). The contention in this book is that far from being the architecture of social fragmentation, the mesh of bounded landscapes drew people into a wider world of exchange and social-interaction.

13.1.4 An emblem of inter-regional exchange

We have established that linear land divisions of the late second and early first millennium BC were confined to a large block of Southern England. Within that region field construction adheres to common conventions of design and often orientation. They also occurred in lowland dispersed clusters or enclaves along the Thames valley, Channel coast, Eastern seaboard, Severn valley and on the Fenland feeder rivers. These geographically separated lowland niches were also characterised by concentrations of settlement and metalwork deposition. It is in these socio-economic hotspots that the emblems of innovation (the coaxial field systems) occur. In centres of innovation, the adoption of formally gridded landscapes is not unexpected. They might, however, have additional significance. Each thriving enclave formed part of an extended inter-regional exchange network – mutually dependent for continued success and long term political stability. Schortman, in analysing inter-regional exchange, suggests that effective interaction within a socially dispersed landscape depended on mutual trust and recognition. Long distance travellers leaving their home base needed reassurance that they would be well received in more distant territories. Predictable interaction is therefore dependent on recognising significant cues which make it clear what categories of people are present and what behaviours to expect (1989, 54). The display of significant or salient identifiers can, according to Schortman, ensure mutual recognition – by 'overcommunicating' affiliation between geographically dispersed regional partners (ibid. 55). In time such symbols of regional affiliation could have ensured that exchange is restricted to those who prominently display ideological membership (ibid. 56 and 59). For Schortman, those cues were largely confined to portable symbols of power and settlement architecture but could equally encompass distinctive landscaping – instantly recognisable and understood by guests who are familiar with the new form of farmland. Historically, landscapes have been taken to act as a symbol of national identity (Lowenthal 1994) and that symbolism could be equally relevant in prehistory.

Mobilisation of a workforce could create particularly impressive coaxial field systems: in effect an overt form of 'showy' or conspicuous production. Late Bronze Age ringworks often overlooked the field grids, acting in effect as viewing platforms. Examples include the ringworks at Wittenham Clumps, Highdown, and Taplow, Queen Mary's Hospital and possibly Springfield Lyons. Such communities are likely to have been preoccupied with conspicuous production and consumption, driven by a demand for status expressed through the acquisition and display of goods and services whose value was measured in terms of perceived social acceptance

and prestige. The construction of extensive field systems may have been one form of status symbol, possibly stimulating their adoption in other areas.

13.1.5 Bearings on a wider world

In one respect, some lowland and upland field systems share an important characteristic. Recent work on Salisbury Plain has suggested that the Bronze Age fields in that area may have shared a dominant axis, extending from NE to SW. This takes no account of the prevailing topography and, although the sun may have influenced it, there are cases in which large areas of arable land would have remained in the shadow (McOmish *et al*. 2002, 55). The same observation can be made on other parts of the chalk, including the Marlborough Downs, Fyfield and Overton Down (Gingell 1992, figure 96; Fowler 2000, 25). The ditched field systems along the Thames Valley and to the south shared a similar alignment. Like their upland counterparts, they showed a subsidiary axis from northwest to southeast that matches the orientation of some of the houses in the associated settlement (Bradley and Yates in press). Again there were variations within Southern England, especially in the Fens where the base line followed the riverbanks and the dividing lines were perpendicular to the river course or fen edge. Conformity to agreed bearings might have represented acknowledgement of the life giving permanence of the sun (Williams 2003, 242), since many are aligned to face the direction of the sunrise.

In 1987, Fleming discussed the powerful ideological or symbolic meaning of coaxially aligned land. He suggested that it is difficult to avoid the elusive notion of ritual landscape where there was a conscious creation and maintenance of a special terrain full of symbolic meaning (Fleming 1987, 197). The discovery of common alignments on the Wessex chalklands, gives weight to the argument of 'ritually correct' landscaping; the knowledge of which may have been held by ancestral guardians (ibid. 201). It is interesting to note that the NW/SE, NE/SW grid coordinates evident in Wessex and along the Thames valley are partly reflected on Dartmoor itself; particularly, Dartmeet (Fleming 1978b, 115), Shaugh Moor (ibid. 118), Ridding Down (ibid. 118), Corringdon Ball (ibid. 119), Venfold (Fleming 1983, 203), Rippon Tor (ibid. 203) and Kestor (ibid. 212). Furthermore, the great majority of the Dartmoor round houses have their doorways towards the south-east; which is also the alignment of the burial cists (Bradley 2002, 76–77).

13.2 Patterns of behaviour within the grids

The field banks and ditches defined large areas of ground in which the farming communities lived out their daily arduous lives, toiling to make a success of their precarious existence. Their thoughts and actions were largely governed by the changing seasons of the year. As spring followed winter and autumn followed summer each individual may have realised that they were contributing in part to a perpetual cycle of growth, development, decline and renewal. That recurrent agricultural cycle transcended individual human existence and people may have come to define their place in the world as part of that process. In consequence, certain dominant elements of farm life (those critical to the perpetual success of the community) were selected and provided with an added emphasis (Williams 2003; Bradley 2003). One of those dominant concerns would have been the welfare of the breeding herd.

In the lowlands it seems as though the waterholes may have been central to economic prosperity. Mixed farming was practised in the river valleys, but there seemed to be a greater emphasis on animal husbandry. The lowland landscapes often contained the same elements: fields and enclosures integrated with droveways, and numerous waterholes. Not only do these provide environmental evidence indicating the presence of grazing land; they often contain special deposits including metalwork, quern stones, curated artefacts, animal bones, human remains and token cremations (placed deposits comprising of a few bone fragments selected from the original pyre). They seem to have been refilled rapidly before they were formally sealed over, and in some respects these features may have had the same symbolic significance as storage pits did in the Iron Age. The ditched boundaries so essential for keeping the herds in and keeping predators out were also the favoured location for special deposits especially around entranceways. Recent fieldwalking and excavation is starting to indicate that the burial

of Later Bronze Age metalwork deposits (single finds and hoards) can be directly related to the location of burnt mounds, watercourses, field boundaries and settlements (Dunkin 2000, 2001; Knight *cf.* and figure 10.4). Many of the answers as to how people engaged in the new world of farming and what the world meant to them lie scattered around the fields (Ingold 2000, 208).

13.3 Subtleties – stock management

Francis Pryor recounts the discovery in 1973 of a mini droveway at Storey's Bar Road, Fengate that seemed to make no sense whatsoever. Twenty years later, it occurred to Pryor that the faint parallel gullies were the remains of a sheep run with associated drafting gates. Along this race individual sheep could be inspected and the flock divided up into breeding ewes, cull ewes and lambs (1998, 105). That breakthrough was only possible because of the meticulous and painstaking efforts to scrutinise everything following large area stripping. It would not have been possible if limited trial trenching had been deployed. Evidence for long distance droving, batching, confining, inspection and selective breeding is now plentiful in the layout of most British prehistoric field systems. It says much about the scale, sophistication and organisation of livestock farming. Those basic elements of stock management have long been recognised, but new details continue to add to the picture of the scale and expertise of such animal husbandry. There are several sites where the drove roads had metalled surfaces suggesting the frequent passage of large herds of cattle, along with instances at South Hornchurch and Round Pound, Kestor Rocks of chicaned droveways close to aggrandised enclosures (Guttmann and Last 2000; Fox 1954). A series of waterholes, wells and ponds (on the chalk downlands) enabled the confinement of large herds, and composite fencing comprising ditches, banks and fence posts are evidence of the strength of the stock pens. The discovery of sheep bridges on marshland and wattle fencing shows further subtleties of shepherding practices (Wilkinson and Murphy 1995, 150).

13.4 Subtleties – soil management

We are still largely ignorant of the agricultural nature of the field systems because we are not sure what was happening within them. A mixed farming regime appears to have been followed, with an emphasis on animal husbandry, but, due to poor survival of pollen and plant remains in the river terrace soils, we lack conclusive evidence of regional differences in arable and pastoral priorities. What was not immediately obvious but is now becoming evident is the expertise used in the selection of prime lands and the skill shown in the conservation and improvement of the soils.

13.4.1 Selection of the best ground

For modern farmers prime lands are at a premium. They can provide lush reliable pasture for stockraising and offer the most fertile grounds to produce abundant crops. Within each individual farm in turn farmers can point to the best-drained plots and the suitability of different ground for varying crops. Bronze Age and Romano-British farmers made similar choices. There is a recurrent pattern of land appropriation in areas associated with rich alluvial and brickearth deposits. The latter was particularly favoured. Loess is fine soil, whisked up by winds from the periglacial expanses of Western Europe and deposited where the wind is broken by the uplands. It is a fine grained, permeable soil, and it evaporates more soil moisture than any other type of sediment. Drainage is also an attribute when loess overlies gravel beds. As a result, brickearth soils can often be very dry and they do not generally favour dense forest growth. That makes the initial clearance of vegetation much easier. It was the preferred choice for *Linearbandkeramik* (LBK) settlement across Europe leading to clustered settlement cells termed *Siedlungskammern* . These early Neolithic people sought out floodplain-lower slope habitats where the ground rarely sloped greater than 2% (Bogucki 1988, 73; Linke 1976). Such flat lands bordering rivers can make irrigation possible (Price 1977). Many centuries separate the LBK pioneers from the coaxial constructors in England but it is intriguing how knowledge of those familiar brickearth soils may have spread. Recurrent use of such brickearths makes the discovery of buried Bronze Age fields more predictable. These grounds may not have been prized solely because they have the highest

grade soils. They occur on strategic locations along river valleys, which may equally have made them valued for societies operating within an extended exchange system.

13.4.2 Soil conservation and improvement

Having laid claim to the most fertile soils, the next priorities were to conserve and improve those grounds. Pressure on the land was intense with progressive erosion of the soils occurring on the uplands, for instance the South Downs (Favis-Mortlock, Boardman and Bell 1997). To counteract that loss, lynchet banks were constructed on chalk downlands. On the lowlands, soils were threatened by flooding and it is interesting that the value of the land could justify the construction of flood prevention dams (Wessex Archaeology 2000c). Waterlogging could also be addressed by digging deeper drainage ditches to cut through the brickearths into the underlying gravel terraces.

Improving these soils involved ground clearance, weed control and regular ploughing. There is some evidence of bean propagation, a crop which improves soil nitrogen levels (Brooks 2002, 61). The field layouts also suggest controlled grazing. There is also increased evidence of manuring on the lowland sites to add to the existing evidence from the uplands, including the establishment of massive middens at East Chisenbury and Potterne by the end of the Bronze Age (McOmish *et al.* 2002, 73; Lawson 2000; Guttmann 2005).

Finally there are indications of spiritual replenishment. Work in Cornwall and Cambridgeshire suggests that field shrines were incorporated into the farmlands (Nowakowski 1991; Bender, Hamilton and Tilley 1997, 173; Pollard 2002) and the discovery of human bones within manure matrices (Nowakowski pers. comm.) suggests a special emphasis on soil enrichment. It signals the continued participation of the dead in the life-giving land in an attempt to ensure the perpetuation of the farming cycle. Successive generations came to reside alongside the living and were part and parcel of the continued development of the soils.

It is such symbolism and subtleties that have only recently become apparent. The things we do not yet know may be even more astounding. We are exploring a cultural landscape – a new spatial setting in which people, their livestock and cultivated land were closely linked in a complex cosmology. Formal land tenure in the Later Bronze Age was not solely an impersonal expression of demographic and economic forces. It was a transformation of the complex ideological relations between people, animals, ancestors and the supernatural (Fokkens 1999, 41). The need to probe even more deeply into the meaning of that landscape raises very real concerns about present methodologies in commercial excavation. It is those issues that we now address.

Chapter 14. Competitive Exploration: Excavation Priorities

14.1 Sampling issues

Before the advent of commercial excavation there were less than half a dozen excavated lowland Bronze Age field systems in Southern England, now there are more than three hundred and the number continues to grow. Arguably, their detection (and the confirmation of zones where they were absent) is one of the greatest achievements of developer-funding. Two major challenges, however, have emerged; first, how should field units proceed when they encounter the monumental scale of this new form of 'site' (some can exceed 400 hectares and, while the structural features may be slight, the enclosed area can be immense)? Secondly, after over a decade of contract digging comes the realisation that such formally planned structures are immensely complex in terms of construction conventions, phasing and the incorporation of ritualised practices. Unlocking the intricacies on such potentially large scale sites requires the development of a new set of strategies and sampling methodologies to increase our understanding of the organisation of the landscape in the late second – early first millennium BC.

New approaches are required because present ones are failing. Despite their scale and complexity, typically formal land blocks receive relatively scant attention in project work compared with identifiable farmstead boundaries and buildings. They are recurrently on the bottom rung of sampling priorities often meriting a 1% investigation of the field ditches and at best 5%. The soils, small pits and scoops which are framed by those borders have an even lower priority. Where waterholes are encountered they might not be bottomed out because the sections lie below the line of development foundations, or their depth would entail significant costs.

The effect of such sampling shortfalls is considerable. Excavation under such limitations makes it difficult to pin down the dating of the land boundaries and the sophistication of their use. Limited sampling cannot achieve preservation by record. If the existing sampling frameworks cannot resolve their genesis and use, the presumption should therefore be preservation by scheduling.

It might be argued that the discovery of field systems cannot be predicted and therefore any encounter in large area strips requires pragmatic solutions. The pattern of enclave or niche construction, however, suggests that it is now possible to anticipate their detection in certain lowland zones. New regional strategies need to be agreed in anticipation of further development pressures. The sampling strategy critically needs to be improved. Increasing the sample strategy is essential on three counts: –

a) the need for chronological precision.
b) the need to integrate palaeo-environmental analysis in the commercial contracts.
c) the need to investigate the subtleties of these areas of conspicuous production.

We shall look at each of these issues in turn before reflecting on the development of economic and social models and predictive modelling.

14.1.1 The paucity of dateable material and the need for chronological precision.

A major obstacle to our understanding of the development and demise of coaxial field systems is often a sketchy chronological framework. Locating dateable remains that relate to the construction/ initial use of the field system may not always be easy or even possible. There is also the problem of residual artefacts found in the ditch fills and curated Neolithic and Early Bronze Age artefacts placed there in the Later Bronze Age. Frequently,

it is impossible to resolve the dating of the land boundaries (with the sampling budgeted for in the commercial contracts) and dating becomes reliant on morphological comparison. Often the features are broadly assigned to the conventional pigeonholes of Early Bronze Age, Middle Bronze Age, Late Bronze Age, Late Bronze Age/Early Iron Age: eras used throughout this book since they continue to dominate excavation reports. The use of absolute dating techniques in commercial work remains the exception rather than the rule, despite the fall in laboratory fees. The remedy is an insistence that radiocarbon dating becomes routine. It should be possible to acquire a suite of AMS dates from all such future sites, and where appropriate, this should be accompanied by programmes of thermoluminescence dating (Palmer 2003). Developments in the dating of lipid residues from pottery should also yield a timed ceramic sequence. We need well-dated sites and well-dated field systems, with the routine use of radiocarbon determination alongside other dating methods. If such a stipulation is adopted across whole regions it should be possible to look more closely at local prehistories during the eight hundred-year span of the first wave of coaxial fields.

