The Landscape Settings of Three Iron Age 'Territorial *Oppida'* in Southern Britain: a study carried out using aerial photographs and lidar

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Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Abstract

The aim of this thesis is to analyse the landscapes of three sites classified as territorial *oppida* in Southern Britain in order to assess whether they possess sufficient similarities to justify their being put into this category, and, by comparison with other sites, test the validity of the monument term. Three case studies, Chichester, Colchester and Silchester, have been examined using a landscape-scale approach in order to contextualise these sites, to analyse how they might have developed, and the relationships they may have had with settlements within their environs. To this end new data have been collected from aerial photographs and lidar and combined with information from other sources for the three case study areas, in order to establish as consistent a baseline of archaeological knowledge as is possible with which to compare them. The three landscapes have then been analysed with the objective of answering the question of whether they form part of a common monument category, with similar features and patterns of settlement. It has been demonstrated that a systematic study of the landscapes of these sites can yield new information which aids understanding of the patterns of settlement and land use, even in relatively well-studied Colchester and Silchester. The conclusion of this study is that the differences between these three sites appear to outweigh their similarities, and the inclusion of Chichester, Colchester and Silchester in the same narrow monument category appears inappropriate. The concept of a specific territory bounded by linear earthworks is hard to define. It places an artificial distinction between the core settlements, where they can be defined, and the apparent links both with the landscapes around them, and the not necessarily coherent dyke `systems' that have been associated with them. Overall, use of the morphological descriptor `territorial *oppidum*' to describe all these sites appears inappropriate and the alternate term, Late Iron Age social centres, may be more suitable.

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1 Introduction and Research Background

The aim of this thesis is to analyse the landscapes of three sites in Southern Britain that have been classified as territorial *oppida* (eg Cunliffe 1976; 2005) in order to assess whether they possess sufficient similarities to justify their being put into this category. By making a comparison of the characteristics of the case studies with other sites, this thesis intends to test the validity of the monument descriptor and to determine whether an alternate term would be more appropriate to the nature of these settlements as suggested by other scholars (eg Haselgrove 2000; Sharples 2010; Moore 2017). The three case studies are Colchester, Silchester and Chichester. They have previously been investigated to differing extents, but, in common with other territorial *oppida* in Britain, the proportion of the overall extent of the sites that has been excavated is relatively small. For example, despite a long history of excavations at Silchester, only two percent of the total area of the site has been investigated to modern standards (Fulford in Fulford *et al* 2018, 4). New data have been collected for each case study over a project area designed to encompass all the features that have been associated with a territorial *oppidum* and the landscape around it, in order to establish as consistent a baseline of archaeological knowledge as is possible. The principal sources used are aerial photographs, satellite imagery and Environment Agency lidar (light detection and ranging) survey data. The new archaeological information gained from these remotely sensed sources has then been analysed together with data from archaeological excavations, other forms of survey and heritage datasets.

Oppida have often been characterised as being proto-urban settlements which appear in Britain in the latter part of the Late Iron Age. As a wider phenomenon, they have been described as the earliest towns in non-Roman or pre-Roman Europe (Collis 1984, 5; Cunliffe 1976, 135), although this definition has been refuted by Fernández-Götz (2014, 379). The nature of these sites as urban has been questioned by other writers (Ralston 1984; Haselgrove 1995), although Moore has suggested that alternate forms of urbanism should be considered; rather than comparing *oppida* with classical towns, they should instead be measured against different forms of social centres such as `low density settlements' (Moore 2017, 286). *Oppida* appear in the Late La Tène period in central and western Europe, in an area between England in the west and Moravia in the east (Collis 1984, 11-12). They are characterised as being large in size, with a minimum of 20-25 hectares (ha) frequently referred to (Woolf 1993, 224) and with a range of social and economic functions which is reflected by their internal structure. Industry and trade are carried out on a larger scale than seen earlier in the Iron Age and the settlements may be surrounded by large scale earthworks (Collis 1984, 5). However, they vary considerably as a category; the morphology of sites differs considerably across northern Europe, from well-defined, fortified sites in central France to the more dispersed sites

found in southern Britain and eastern Europe (Moore 2017, 283). The trajectories of development on these sites can also vary (Moore *et al* 2013, 493).

In British archaeology, *oppida* have been subdivided into several categories, including enclosed and territorial *oppida* (Cunliffe 1976, 136). The term 'territorial *oppida*' is generally used in Britain to describe settlements associated with large linear earthworks or dykes and evidence for high status functions, industry, exchange or trade and burial or ritual activity (Cunliffe 1976; Bryant 2007, 77). Material assemblages from these English sites include large quantities of imported pottery coming from continental Europe, coins and pellet moulds (Sharples 2010, 166-167).

Oppida have been the subject of study since the 19th century (Collis 1984, 6), but in general, archaeological investigations on sites in England have been on a small scale (Bryant 2007, 63). Their large size is one reason why a comparatively small proportion of a site might be examined, and another is inaccessibility; many *oppida* in the western area of the distribution are overlain by Roman and later structures, although this is not always the case in Britain (Woolf 1993, 226). Earlier investigations were carried out at the level of the site, but more recent research has also considered the landscape setting of *oppida*, for example, at Stanwick (North Yorks) (Haselgrove 2016), Silchester (Barnett & Fulford in prep), Bagendon (Gloucs) (Moore 2020) and Bibracte (France) (Moore *et al* 2013). Geophysical survey has been used over areas that extend beyond the earthworks of the site, for example, Silchester (Hants) (Creighton with Fry 2016), and a combination of geophysical survey and earthwork survey has been used elsewhere, for example, Entremont (France) (Armit, Gaffney & Hayes 2012).

Aerial photograph and lidar survey (or Airborne Laser Scanning) are less frequently used techniques in the study of *oppida* landscapes, but there are examples covering varying geographical areas at Stanwick (North Yorks) (Haselgrove 2016), Bagendon (Gloucs) (Moore 2020) and Silchester (Hants) (Creighton with Fry 2016; Truscoe 2018 and see Chapter 4). Remote sensing using aerial photographs has a long history in archaeology and, with the advent of freely available sources, the use of lidar alongside aerial photographs and satellite imagery has become more common.

Derivation and use of the term

The term *oppidum* has been used for a broad range of sites in both archaeological and classical contexts. A review of the application of the term would suggest that it has limited utility as a descriptor and obscures more than it reveals. Sites long considered to be *oppida* might not be regarded as such if strict criteria on favoured location, defensive earthworks and identified functions are applied (eg Bryant 2007, 78). Usage differs geographically as well as between disciplines; what is referred to as a territorial *oppidum* in continental Northern Europe may be quite different to one

given the same description in Great Britain, both in terms of morphology, site location and date of construction (Woolf 1993, 225). However, considerable variation is evident between sites, even within one geographic area.

The Latin word was used to refer to a town by the Romans of the Late Republican period, as the urban centre of a community but not a centre in control of a territory (Collis 1984, 5). Caesar refers to the Gallic *oppida* as being the largest of a hierarchy of settlement types (*de bello Gallico* VIII 14) but uses the term inconsistently; sometimes it is used to described sites for which urban characteristics are implied and at other times it is used to describe minor hillforts (Collis 1984, 5). In Britain, the term is reserved by Caesar for sites which are purely defensive in nature and which may have no urban characteristics and may not be permanently occupied. The sites which are occupied in times of trouble, such as the strongly defended site of Cassivellaunus, are described by Caesar as follows: "*Oppidum autem Britanni vocant, cum silvas impeditas vallo atque fossa munierunt"* ("Now the Britons call it an *oppidum* when they have fortified a thick-set woodland with rampart and trench", *de bello Gallico V 21*). This description has been interpreted as referring to the Late Iron Age enclosure at Wheathampstead (Herts), which is thought to have the characteristics of an *oppidum* but may have been used for seasonal activities associated with stock management (Hunn 1992, 42). Caesar may have been translating from the Gallic of his informers and the sites might or might not have had urban status in the Roman sense (Collis 1984, 5). The use of the phrase "the Britons call…" suggests that Caesar's definition of an *oppidum* in the Italian sense differs from the sites that he is describing in *de bello Gallico* and that he is not necessarily conferring urban status on them. Suetonius (in *The Life of Vespasian*) refers to the capture of 20 *oppida* in south-west Britain, but most of these would probably be classified as hillforts (Pitts 2010, 34).

The inconsistency in the use of the term *oppidum* to describe a Late Iron Age defended site in classical sources results in a confusing basis for later antiquaries and archaeologists seeking to define it as a monument category. However, the Ordnance Survey were very clear about their definition of the term on the map of Iron Age Britain (1962), limiting it to meaning: "the defended settlements of the Belgae as distinct from the hill forts of the non-Belgic tribes" (Ordnance Survey 1962, 12). This reflects the research direction of the period in which the map was produced and earlier, in which the new development of *oppida* was ascribed to an intrusive Belgic culture, transplanted to Britain from continental Europe (Hawkes & Hull 1947).

The Ordnance Survey definition is based on Caesar's description of the stronghold of Cassivellaunus: sites are specified as being located on relatively low-lying ground rather than in hilltop locations and defended by "a complex and superficially disjointed series of dykes" (Ordnance Survey 1962, 12). *Oppida* are also associated with the presence of mints and Colchester, Bagendon, Verulamium,

Silchester and Old Sleaford are identified, with a possible site at Medmerry on the west of the Selsey peninsula (*ibid*, 13). The sites are not described as being urban. The buildings identified at Camulodunum, the most intensively investigated site at the time the map was produced (1962), are described as likely to be constructed of timber and "haphazardly arranged" (*ibid,* 12). This is a point picked up by Wacher, who, however, broadens it to state that none of these pre-Roman settlements "would have contained more than a haphazardly-placed collection of huts" (Wacher 1974, 36).

This definition was challenged by Cunliffe (1976), who suggested that Roman authors may have not been ascribing the term *oppidum* to a site based on its morphology, but on a recognition of its function; urban living might have looked different to these commentators but had recognisable characteristics all the same (Cunliffe 1976, 135). Haselgrove also emphasises the need to identify the processes that might characterise urbanism, suggesting that a preoccupation with attempting to define the term *oppidum* limited the ability of archaeologists to do this (Haselgrove 1976, 25). Cunliffe proposed sub-categories of the term *oppida*, rather than the use of one loosely defined, and disputed, term: enclosed *oppida*, territorial *oppida,* and unenclosed *oppida* (Cunliffe 1976, 136). A distinction is made between *oppida* and large hillfort sites based on locality, and enclosed *oppida* are defined as large settlements, generally over 10 ha in size, surrounded by natural or artificial defences and in valley side sites. Territorial *oppida* are further defined as being associated with extensive areas of countryside which are partially defined by discontinuous lengths of linear earthworks. The category of unenclosed, or undefended, *oppida*, is introduced to account for sites which are densely settled and exhibit urban characteristics, but which do not appear to have defensive earthworks (*ibid,* 136). This final category presumably allows for the inclusion of sites identified by the Ordnance Survey as open settlements, but described as amounting to small towns, "which if dyke defences had been found would rank for inclusion in the category of *Oppida*". Included in this category are Leicester, Canterbury and Great Chesterford (Ordnance Survey 1962, 14).

Cunliffe suggested that further refinements in the categorisation of *oppida* types would be necessary in the future (1976, 136) and an examination of the way that they have been defined by English Heritage demonstrates that this has at least been partly the case. The monument description produced by English Heritage (now Historic England) in 1989 subdivides the class of territorial *oppida* into A) incomplete or unfinished dyke systems and B) rectilinear dyke systems (Edmonds 1989). However, the updated description of the heritage asset of *oppida* produced by English Heritage (2011) states that there are two main types of site: enclosed *oppida* and territorial *oppida,* describing the category of unenclosed *oppida* as "highly contentious" (McOmish 2011, 2). A separate monument category, "Prehistoric linear earthworks", includes a description of the dyke systems

thought to be associated with territorial *oppida,* stating that they are "discontinuous" and "seem as much concerned with the definition of territory as with defence" (Oswald 2011, 4).

The extent to which sites later designated by Cunliffe as territorial *oppida* were described as such by their earlier excavators varies. *Camulodunum* is not described as an *oppidum* by its earlier surveyors and excavators in their published reports, but rather as a "focal point of Catuvellaunian power and authority within Trinovantian territory" which developed into a Roman administrative centre (Hawkes & Hull 1947; Hawkes & Crummy 1995). In the Scheduled Monument description for Gosbecks, one of the reasons listed for its designation is: "Period and rarity: as one of only 20 known examples of *oppida* in England, a settlement type exclusive to the later Iron Age" (Scheduled Monument 1002180). However, the possible Late Iron Age features of the Gosbecks area are also largely unexcavated (see Chapter 3). The Prae Wood site at *Verlamion*, however, is described by Wheeler and Wheeler as possibly the successor to the Belgic *oppidum* at Wheathampstead. Neither is there any dispute about whether the initial Late Iron Age site or its successors might be perceived as being urban, the title of the report being "Verulamium: A Belgic and two Roman Cities" (Wheeler & Wheeler 1936). Bagendon is identified as an *oppidum* for the first time by Clifford in the report on her excavations of 1954 to 1956 (Clifford 1961).

Cunliffe interpreted *oppida* as being the last development in a process of centralisation during this period, following on from developed hillforts and demonstrating a gradual change in the political organisation of Iron Age societies (1976, 145; 1978, 286; 2005, 406). This viewpoint suggests that societies in all regions of Britain are developing in the same manner, whereas *oppida* are not widespread geographically. For example, hillforts did not go out of use to the same extent in south-western Britain and social interactions were probably quite different in this area to those in the *oppida* zone. *Oppida* do appear to have been important political and economic centres (Sharples 2010, 82), although with differences in character to sites also described in such a way in continental Europe (Bradley *et al* 2016, 285). Hawkes reflects this view that *oppida* were important centres, while disputing the fact they should be regarded as tribal capitals, suggesting instead that each leader would have possessed more than one of these types of site (Hawkes 1980, 138). Cunliffe describes territorial *oppida* as sites defined by linear dykes which could be some distance from the settlement nucleus, seen as a further development in Iron Age settlement (1978, 286; 2005, 406). Silchester is described as a centre for the Atrebatic people in the first edition of *Iron Age Communities in Britain* (1974, 93), but Cunliffe states that little is known of the earthworks associated with the settlement below the Roman town. However, the site is put into both the categories of enclosed and territorial *oppida* in the fourth edition (2005, 403-4), a result of

recognition of work confirming the Late Iron Age origins of the Roman town in the intervening period (Fulford & Timby 2000).

Cunliffe suggests that the linear earthworks around Silchester belong to a later stage in development of the site into a territorial *oppidum* (2005, 172). However, recent work suggests that some of the linear dykes are contemporary with the central settlement while others may predate it (Fulford *et al* 2016; Barnett & Fulford in prep and see Chapter 4), although how, or whether, the linear earthworks and the enclosed settlement functioned together is unclear. The linear earthworks may have had a defensive function, delineating a particular boundary, or could have been associated with the movement of stock. Creighton noted a rise in the importance to regional leaders of keeping horses, based on classical references to the accompaniment of a leader by a group of horsemen, the presence of whom reinforced their authority (Creighton 2000, 15). He suggests that the river valley bottom sites chosen for the location of *oppida* might, in addition to having good communication links and being in a good position to control trade, have provided good grazing land which was protected by the *oppidum* earthworks (*ibid,* 18), a function suggested for the Colchester dykes (Hawkes & Crummy 1995, 104).