So what will greater chronological precision enable us to explore? Firstly, it has to be said that the late second and early first millennium BC field systems analysed in this research are one era of landscaping sandwiched between a succession of different attempts to shape and reshape the countryside. Hence the use of the term landscape palimpsest – just like medieval parchment the land surface has been reworked over time with previous earthworks being erased and overwritten by new landscape configurations. Chronological precision will provide a clearer insight into different building and maintenance phases, claims and counter claims on the land, and the longevity of settlements within a competitive world with all the fluidity of changing political fortunes that has entailed. We could also attempt to place the emergence of field systems in relation to the wider prehistoric woodland clearance phases. Finally, we can explore the genesis and spread of the adoption of this new form of land allotment. When did the innovation start and, ultimately, how sudden was the decline in the social significance of this emblem of land tenure? Absolute dating will also enable us to explore the uptake of new plant and animal species throughout Britain.

Less than 2% of the gazetteer entries pre-date the mid second millennium BC. All are notoriously difficult to date very closely – a task complicated by Later Bronze Age people who customarily placed curated artefacts in the field structures. The identification of the earliest permanent land divisions therefore poses especial problems in fieldwork.

Along the Thames valley and approaches the earliest examples of farming infrastructure were preserved by being deeply buried. A hollow way routed through a zone of ard mark ploughing at Holywell Coombe, Folkestone was sealed by colluvial deposits at the foot of the steep escarpment of the North Downs (Bennett *et al.* 1998). Similar ard-ploughing evidence and fragments of boundaries have also been found at Lambeth and Southwark, this time protected by peat deposits. These Early Bronze Age small-scale farming plots masked by overburden show the potential for research in specific pockets of preservation – the results from Lambeth and Southwark are particularly important because of the regular deployment of radiocarbon sampling whenever the peat blanket is encountered. Further up the Thames, the investigation of larger land blocks shows that interrupted ditches may have predated the creation of a system of continuous ditches, a phenomenon identified at Reading Business Park, Butlers Field, Lechlade, Didcot and Ashville Trading Estate, Abingdon (Yates 1999, 165).

Along the South Coast evidence for early fields occurs west of the Solent. At Bestwall Quarry a discontinuous ditch appears to predate a Middle Bronze Age field system, replicating the Thames sequence (Ladle and Woodward 2003, 265). Up river from Bestwall there are examples of short-lived land divisions along the Frome valley assigned to the Early Bronze Age but precise dating evidence is very limited (Wessex Archaeology 1994c; BUFAU 1994). The paucity of dating evidence available to excavators can be seen at the East of Corfe River site, on the Poole Harbour shoreline. The dating of all the phases associated with Wytch Farm Oilfield were largely dependent on ceramic analysis. The only radiocarbon determination was gathered from the Middle Bronze Age occupation phase. Finds recovered from the ditches of the Early/Middle Bronze Age field system were confined to a single Bronze Age sherd and a worked flint from one ditch and a scraper and flake from another (Cox and Hearne 1991, 31). Further west on Dartmoor the characteristic moorland reaves are associated

with the 18th and 17th centuries BC but as Johnston observes the only fully published radiocarbon dates come from the excavation of one boundary, on Shaugh Moor (2005, 3). In Cornwall again there are sites tentatively assigned to the Early Bronze Age but they await new research (such as at Gwithian) to establish their age.

North of the Thames there have been claims for even earlier field systems. On closer scrutiny, some of these are now less convincing than at the time of their publication. Chigborough Farm site was argued to be, for Essex, the clearest indication of land division in the Neolithic/Early Bronze Age. That interpretation is reliant on circumstantial evidence. Direct dating evidence for two rectilinear structures associated with a dividing boundary are minimal and the postulated dating for these domestic and farming zones is reliant on a process of elimination (Waughman 1998a, 67 and 103). Further up along the North Sea coast, a possible late Neolithic/Early Bronze Age field system was identified in the interim excavation reports for Sutton Hoo (Hummler 1993; Copp 1989). The final publication suggests an Early Bronze Age origin (Carver 2005).

In the Fenlands, the Fengate field systems were originally suggested to be Late Neolithic/Early Bronze Age in date. That conclusion may have influenced further excavations in the vicinity. For example, along the A605 Elton-Haddon Bypass it was concluded that prehistoric fields were aligned at right angles to a tributary of the Nene "during the Neolithic period, just as field systems were aligned at right angles to the fen edge at Fengate" (French 1994, 173). The excavation report does not provide a particularly convincing case for a Late Neolithic/Early Bronze Age origin. No radiocarbon dates are available and, in total, only 3 abraided late Neolithic/Early Bronze Age sherds were recovered in surface collection at Dog Kennel Field whilst the excavated ditch sections were essentially free of pottery (ibid. 48). The recent reassessment of the dating of the Storey's Bar Road field system at Fengate, placing their construction in the early to mid second millennium BC (Evans and Pollard 2001, 25), further undermines a Neolithic attribution for coaxial field systems along the River Nene. Such uncertainties over local start dates for boundary building, present a research challenge for all units.

Concerns over chronological precision are not confined to the earliest land blocks. Current typological categorisation of Late Bronze Age and Early Iron Age pottery in southern England looks in need of a reassessment and that may affect some regional interpretations (Needham in print). For example the radiocarbon dates for Game Farm, Brandon suggest that the accepted dating scheme for Post Deverel-Rimbury ware in East Anglia needs to be pushed back (O'Brien 2004, 51).

Improved ceramic chronologies, together with the frequent use of absolute dating, would allow us to explore the complexity of land partitioning and enable us to detect any coeval standardisation (or otherwise) in field system design. Some patterns are already apparent.

During the Later Bronze Age sequence there are instances suggesting the use of standard measurement in design at least at the local level. For example, along the Thames valley 30m wide field plots occur at Didcot, Bray, Corporation Farm and Lady Lamb Farm (Yates 1997, 84). On the nearby uplands above Avebury, Fowler suspects that a unit of measurement of c 10m was used in the coaxial field system skirting Overton Hill (Fowler 2000, 24). East Anglia, the area with the largest excavated coaxial fields, also has examples of apparent imitation. Two overlapping land blocks at Raunds had similar spaced boundaries. At West Deeping and Fengate, the field systems both incorporated a major series of identically spaced parallel droveways designed to head livestock down to the water's edge. The landblock dimensions at Eyebury Quarry and Barleycroft are also alike.

There is a further intriguing dimension regarding standardisation. Over time it is possible to detect a drift away from rigid conformity to a pure form of coaxial grid. This may be detectable in both the uplands and lowlands. On Salisbury Plain, the degree of regularity in terms of size and shape of coaxial field systems is remarkable (McOmish *et al.* 2002, 53). They display a common symmetry of layout with a predominant axis NE –SW, terrain oblivious, orientation. At Orcheston Down the fields at the heart of the coaxial system and integral to the earliest phase of development adhere to a fixed design form suggesting that strict rules governed field size during their construction. However, on the periphery of the system land plots have been altered by ploughing across the subdivisions of earlier examples (ibid. 54). There is also evidence of earlier land divisions having been obliterated in order to create longer fields at Lidbury and the Central Impact Zone (ibid. 56). Similarly in the Fenlands, 'styles' of layout may alter over time. There may have been a move away

Plate 8. South Hornchurch droveway. Reconstruction painting by Casper Johnson. The 14m wide droveway heads SW towards the River Thames, passing by a ringwork and associated holding compounds

from larger more formal coaxial field systems, rigidly aligned on the fen edge, to more irregular land partitioning by the later second millennium BC (Evans and Patten 2003, 60).

The zones of intensive activity in lowland South Eastern England suggest a parcelling of land to accommodate large-scale pastoralism to ensure what may be termed 'structured mobility' (Pryor 1998, 100). There is evidence for droving, stock handling, confining, inspection and sorting of livestock. In terms of morphology, the division of the land relied on the creation of ditched boundaries. They might be embanked, double ditched and banked, and were probably reinforced by hedges. Composite boundaries using both ditches and fencing posts were also employed. The discovery of wattle hurdles may reflect seasonal stock activity, such as lambing or summer grazing (Yates 1999, 165–166). Ditch profiles at Raunds suggests a further variation, for they resembled foundation trenches to support stout fencing. Whatever their form, the barriers were linear in Southern England. Only in Cornwall and Devon do we see a degree of individualism or nonconformity and a disregard for straight barriers.

In terms of linear conformity, the primacy of the droveways may have been the chief feature organising the landscape access/axis. It is particularly noticeable in the large area excavations in parts of the Fenlands, but is equally applicable to the gravel terraces of the Thames and the wide stretches of loess on the Sussex Coastal Plain. The scale of some droveways suggest that they are 'great' routes, built and maintained to serve both local residents and more distant communities (Evans and Patten 2003, 59). As such they require prioritising in excavation, especially as *en masse* holding compounds are associated with these routeways. Examples include the 13–19m wide track at Colne Fen (Evans and Patten 2003, 9);

the c.14m lane (Plate 8) at South Hornchurch (Guttmann and Last 2000, 320); and, a 12m broad track at Coldharbour Road (Mudd 1994, fig 13). The importance of these routes can also be gauged by the investment required. At Hays, Dagenham a sizeable workforce would have been required to excavate and transport substantial quantities of gravel, silts and fire cracked flint to form a causeway. The peats immediately overlaying this principal access route into the Thames marshes were dated to 1400–970 cal. BC (Beta-70881; 2960±80 BP) (Meddens 1996, 326). The impetus for the scale of these routes may have been a predominantly cattle-based economy. It may, ultimately, be possible to trace and date sections of connecting roads.

14.1.2 Palaeo-environmental sampling

Field systems are the ultimate symbol of conspicuous production and the subjugation of nature by people, representing dominance over the environment by the impositon of unwavering terrain oblivious boundaries. Rectilinear land blocks became the ubiquitous form of formal landscaping signing a new era of permanence, long term land tenure and environmental control. It follows therefore that palaeo-environmental analysis should be central in investigating these imposed grids.

The preferred ground for formal land appropriation was the river gravels and brickearths which preserve little archaeo-botanical or environmental evidence – the very clues needed to determine what crops were propagated, which animals were favoured and how the land was cleared and managed. The scarcity of such data should not thwart attempts to retrieve information that can reveal the habitats being controlled within these managed lands.

Environmental work should be more prominent in the PPG16 briefs and incorporated into the development strategy of the area. Where waterlogged deposits are encountered they should receive priority including the full sampling of waterholes and well features. Sampling of so called natural deposits – dry river valleys, alluvial sequences, peat deposits, and palaeo-channels should also be integrated into development work. Such sediments and natural deposits have intrinsic archaeological value helping to explain the nature of land use during the adoption of formal land divisions. This requires specialist sampling and integrated C14 dating which can have a significant effect on budgets. It needs to be included as a non-negotiable item rather than an 'add on' vulnerable to cost cutting if projects run over budget. Edwards suggests that natural sequences are so vital to explaining land use on site that we need to look at off site locales for palaeo-environmental evidence, for example peat bogs and relict stream beds in the vicinity (K. J. Edwards 1991). Off site exploration would be a more imaginative strategy for exploration, breaking away from adherence to legalistic definitions of the archaeological resource.

What are the gains in prioritising the recovery of environmental evidence? The imposition of the new form of land enclosure needs to be seen within the context of earlier land clearance and soil erosion. It is also of interest to see what follows this particular form of land appropriation. To this effect we need to chart: regional variations in the pace of woodland clearance; soil erosion in the form of colluviation and alluviation; and possible signs of woodland regeneration following de-intensification of land use.

The record may also reveal climate fluctuations, seasonality of land use, thresholds in the adoption of new crop species and any flooding events on the river and coastal margins. Many other scientific techniques are now available which can unlock some of the mysteries of these permanent farming communities, including diet (stable isotope and lipid analyses) and soil management (micromorphology). Sadly, such scientific inquiry remains largely confined to research excavations. That expertise is much needed in commercial projects.

14.1.3 Exploring the subtleties of the formal landscapes

In a sense discovering the rectilinear fields and enclosures is the easy part, particularly for experienced excavation teams well aware of the need to allow adequate weathering time for the ditches to reveal themselves. Deciphering the subtleties of these land blocks is also improving as experience develops in commercial units and that knowledge percolates down. In the early days of excavation, interest focused on the ditch borders rather than the 'dead ground' that they surrounded. The increasing discovery of human bones within the fields however makes that term 'dead ground' more meaningful. The incorporation of human skeletal remains as a constituent of the cultural soils suggests a richness for those 'empty'

spaces previously unknown. It immediately has implications for wholesale topsoil stripping and the need for micromorphological work to fully explore the nature of the worked soils. This is just one subtlety now becoming apparent. It cautions against regarding these areas as lacking finer detail.

As more field systems are discovered, the more intricate and regulated they appear. The architectural formality of the field layouts created an ordered world – a world within which there may have been rules governing the correct placement of metalwork and curated items (Figure 10.4). Use of each major component within the gridded terrain may have followed prescribed behaviour. For example the ritualised activity associated with the waterholes within the compounds, suggests a form of worship to underground (chthonic) gods. The formally structured landscape is one of controlled movement, and the finer details of that managed space are still emerging – driven by breakthroughs such as that at Fengate with the identification of community stockyards, sheep runs, field shrines and batching gates for livestock management. These organised landscapes are also beginning to reveal the disciplined nature of their construction – the ditch profiles, when examined in several sections suggest gang working and incremental building phases. The possibility of an enslaved workforce cannot be ruled out.

14.2 Developing economic and social models

Having confirmed the existence of both lowland and upland field systems separated by apparently relatively empty hinterlands, the next challenge is to build suitable economic and social models for the farming system. These models should build in local diversity, interconnections between regions, and chart changes over time. Data already available suggest mixed farming regimes with an emphasis on livestock rearing in the lowland river valley sites. The profusion of permanent droveway routes suggests a good deal of seasonal movement and extended land management. Having revealed a regional pattern of field systems in southern England and confirmed a regional emphasis on formal land control and agricultural intensification, it is now necessary to determine the seasonal routines underpinning the quest for surplus production.

The new economic foundation determined social developments. Rowlands's theoretical model of an Atlantic economy appears to be uncannily accurate in respect of a hierarchy of exchange dominated by riverine and coastal communities. The ultimate aim should be to construct social models which depict changes through time, including shifting power centres and alliances: a model that accommodates factional politics, the importance of hinterlands and that concentrates on the remarkable social changes marking the Bronze Age / Iron Age transition. Bronze Age communities have not helped this task because, irritatingly, they tended to build their formal landscapes along river corridors – the very borders that separate modern administrative counties. County based Sites and Monuments Records therefore are immediately disadvantaged in attempting to offer a meaningful database for studying this phenomenon. That issue has been addressed in part by the imaginative establishment of regional research frameworks in England. But even these approaches fall short, for the Bronze Age communities appear to have established exchange alliances on a much larger scale than can be accommodated in modern regional initiatives. Ultimately best understood in a wider European context, any model building attempt will require cross channel research.