It is probable that territorial *oppida* sites in southern Britain developed in phases, although they may not have all followed the same trajectories. Crummy identified three main early dykes at *Camulodunum:* the Heath Farm Dyke, the Sheepen Dyke and the Lexden Dyke were constructed over a period of time from an unknown date prior to c 50 BC up until the development of the Lexden cemetery between c25 BC and 10 BC (Hawkes & Crummy 1995, 174-175). Bradley's survey of the Chichester Entrenchments suggested a three-phase development, which may indicate a change in function, or focus, over time (Bradley 1971, 30-34).

Woolf criticises the use of the term *oppida* in general to describe settlement archaeology in late La Tène Europe, finding the sites to which it is applied to be "too diverse in scale, form, function and chronology" (1993, 223). However, Pitts suggests that there may be some consistency that can be observed across British *oppida* at the level of their material culture (2010, 56). For example, the pottery assemblage from the forum-basilica excavations at Silchester included a large proportion of imported wares from Central and North Gaul, and Mediterranean and Spanish amphorae. The material culture as a whole "closely resembled other late Iron Age territorial *oppida* or nucleated settlements in south-east England" including Colchester and St Albans (Fulford *et al* 2018, 3). To this list can be added incidences of the cremation burials with rich grave goods, such as the Lexden tumulus (Hawkes & Crummy 1995, 86-7) and evidence of coin production, either through finds of pellet moulds (eg Fulford & Timby 2000, 414; Wheeler & Wheeler 1936, 222; Frere 1983, 30), or the mint name on the coins themselves (Creighton 2000, 168).

Pitts links many of the sites which demonstrate a degree of uniformity in their material culture sites to the emergence of the Southern and Eastern Kingdoms from approximately 25-10 BC (2010, 56). Creighton has linked the development of *oppida* in these suggested political areas to the emergence of kingship, suggesting that the short life span of some sites might reflect an association with a particular individual (Creighton 2000, 205). While the term *oppida* is used relatively broadly, unenclosed sites tend to be excluded. However, the presence or absence of defences may not provide a meaningful reflection of the status of the site and recognition of enclosed sites alone as *oppida* may limit the understanding of Late Iron Age societies (Moore & Ponroy 2014, 141).

Oppida studies - Theoretical approaches

The study of *oppida* has taken place in the context of a number of models used by archaeologists to understand the Iron Age: historical models, the culture model, and economic and social models (Collis 1977, 3). *Oppida* were initially studied in association with the historical framework suggested by classical sources, such as Caesar or Suetonius. Where this historical framework was not evident, an attempt was made to recognise particular peoples, or the extent of the territory of `tribal' groups, through the distribution and association of groups of artefact types or burial rites; the culture model developed by Gordon Childe. This model was challenged in the 1960s, with the main criticism being that the movement of pots could not be closely correlated with political, ethnic, or linguistic identities. Study of material culture under this model aided development of a chronology, but did not necessary help to interpret archaeological sites, the resulting publications being more descriptive than analytical (Collis 1977, 3; Collis 1984, 34-35).

Studies of Late Iron Age *oppida* were initially associated with investigations into the locations of sites mentioned in classical texts, particularly Julius Caesar's account of his campaigns, *de Bello Gallico* (Collis 1984, 31), Developments in Iron Age chronology were made in the 1860s and 1870s by Hildebrand and Tischler and systematic investigations of *oppida* sites also began in this decade, initially with the first systematic study of *oppida* in France "Histoire de Jules César: Guerre des Gaules (1866) produced under the aegis of Napoleon III. Excavations followed in the Forêt de Compiègne and Alise-Ste.-Reine, Gergovie and Le Mont Beuvray (Collis 1984, 31). An association with classical texts is also evident in early 20th century investigations of British *oppida* and continues in recent research, for example, the "In the Footsteps of Caesar" project (www.le.ac.uk...footsteps-of-caesar).

The approach taken to investigating these sites up to around 1960, associated with the historical and culture models, was to see them as the creation of external settlers, the *Belgae*. The popular view particularly from the 1930s on held that all innovations associated with prehistoric Britain, whether

related to settlement types, pottery or metallurgy, had to be related to the arrival of an invading force. This is reflected in Hawkes' ABC classification of the Iron Age, with each phase ascribed to a different wave of invaders from the continent: Iron Age A saw the Hallstatt culture infiltrating Britain; B was characterised by the arrival of Marnians from the Lower Rhine; and C was represented by two waves of invasions from Belgic Gaul (Hawkes 1931, 62). The `invasion hypothesis' has also been applied to the study of Iron Age coins, a crucial area of investigation as concerns *oppida*. Allen, who carried out extensive work on the classification and distribution of imported and indigenous coins, attributed the presence of the first gold coins in Britain, classified as Gallo-Belgic A – C, to a wave of invasions (Allen 1944), rather than considering other motives such as trade and exchange.

This view had begun to be challenged in the 1960s, notably with Birchall's review of the Aylesford-Swarling culture, held to be definitive evidence of a Belgic presence. Birchall dated the burial groups to c.50/30 BC to 10 BC, putting their origin as Caesar's settlers who had occupied the maritime area of Britain (*de Bello Gallico* 5, 12) in doubt (Clark 1966, 187). Clark had adopted Hawkes' classification in his earlier publications, for example, *Prehistoric England* (1940), but in 1966 he produced a strong critique of both it and the general view that cultural innovations in prehistoric Britain could only have been achieved through the actions of an external force. He describes this 'invasion hypothesis' as having been prevalent in archaeologists' dealings with other periods, but that it had "reached its peak in relation to the Pre-Roman Iron Age" (Clark 1966, 185).

Archaeological approaches shifted away from the culture/historical model with the advent of the 'New Archaeology' in the 1960s, towards models based on economy, environment, and social development. The emphasis in excavation strategy changed focus from concentrating on the earthworks around the site, the main target for archaeologists working within a historical model, to the interior, examining how the site functioned, for example, in terms of foodstuffs consumed within it and sites of agricultural production around it (Collis 1984, 36), moving away from seeing the site as bounded by its surrounding banks and ditches and starting to appreciate its place in the surrounding landscape in terms that are not purely related to defence.

The motivations behind the construction of the sometimes massive earthworks surrounding hillforts and *oppida* have also been the subject of changing views. Traditionally they have been seen as a defensive measure, part of a socio-economic model which suggests that they were a response to stresses in later prehistoric society such as population pressure (Collis 1977, 6). The emphasis on defence, while not completely abandoned, has been questioned and non-utilitarian roles, such as the enhancement of the prestige of the settlement and definition of the social grouping within it have been posited (Bowden & McOmish 1987, 77). Sharples suggests that the labour necessary to create and maintain these earthworks might have been part of a gift exchange system, creating and

cementing social relationships (2010, 116), which contrasts with the earlier view of Cunliffe that communities carried out this labour under the influence of a coercive power (1976, 138).

Different viewpoints on the adoption of coinage in Britain evolved similarly to those concerning the monuments and landscapes in which they were found. Models of their use in trade and in satisfying social obligations began to be developed. Van Ardsell posited that coins represented trade and payment to mercenaries alone (Van Ardsell in Creighton 2000, 226). Haselgrove suggested that, while an immigration from Belgic Gaul probably occurred at some point, the reason for the presence of gold coins in Britain was due to kinship and cross-Channel links in the pre-Caesarian period, which resulted in a range of political and social ties and patron-client relationships. The need for gift exchanges would have been implicit in these associations (Haselgrove 1987, 193). Creighton interpreted the use of coinage as a method of expression the authority of the individual and the concept of kingship (Creighton 2000, 22).