14.3 Conclusion

This book started by contrasting the achievement of central European Bronze Age communities with the relative void in 'showy' sites in the offshore nations of Britain and South Scandinavia. British archaeologists, paid and volunteer alike, have started to expose a hidden legacy of landscaping on a hitherto unknown scale: a formal landscape shaping the lives and political fortunes of peoples driven by new aspirations within a new world order. Competitive forces drove these prehistoric communities – the very ethos that underpins present day excavation units. Project managers face their own daily risks in maintaining their teams, rewarding efforts, cementing alliances, keeping within budget whilst not compromising their own standards. The narrative that they have discovered in this research is testament to the effort and commitment of their own mobilised workforce who are re-digging the ditches that marked out a new landscape of endeavour.

TABLES

Table 3. Straits of Dover and the Thames Estuary
Site numbers refer to Fig. 3.3
Later Bronze Age sites as at June 2003

	Site Name	*Map Reference*			*Description*	*References*
1	Church Lane, Church St, Dagenham	TQ	499	848	Prehistoric ditches, LBA pottery	Maloney 1999:1
2	Bridge Road, Rainham	TQ	521	825	MBA rectangular enclosure and droveway	Meddens 1996:325
3	South Hornchurch	TQ	523	830	LBA ringwork, droveway, field system	Guttmann and Last 2000
4	Site 9 Horndon to Barking gas pipeline	TQ	526	815	Possible prehistoric parallel boundary ditches	Wessex Arch. 1994b
5	Whitehall Wood, Upminster	TQ	570	825	LBA/EIA field system	Greenwood 1986
6	Site 5 Horndon to Barking gas pipeline	TQ	606	840	LBA field boundary ditch	Wessex Arch. 1994b
7	William Edwards School	TQ	619	809	LBA stock enclosure	Lavender 1998:23
8	Site 4 Horndon to Barking gas pipeline	TQ	624	840	LBA /EIA field boundary ditches	Wessex Arch. 1994b
9	Baker Street, Orsett	TQ	632	810	LBA open settlement and possible boundary gully	Wilkinson 1988:15–17
10	Gun Hill, Tilbury	TQ	655	778	LBA field system with spur ditch cutting off a promontory of grazing land	Drury and Rodwell 1973:95
11	Linford	TQ	667	798	BA ditches	Barton 1962:61
12	Mucking	TQ	674	806	LBA/EIA ringworks. Two phased enclosure at N. Mucking 48m in diameter. Originally with an internal revetted bank. Mucking South rings 83m in diameter with central roundhouse. MBA field system	Bond 1988. Clark 1993 Clark and Barrett 1988 Jones 1973
13	Eastwood, Southend	TQ	853	890	MBA/LBA enclosure	Wymer and Brown 1995:177
14	London Southend Airport	TQ	875	891	LBA field system	Essex County Council 1998
15	South-eastern corner of Southend Airport	TQ	875	889	LBA field system	Germany and Foreman 1997
16	Butlers Farm Gravel Pit	TQ	905	892	Possible BA enclosure	Wymer and Brown 1995:178
17	Wick Farm, Southchurch	TQ	906	872	Possible LBA enclosure	Bennett 1998: 202
18	North Shoebury	TQ	931	862	MBA Sub rectangular compounds and field system. LBA trackway and land division	Wymer and Brown 1995
19	Baldwin Farm Gravel Pits, Barling Magna	TQ	937	896	Possible MBA field gullies	Couchman 1977:63
20	Alexandra Road, Great Wakering	TQ	940	870	MBA field system	Reidy 1997
Settlement with Associated Enclosure, Fields or Droveway						
21	Princes Road, Dartford	TQ	541	732	LBA	GLSMR
22	Coldharbour Road	TQ	638	717	MBA LBA	Mudd 1994:407
23	Cobham Golf Course	TQ	692	695	MBA LBA	KSMR Mudd 1997 OAU 1997a
24	Hoo St Werburgh	TQ	778	716	LBA	KSMR
25	Sandway Road, Lenham	TQ	880	515	MBA LBA	KSMR TQ85 SE131
26	Kemsley Fields	TQ	910	660	MBA LBA	KSMR
27	Shrubsoles Hill	TQ	968	716	MBA LBA	KSMR
28	Brisley Farm	TQ	990	400	LBA	Stevenson and Johnson 2004
29	Little Stock Farm	TR	064	386	LBA	KSMR CTRL
30	Church Lane East, Whitstable	TR	102	647	LBA	KSMR
31	South Street, Radfall Road	TR	130	645	LBA	Cross 1994b, Parfitt 1995

Table 3. cont.

32	Radfall Corner, Thanet Way	TR	133	647	LBA	Parfitt and Allen 1990 Cross 1994b, Parfitt 1995
33	Churchwood Drive Chestfield	TR	140	662	MBA LBA	KSMR
34	Eddington Farm	TR	170	670	LBA	Houliston 1998, Macpherson-Grant 1992b, 1993
35	Willow Farm, Broomfield	TR	194	670	LBA	KSMR
36	Beltinge Cliff	TR	195	683	LBA	Cross 1994c, Hutchinson 1994, Parfitt 1996
37	Holywell Coombe	TR	220	380	EBA	Bennett, P. Ouditt, S. and Rady, J. 1998
38	Monkton Court Farm	TR	277	655	LBA	Perkins *et al*. 1994
39	Ebbsfleet Farm	TR	332	630	LBA	Perkins 1992a Hearne *et al*. 1995
40	Manston Road, Ramsgate	TR	361	656	LBA	Wessex Arch. forthcoming
41	Ramsgate Harbour Approach Road	TR	362	647	LBA	Shand 1998a 1998b
42	Northdown School	TR	373	701	MBA LBA	KSMR TR36 NE187
43	RM Barracks, Deal	TR	375	516	LBA	KSMR TR35 SE405

Farm Enclosure, Fields or Droveway

44	Erith	TQ	506	788	MBA LBA	GLSMR
45	Joyce Green Lane	TQ	545	756	LBA	KSMR
46	Springhead, Gravesend	TQ	617	728	LBA	Wessex Arch. 1997a
47	Temple East of Springhead	TQ	623	719	LBA	Wessex Arch. 1997b
48	West of Church Road, Singlewell	TQ	652	705	LBA	OAU 1997b
49	Snodland	TQ	687	629	LBA	KSMR TQ66 SE15
50	High Halstow	TQ	784	753	MBA	KSMR
51	Thurnham Roman Villa	TQ	799	571	MBA	KSMR-CTRL
52	Malmaynes Hall Farm	TQ	817	757	LBA	James 1999
53	Damhead Creek Power Station	TQ	817	745	MBA LBA	James *pers. comm.*
54	Middle Stoke	TQ	828	755	MBA	James forthcoming
55	Tutt Hill	TQ	975	466	LBA	KSMR
56	Westhawk Farm	TR	002	400	MBA	Booth and Lawrence 2000
57	West of Blind Lane, Sevington	TR	040	401	MBA LBA	KSMR-CTRL
58	Church Lane, Smeeth	TR	077	384	LBA	KSMR-CTRL
59	Link Park, Lympne	TR	113	358	MBA LBA	Johnson *pers. comm.*
60	Dence Park	TR	187	681	LBA	KSMR TR16NE7
61	Bogshole Lane, Broomfield	TR	198	669	LBA	Cross *pers. comm.*
62	Herne Bay Waste water treatment pipeline	TR	224	648	LBA	Parfitt 1996 Wessex 1993a
63	Herne Bay Waste water treatment pipeline	TR	231	643	LBA	Parfitt 1996
64	Netherhale Farm	TR	275	675	MBA	Macpherson-Grant 1993

Table 3. cont.

Enclosures

65	White Horse Wood, Thurnham	TQ	806	585	LBA	James *pers. comm*
66	Minster Abbey	TQ	956	730	LBA	Philp and Chenery 1998
67	Kingsborough Farm	TQ	976	723	LBA	Dyson, Shand and Stevens 2000
68	10–11 Castle Street, Canterbury	TR	145	574	LBA	Boyle and Jenkins 1951 Macpherson-Grant 1991a
69	Highstead	TR	215	660	LBA	Bennett 1997
70	South Dumpton Down	TR	392	663	MBA LBA	Perkins 2000 Perkins 1992b
71	Mill Hill, Deal	TR	362	512	LBA	Champion 1980
72	Hawkinge Aerodrome	TR	220	400	LBA	Stevens 2003

Coastal Transport

73	Dover Boat	TR	325	414	MBA	Clark 2004a, b
74	Langdon Bay	TR	341	417	MBA	Clark 2004a, b

Table 4.1 Rivers Lea and Stort.
Site details refer to Fig. 4.1.

	Site Name	*Map Reference*			*Description*	*References*
1	Stansted Airport	TL	540	230	LBA integrated fields and droveway. MBA settlement. Deforestation from 3000BC (Murphy 1996)	Brooks and Bedwin 1989 Havis and Brooks 2004
2	Household waste site and football ground, Dunmow Road, Bishops Stortford	TL	508	217	LBA settlement and 2 NE/SE parallel ditches. Trace of MBA material	HSMR 9815 HSMR 1018 Herts. Arch. Trust 1998
3	Thorley	TL	470	208	LBA field system. Cremations emphasising field boundaries	HSMR 9274 HSMR 9277. Ellcock 1968 Last and Cameron 2000
4	Thornbera Road, Bishops Stortford	TL	486	197	LBA occupation and boundary ditch	HSMR1090
5	SW of St John's Wood, Hertford. See also Rickney's extension, north of Hertford	TL	322	152	Close to R. Lea. LBA enclosures. Mainly coarse ware jars. No subsequent EIA material	HSMR7609, and HSMR7610 Percival and Richmond 1997
6	Hatfield Heath to Matching Tye Rising main. Sites 31 + 35	TL	516	124	LBA field boundaries. Possible LBA colluviation	Guttmann 2000
7	Cole Green Bypass	TL	299	118	LBA farmstead, manured ploughsoils D shaped enclosure and field system	HSMR9748 McDonald 2004
8	Wormley Wood	TL	329	060	Field block. 6 sq. km. Extant co-axial field system. Pollen assemblages commonly associated with LBA/EIA. Saxon land surface	Bryant *pers. comm.* *Pers. obs*.
9	Canada Field, Turnford	TL	361	043	LBA occupation. LBA droveway and field system	HSMR6816 Cooper-Reade 1990
10	Waltham Abbey	TL	383	009	LBA enclosure ditch	Clarke, Gardiner, and Higgins 1993
11	Rammey Marsh Former Sewage Treatment Works, Enfield	TQ	368	993	BA trackway and fields	GLSMR 084271
12	Innova Science Park, Enfield	TQ	369	991	Four BA ditches, an enclosure corner and 61 pits in three groups forming a N-S alignment	Maloney and Holroyd 2002:11
13	Aylands Allotments	TQ	353	991	LBA occupation	GLSMR 082191
14	Chingford	TQ est	376	955	BA to LIA agrarian ditches	Bishop in print
15	Montague Road Enfield	TQ	362	935	Linear ditches. BA land demarcation suggested	Bishop in print
16	Plevna Road, Enfield	TQ	355	934	MBA settlement	Bishop in print
17	Banbury Reservoir	TQ	364	916	Piling	GLSMR 060838

Table 4.1. cont.

18	Maynard reservoir, Waltham Forest	TQ	353	896	Bronze dagger Piling	GLSMR 060844
19	Former King George V Hospital, Newbury Park	TQ	448	884	LBA field system. 1st phase 950–750 BC	Maloney and Holroyd 2003:50.
20	Warwick reservoir	TQ	347	883	Extensive piling	GLSMR060837 Hatley 1933
21	CTRL, Stratford New Town	TQ	382	846	LBA timbers	Maloney and Holroyd 2003:49
22	Stratford market depot	TQ	389	835	LBA/EIA gullies and pits	GLSMR 061934
23	Old Ford, Bow, Tower Hamlets	TQ	369	835	MBA field boundaries	Taylor-Wilson 2000
24	Movers Lane Barking	TQ	452	833	M/LBA simple trackways	Maloney and Holroyd 2002:1
25	Vicarage Primary School, Newham	TQ	425	828	Late Neolithic or EBA fenceline	Maloney and Holroyd 2003:49
26	Woolwich Manor Way, Beckton	TQ	429	821	N-S MBA brushwood trackways	Maloney and Holroyd 2003:50
27	Golfers Site, North Beckton	TQ	429	820	MBA trackway and timber platform	Maloney and Holroyd 2003:50
28	A13 Prince Regent Lane	TQ	406	817	EBA 15m post built walkway dated 1780–1540 BC. Associated dog remains	Maloney and Holroyd 2002:20
29	Vauxhall Bridge	TQ est	303	782	Timber way 1750–1535 cal BC, 1605–1285 cal BC	Haughey 1999
30	99–101 Waterloo Road, Lambeth	TQ	312	799	Linear ditch sealed by peat, probably laid down in Tilbury IV regression.	Thompson, Westman and Dyson 1998:125
31	Bermondsey Abbey	TQ	334	793	Several small possibly Bronze Age gullies, cut into natural sand and gravel	Thompson, Westman and Dyson 1998:197
32	Phoenix Wharf, Bermondsey	TQ	337	799	EBA burnt mound + E/MBA plough, spade and hoe marks	Densem 1994
33	10–16 Lafone Street	TQ	337	798	Prehistoric ard marks and possible Neo/BA field boundary ditch	Bates 1996, 1997
34	Wolseley Street	TQ	339	797	MBA rip ard marks sealed by silty clay deposits and peats	Drummond-Murray 1994
35	Bramcote Grove, Bermondsey	TQ	349	780	MBA wooden trackways: access for hunting and fishing	Thomas and Rackham 1996
36	Hays, Dagenham	TQ	486	833	MBA trackways	Meddens 1996:332

Table 4.2 Wandle Valley
Site numbers refer to Plate 6

	Site Name	*Map Reference*			*Description*	*References*
1	Kings College Sports Ground, Merton	TQ	272	698	A multi-phase MBA rectilinear field system	Bazely 1989
2	Hundred Acre Bridge, Mitcham	TQ	285	670	LBA linear ditch and associated droveway. Burnt mound and tree clearance	Tucker 1992
3	Wandle Valley Hospital, Carshalton	TQ	277	666	1st millennium BC enviro-sedimentary sequence	Birley 1993
4	London Carriers Ltd, Beddington Road	TQ	299	666	Two truncated ditches. LBA pottery	Bird, Crocker and McCracken 1991–92:166
5	138, Beddington Lane, Croydon	TQ	300	666	BA rectilinear field system and fence lines	Maloney 1999:25
6	Interim Storage Pond, Beddington Sewage Works	TQ	287	665	LBA ditches, pits and flint scatters	Bird, Crocker and McCracken 1990:226
7	Wandle Meadows, London Road, Hackbridge	TQ	285	665	Ditches revealing LBA pottery	Bird, Crocker and McCracken 1991–2:166 GLSMR 021203
8	Royal Mail Site, Beddington Farm	TQ	301	664	Prehistoric farming activity	Greenwood and Thompson 1992
9	Furlong Close, Sutton	TQ	286	664	Prehistoric finds, undated ploughsoils	GLSMR No.FLC96
10	Valley Park Site, Purley	TQ	305	662	LBA field systems. Parallel linear ditches 104 acre site	Thompson, Westman and Dyson 1998:50 Heathcote 1989
11	London Road	TQ	285	662	Possible LBA linear features	GLSMR 021211

Table 4.2. cont.