Views have continued to change among archaeologists as to what type of economic and social model *oppida* should be placed within. A widely held view in the 1970s and 1980s was that they were a crucial element of core-periphery models, home to an élite class controlling the surrounding landscape (Pitts 2010, 32). The inhabitants of the *oppida* would have had privileged access to commodities produced by Roman or Romanised industries, which were exchanged for raw materials. This would enhance the status of those individuals and their position in hierarchical structures in Britain. The settlements in contact with the Roman world would be part of their own core-periphery model, relying on other areas of Britain to supply them with raw materials and trading prestige commodities with them (Sharples 2010, 169). However, as Sharples points out, this model relies on the consensus that all people outside the Roman world want to obtain Roman material culture and denies any agency on the part of those people, or the element of gift exchange which was an important element of Roman foreign policy. He argues that Late Iron Age societies should be seen as having developed from successful indigenous societies which had already developed trading and exchange links with the outside world and should therefore be given more important status than previously accorded in their relationships with the Roman world (*ibid,* 170).

A prevailing question in Later Iron Age studies is whether *oppida* can be regarded as being proto-urban, or urban. Woolf proposes criteria for examining whether *oppida* can be considered as such based on the principles of central place theory. He suggests that it should be possible to demonstrate that an *oppidum* is important in the hierarchy of a local settlement system because a degree of functional differentiation and specialisation can be recognised through archaeological investigation (Woolf 1993, 227). Bryant's study of the origins and development of *oppida* in Hertfordshire applies the criteria outlined by Woolf, although he is looking at six clusters of sites,

rather than six individual sites. Bryant identifies possible zoning of activities at sites, including Braughing and St Albans, taking place within a discrete landscape, for example, burial/ritual areas and settlement/agricultural areas (Bryant 2007). However, he concludes that the differences between them do not point to them being part of the same monument class and therefore, describing them as *oppida* is not useful (*ibid*, 78).

The concentration by archaeologists on the functionality and defensive capabilities of *oppida* has gradually changed during the period that the sites have been studied. Woolf's desire to emphasise the unique aspects of Late Iron Age settlement connects with a less static recognition of the character and identity of societies in this period. It is not a case of trying to emulate ideas of urbanism imported from elsewhere, but instead of interpreting the sites that have been classified as *oppida* within Britain as an indigenous development, albeit with great variations. Looking at *oppida* in terms of being important centres with particular functions and relationship networks, may be better than trying to look at them as proto-urban or urban, with all the connotations that has with the study of classical and later towns. The search for urbanism in that sense is applying a different world view to their architects, rather than crediting them with their own capacity to innovate and develop ideas about the creation of settlements. The phrase Late Iron Age social centres has been applied by Sharples (2010) and Moore (2020) which distances these sites from classical ideas of the development of towns.

Investigations of British territorial *Oppida*

With very few exceptions, only a vanishingly small proportion of the overall site areas of British *oppida* have been excavated; for example, less than 1% of the total area of Braughing has been investigated (Bryant 2007, 63). A similar picture is seen in continental Europe; Bradley *et al* note in their synthesis, *The Later Prehistory of North-West Europe* that little new data for *oppida* has been gained through development-led archaeology and that the majority comes from research projects, the elevated locations of many continental European *oppida* meaning that they are less subject to development pressures (2016, 286-7). However, there are exceptions to this picture; much of the information gained about the low-lying site of Manching was gained through excavations carried out due to such pressures (eg Wendling 2013, 464), and the situation where the site lies below a modern town and the sequence of occupation layers from the Iron Age to the present day is preserved, for example, at Besançon (2016, 286-7). The earlier excavations at many of the sites, including Verlamion, Camulodunum and Bagendon, were governed by the belief that they should be interpreted as Belgic in origin, reflecting the prevailing belief of the time that the influence of the Belgae had gradually spread from their initial landing point in Kent (Hawkes & Hull 1947, 6). While

the earlier investigations are not exclusively site-based, with some consideration given to other aspects of the landscape, it is generally not until the later phases of study that the wider environs of territorial *oppida* are considered.

Excavations were carried out in the inter-war period at Verulamium (St Albans, Herts) by R E M and T V Wheeler in 1930-33, which considered the Iron Age settlement (Verlamion) in addition to the Roman town. Two phases of Iron Age occupation were suggested: an initial centre at Wheathampstead, followed in the late 1st century BC by a site some distance away in Prae Wood (Wheeler & Wheeler 1936). The model suggested by the Wheelers for Verulamium was the Prae Wood site, described as a "Belgic City" positioned on the plateau edge above the valley of the River Ver, with two phases of the "Roman City" in the valley bottom (*ibid*, 2; Niblett 2001, 20). The investigations may have focused on particular sites, but the Wheelers' appreciated that the individual settlements could only be understood in terms of their relationships to the wider environs (Niblett 2001, 21). The existence of Late Iron Age settlement in the valley bottom was demonstrated by large-scale excavations undertaken by Shepherd Frere between 1954 and 1961, carried out as rescue excavations ahead of development. He identified Late Iron Age deposits beneath the forum of the Roman town, in the form of a large ditch interpreted as forming part of a quadrangular enclosure (Haselgrove & Millett 1997, 283).

Further rescue excavations took place in 1963-4 which revealed a Late Iron Age cremation cemetery at Verulam Hills Fields (*ibid*, 283) and, in 1966-8, the major cemetery at King Harry Lane. 455 burials were excavated dating to between the late 1st century BC and *c.* AD 70 (Stead & Rigby 1989; Niblett 2001, 32). Further rescue excavations in 1974 and 1977 carried out by Saunders and Havercroft on the Wheathampstead site uncovered more evidence of the Iron Age settlement (Haselgrove & Millett 1997, 283) and pre-Roman settlement was also identified within an enclosure on the plateau edge at Gorhambury, excavated by Neal in the 1980s (Niblett 2001, 39).

The success of the 1930s Verulamium investigations led to a growing interest in the Iron Age in the county, and several groups of amateur archaeologists were formed as a result. An extensive amount of development work occurred in Hertfordshire between the 1930s and 1970s and these groups were able to carry out rescue excavations, to identify and record archaeological sites in areas where construction was taking place. These included four rich Iron Age burials found during the construction of Welwyn Garden City, designated as 'Welwyn type' burials, and two Late Iron Age complexes at Baldock and Braughing (Bryant 1997, 270; 275). The site at Braughing covers approximately 200 ha and comprises areas which are urban in appearance, Braughing-Puckeridge (Skeleton Green) (Partridge 1981) and more rural in character, such as at Ralph Sadler School (Partridge 1977). The material assemblage from the excavated areas includes a large proportion of

imported pottery and other goods (Bryant 1997, 276). The relative status and function of Verlamion, Braughing and other Late Iron Age complexes in Hertfordshire has been discussed by Bryant and Niblett (2001). Despite evidence of coin production and rich burial sites, both suggesting an important settlement, a relatively low level of imported pottery has been discovered outside of funerary contexts at Verlamion. A comparison between six Late Iron Age complexes within Hertfordshire suggested that an element of specialisation in activity was evident between these sites, such as funerary/ritual activities centred on Verlamion and Baldock, and trade and industry at Braughing (Bryant & Niblett 2001, 107; Bryant 2007, 78). More recent research has also considered the landscape setting of Verlamion; an AHRC-funded community project 'Sensing the Iron Age and Roman Past: Geophysics and the Landscape of Hertfordshire', led by Kris Lockyear (hertsgeosurvey.wordpress.com).

Hawkes and Hull carried out an excavation of the Sheepen site at Colchester (Essex) between 1930-1939 uncovering large quantities of imported pottery and evidence of coin production associated with the Late Iron Age settlement phase (Hawkes & Hull 1947). The excavators identified the establishment of Camulodunum with the "`Belgicization' of Essex" and suggested that, under the leadership of Cunobelin, the settlement became "the capital of the whole Belgic country north of the Thames" (*ibid,* 6). Excavations continued in the wider area during the post-Second World War period: Appleby investigated a small area of the Gosbecks enclosure ditches in 1949 (Hawkes & Crummy 1995, 97); Hawkes continued to excavate sections of the dyke systems between 1947 and 1961; and dykes and occupation sites were also investigated during the 1950s and 1960s by Hall, Appleby and Blake (Hawkes & Crummy 1995, 2). Further investigations were carried out at Sheepen by Niblett in 1970 and 1971 on the southern side of Sheepen Hill, where the findings were predominantly Roman in date, but some evidence of pre-conquest occupation was also uncovered (Niblett 1985, 22-23). Excavations were also later carried out by the Colchester Archaeological Trust in 2007-9, uncovering further evidence of coin production associated with Cunobelin (Radford 2013, 36). Further information was added to the knowledge of burials in the area in the 1980s; Foster and Sealy reviewed the material of the Lexden Tumulus burial and rich chamber burials were uncovered during excavations on the Stanway site after it had been designated as a site for mineral extraction (Radford 2013, 38). Developer-led excavations have continued to uncover evidence of pre-conquest activity in the Colchester area, particularly during the redevelopment of the extensive Colchester Garrison site (e.g., Brooks 2016).

Sir Mortimer Wheeler moved away from southern England to excavate at Stanwick (North Yorkshire) in 1951-52 (Wheeler 1954). The site consists of several lengths of slightly curving earthworks which form an irregular pentagon enclosing an area of *c.* 270 ha. Within this perimeter lie the Maiden Gill

linear earthwork, which cuts off a portion of the northern part of the interior, and the Duchess's Walk linear earthwork, which forms the south-western side of an internal enclosure, The Tofts (Haselgrove 2016, 13-15). Sections were cut through the perimeter earthworks and around the Tofts during Wheeler's excavations, and an initial date of occupation of the mid-1st century AD was proposed (*ibid*, 7). Assessments were made of the site in 1981 in response to threats from farming and development and academic enquiries, which included geophysical survey with the Tofts, revealing evidence of settlement activity. The Stanwick Research Project was set up by the University of Durham to investigate the Tofts and the wider complex, with excavations carried out between 1983 and 1986 (*ibid*, 9-10). The 1980s excavations at Stanwick were followed by a new topographical survey of the earthworks by the Royal Commission on the Historic Monuments of England (RCHME) and by campaigns of fieldwalking and aerial survey in the Tees Valley, and geophysical survey at Melsonby (*ibid*, 10). Haselgrove has described the Stanwick complex as having parallels with `enclosed *oppida*', although acknowledging the limitations of the category. He includes Silchester using both the central settlement and the linear earthworks as points of comparison. Haselgrove also points to similarities between the Tofts and Irish `royal' sites, such as a later phase of monumentalisation of the site and geographic position overlooking a wet area (*ibid*, 448-9).

The complex of earthworks at Bagendon (Gloucs) were investigated by Clifford between 1954 and 1956. She carried out excavations on the Cutham dyke and two occupation areas, one of which was identified as the "mint area", in the valley bottom. Evidence of coin production together with the presence of imported ceramics led to her identification of the site as an *oppidum,* a `Belgic' precursor to the Roman town Corinium (Cirencester) (Clifford 1961). A re-evaluation of the ceramics by Swan in the 1970s suggested that the site was post-conquest in date (Moore 2020, 11). Excavations by Richard Reece in 1979-81 sought to reassess Clifford's excavations and establish the chronology of the valley bottom sites. The overall date range of the artefact assemblage was suggested as being between AD 30 and no later than the AD 60s, with a significant period of activity between AD 30 and AD 50 (*ibid* 157). The Ditches enclosure, located approximately 2 km to the north-west of the Bagendon complex, was excavated between 1982 and 1985 and found to have occupation originating in the Late Iron Age and continuing into the Roman period when a villa was constructed on the site (Trow *et al* 2009). The Scrubditch and Cutham enclosures, adjacent to the dykes of the same names, were excavated in 2012-2014 and found to originate in the pre-*oppidum* period. Both were constructed in the Middle Iron Age, probably in the 3rd century BC and appear to have fallen out of use in the late 2nd or early 1st century BC. However, elements of the Cutham enclosure were likely to have been important boundary features into the 1st century AD (Moore 2020, 127).

A greater understanding of the Bagendon complex was acquired following a project of remote sensing surveys carried out between 2008 and 2016, including geophysical survey, fieldwalking, lidar interpretation and an examination of the National Mapping Programme data (Historic England). The project has examined how the complex of monuments which form the site may have worked as a landscape, rather than looking at individual elements (Moore 2020, 21). Excavation of two enclosures, which had been identified through geophysical survey adjacent to the Scrubditch and Cutham dykes, identified that the sites were morphologically similar to banjo enclosures. They were found to date to the late 1st century BC to early 1st century AD, predating the valley bottom settlement (*ibid*, 132). Bagendon was initially interpreted as being an *oppidum*, and later included in the category of territorial *oppida.* Moore has described Bagendon as having both similarities and differences with other sites so designated, finding it too restrictive as a category (*ibid*, 579). An earlier interpretation described it as a polyfocal landscape, where different sites dispersed throughout the complex, probably performed different functions (Moore 2012, 391; 401). However, more recently, Moore has reinterpreted Bagendon as a `powerscape', a definition which integrates the disparate constructed elements with the topography and puts less emphasis on the bounds of a territory (Moore 2020, 579).

The Chichester Entrenchments (West Sussex) have been the subject of study since their illustration by John Aubrey in *c*.1670, and first full survey and description by William Sabatier in 1798, who referred to them as "Roman military works" (Magilton 2012, 185). The presence of the linear earthworks has been put forward as being evidence of the site of a territorial *oppidum* and the potential sites of a central settlement associated with them have been suggested on the Selsey Peninsula (Cunliffe 2005, 169) and in the Chichester/Fishbourne area (Frere 1972; Bedwin 1983), although, to date, there is no definitive evidence to support the candidacies of either area. Excavations by Alec Down at Chichester initially found scarce evidence of pre-Roman occupation, only a small assemblage of pottery and coins found in Roman period deposits (Down 1978, 188; 330), and three roundhouses identified in a subsequent season of excavation (Down 1989, 151). However, evidence of Late Iron Age coinage suggests that there was an important regional centre in this area (Bean 1994, 236; Davenport 2003, 102) and a growing assemblage of imported pottery points to high status occupation in the pre-conquest period (Rigby 1996), including in association with a Late Iron Ditch at Fishbourne (Manley & Rudkin 2005). Another discovery which may indicate that this was an important regional centre is a possible warrior burial found to the south-east of Chichester during excavations in 2007-2010 at North Bersted, Bognor Regis (Taylor *et al* 2014, 59). An assessment of the landscape by Garland synthesised information from developer- and research-led archaeology and combined it with viewshed analyses. Garland also carried out a similar

assessment of the Colchester territorial *oppidum*, putting both sites into a wider context and examining the place of *oppida* in the changing social structures of the Late Iron Age (Garland 2017).

The Roman town of Silchester was first excavated in the 19th century, but the Late Iron Age deposits beneath the Roman layers were not fully appreciated until the ongoing programme of excavations by the University of Reading began in 1974. Prior to that point little was known of the Late Iron Age settlement, beyond a report on an excavation on the Inner and Outer Earthworks by Boon in 1954-58 and a reappraisal by him of all pre-Roman material from the Victorian excavations (Boon 1969). Other appraisals of the coin distributions and incidences of the *Calleva* mint mark have also been carried out (eg Haselgrove 1987; Bean 1994; Creighton 2000). Late Iron Age streets and occupation features were recorded for the first time beneath the Forum-Basilica (Fulford & Timby 2000) and further evidence of pre-Roman occupation was uncovered during the Insula IX *Town Life Project* (Fulford *et al* 2018).