12	Beddington Sewage Farm	TQ	290	660	Ditches and shallow gullies	Greenwood and Maloney 1993:106
13	Wandle Overflow	TQ	293	660	Prehistoric field systems	Bird, Crocker and McCracken 1990:226
14	Pegasus Way, Croydon	TQ	300	660	BA hearth and land surface	GLSMR No.IMW97
15	Beddington Lane, Beddington Roman Villa	TQ	297	658	Linear features, possibly LBA	Adkins and Adkins 1986. Adkins, Adkins and Perry 1986. GLSMR 02057502
16	Philips Factory site, Beddington Farm Road	TQ	307	656	LBA pottery, possible burnt mound and undated linear ditch.	Tucker 1991
17	NRA Flood relief scheme, Beddington Park	TQ	296	655	Possible metalled prehistoric or Roman trackway BA rectilinear field system	Thompson, Westman and Dyson 1998:231
18	34 Beddington Lane	TQ	302	654	Fire fractured flint concentration	Saxby 1990
19	Aldwyk Road, Waddon	TQ	307	650	LBA assemblage	Gallant 1966:169 GLSMR 030232. See also Lowther 1939:180
20	Park Lane, Croydon	TQ	325	650	BA pits and gullies	Bird, Crocker, Maloney and Saich 1996:208
21	Stanhope Lane	TQ	330	650	LBA settlement	GLSMR 020299
22	Beddington Infants School	TQ	292	649	A ditch containing LBA pottery and flint	Heathcote 1989:194 Mason n.d.
23	St Mary the Virgin Church Hall, Wallington	TQ	294	649	LBA pottery in primary colluvium	Bird, Crocker, Maloney and Saich 1996:225
24	Westcroft House, Westcroft Road, Carshalton	TQ	283	647	2 LBA/EIA ditches, LBA ritual pit containing sheep bones	Proctor 1999
25	St. Philomena's Catholic Girls School, Pound Street, Carshalton	TQ	274	646	LBA midden filling a gully	Maloney 1999:26
26	Carshalton House	TQ	277	644	LBA/EIA ditch. Post Deverel-Rimbury plain ware pottery	Howes and Skelton 1992
27	Kings Road and Harrow Road, Carshalton Camp	TQ	268	640	Agricultural terrace. LBA finds	GLSMR 030338, Turner 1963
28	Queen Marys Hospital, Carshalton	TQ	279	622	LBA ringwork	Adkins and Needham 1985. Bird, Crocker, Maloney and Saich 1996:224

Table 4.3 West of London sites.
Site numbers refer to Fig. 4.2

	Site Name	*Map Reference*			*Description*	*References*
1	Cassiobridge Farm, Watford	TQ est	100	990	LBA carps tongue hoard. Similarities to Potterne, Possibly matches Potterne chape well and a chape of similar design at Petters Sports Field (Lawson 2000:193)	Coombs and Savage 1979 in Burgess and Coombs 1979
2	Gravel Pit, W of Watford	TQ	076	985	LBA possible ringwork	Bryant *pers. comm.*
3	The Grove Estate, Watford	TQ	080	980	LBA fields and settlement. Site just to the east of LBA enclosure	Le Quesne, Capon and Stevens 2001.
4	Sandy Lodge Lane, Rickmansworth	TQ	092	936	LBA pottery, 2 loom weights, grilling plate (fine metal working)	HSMR 633
5	Sandy Lodge Golf Course, Northwood	TQ	090	935	LBA/EIA occupation	HSMR 9686
6	The Lee, Buckinghamshire, Denham	TQ	047	860	MBA Field system	Coleman *et al*. 2002 Farley 1995
7	The Former Jewsons Yard, Uxbridge	TQ	055	845	A major LBA/EIA boundary	Barclay, Boyle, Bradley and Roberts 1995 Mills 1984
8	2–3 Windsor Rd, Uxbridge	TQ	056	840	BA boundary ditch	GLSMR 056024301
9	5–6 High Street, Uxbridge	TQ	056	840	BA gullies and parallel ditch. See also Windsor Rd site	GLSMR 050243

Table 4.3. cont.

10	Try Builders Yard, Uxbridge	TQ	051	828	2 parallel ditches possibly LBA	GLSMR 051032
11	Northolt Rd, Longford Hillingdon	TQ	059	813	MBA settlement and possible field boundaries	MOLAS 1995
12	Former George Hopton site, Packet Boat Lane, Cowley	TQ	053	812	LBA/EIA linear ditch	Thompson, Westman and Dyson 1998:83
13	Stockley Park	TQ	083	803	M/LBA pit and LBA pit	Mason and Lewis 1993:25
14	36 Avenue Gardens, Acton	TQ	198	797	Possible MBA linear ditch	Thompson, Westman and Dyson 1998:53
15	Former LRT Bus Works, Chiswick High Road, Hounslow	TQ	198	787	MBA/LBA ditches	Thompson, Westman and Dyson 1998:96
16	Wall Garden Farm	TQ	078	784	MBA field boundary and possible enclosure	GLSMR 05046302
17	Holloway Lane	TQ	068	784	Ditches, stock enclosure and trackway with a range of LBA finds	GLSMR 05046105
18	M4 widening/Gas main relocation	TQ	062	784	LBA pits and ditch	Mason and Lewis 1993:30
19	Imperial College Sports Ground, Harlington	TQ	082	780	M/LBA subrectangular enclosures	Crockett 2002
20	Home Farm, Harmondsworth.	TQ	071	777	MBA/LBA ditches	GLSMR 051109.3
21	Prospect Park, Harmondsworth, Hillingdon	TQ	050	775	LBA field system possibly linked to the middle phases of the land divisions at Cranford Lane	Andrews 1996b:108 1996c Farwell, Andrews and Brook 1999
22	Home Farm, BFI Quarries, off Harmondsworth Lane	TQ	067	774	BA field system, possible droveway and fencing	Maloney 1999:14
23	Nobel Drive, North of Heathrow Airport	TQ	091	770	M/LBA field boundaries. Drafting gate	Elsden 1998
24	Cranford Lane, Harlington	TQ	093	770	LBA coaxial field system and trackways	Elsden 1996
25	Airport Gate, Bath Road, Harmondsworth	TQ	070	770	MBA coaxial field system	Maloney 1999:13
26	Neptune Road, Heathrow	TQ	085	768	LBA/EIA ditch	Elsden 1998
27	Heathrow Northern Runway	TQ	085	766	Pits and ditches	MOLAS 1998:17
28	Heathrow Airport	TQ	052	766	2 undated ditches	Elsden 1998:10
29	Perry Oaks Sludge Works and Heathrow Airport Runway	TQ	055	765	MBA coaxial field system. LBA stock keeping. BA settlement	Andrews *et al*. 2000 Barrett *et al*. 2001
30	Bankside Close, Isleworth	TQ	158	749	MBA field boundaries	Hull 1999
31	Stanwell, Heathrow	TQ	053	745	LBA field system	O'Connell 1990
32	Cargo Point Development, Bedfont Road, Stanwell	TQ	065	745	Three phases of ditched boundaries	MOLAS 1998:18
33	Heathrow Terminal 4, Remote Stands	TQ	080	745	Probable BA features	MOLAS 1998:17
34	Stanwell Road, East Bedfont	TQ	077	740	Probable prehistoric ditch	Mason and Lewis 1993:31
35	Lower Mill Farm, Stanwell	TQ	035	739	Possible Neolithic – EBA farmstead	Bird, Crocker, McCracken and Saich 1994:208
36	Poyle, Stanwell	TQ	032	738	BA settlement	Longley 1976:8
37	Mayfield Farm	TQ	077	736	Possible LBA ringwork	Cotton 1991
38	Church Lammas, Staines	TQ	028	722	MBA rectangular enclosure	Bird, Crocker, McCracken and Saich.1994:207
39	Church Lammas NW Staines	TQ	027	721	2 successive field systems (undated)	Jackson, Maloney, Saich 1997:211
40	Tilly's Lane Staines	TQ	030	720	BA flood defence bank in the NW margin of the gravel island, protecting settlement to the SW? Probable M/LBA farming. No subsequent activity until Romano- British era	Wessex Arch. 2000c
41	Runnymede	TQ	020	720	LBA riverside settlement	Needham and Longley 1980 Needham 1990, 1991, 2000

Table 4.3. cont.

42	Staines Central Trading Estate, Mustard Mill Lane	TQ	034	716	MBA/LBA field system	Fitzpatrick *pers. comm.*
43	2–8 High Street, Staines	TQ	034	715	LBA occupation	Jackson, Maloney, Saich 1997:212
44	Matthew Arnold School, Staines	TQ	053	706	BA ditches and settlement	Bird, Crocker and McCracken 1991–2:155
45	Vicarage Road, Sunbury	TQ	101	706	E?/MBA waterholes, grassland habitat	Bird, Crocker, Maloney and Saich 1996:201
46	Thorpe Lea Nurseries	TQ	017	697	M/LBA field boundaries	SCAU 1993
47	Fairyland Caravan Park Laleham	TQ	045	694	Substantial LBA boundary ditch oriented NW-SE, cut into a pre-existing ancient soil. After silting up, abandoned in LBA. Not recut again until LIA. Given its overall dimensions the ditch would have prevented the movement of livestock into the palaeochannel where they would have perished	Taylor-Wilson 1997
48	Home Farm, Laleham	TQ	059	692	MBA/LBA settlement. Possible BA boundary	Jackson, Maloney, Saich 1997:211. Bird, Crocker, McCracken and Saich 1994:208
49	Hurst Park, East Molesey	TQ	145	689	E/M/LBA activity. Probable LBA farmstead with associated field system	Andrews 1996a, 1996b:107 Farwell, Andrews and Brook 1999:69
50	Junctions 12 and 15 on the M25	TQ	020	685	A prehistoric boundary at Junction 12. Several prehistoric boundary ditches at Junction 15	OAU 1994
51	Wey Manor Farm, Addlestone	TQ	058	634	BA waterhole with wooden bowl rough out. Fertile agricultural soil 1km NW of St Georges Hill. Possible BA field system. A BA enclosed roundhouse	SCAU 1999 Hayman 1995
52	Broadoaks Estate W. Byfleet	TQ	048	608	Possible BA settlement and associated ditches	Hayman 1995
53	Whitmoor Common	SU	980	530	Prehistoric fields? *Tilia* decline recorded	Ellis 1996

Table 4.4 Middle Thames Valley, Windsor to Reading.
Site numbers refer to Fig.4.3

	Site Name	*Map Reference*			*Description*	*References*
1	Brimpton	SU	569	653	M/LBA pottery	Lobb 1990
2	Aldermaston Wharf	SU	605	678	LBA settlement	Bradley, Lobb Richards and Robinson 1980
3	Field Farm, Burghfield	SU	675	704	LBA settlement and enclosure (undated): similar to a community stockyard	Butterworth and Lobb 1992 Lobb 1985
4	Anslow's Cottages, Burghfield	SU est	680	706	LBA settlement, riverside jetty and boundary	Butterworth and Lobb 1992
5	Knight's Farm, Burghfield	SU	690	700	LBA settlement	Bradley, Lobb Richards and Robinson 1980
6	Pingewood, Burghfield	SU	698	693	BA settlement	Lobb and Mills 1993
7	Moore's Farm	SU est	700	695	LBA/EIA stock enclosures	Moore and Jennings 1992
8	Reading Business Park	SU	700	700	M/LBA settlement and field system	Moore and Jennings 1992 Brown and Early 1997 Brossler *et al.* 2004
9	Marshall's Hill	SU	700	720	LBA ringwork	Bradley *pers. comm.*
10	Grazeley	SU	702	661	MBA field system	Trott 1990
11	Hartley Court Farm	SU est	705	690	LBA/EIA enclosures	Moore and Jennings 1992
12	Land West of Park Lane, Charvil	SU	776	753	LBA/EIA settlement	Langton 1996
13	East Park Farm, Charvil	SU	778	756	M/LBA settlement	Butterworth and Rawlings 1997

Table 4.4. cont.

14	Taplow	SU est	905	820	LBA enclosure	Allen *pers. comm*.
15	Weir Bank Stud Farm, Bray	SU	909	790	MBA field system, triple ditches and round house	Barnes and Cleal 1995
16	Eton Rowing Lake	SU	920	785	MBA field system	Allen and Welsh 1996a, 1996b Allen 1995
17	Marsh Lane East	SU	920	792	Part of MBA field system	Roberts *pers. comm*.
18	Lake End Road	SU	925	795	Part of MBA field system	Barclay *pers. comm.*
19	Datchet	SU	992	762	MBA? settlement and field system	Kennish *pers. comm*.

Table 5.1 Wallingford group.
Site numbers refer to Fig. 5.1

	Site Name	***Map Reference***			***Description***	***References***
1	Eight Acre Field, Radley	SU	525	980	M/LBA field system, settlement and waterholes	Mudd 1995
2	Ashville Trading Estate, Abingdon	SU	483	973	MBA ditch predates ring ditches	Parrington 1978
3	Sheephouse Farm	SU	390	963	Prehistoric? coaxial field system	Oxford. SMR 12123
4	Meadow Farm	SU	462	962	Prehistoric? coaxial field system	RCHME Thames Valley Project
5	Corporation Farm, Abingdon	SU	498	958	MBA rectilinear enclosures	Shand undated
6	Mount Farm, Berinsfield	SU	581	962	MBA field system aligned on earlier round barrow	Barclay Bradley Hey and Lambrick 1997:13
7	Dorchester on Thames cursus	SU	571	958	Probable Later Bronze Age field system overlying cursus	Bradley and Chambers 1988 Whittle *et al*. 1992
8	Northfield Farm, Long Wittenham	SU	559	951	MBA? Field system and settlement	Gray 1977 Thomas 1980
9	Fullamoor Farm	SU	529	946	Major LBA linear boundary slighting earlier field systems	Boyle *et al*. 1993
10	Appleford	SU est	530	930	MBA waterholes and field system	Hinchcliffe and Thomas 1980
11	Wittenham Clumps	SU	568	927	LBA enclosure	Hingley 1980
12	Wallingford Road, Didcot	SU	539	899	MBA settlement and field system	Ruben and Ford 1992
13	Wallingford Bypass	SU	608	885	LBA riverside settlement	Barclay, Bradley Lambrick and Roberts 1995. Cromarty *et al*. 2006

Table 5.2 Extreme Upper Thames Valley.
Site numbers refer to Fig. 5.4

	Site Name	*Map Reference*			*Description*	*References*
1	Royal Agricultural College, Cirencester	SP	009	012	Prehistoric? Ditches, pits and postholes. Rectilinear field system on a different alignment to Roman Fosse Way	Coleman Cullen and Kenyon 2001
2	Queen Elizabeth Road, Cirencester	SP	032	014	Later prehistoric? pits and ditches on E bank of R. Churn	Barber 2000b
3	Kingshill and Beeches Nursery Field, SE of Cirencester	SP est	035	010	Prehistoric? Ditches, scattered pits and post holes	Glos. SMR
4	The Beeches Playing Field, London Road, Cirencester	SP	037	021	MBA enclosure with double cow burial in entrance way Cattle bone dated 1400–1120 cal BC. EIA second enclosure. No subsequent MIA or LIA activity	Young 2001
5	Swindon to Gloucester Road Improvement DBFO. Norcote Farm	SP	045	016	Prehistoric? Boundary ditch	Glos. SMR
6	Swindon to Gloucester Road Improvement DBFO. Preston Village	SP	045	005	Two BA ring ditches and a number of probable prehistoric land boundaries	Glos. SMR
7	Swindon to Gloucester Road Improvement DBFO. St Augustine's Lane	SP est	055	009	Early land boundaries	Glos. SMR
8	Swindon to Gloucester Road Improvement DBFO. St. Augustine's Farm South	SP est	060	005	Significant land boundary, containing prehistoric pottery, respecting two ring ditches	Glos. SMR
9	Lady Lamb Farm, Fairford	SP	137	002	M/LBA ditches and EIA pit alignment	Roberts 1993
10	Cuthwine Place, Lechlade	SP	211	001	Four LBA/EIA boundaries	Gocher 1998
11	Gassons Road	SP	211	004	LBA/EIA settlement and boundaries	Catchpole 1992 King 1993
12	Burroway enclosure	SP	309	003	EIA enclosure	Yates 1999
13	Spratsgate Lane, Somerford Keynes	SU	024	958	Series of MIA stock enclosures of rectilinear, sub circular or circular form	GCC.1990
14	Dryleaze Farm, Siddington	SU	029	978	Series of NW/SE orientated EIA boundaries	OAU 2002b
15	Shorncote Quarry	SU est	030	965	Very extensive unenclosed LBA/EIA settlement	Hearne and Heaton 1994 Barclay 1995
16	Cotswold Community School, Somerford Keynes	SU	033	962	LBA ditches, and LBA/EIA pit alignment on the modern Gloucestershire/Wiltshire border	Wessex Arch. 1994a OAU 2000 Cotswold 1998b GCCAS 2001
17	Latton Lands	SU	080	970	2 boundary ditch lengths of LBA/EIA date, orientated NE-SW	CAT 1996b
18	Eysey Manor Farm, Eysey	SU	110	944	NW-SE orientated EIA enclosure. 450m length of NE-SW boundary ditch (undated). EIA double ditched trackway aligned NW-SE. Extensive evidence of Iron Age settlement and agriculture	CAT 1999b
19	Roundhouse Farm, Marston Meysey	SU	135	964	EIA droveway. EIA/MIA settlement	OAU 1992
20	Groundwell, West Swindon (Motorola site)	SU est	148	890	MIA unenclosed occupation (4 possible roundhouses), followed by enclosure and pit alignment	Walker *et al*. 2001
21	RAF Fairford	SU	150	980	EIA ditches, pits, postholes, gullies, burials and disarticulated animal burials Elements of EIA land division	Hoad 2002
22	Totterdown Lane Nr. Fairford	SU	152	990	10 MIA roundhouses, enclosures and associated field system	Pine and Preston 2002
23	Allcourt Farm, Little London, Lechlade	SU	211	995	A group of EIA field boundaries including a substantial NNE-SSW 7.2m wide ditch	OAU 2001
24	The Loders, Lechlade	SU est	211	993	EIA settlement	Darvill *et al.* 1986
25	Sherbourne House, Lechlade	SU	212	997	Successive phases of land division spanning the LBA, EIA and MIA	CAT2000b CAT1998a

Table 5.2. cont.

26	Butler's Field	SU	213	995	600m LBA/EIA linear boundary ditch.	Jennings *pers. comm.*
27	Clemenson Memorial Hall, Lechlade	SU	213	999	NNE EIA major boundary , subsequently redefined by NE-SW pit alignment	CAT 1996a Thomas and Holbrook 1995
28	Recreation Ground, Lechlade	SU	213	998	2nd terrace gravels. SMR records enclosures from APs over entire recreation ground. Postholes and ditches of probable EIA occupation	Cox 1998
29	Roughground Farm	SU est	214	997	Major EIA boundary ditches	Allen Darvill Green and Jones 1993
30	The Maples Oak Street, Lechlade	SU	215	999	Substantial prehistoric/LIA boundary ditch	CAT 2000a
31	Leaze Farm, Lechlade	SU	229	988	EIA occupation. Significantly the site indicates that the EIA settlement in Lechlade is not confined to a meander zone defined by the Thames and the Leach	Moore 2001

Table 6.1 Sussex: The Weald.
Site numbers refer to Fig. 6.2

	Site Name	***Map Reference***			***Description***	***References***
1	Midhurst Pond	SU	877	208	M/LBA woodland clearance	Scaife 2001:101
2	Burton Millpond	SU	980	178	LBA woodland clearance	Evans 1991
3	Fitzleroi Farm, Fittleworth	TQ	010	204 est	LBA hoard	Kenny 1995
4	Waltham Brooks	TQ	024	158	LBA clearance in 9th century BC	Turner 1998
5	Lickfold Farm, Pulborough	TQ	062	175	LBA pottery in surface collection	Wessex Arch. 1991a
6	Dean Way, Storrington	TQ	080	151	LBA/EIA field system	Howard-Davis and Matthews 2002
7	Billingshurst Western By Pass	TQ	081	247	LBA/EIA pottery in burnt scoop or hearth	Place 1999a
8	London Road, Ashington	TQ	133	162	LBA possible linear features, postholes and stakeholes. Probably material drifting downslope from America Wood ridge	SAS 1999a. W.Sx SMR 5020
9	America Wood, Ashington	TQ	134	164	LBA pits, gullies, post-holes, pottery, and querns	W.Sx. SMR 5020 Preistley-Bell 1994
10	Furners Lane, Henfield	TQ	216	161	MBA cremation	C. Johnson 1999
11	Asda, Crawley	TQ	260	360	Possible MBA cremation	S. Stevens *pers. comm.*
12	North West zone devt. Gatwick Airport	TQ	261	414	LBA/EIA enclosed settlement	Framework Arch. 2002
13	Friars Oaks, Hassocks	TQ	300	162	LBA/EIA unstratified pottery	Butler 2000:23
14	Hammonds Mill Farm, Hassocks	TQ	301	175	LBA/EIA pit with associated burnt flint mound	Butler 2000
15	Wakehurst Place, Ardingly	TQ	339	316	LBA/EIA pottery in gully features, BA pits. Interpreted as a temporary occupation	Stevens 1998
16	Barcombe Roman Villa	TQ	420	140	2 LBA/IA linear ditches. Pre villa use	Chris Butler *pers. comm.*
17	Sharpsbridge	TQ	444	208	*Tilia* decline probably during the LBA/EIA.i.e. prehistoric communities made a significant impact on the environment causing flood sedimentation and alluviation within the Upper Ouse Valley. High Weald	Scaife and Burrin 1983
18	Stream Farm, Chiddingly	TQ	557	157	Upper Cuckmere headwaters. Investigation of alluvium accumulation. *Tilia* possibly declines because of increasing Later Bronze Age agric. pressure or changing agricultural practices	Scaife and Burrin 1985
19	Shinewater	TQ	614	029	LBA wetland trackway, metalwork and occupation. Antler cheek piece, reed hook, shale bracelet, distinctive pottery bowl from Thames Valley, Baltic amber, socketed axe from N Holland or NW Germany	Greatorex 2003

Table 6.2 Sussex: The Coastal Plain.
Site numbers refer to Fig. 6.3.

	Site Name	*Map Reference*			*Description*	*References*
1	Fishbourne By Pass	SU	841	048	LBA pits, pottery and hearth	WSx. SMR 5481
2	Selsey Foreshore	SZ	844	930	LBA well and pottery in cliff collapse	Seager Thomas 1998
3	Pontins, Selsey	SZ	859	924	MBA roundhouses, enclosure ditch, pottery, and fire-fractured flint	WSx. SMR 4920/5401
4	Chichester Road, Selsey	SZ	860	940	BA pits, postholes. MBA pottery and field boundaries	Preston 2002
5	Chichester Cattle Market	SU	865	046	MBA pottery, cultivation evidence	WSx. SMR 4496
6	Chalkpit Lane, Lavant	SU	870	094	LBA pits, pottery, metalwork and cremations	WSx. SMR 5474
7	Thomas à Becket Church, Pagham	SZ	883	974	3 cremation urns. Numerous MBA pottery sherds	WSx. SMR 5608 Kirk 1996
8	Claypit Lane, Westhampnett	SU	884	066	Intense MBA activity. LBA trackway and field system. Little IA activity	Wessex Arch. 2000a, 2002
9	Drayton Lane, Chichester	SU	885	044	M/LBA burnt mounds, cremations, boundary ditches, shallow gullies. EIA missing? Field system silting up by end of LBA	Priestley – Bell 2000 2002. AOC Arch. 2002 Griffin 2002b Northam. Arch 2002
10	Westhampnett By Pass	SU	892	064	MBA house structures, pits, pottery and fencelines	Fitzpatrick 1997
11	Newlands Nurseries, Lagness, Pagham	SU	898	016	MBA pottery and LBA cremations	SAS 1999b
12	Westergate Community College, Bognor	SU	940	054	E-W prehistoric ditch. LBA post hole, burnt flint and lithics. Brickearth	Stevens 2000a Hulka 1998
13	Arundel Road, Fontwell	SU	955	071	LBA/EIA field boundaries. 2 phases of field system. Some fineware bowls and jars	Jamieson, 2000
14	Yapton (Bilsham)	SU	964	024	BA settlement	Rudling 1987
15	Middleton- on- Sea	SU	968	005	MBA pottery	WSx. SMR 1466
16	Moraunt Drive, Middleton-on-Sea	SU	970	006	LBA pottery	WSx. SMR 5022 Barber 1994
17	Ford Aerodrome	SU	994	033	LBA/EIA enclosure similar to Highstead? Pastoral farmstead. Trackways	RPS Clouston 1999, 2000
18	Ford Droveway	SU	994	026	LBA SW-NE droveways. No EIA	Place 1999b. RPS Clouston 1999, 2000
19	Chesswood Mushroom Farm, Climping	SU	999	022	LBA E/W ditch see below Cropthorne Climping and Fordacres	Stevens 2000b
20	Fordacres, Climping	TQ	000	025 est	LBA ditches. Also called Waterford Gardens. Brickearths. 2.2ha site	Stevenson 2002
21	Cropthorne , Climping	TQ	001	022	LBA? E/W linear feature. Same feature as at Chesswood Farm (150m to the west) Matches boundary shown in Yeakell and Garner Sussex Survey 1778 and 1843 Climping Tithe Map	Stevens 2001a
22	Horticulture Research International Site, Littlehampton	TQ	043	034	M/LBA cremation. Probable nearby LBA settlement	Lovell 2000 2002
23	Worthing Road, Rustington	TQ	047	031	Later Bronze Age pottery. Dress pin in pit or waterhole with curated? Arrowhead	Bashford 1997
24	A259 Rustington By-pass	TQ	055	033	MBA? Cremation and possible burnt mound	Rudling and Gilkes 2000
25	Barn Nursery, Rustington	TQ	059	031	LBA pottery, post holes, quernstone and fire fractured flint	WSx. SMR 4989 Rudling 1990
26	Roundstone Lane, Angmering	TQ	072	038	MBA field boundaries. LBA? well and ritual pit. Field system close to Highdown camp	Griffin 2002a
27	A280 Angmering By-Pass	TQ	079	034	BA enclosed settlement: two phases MBA and LBA. Little IA activity. Significant boundary ditch	OAU 2002a

Table 6.2. cont.

28	Ferring Rife	TQ	089	024	First wave of alluviation 1450–1050 cal BC. A gradual movement of alluvium from agricultural land to the north	Drewett 1989:23
29	Highdown Hill, Worthing	TQ	093	043	LBA coastal aggrandiser centre	WSx. SMR 2233
30	Potlands Farm, Patching	TQ	095	057	2 MBA burnt mounds with linear ditches to the immediate north	Stevens 1997a
31	Northbrook College	TQ	105	038	LBA roundhouse settlement	Stevens 1997b James *pers. comm.*
32	Centenary House, Durrington	TQ	118	043	LBA roundhouse settlement	Stevens 2001b
33	South Farm Road, Worthing	TQ	142	042	2 LBA pits, fire fractured flint and daub	WSx SMR 3309
34	St Pauls, Worthing	TQ	148	028	LBA ditch	Priestley-Bell *pers. comm.*
35	North Street Worthing	TQ	149	029	LBA/EIA ditch section found in urban excavation	Bashford 1996
36	Kingston Buci, Shoreham by Sea	TQ	232	058	Bucket urn, pits and pottery	WSx. SMR 3671 Curwen 1954:183

Table 6.3 Sussex: Downland sites.
Site numbers refer to Fig. 6.5

	Site Name	***Map Reference***			***Description***	***References***
1	Harting Beacon	SU	807	184	LBA enclosure, possible house platforms and pottery	Hamilton and Manley 1997, 2001
2	Goosehill Camp	SU	830	127	LBA? Hillside enclosure	Boyden 1956 Bradley 1971
3	Halnaker Hill	SU	920	097	SW-NE Celtic fields on southern slopes, suggested to be LBA	Bedwin 1992 RCHM 1995
4	Amberley Mount	TQ	043	124	2 M/LBA roundhouses, pottery and field system	Ratcliffe-Densham 1966
5	Harrow Hill	TQ	082	100	LBA pottery in gateway post hole of enclosure. Feasting debris	Hamilton and Manley 1997, 2001
6	New Barn Down, Worthing	TQ	085	092	MBA lynchetted fields, hut platforms, pottery and occupation debris	WSx. SMR 2030 Curwen 1954:174–182
7	Cock Hill Patching	TQ	089	098	MBA enclosure, hut platforms, pond, trackways and occupation debris	WSx. SMR 2027/2059 Ratcliffe Densham 1961
8	Highdown, Worthing	TQ	093	043	LBA enclosure, pottery, roundhouses, pits. Occupation debris and metalworking	WSx. SMR 2233
9	Blackpatch Hill, Worthing	TQ	096	096	MBA burial and occupation debris within Neolithic flint mining site	WSx. SMR 2038
10	Chanctonbury	TQ	139	120	LBA hillfort	WSx. SMR 4326 Hamilton and Manley 1997, 2001
11	Park Brow, Sompting	TQ	153	086	M/LBA roundhouses, terraces, pits, pottery and occupation debris	WSx. SMR 3078. Curwen 1954:171–172
12	Thundersbarrow Hill	TQ	229	082	Pre hillfort enclosure with ditch containing LBA pottery	Hamilton and Manley 1997, 2001
13	Mile Oak Farm	TQ	244	079	MBA enclosed settlement. LBA metalworking and settlement	Russell 2002
14	Offtake Gas Pipeline, Devils Dyke	TQ	277	091	LBA/EIA 4 and 5 poster structures, roundhouse near Offtake site	J. Russell *pers. comm.*
15	Wolstonbury	TQ	284	138	LBA pottery from lowest fill of enclosure ditch. *Celtic fields* on western slopes	Hamilton and Manley 1997, 2001
16	Patcham Fawcett School	TQ	316	091	MBA roundhouses, 4 poster structures, fenceline and pottery	Greatorex 2002
17	Eastwick Barn	TQ	320	096	LBA/EIA field system	Rudling 2002
18	Hollingbury Hillfort	TQ	322	078	LBA metalwork may relate to pre hillfort enclosure	Hamilton and Manley 1997, 2001
19	Downsview, Brighton	TQ	327	091	M/LBA settlement and boundaries	ESx. SMR 402030 Rudling 2002:143
20	Ditchling Beacon	TQ	332	131	LBA hillfort	ESx. SMR

Table 6.3. cont.