Geophysical survey has also been used over areas that extend beyond the earthworks of the site at Silchester, in a project which also included an examination of Department of Environment lidar in the immediate environs of the *oppidum* (Creighton with Fry 2016). Further investigations focussing on the environs of Late Iron Age Silchester have subsequently been carried out using multiple investigative techniques, including aerial photograph and lidar survey (Truscoe 2018), excavation, coring and geophysical survey (Barnett & Fulford in prep). Settlement sites were newly identified from cropmarks or as low earthworks on lidar during this project and a number were targeted for further investigation. Subsequent excavations demonstrated settlements which were occupied either prior to, or contemporary with, the creation of the *oppidum,* or with evidence of continuous use throughout the Late Iron Age. A chambered cremation burial with imported grave goods and complete vessels was excavated at Windabout Copse, the first example of a burial of this type in the Silchester area (Fulford, Barnett, and Clarke 2018).

This emphasis on landscape setting is also reflected in recent investigations of *oppida* in continental Europe, for example, a survey of the environs of Bibracte using a combination of field survey techniques to explore the chronology of development of the *oppidum*. (Moore *et al* 2013). A combination of geophysical survey and topographic survey was used to examine issues of space and organisation at Entremont in southern France (Armit, Gaffney and Hayes 2012).

However, while an acknowledgement of the importance of the environs of territorial *oppida* has become more widespread (eg Garland 2017; Moore 2020; Barnett & Fulford in prep), few studies analyse the features that constitute those landscape settings, such as smaller settlements and field systems. This thesis addresses that issue, analysing and contrasting the landscape settings of three

sites identified as territorial *oppida* (Colchester, Silchester and Chichester), utilising data acquired from the systematic examination of aerial photographs and lidar, together with information from other sources (outlined below in Chapter 2). While there is an acceptance that features identified through remote sensing are not dated, chronological relationships between features can sometimes be observed, and morphological similarities to excavated monuments can infer a period of origin. The aim of this thesis is to use this additional data to analyse the known features that have been associated with the territorial *oppidum* within each case study area, against the patterns of settlement and distributions of other features, such as field systems and trackways, in order to gain an understanding of how these sites might have functioned within their wider landscapes, and the possible extents of the areas that were associated with them (Chapters 3, 4 and 5). A comparison will then be made between the three case studies in order to assess whether they possess sufficient similarities to be considered to be same type of monument (Chapter 6). Finally, hypothetical models of the chronological development of the three landscapes will be put forward and the validity of the monument term, `territorial *oppidum*' will be considered (Chapter 7).

2 Methods and approach

Introduction

This thesis aims to assess whether the use of a landscape survey methodology can add to the analysis and definition of sites currently interpreted as territorial *oppida.* The principal method used to collect new data in the environs of each of the case studies is the interpretation of remotely sensed sources: aerial photographs, satellite imagery and lidar (see Appendix II for lidar coverage and Appendix III for all features mapped for each area). Where further information was required in order to understand the features recorded from remotely sensed data, as occurred within one area of the Chichester Entrenchments, targeted analytical earthwork survey was carried out. The new data were then examined within a Geographic Information System (GIS) alongside other sources, such as previous surveys, to identify what could be inferred from an investigation of these sites within their landscape; for example, whether it was possible to draw conclusions about the relationships between the *oppidum* and surrounding sites and their relative economic and social functions.

A landscape-scale approach

Territorial *oppida* by definition have been interpreted as covering extensive areas of land when all the earthworks thought to be associated with them are considered. I have taken a landscape-scale approach to study the project areas of Colchester, Silchester and Chichester in order to contextualise these sites, to analyse how they might have developed and the relationships they may have had with settlements within their environs. This approach is rooted in landscape archaeology, a relatively recent sub-discipline (Rainbird 2008, 17), which analyses the contexts of particular monuments rather than focusing on sites in isolation. Taking a landscape-scale approach involves the systematic recording of all sites and features, such as enclosures, trackways and field systems, which may date to the later prehistoric periods. It enables the identification of possible chronological relationships and associations, contributing to an understanding of a landscape as more than the sum of its parts. This is in keeping with the definition of landscape given in the European Landscape Convention. This states that “landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” (Council of Europe 2000), stressing the importance of landscapes and the essential part that they play in the lives of people, linking them with culture and nature and their past. Moore’s analysis of Bagendon identifies the benefits of this

approach and how it enables the examination of "how this complex worked as a landscape, rather than as a set of individual elements" (Moore 2012, 292).

Analysis of the landscapes of territorial *oppida* using this approach makes it possible to question previous assumptions about the extent of these sites, whether they were bounded by linear dykes, or if the reach of these sites was defined in a way that does not visibly survive. An example is the observation of the placement of probable farmstead enclosures adjacent to the dykes, but in the areas considered to be both `inside' and `outside' the *oppidum* territory, at both Colchester and Silchester, which suggests that the areas of landscape associated with each of the sites might have been larger than earlier interpretations suggest.

Project areas

The areas for which new data were collected for the case studies of Colchester and Silchester was based on the extent of the dykes thought to be associated with them, but with a buffer area around them in order to consider the context of those earthworks. The known extent of a possible *oppidum* at Chichester is uncertain and the project area was designed to cover both of the suggested locations for a central focus (Chichester/Fishbourne and the Selsey peninsula). The reason that these sites were chosen was in order compare sites where limited landscape analysis using aerial photograph and lidar interpretation had been carried out (Chichester) with those which had been more intensively studied (Silchester (Truscoe 2018) and Colchester (Ingle & Saunders 2003)), and, to test the efficacy of previous mapping projects (Colchester). The survey results proved that, even where extensive data had already been collected, new features were identified through the re-examination of aerial photographs and new analysis of lidar data. The resultant landscape analysis has proved that, even with well-studied sites such as Colchester, the information gained from systematic data collection enables patterns of settlement and agriculture to be newly identified.

Colchester

The Colchester project area covers the entirety of the peninsula of land defined by the River Colne and Roman River on which the majority of the linear dykes are located and includes a buffer zone around it, 99 square kilometres. The area extends to the north in order to include the Middle Iron Age hillfort of Pitchbury Ramparts. The project area is located within the Northern Thames Basin National Character Area (NCA 111) (Natural England 2013). The underlying geology is London Clay with superficial deposits of Sand and Gravel and alluvium (British Geological Survey sheets 224 and 242).

Information was collected from aerial photographs and lidar within the area indicated by the red outline (see Figure 2.1) and combined with previous surveys carried out as part of the Essex NMP project, part of a county-wide survey (Ingle & Saunders 2003), and an interpretation by Philip Crummy of the Gosbecks area (1979). The linear dykes, occupation areas and other features not covered by later development were recorded from aerial photographs, satellite imagery and Environment Agency lidar. Lidar coverage was incomplete, but the majority of the area was available at 1 m resolution data, with a smaller area covered by 50 cm and 25 cm resolution data. The conditions in the survey area are favourable to cropmark formation and there is good coverage by specialist oblique aerial photography. Another particularly useful source was the Google Earth 2018 layer which, together with the lidar imagery, was not available to earlier surveys.