21	Varley Halls, Coldean Lane	TQ	332	089	MBA roundhouses, pits, pond, occupation debris, ditches and cow burial	Greig 1997
22	Plumpton Plain	TQ	357	122	MBA and LBA house platforms, enclosures, droveway, lynchets and pottery	ESx. SMR 402737 Curwen 1954 173–179
23	Balmer Farm, Falmer	TQ	358	097	LBA field system	ESx. SMR 974147
24	Houndean Bottom, Lewes	TQ	389	099	LBA field system, pottery, fire fractured flint and lithics	ESx SMR 973946
25	Mount Caburn	TQ	444	089	LBA feasting material within MIA hillfort	Hamilton 1998
26	Castle Hill, Newhaven	TQ	447	002	LBA decorated wares from hillfort	ESx. SMR 406342 Hamilton and Manley 1997, 2001
27	Itford Hill, Beddingham	TQ	447	053	MBA field system, barrow cemetery, hut platforms and pottery	Burstow and Holleyman 1957 Holden 1972
28	Bishopstone, Seaford	TQ	467	007	M/LBA pits, post holes and pottery	ESx. SMR 406076 Bell 1977
29	South Heighton, Nr Denton	TQ	475	028	LBA field system. AP interpretation	ESx SMR 406082
30	Black Patch, Alciston	TQ	495	035	MBA field system, house platforms, pits and occupation debris	ESx. SMR 406149 Drewett 1982b
31	France Hill, Alfriston	TQ	508	037	LBA lynchet formation	ESx. SMR Dunkin *pers. comm.*
32	Seaford Camp	TV	494	978	LBA plainware from lower fill of hillfort ditch	Hamilton and Manley 1997, 2001
33	Belle Tout	TV	559	956	Unstratified LBA pottery plainware	Hamilton and Manley 1997, 2001
34	Bullock Down	TV	580	960	LBA/EIA field system	Drewett 1982a

Table 7. Solent Basin.
Site numbers refer to Fig. 7.1

	Site Name	*Map Reference*			*Description*	*References*
1	Stour Park, Blandford St Mary	ST	888	057	LBA pits and ring ditch	AC 1993
2	Lophill Farm, Blandford Forum	ST	907	048	Substantial LBA/ EIA E-W ditch	Wessex Arch. 1995b
3	Sturminster Marshall to Blandford St Mary Main	ST	920	030 est	MBA cremation	Wessex Arch. 1991b
4	Bridport Community Hospital	SY	458	938	Bridport sands. NW/SE – NE/SW Neolithic/ EBA ditches recorded in evaluation work. Overlooks the R. Brit.	AC Arch 1991
5	Manor Farm, Portesham	SY	602	859	LBA pits	AC 2000
6	Dorchester Road, Stratton, Nr. Dorchester	SY	649	938	LBA/EIA pottery in pit. Prehistoric linear ditches	AC 1997
7	Proposed Sports Centre, Poundbury	SY	677	908	Later BA ditched field system	Wessex Arch. 1997d
8	Coburg Road Rugby Ground, Dorchester	SY	679	898	BA barrow cemetery. E-W boundary	Wessex Arch. 1988b
9	Maiden Castle Road School	SY	679	895	Cropmarks, linear features – some predate the LIA/RB activity	Graham 1993
10	Poundbury Farm, Dorchester	SY	670	904	M/LBA rectangular enclosure. LBA field system	Wessex Arch. 2001
11	Thomas Hardye School, Dorchester	SY	679	899	M/LBA cremations. LBA NE/SW ditch	AC 1994b. Smith 2000
12	Sutton Poyntz Waterworks, Weymouth	SY	705	839	Ditch segments of LBA/EIA date. EIA drainage ditches	Wessex Arch. 1993b
13	South Winterbourne	SY	719	891	EBA? Fields and droveway	Wessex Arch. 1994c
14	Warmwell Quarry, West Knighton	SY	760	880	EBA short lived field system + MBA settlement and cremations	BUFAU 1994 Ellis 1994
15	Tolpuddle Ball	SY	810	947	Boundary of LBA field system. Overlooks R. Piddle	Terrain Arch. 1999
16	Bestwall Quarry	SY	940	880	MBA cremation cemetery, LBA N/S ditches. MBA ritual pits. E/MBA field boundaries. Carbonised grain in pit	Ladle 2003 Ladle and Woodward 2003
17	Henbury Pit, Sturminster Marshall	SY	957	977	River Stour LBA/EIA settlement	AC Arch.1994a HSMR
18	East of Corfe River	SY	970	856	MBA field system. Similar cropmarks nearby at New Mills Heath (SY960842)	Cox and Hearne 1991
19	Canford Magna Golf Course	SZ	042	988	Small MBA cremation cemetery. N.B. other large cremation cemeteries in the area i.e. Canford Heath, Simons Ground, Hampreston. Close to R. Stour	Wessex Arch. 1996e
20	Bearwood School, Poole	SZ	045	967	1km to south of R. Stour. Sandy loam. LBA possible field system + droveways. LBA pit	Wessex Arch. 1995a
21	Longham Lakes	SZ	061	975	M/.LBA Urn field. Cremations. Buried plough soil containing BA pottery	SAA 1998
22	The Hampshire Centre, Bournemouth	SZ	113	949	Narrow rectangular MBA fields	AC Arch. 2001
23	Pokesdown	SZ	126	927	M/LBA urnfield post-dating field system. 1km from R. Stour	Clay 1927. Barrett and Bradley 1980a:186
24	Ellingham Farm. Blashford, Nr Ringwood	SU	148	085	Middle Avon Valley. Gravel extraction. M/LBA occupation along the Avon including textile production	Wessex Arch. 1992
25	Avon Valley Study	SU	160	183	River Avon. Localised small scale MBA activity. Pastoral communities. Over 20 burnt mounds	Light Schofield and Shennan 1994
26	Ridley Plain, New Forest	SU	203	063	Cohesive prehistoric field system. AP interpretation	Smith 1999
27	The Fairground Weyhill, Andover	SU	315	468	Fragment of LBA/EIA field system	Wessex Arch. 2000b
28	Testwood Lakes	SU	345	160	MBA jetties/causeway jutting into the fast flowing clear Blackwater River. Cleat of a BA plank sewn boat	Wessex Arch. 1996d Fitzpatrick *et al.* 1996

Table 7. cont.

29	Crockford	SZ	355	993	Prehistoric? field system	Smith 1999
30	Dairy Lane, Nursling	SU	366	161	M/LBA field system. Extends into Nightingale Wood close to Toot Hill hillfort. Field ditches (certain or possible) also at Nursling Gravel Quarry, Manor Farm Stables and Franconia Drive	Adam, Seager Smith and Smith 1997 Crawford 1953
31	Shepton Water	SU	375	046	Four sub rectangular prehistoric? enclosures. Close proximity to round barrows	Smith 1999
32	Matchpoint Tennis Centre, Frogmore Lane, Southampton	SU	378	153	Brickearths, prehistoric scoop. BA pottery. Close to R. Test	SSMR SAS 2000
33	Western Hospital, Southampton	SU	389	139	Later BA pottery	SSMR SAS 1994
34	Spa Tavern Public House, Southampton	SU	419	117	LBA pottery in feature	SSMR Kavanagh n.d.
35	Cook Street, Southampton	SU	424	115	Prehistoric pit. Brickearths. Watershed of R. Itchen	Garner and Vincent 1995
36	Parkville, Southampton	SU	437	157	BA burnt flint mound? Brickearths.	SSMR
37	Montefiore New Halls of Residence, Swaythling, Southampton	SU	439	156	Substantial E–W ditch, interpreted as LBA/EIA	Crockett 1994
38	Twyford Down	SU	485	270	LBA field system. Overlooks R. Itchen	Walker and Farwell 2000
39	Cams Hall Housing Development, Fareham	SU	593	055	LBA pit on brickearths. Undated linear field boundaries. Wallington River	Wessex Arch. 1996a
40	Land off Chineham Lane, Sherborne St John, Basingstoke	SU	637	545	Portion of a Later Bronze Age field system and possible settlement	Wessex Arch. 1997c
41	HMS Mercury, East Meon	SU	679	191	BA triple ditch and bank. Ditch filled in by EIA	Wessex Arch. 1996c
42	Odiham Borehole	SU	739	504	LBA/EIA linear ditches, stock control, long period of abandonment after EIA	HSMR
43	Rookery Farm, Kingsley	SU	780	374	Wealden Sands. Possible M/LBA settlement and trackway. Series of fields defined by ditches. EBA round barrow cluster in area. Several hoards:- Woolmer Forest, Kingsley Common, Blackmoor	HSMR. Dunkin 2000:147, 155 Wessex Arch. 1988a
44	Grooms Farm, Kingsley	SU	814	389	Wealden Sands. M/LBA settlement including ditch terminal. The MIA and LIA less well represented than previous phases of activity	Wessex Arch. 1999
45	Langstone Harbour Study	SU	692	044	MBA ditch	Allen and Gardiner 2000

Table 8. 1 Devon.
Site numbers refer to Fig. 8.1

	Site Name	*Map Reference*			*Description*	*References*
1	Alexandra Close, Plymouth	SX	527	536	Overlooks Bollacombe Brook. E/MBA flat cremation cemetery	Watts and Quinnell 2001 Watts 2000
2	Hazel Grove, Elburton, Plymouth	SX	533	535	Prehistoric linear features – assigned to LIA but some evidence that they are earlier	Sage and Rance 1994 Gent 1996
3	Sherford Road, Plymouth	SX	537	534	Prehistoric NE/SW boundary ditch	Reed and Watts 1998
4	Sourton Down	SX est	540	890	Probable MBA reave. A30 bypass work	Weddell and Reed 1997 Pye n.d.
5	'Trevanion', Station Road, Plympton	SX	540	563	Two parallel possible prehistoric reaves. Possible trackway	Wessex Arch. 1995c
6	Martin Deane Nursery, Plymouth	SX	540	534	Boundary ditches. Dating sparse. Possible Neo/BA settlement with cultivation	Watts 1995
7	Ugborough	SX	664	552	Probable reaves. Southern bounds of Dartmoor. Part of SW Water pipe main linear archaeological transect	Exeter Arch. Archives. Reed n.d.
8	Intertidal peat deposit, Thurlestone Sands	SX	676	414	500 sq. m. of exposed peat. Accumulated between 1890–1630 cal BC and 1870–1520 cal BC. Pasture grazed by domestic animals: dung beetles present	Reed and Whitton 1998
9	Parsonage Cross	SX	811	635	BA roundhouse. Nr. R Dart. Cereals recovered (wheat barley oats)	Exeter Arch. Archives
10	Jetty Marsh Link Road, Newton Abbot	SX est	855	719	Base of peat deposit dated 1430–1050 cal BC. Open grassland landscape and presence of cereal type pollen	Reed 1997
11	Kerswell Down and Whilborough Common	SX	869	676	Prehistoric field system	Quinn 1995 Gallant *et al*. 1985
12	Tesco Store, Digby, Exeter	SX	953	911	Prehistoric boundary ditches. Linear features. An evaluation. Sandy well drained and easily cultivated soils	Reed 2001
13	Hayes Farm, Clyst Honiton, Nr. Exeter	SX	991	943	MBA parallel field boundaries and enclosure	Barber 2000a
14	Langland Lane	SY	091	975	Parallel boundaries predating MIA penannular gully. This prehistoric field system (large-scale land organisation) echoed in post med. boundaries. Just east of R. Tale that flows into the main Otter valley	Butterworth 1999c
15	Patteson's Cross	SY	094	976	Two round-houses recorded, one of which lay within a small enclosure. Possible prehistoric land divisions present	Butterworth 1999d
16	Castle Hill, Nr. Feniton. Nr. R. Otter	SY	106	985	MBA co-axial. Field system extends N and S of the excavated area	Butterworth 1999a
17	Hayne Lane, Honiton	SY	140	996	An enclosed farmstead of M/LBA date. Abundant charred plant remains. Just over 200m from the R. Otter	Butterworth 1999b

Table 8.2 Cornwall.
Site numbers refer to Fig. 8.4

	Site Name	*Map Reference*			*Description*	*References*
1	Maen Castle	SW	348	257	Accreted prehistoric fields	Herring 1994
2	Cornish Way, Lands End. Sennen Cove – National Cycle Network	SW	348	250	Possible Later Bronze Age boundaries	Reynolds 2000 Herring 1986a
3	Nanquidno Downs	SW	370	288	Extensive complex of BA ? lynchet and stony banks defining mostly rectangular fields	Thomas 1995
4	Kenidjack, West Penwith	SW est	385	325	Later BA lynchetted fields. Hoard in enclosure lynchet against a field bank	Johnson 1980:149
5	Sancreed Beacon Survey, Penwith	SW	414	294	Divided sacred – worked (likely) BA landscape. Field boundary respects summit cairn	Herring *pers. comm.*
6	Bosigran	SW	418	369	MBA coaxial elements	Herring 1987
7	Rosemergy West Penwith + Rosemergy Cable Trench	SW	418	364	A network of small curvilinear terraced fields. Assumed to be a BA clearance cairn field system, enclosures and hut circles	Nowakowski and Herring 1990. Jones 1997.
8	Boswednack Farm, Zennor	SW	442	378	LBA/EIA settlement with later or contemporary field system?	Herring *pers. comm.*
9	Pennance, Zennor	SW est	448	375	BA curvilinear field system with linking linear pasture boundaries	Herring 1990a
10	Trewey-Foage	SW est	464	374	Trewey-Foage site is the best known BA field system of a sub-rectangular or curvilinear nature. Clearance cairns	Johnson 1980:160 Dudley 1942
11	Wicca, Penwith	SW est	472	395	Prehistoric coaxial terminal boundary	Johnson 1980:169. fig. 7 Herring 1986b
12	Chysauster	SW	472	350	A valley side covered with near – continuous enclosure. Probably developed over the 2nd and lst millennia BC. A neatly laid out rectilinear system in SE part of site with three associated round houses. The contour following boundaries are stony lynchets. Two or three orthostat gateways survive. Erosion of brickearth patches over granite soils in Neolithic/BA with possible secondary clearance in BA	Smith 1996
13	Trevessa Farm, Towednack	SW est	482	398	Regular and irregular prehistoric field systems	Herring 1990b
14	Amalveor, Penwith	SW est	483	375	Prehistoric huts and fields. Towednack: gold find in field bank. Part of an area of sub-rectangular fields	Johnson 1980:149
15	Pig Moor, Ludgvan, Penwith	SW est	485	345	Close to Castle-an-Dinas. Fields illustrated by Johnson now thought to be Medieval field strips. Taylor has surveyed multi phased (prehistoric elements) field systems nearby including droveways and round houses	Johnson 1980:168 Taylor 2002
16	Perranuthnoe Beach/ Barlowenath Farm sewage pipeline	SW	540	295	Possible coastal prehistoric lynchetted fields. Lithics concentration further up the valley	A L Jones 2001
17	Gwithian	SW	590	420	M/LBA lynchetted curvilinear rectangular fields. Plough and spade marks. Pot, animal and human bone compost (Nowakowski *pers.comm.*)	Johnson 1980:169 fig. 7
18	Godolphin	SW	590	310	BA? Co-axial fields	Cole, Herring, Johns and Reynolds 2001
19	Kynance Gate, The Lizard	SW	687	137	EBA? Settlement with cellular spreading plots	Johnson 1980 fig. 6 see p.159
20	St Agnes Head	SW	700	515	Possible BA field system with clearance cairns	CSMR

Table 8.2. cont.