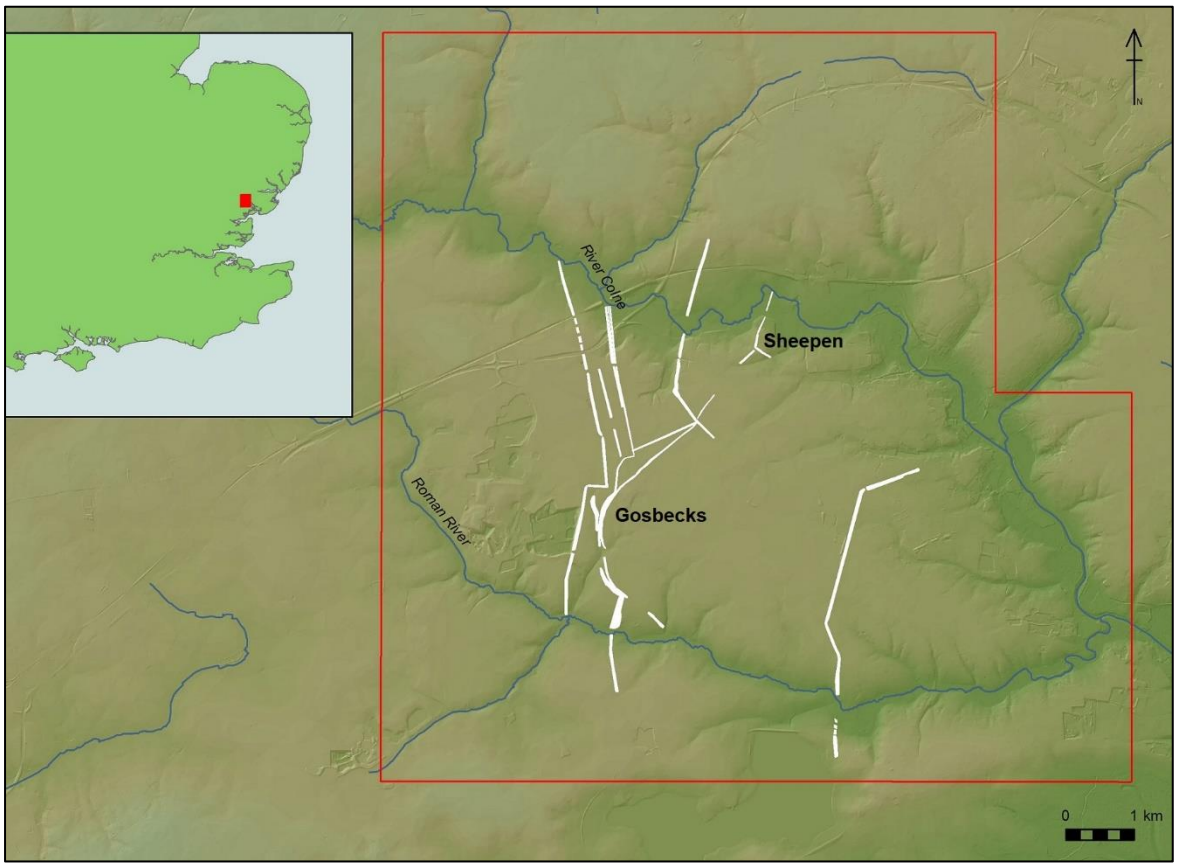


Figure 2.1 Colchester project area. Background map created from OS Terrain 5 © Crown copyright and database rights 2021 Ordnance Survey (100025252). Inset map contains Ordnance Survey data © Crown copyright and database right 2021

Example of rectification using a Digital Terrain Model: Stanway

The additional sources and technology available to the current survey have made it possible to add detail to previously recorded sites, identify new features and assess the condition of monuments. This is an area where a considerable amount of archaeological information has been collected from aerial photographs but a greater level of accuracy in georeferencing photographs has been possible

through the use of a Digital Terrain Model (DTM). An example of the difference in accuracy of rectification between the Essex NMP survey and the current research is demonstrated in the Stanway area.

The location of the cropmarks transcribed in the earlier survey shows an offset of between 9 m and 11 m, which was corrected by the application of a DTM in the rectifications used in the current survey (see Figure 2.2). Re-examining historic aerial photography together with modern sources has also enabled the identification of new field boundaries to the west and south and a new enclosure adjacent to Stanway Hall Farm to the south of Maldon Road. A smaller enclosure is also visible inside a previously recorded rectilinear enclosure in this location, the complete outline of which could be identified from 2018 imagery. The identification of new features and the increased accuracy of

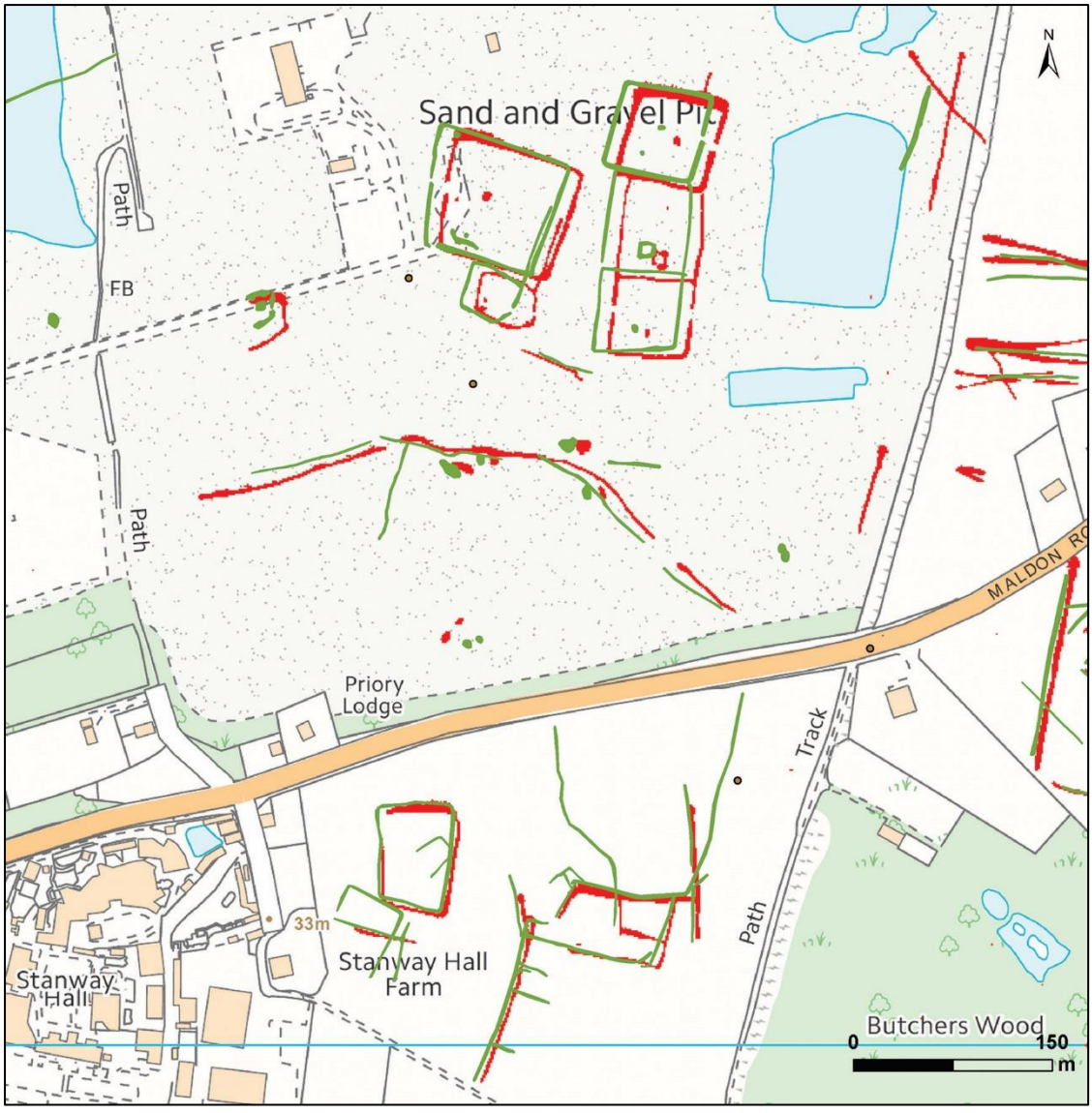


Figure 2.2 Current mapping (green) and the earlier Essex National Mapping Programme mapping (red) showing the offset between features. Newly identified enclosures are shown in green in the field adjacent to Stanway Hall Farm. © Crown copyright and database rights 2021 Ordnance Survey (100025252).

rectification demonstrates the benefit of re-examining an area where previous aerial photographic interpretation has been carried out.