21	Wheal Coates, St Agnes	SW est	700	500	Probable BA field system	CSMR
22	Poldowrian, The Lizard	SW	746	167	EBA? Fields bounded by stone walls and banks with slight lynchets.	Johnson 1980:157
23	Kestlemerris The Lizard	SW	766	195	Prehistoric co-axial field system orientated NE-SW	Johnson 1980 fig.8
24	Polcoverack, The Lizard	SW est	775	190	Prehistoric co-axial fields orientated NE-SW	Johnson 1980 fig. 8
25	St Keverne	SW	795	200	Prehistoric co-axial fields at Trebarveth, Trevalsoe and Trevean.	Johns and Herring 1996
26	Trethellan Farm	SW	798	614	MBA farmstead	Nowakowski 1991
27	Trevisker	SW	903	730	This LBA settlement flanked by boundaries (see comment by Johnson 1980:159). Gap between LBA and LIA. Trevisker round is LIA	ApSimon and Greenfield 1972
28	Penhale	SW	903	571	*Penhale Moor*. MBA farmstead (the only phase of occupation) sited within an open informal landscape. Temporary boundaries. A planned abandonment event here. Bronze metalwork directly associated with this settlement (a first for commercial arch.) and metal working waste. Possible flanking boundaries. *Penhale Round* A curvilinear ditch associated with a MBA structure. Later Iron Age rectilinear field system . *Penhale watching brief.* Prehistoric field system, uncertain structure	Nowakowski 1998
29	St Austell NE Distributor Road,Trenowah	SX	045	533	M/LBA hollow associated with metalworking	Johns 2000. And Johns *pers. comm*.
30	Hamatethy	SX	095	785	Prehistoric? rectilinear fields	Johnson and Rose 1994
31	Rowden	SX	115	795	Prehistoric? coaxial fields	Johnson and Rose 1994
32	Watergate	SX	118	813	Prehistoric? rectilinear fields	Johnson and Rose 1994
33	Stannon Down, Bodmin	SX	135	810	Suggestive of BA field systems	Jones 2001
34	Roughtor, Bodmin	SX	142	815	Boundary reaves	Johnson 1980:165–180 Johnson and Rose 1994:62–5 72–6. fig. 11
35	Blacktor Downs, Bodmin	SX	156	735	Prehistoric cellular fields. Huts and small enclosures	Johnson 1980: fig. 6
36	Leskernick Hill	SX	182	800	BA cellular fields	Bender, Hamilton and Tilley 1997
37	Carne Down	SX	203	818	Prehistoric? coaxial fields	Johnson and Rose 1994
38	Smallacoombe	SX	228	758	Prehistoric? coaxial fields	Johnson and Rose 1994
39	East Moor, Bodmin	SX	240	780	LBA? Coaxial incorporates best-drained ground. Boundary post dates the cairn and may have been built a short time after. Fallen orthostat on barrow edge	Brisbane and Clews 1979
40	Kit Hill, NE of Callington, W of Gunnislake	SX	385	710	BA? co-axial field system Dated only by analogy to Dartmoor and Bodmin. Kit Hill forms an intermediate block of high ground between the large uplands of Bodmin Moor and Dartmoor	Herring and Thomas 1990

Table 8.3 Somerset.
Site numbers refer to Fig. 8.6

	Site Name	*Map Reference*			*Description*	*References*
1	Valley of Rocks, Exmoor	SS	705	495	Prehistoric? Field system, enclosures, hut circles	Riley and Wilson-North 2001:43
2	Chetsford Water, Exmoor	SS	851	424	Prehistoric? Settlement and field system	Riley and Wilson-North 2001:54
3	Codsend, Exmoor	SS	887	403	Prehistoric? Field system	Riley and Wilson-North 2001:46
4	Norton Fitzwarren	ST	196	263	LBA? Palisade	Ellis 1989
5	Brean Down	ST	300	590	Prehistoric? Field system	Riley 1995 Bell 1990:261
6	Axbridge	ST	375	575	Prehistoric? Field system	Dawson *et al*. 2003
7	Portbury	ST	488	746	Prehistoric? Field system	Dawson *et al*. 2003
8	Durnford Quarry, Long Ashton	ST est	540	730	Possible BA field system	L.Cross 1993
9	Sigwells, within South Cadbury Environs study area	ST est	650	250	BA field boundaries	Tabor and Johnson 2000. 2002
10	Claverton Down, Bath	ST	770	650	Prehistoric? Field system	Russett 1990 Lewcun 1998

Table 9.1 The Lower Blackwater.
Site numbers refer to Fig. 9.1

	Site Name	*Map Reference*			*Description*	*References*
1	Blackwater site 18	TL	941	080	LBA trackway/sheep bridge?	Brown 1988a:295 Wilkinson and Murphy 1995:150
2	Hill Farm, Tolleshunt D'Arcy	TL	922	116	BA ditched field system?	Waughman 1998b:233. Adkins 1983 fig. 1
3	Blackwater site 3	TL	912	042	LBA staith	Wilkinson and Murphy 1995:150
4	Chigborough Farm	TL	880	084	Late Neo/EBA fence lines. MBA waterhole. Possible increased grazing pressure. LBA rectilinear enclosures	Waughman 1998a
5	Rook Hall Farm	TL	879 est	089	MBA settlement and associated rectilinear field system for stock management	Wallis and Waughman 1998. Brown 1988a:295
6	Slough House Farm	TL	875	091	Possible LBA fields. Heavy grazing around waterholes	Wallis 1998b
7	Blackwater Sailing Club, Heybridge	TL	872	077	2 parallel LBA ditches. 4 waterholes. Possible further field system elements	Brown and Adkins 1988
8	Lofts Farm	TL	868	093	LBA aggrandised enclosure supported primarily by a pastoral economy	Brown 1988a
9	Crescent Road, Heybridge	TL est	860	080	BA settlement	Essx. SMR
10	Howell's Farm	TL	854	095	MBA loomweight	Wallis 1998

Table 9.2 The Chelmer Valley.
Site numbers refer to Fig. 9.1

	Site Name	*Map Reference*			*Description*	*References*
11	Bradwell Cropmarks Complex	TL	810	220	Possible prehistoric field system	Essx. SMR
12	Great Baddow	TL	736	055	LBA ringwork. Circular V shaped ditch over 2m deep and over 60m. in diameter. Internal bank	Brown and Lavender 1994
13	Springfield Lyons	TL	736	082	LBA ringwork. 5m wide V shaped segmented ditch, over 60m in diameter. Internal rampart. Large central roundhouse with porch aligned on eastern gateway. Largest BA mould assemblage in the country	Buckley and Hedges 1987
14	Land South of Goodmans Lane, Little Leighs	TL	722	159	LBA possible enclosure	Lavender 1995
15	Windmill Field, Broomfield	TL	705	114	Enclosed LBA settlement, aggrandised elements	Atkinson 1995
16	Broads Green	TL	685	122	LBA unenclosed settlement on boulder clay fringe	Brown 1988b
17	Roxwell Quarry/ Pengymill	TL	660	090 est	4 MBA loomweights in pit Note also possible farming activity at Chignall St James	Lavender *pers. comm.*

Table 9.3 North East Essex.
Site numbers refer to Fig. 9.3.

	Site Name	*Map Reference*			*Description*	*References*
1	Sheepen, Colchester	TL est	990	255	LBA settlement	Davies 1992
2	County Farm Chilton	TL	888	423	Possible LBA/EIA enclosure ditch, round houses and droveway	SMR SF6918 Abbott 1998
3	Ferriers Farm, Bures	TL	896	344	LBA cemetery/ringwork?	Havis 1992. McMaster 1971:6
4	Ridgewell Hall	TL	742	406	Undated field system and ring ditch	Acquier 1985
5	Rush Green, Clacton	TM	156	154	Ring ditch – pollen analysis	Priddy 1983:121
6	Moverons Pit, Brightlingsea	TM	075	182	M/LBA enclosure and trackway	Clarke 1996
7	Frog Hall Farm, Fingringhoe	TM	034	196	LBA settlement	Brooks 2002
8	Montana Nursery, Little Clacton	TM	158	196	Undated field systems and ring ditches	ECCSMR
9	Hill Farm Tendring	TM	133	237	Possible EBA field system	Heppell *pers. comm.*
10	Little Bromley	TM	089	275	Undated ring ditches, trackways and field systems	ECCSMR
11	Martell's Quarry, Ardleigh	TM	053	276	BA boundary feature	James 2000
12	Martells Hall, Ardleigh	TM	053	281	MBA cemetery	McMaster 1971:20
13	Vince's Farm, Ardleigh	TM	060	290	MBA land divisions aligned on a cemetery	Brown 1999 Hinchliffe 1981
14	Lawford	TM	085	315	Ring ditches lie within a rectilinear field system	Erith 1970
15	Langham	TM	034	346	12 ring ditches with associated field systems	TM 03–045
16	Blofield Hall, Trimley St. Martin	TM	280	355	Clickett Hill pre Iron Age ditches	Suf SMR TYY026–027–029
17	Wherstead	TM	153	403	LBA/IA trackway. IA? Pottery sherds	Suf SMR WHR021
18	Ipswich Airport	TM	193	414	Possible prehistoric boundary ditches	Meredith 2000
19	Shottisham	TM	322	450	Rectilinear ditches. Trackway Possibly BA	Suf SMR SF17947
20	Victoria Nurseries	TM	167	460	Butt end of prehistoric linear feature	Suf SMR SF14085
21	Kesgrave	TM	224	465	Prehistoric features	Suf SMR SF18505
22	Sutton Hoo	TM	292	489	Possible late Neolithic/EBA field system	Hummler 1993 Copp 1989

Table 9.4 North Sea Coast.
Site numbers refer to Fig. 9.5

	Site Name	*Map Reference*			*Description*	*References*
1	Stow Park, Bungay	TM	326	874	MBA ditches and postholes	Suf. SMR. BUN 041 BUN 042
2	Bloodmoor Hill, Carlton Colville	TM	521	899	Predominance of LBA/EIA material. One EIA ditch	Mortimer 2000
3	Somerleyton	TM	508	979	Prehistoric rectangular field system. Note also hoard find at Somerleyton Rectory	Suf. SMR. LUD 006
4	Hopton on Sea	TG	530	005	On edge of an extensive field system cropmark 2 undated ditches observed, possibly prehistoric	Penn 2001 Edwards 1978:100
5	S. Gorleston Development Area	TG	517	022	Extensive linear field systems. M/LBA lithics. Some elements of field system may date from BA (Hutcheson 1998:19)	Gibson 1998b Hutcheson 1998. Timms and Ashwin 1999
6	Hemsby	TG est	490	170	Prehistoric boundaries	Bown *pers. comm.*
7	Witton	TG	330	320	M/LBA rectilinear enclosure. Bucket urns recovered from 7.6m section of enclosure ditch (Lawson 1983:33)	Lawson 1983

Table 10.1 Northern Fens and Welland sites.
Site numbers refer to Fig. 10.2.

	Site Name	*Map Reference*			*Description*	*References*
1	Billingborough	TF est	130	350	M/LBA settlement	Chowne 2001. Chowne *et al*. 2001
2	Meadow Drove, Bourne	TF est	100	200	M/LBA settlement	Cope-Faulkner 1999
3	Cross Drain , Baston, Lincs	TF	145	158	BA pottery in buried ancient soil. Evidence of cattle butchery	Herbert 1998
4	The Meadows, Langtoft	TF	146	140	BA domestic refuse pit	Hall 1999
5	Rectory Farm and Stowe Farm, West Deeping	TF	100	100	M/LBA/EIA field system. A palimpsest of field phases. The first system constructed c.1100BC in a largely cleared environment. Pasture use for the M/LBA fields	Pryor 1998:110. Pryor 1996:321 Kemp 2000 Kiberd 1996 Hunn 1994a
6	A15/A16 Market Deeping By-Pass	TF	131	098	Numerous cropmarks likely to include BA elements	Trimble 1999
7	Welland Bank Quarry	TF	183	081	LBA co-axial fields	Pryor 1998:111
8	Borough Fen Ringwork	TF	193	073	Ringwork with BA origins? Ancient soils inside?	Bacilieri 2000 Pryor 1998
9	Borough Fen	TF	195	065	BA co-axial fields	Pryor 1998:111
10	Tixover	SK	980	023	Prehistoric land divisions	Mackie 1993
11	Ketton	SK	975	029	Prehistoric land divisions	Mackie 1993

Table 10.2 The River Nene and Flag Fen Basin.
Site numbers refer to Fig. 10.3A.

	Site Name	*Map Reference*			*Description*	*References*
1	Pode Hole Quarry, Thorney	TF	263	035	Formerly assumed to be Roman field systems. A NE-SW boundary orientation on burial mounds. Possibly E/MBA in date	Network Arch. 2002
2	Eyebury Quarry Eye, Tanholt Farm	TF	243	024	A MBA field system and LBA structures. System bracketed by Collared Urn pits and four post structures. No Iron Age evidence. Romano-British field system overlies this landscape	Patten 2002 2003. Garrow 2000
3	Eye Quarry, Peterborough	TF	237	021	NE-SW aligned BA field system. Wells (a pit with cremation and child burial): exceptional organic remains including carved bowl that copied Later BA ceramic forms. Cattle predominate bone assemblage. Pollen evidence suggests open weedy grassland. Enclosed BA fields	PSMR 50516 Gibson and White 1998
4	Oxney Road, Fengate	TF	223	006	Two parallel BA ditches, pits and postholes	Britchfield 2002
5	Peterborough Prison	TF	180	003	MBA field system. Orientation NE/SW NW/SE. EBA pit deposition	Knight 2002
6	The Broadlands, Newark Road, Peterborough	TF	214	001	Extensive LBA co-axial field systems	Vaughan and Last 1999 Hounsell and Wotherspoon 2003
7	Raunds Project, River Nene	TL est	000	700	MBA co-axial field system associated with a roundhouse and fence line	Harding and Healy forthcoming
8	Thrapston	TL	003	781	LBA/EIA ringwork. 110–120m in diameter. V shaped circular ditch (4m+ wide). No MIA phase	Hull 2000–2001
9	Dog Kennel Field, Elton A605 Bypass	TL	088	925	Co-axial Neo/EBA field system covered by BA? colluvium. No EIA artefacts	French 1994:26 PSMR 09747
10	Charlie's Close Field, Elton A605 Bypass	TL	090	926	Neo-EBA boundaries. Probably extension of Dog Kennel rectilinear fields. No EIA artefacts	French 1994:29
11	Orton Longueville School, Peterborough	TL	163	962	Late Neo/BA enclosure and droveway system. Later Bronze Age /Early to Mid Iron Age characterised by smaller enclosures	Casa-Hatton 2001
12	Tower Works, Fengate	TL	206	987	LBA/EIA field system	Evans *et al.* 1998:183. PSMR 111928 Lucas 1997
13	Boongate Roundabout	TL	210	988	Neolithic settlement	Evans and Pryor 2001:33
14	Fengate Depot Site	TL	212	985	BA co-axial paddocks, comprising 70m sq. blocks. Succeeded by double ditched MBA settlement. No evidence of long term renewal	Evans 1994:2–9 Pryor 1997
15	Site O. Land off Third Drove, Fengate	TL	213	986	Buried soils. BA droveway	Reynolds *et al*. 1999:100 Evans and Pryor 2001
16	Storey's Bar Road	TL	213	988	Later Bronze Age fields	Evans and Pollard 2001:25
17	Padholme Road, Fengate	TL	214	990	M/LBA pits	Pryor 2001
18	Newark Road	TL	215	997	Little found! Northern limit of Fengate system?	Pryor 2001
19	Newark Road	TL	215	994	M/LBA field system	Crank *et al*. 2001
20	Cat's Water, Co-op site	TL	216	988	Neolithic structure	Gibson 1998a
21	TK Packaging Ltd, Fengate	TL	216	987	BA ditches of the Fengate complex	Reynolds 1999:101 Pryor and Trimble 2000
22	Boroughby Garage, Storey's Bar Road, Fengate	TL	216	994	Two ditches of Fengate field complex. Orientated NW/SE NE/SW	Pryor 2000
23	Land off Vicarage Farm Road	TL	217	996	LBA field ditches and structures	Vaughan *et al*. 1998
24	Flag Fen	TL	227	989	Causeway and platform	Pryor 2001

Table 10.2. cont.

25	Northey Island	TL	230	980	BA system of ditches, droveways and settlement. Pottery contemporary with Fengate. Arable use of SW Thorley Island. Peat from adjacent fen used as a fertiliser or attempts made (dumping topsoil) to keep land in cultivation despite initial encroachment of peat on the island. Hall reports two settlements of BA date on the island including enclosure at site 26 (1987 fig. 30)	Gurney 1980 French and Pryor 1993:103 Hall 1987
26	Green Wheel cycleway at Flag Fen	TL	231	990	Noticeable E/MIA decline	Pryor *et al.* 2001
27	King's Dyke West, Whittlesey, Cambs	TL	240	980	Unenclosed LBA settlement. One substantial building with Post Deverel-Rimbury pottery and successive deposits of lamb bone, reflecting seasonal slaughter	Knight 1999
28	Bradley Fen Whittlesey	TL	240	976	BA fields, burnt mounds, and structured deposition of weaponry	Knight 2000
29	Stonard Field, Whittlesey	TL	242	981	LBA settlement	Gibson and Knight 2002

Table 10. 3 Great Ouse sites.
Site numbers refer to Fig. 10.5

	Site Name	*Map Reference*			*Description*	*References*
1	Bunyans Farm, Bedford Bypass	TL	060	470	Possible LBA enclosure	BCAS 1995
2	Octagon Farm, Bedford bypass	TL	095	495	Possible LBA/EIA rectilinear fields	BCAS 1995
3	Roxton Quarry, Great Ouse	TL	157	535	Short seasonal occupation around the cemetery during the BA. Area probably used for grazing. Land divisions are probably EIA or LIA/RB	Kiberd 1995
4	Broom, R. Ivel	TL	175	440	Large scale M/LBA field system	CAU 1999
5	Great North Road, Little Paxton, Great Ouse	TL	179	623	EBA settlement? Undated SW/NE SE/NW field system possibly of LBA/EIA date	Alexander 1992 Jones 1992
6	Sandy Lodge, R. Ivel	TL	187	478	LBA/EIA "aggrandised enclosure" or stock compound?	D. Knight 1984:178
7	Huntington Road, St Neots	TL	190	614	Field system orientated NE-SW. Possibly prehistoric	SMR09837–CB11689 Tempvs Reparatvm 1988
8	Thrapston Road, Brampton	TL	200	715	Possible N-S Neolithic field ditches or territorial markers	Malim and Mitchell 1993
9	The Racecourse, Huntingdon	TL	206	720	EBA land boundaries	Malim 2001
10	Diddington	TL	208	659	Ring ditch complex	Evans 1997
11	Offord Cluny	TL	220	672	BA ditches	Kenney 2002
12	Land adjacent to 28 St Anne's Lane, Godmanchester	TL	248	704	Prehistoric SW/NE ditch	Hinman 1998 Malim 2001
13	New School Site, London Road, Godmanchester	TL	249	699	EBA pits and ditches	Camb SMR
14	Godmanchester A14/A604 junction	TL	250	700	BA settlement	Malim 2001
15	Cardinal Distribution Park, Godmanchester	TL	255	703	LBA activity within a multi-phase site	Reynolds 1999:10 Murray 1998
16	Low Fen, Fen Drayton Gt. Ouse	TL	337	690	BA coaxial field system. Subsequent M/LIA farmstead enclosures	Mortimer 1995 Malim 2001
17	Barleycroft Paddocks, Needingworth. Gt Ouse	TL	351	722	Later BA field system. No subsequent IA material. Reave like 10 ha bi-axial field system. Roundhouses. Large wells and processing pits. Substantial "big man" longhouse set within a "c" enclosure	Edmonds, Evans and Gibson 1999:75 Evans and Knight 2001
18	Lowland, West of Over, Gt. Ouse	TL	370	700	Later BA field system and settlement	Evans and Knight 1997b

Table 10.3. cont.

19	Colne Fen, Earith, The Holme Fieldsystem	TL	385	766	4.4ha site. Later BA field system, comprising a series of compounds and a droveway. Seven roundhouses. 1 EIA pit-well	Evans and Patten 2003
20	Chatteris Parish Church	TL	395	862	Deverel-Rimbury pots in pit 20 loomweights, antlers. Ritual deposition. Some undated linear features	Roberts 2000
21	Northern Office, March. (Nr R.Ouse)	TL	415	977	Prehistoric, terrain oblivious, field boundaries? Aligned NW-SE. No dating material but possibly prehistoric	Casa-Hatton and Macaulay 2001
22	Langwood Farm West	TL	420	850	BA field system?	Evans 1995
23	Block Fen, Mepal	TL	425	840	AP survey suggests extensive BA field system and barrows. Excavation suggests a pastoral function. NW-SE BA field system in Block Fen A and B	Hunn 1994b:10–11 Evans *et al.* 1997:181 Coxah and Lisboa 1994 Davison 1993

Table 10.4 Cam, Rhee and Granta.
Site numbers refer to Fig. 10.7

	Site Name	*Map Reference*			*Description*	*References*
1	Town Farm, Whaddon	TL	348	463	Fragment of NE/SW LBA/EIA ditch	Roberts 1996
2	South of Foxton Recreation Ground Gt. Ouse	TL	412	481	Prehistoric NE/SW ditch	Roberts 1998
3	Manor Farm, Harston	TL	418	498	Rich multi period site including possible BA ditches	Malim 1994
4	Edmundsoles, Haslingfield M11 rescue	TL est	440	540	Antler bridle cheekpieces. Flag Fen type earthfast structure	Robertson 1976 Britnell 1984:5
5	New Hall, Cambridge	TL	440	595	Arguably a BA E/W ditch Settlement nearby?	Evans 1996
6	Sutton	TL est	440	790	BA co-axial field system in vicinity of Wilburton hoard	Hunn 1992, Malim 2001
7	Jesus College	TL	452	587	Possibly BA ditches and postholes.	Whittaker 1999
8	Long Road Sixth Form College, Cambridge	TL	455	550	Undated NE/SW and E/W N/S coaxial field system	Abrams 2000
9	Former Charrington Oil Depot, Cambridge	TL	459	567	Possible prehistoric field system	Kenny 2000
10	Homerton College, Cambridge	TL	460	562	Several undated linear features, one of which is possibly prehistoric	Kenny 2000
11	Milton Landfill Site, Milton	TL	464	633	LBA settlement	Denham *et al*. 1997:174
12	Butt Lane Milton	TL	465	630	MBA settlement. Hiatus between MBA and LIA	Connor 1998
13	Cambridge Centre for Recycling, Ely Road, Waterbeach	TL est	490	650	LBA/EIA outlier ditch to field system	Masser 2000
14	Fulbourn Hospital, Fulbourn	TL	498	566	M/LBA enclosure with stock management features including fence lines.. Field division aligned NW/SE. No subsequent Iron Age material	Brown and Score 1998
15	Granta Park, Gt. Abingdon	TL	523	490	BA pits containing deer bone. Hunting still important	Kemp 1999
16	West Fen, Ely	TL est	530	800	LBA pond and possible wells. Ephemeral linear features. Dramatic colluvial cover may be masking much of Ely's prehistory	Masser 2001
17	West Fen Road and St John's Road Ely	TL	530	800	Possible BA well and associated pits	Masser and Evans 2000
18	A10 Bypass Ely	TL	539	813	LBA pit in corner of possible contemporary field or enclosure boundary	Robinson and Bray 1998:18 and fig. 3
19	Lingwood Farm, Cottenham	TL	541	711	LBA settlement. A Fenland Management Project that included a phosphate survey. Ditch, fencelines and intercutting waterholes. Tripartite wheel. Elite centre?	Evans 1998
20	Dimmocks Cote, Wicken	TL	544	723	Part of a field system (two BA parallel shallow ditches). A preserved BA landscape on the Fen Edge	Malim 2001 Bray 1994

Table 10. 5 Snail, Lark and Little Ouse.
Site numbers refer to Fig. 10.8.

	Site Name	*Map Reference*			*Description*	*References*
1	Soham	TL	556	731	Air photography has recorded a possible prehistoric field system	SMR 07036A-CB8486
2	Soham, St Andrew's House	TL	593	731	Prehistoric ditch with BA flint	Lewis, Malim and Roberts 2001:145
3	Fordham Road Allotments, Soham	TL	602	725	LBA/EIA rectangular ditched enclosures	Connor 2001
4	Fordham bypass	TL	630	690	LBA/EIA field system, fencelines and buildings	Casa-Hatton and Kemp 2002
5	Isleham	TL	630	723	Largest UK LBA hoard site at end of land ditch. Stockyard enclosure. Sparse IA activity in this area (see Casa-Hatton 2001)	Gdaniec 1996 Malim 2000
6	Landwade Road, Fordham, Cambs	TL	630	683	Possible LBA enclosure. Associated ditched fields to the south. Infilling of ditches in EIA? Some field boundaries predate the enclosure	Denham *et al.* 1997:171 Connor *pers. comm.*
7	Prickwillow Road, Isleham	TL	637	751	1880–1490 cal BC *bos* skull. Adult human buried with a flexed young cow; suggests a high regard for cattle. E/MBA butchery yard. Reverence for meat and carcass preparation. Minature bow 1880–1520 cal BC	Gdaniec *et al.* 1997 Gdaniec 1996 Ingold 1986
8	Lakenheath, Suffolk	TL	730	807	BA field ditches. Cremated bone in 9th century BC bowl found in pit at Maidscross Hill	Suf. SMR Needham 1995 Briscoe 1949
9	Game Farm, Brandon	TL	780	866	M/LBA field enclosure system	Last 2000a Murray 2000 Gibson 2004
10	Grimes Graves	TL	820	900	MBA environmental evidence	Legge 1981
11	W. Harling ringworks	TL est	950	840	LBA/EIA ringworks	Clark and Fell 1953
12	Shropham	TL est	990	940	Prehistoric fields	Bown *pers. comm.*

Table 11. Severn and Avon Vales.
Site numbers refer to Fig. 11.

	Site Name	*Map Reference*			*Description*	*References*
1	The Breiddin	SJ	292	144	LBA enclosure	Musson 1991
2	Sharpstones Hill	SJ	510	103	BA? enclosure	Barker *et al.* 1991
3	Holt Grimley quarries	SO	830	611	Prehistoric, possibly BA, fields	Shelley 1989 Edwards 1991 Jackson 1991
4	Perdiswell Park and Ride, Worcester	SO	852	577	MBA palisaded enclosure	Griffin *et al.* 2002
5	Wyre Piddle Bypass	SO Centred	970	475	MBA enclosure and field boundary	Napthan *et al.* 1997
6	Sports Ground, Station Road, Fladbury	SO est	995	460	2nd millennium BC postholes	Cook and Buteux 1998
7	Pershore Youth Hostel	SO est	950	460	BA? sudden advent of red alluvium	Pearson 1994
8	DERA Malvern, Wyche Cutting	SO	785	447	Probable BA boundary ditch	Griffin *et al.* 2000
9	Gwen Finch Nature Reserve, Birlingham	SO	939	418	LBA livestock evidence	Bretherton and Pearson 2000
10	Huntsmans Quarry, Kemerton	SO	939	363	MBA settlement, trackways and field system	Jackson and Napthan 1998
11	Tewkesbury Eastern Relief Road	SO	902	322	MBA D shaped enclosure. Bronze casting site. Land boundaries at Rudgeway Lane and the Gastons	Walker 1992 Coleman 2002 Barber 1993 Walker *et al.* 2004
12	Gloucester Business Park Link Road, Hucclecote	SO	880	190	Alluviation *terminus ante quem* 1420–1120 cal BC 1390–1010 cal BC. Linear gullies	Thomas *et al.* 2001, 2003
13	Perrin's Farm, Childswickham	SP	075	399	Large LBA land boundary	D. Hurst *pers. comm.*
14	Arrow Valley	SP	080	570	LBA settlement + cauldron burial	Palmer 1999
15	Pilgrim Lock near Bidford-on-Avon	SP	119	516	LBA palaeoenvironmental data	Osborne 1988
16	Wasperton	SP est	260	580	LBA boundaries including meander boundary	Hughes and Crawford 1995 Hingley 1996
17	Frocester	SO	800	040	LBA field boundaries	Price 2000
18	Second Severn Crossing, English Approaches	ST	570	860	Later Bronze Age summer grazing on the levels	Gardiner *et al.* 2002

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