Silchester

The case study area comprises the landscape around the Late Iron Age settlement of Calleva, including the linear dykes and a buffer zone, a total of 47 square kilometres (see Figure 2.3). Silchester is situated on the eastern end of a gravel plateau, which extends to the west across Pamber Heath, within a salient in the northern boundary of the county of Hampshire where it adjoins West Berkshire. The site is located on gently undulating terrain between the course of the River Kennet to the north and north-west and the River Loddon to the east. Numerous tributaries of both rivers, including the Foudry Brook, cross the survey area and define the gravel promontory on which the central settlement is located. The promontory is around 91 m above sea level. The plateau is composed of Tertiary sands and gravels situated in the London Basin with intervening river valleys floored by London Clay (British Geological Survey (BGS) sheets 268 and 284).

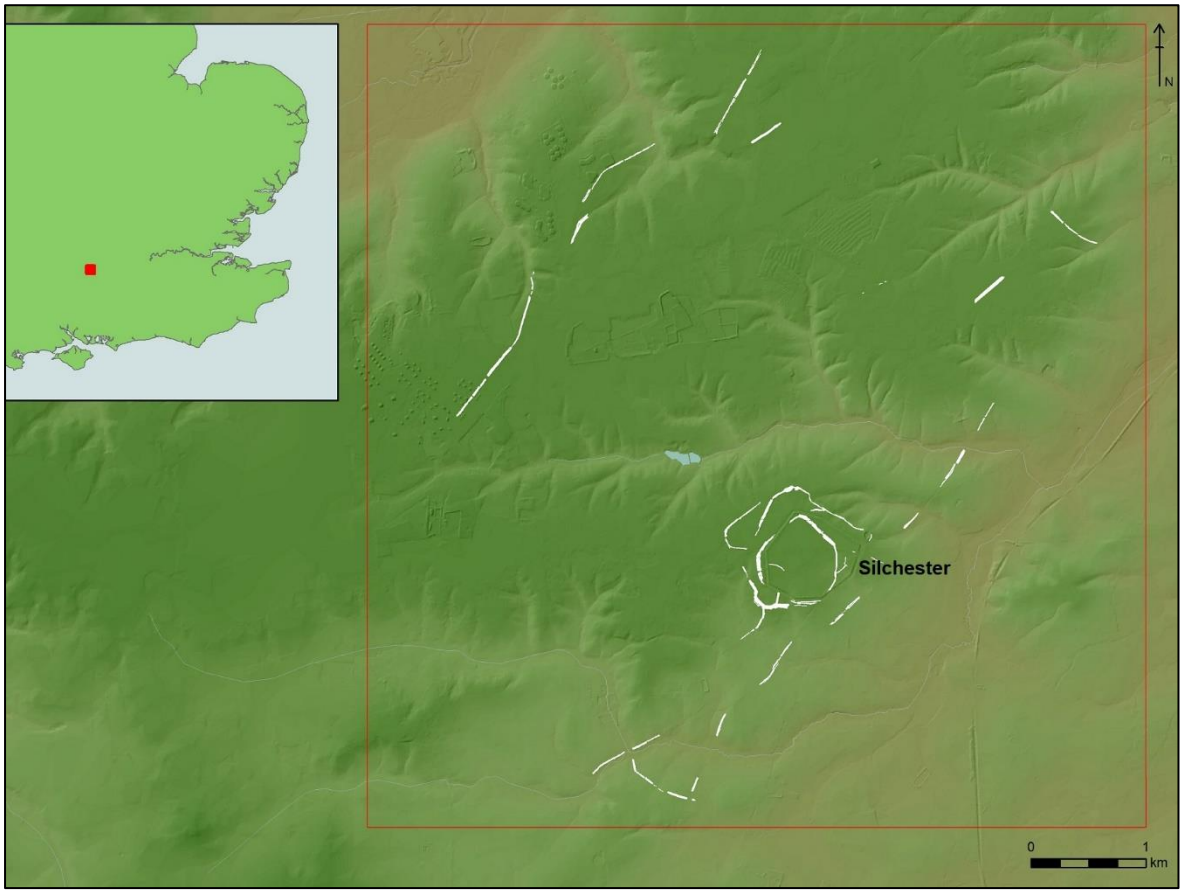


Figure 2.3 Silchester project area. Background map created from OS Terrain 5 © Crown copyright and database rights 2021 Ordnance Survey (100025252). Inset map contains Ordnance Survey data © Crown copyright and database right 2021

The project area is mainly located within the Thames Basin and Heaths National Character Area (NCA 129) (Natural England 2014).

New archaeological information was collected by the author from aerial photographs and lidar during the Silchester Iron Age Environs Project (Truscoe 2018). This project covered a larger area than considered by the current study in order to connect the results with two other previous aerial photographic surveys and provide a larger area within which to contextualise the findings: the Thames Valley to the north, carried out by the Royal Commission on the Historical Monuments of England (RCHME) as part of an early National Mapping Programme (NMP) survey (Fenner & Dyer 1994) and the Hampshire aggregates mapping project which included the Silchester gravel plateau (Young 2008). Interpretation of the survey results was aided by participation in other areas of the Silchester Iron Age Environs Project: woodland walkover survey, analytical earthwork survey and excavation (Barnett & Fulford in prep).

Chichester

The Chichester project area is larger than those for the Silchester or Colchester case studies due to the fact that the known or suspected extent of the possible territorial *oppidum* site is less well-defined. The area considered extends from the South Downs in the north to the Selsey peninsula in south in order to include both areas which have been suggested as locations for a possible nucleated settlement: Selsey and the Chichester/Fishbourne area (see Figure 2.4). The underlying geology of the South Downs is chalk, while the coastal plain is predominantly London Clay Formation (Clay, Silt and Sand), but with bands of Head (Clay, Silt, Sand and Gravel) crossing the northern area of the coastal plain (British Geological Survey sheets 317 and 332). The area falls within National Character Areas 125, South Downs (Natural England 2013) and 126, South Coast Plain (Natural England 2014).

The project area covers an area as far to the north of the Chichester Entrenchments as it does to the south in order to fully consider their landscape setting and possible relationships with other monuments. New data were collected for this thesis from aerial photographs and lidar over an area to the south of the entrenchments encompassing the West Sussex Coastal Plain down to Selsey Bill (166 square kilometres). In addition, the results of two previous aerial photograph and lidar surveys carried out in the Chichester region have been utilised as part of this research: the High Woods from Above project which covered the South Downs National Park to the north of the coastal plain (Carpenter *et al* 2016); and the South East Rapid Coastal Zone Assessment which covered the Chichester Channel and the coast to the south (Dickson *et al* 2012). The majority of sites identified in the section of the South East Rapid Coastal Zone Assessment mapping project related to medieval or

post medieval intertidal features and Second World War military installations; the level nature of the coastal plain made it particularly suitable for airfields. The construction of military sites has a major impact on the visibility of archaeological sites on aerial photographs, although sites with sub-surface remains only might be better preserved on, for example, large airfields or training sites. High resolution lidar was available for the High Woods from Above project, enabling the identification of a wealth of new archaeological sites, and clarification of the extent of previously recorded features, surviving as low earthworks under tree cover. These included extensive coaxial field systems which were found to cover the majority of this area of the South Downs, interspersed with settlements dating to between the Bronze Age and the Roman period.

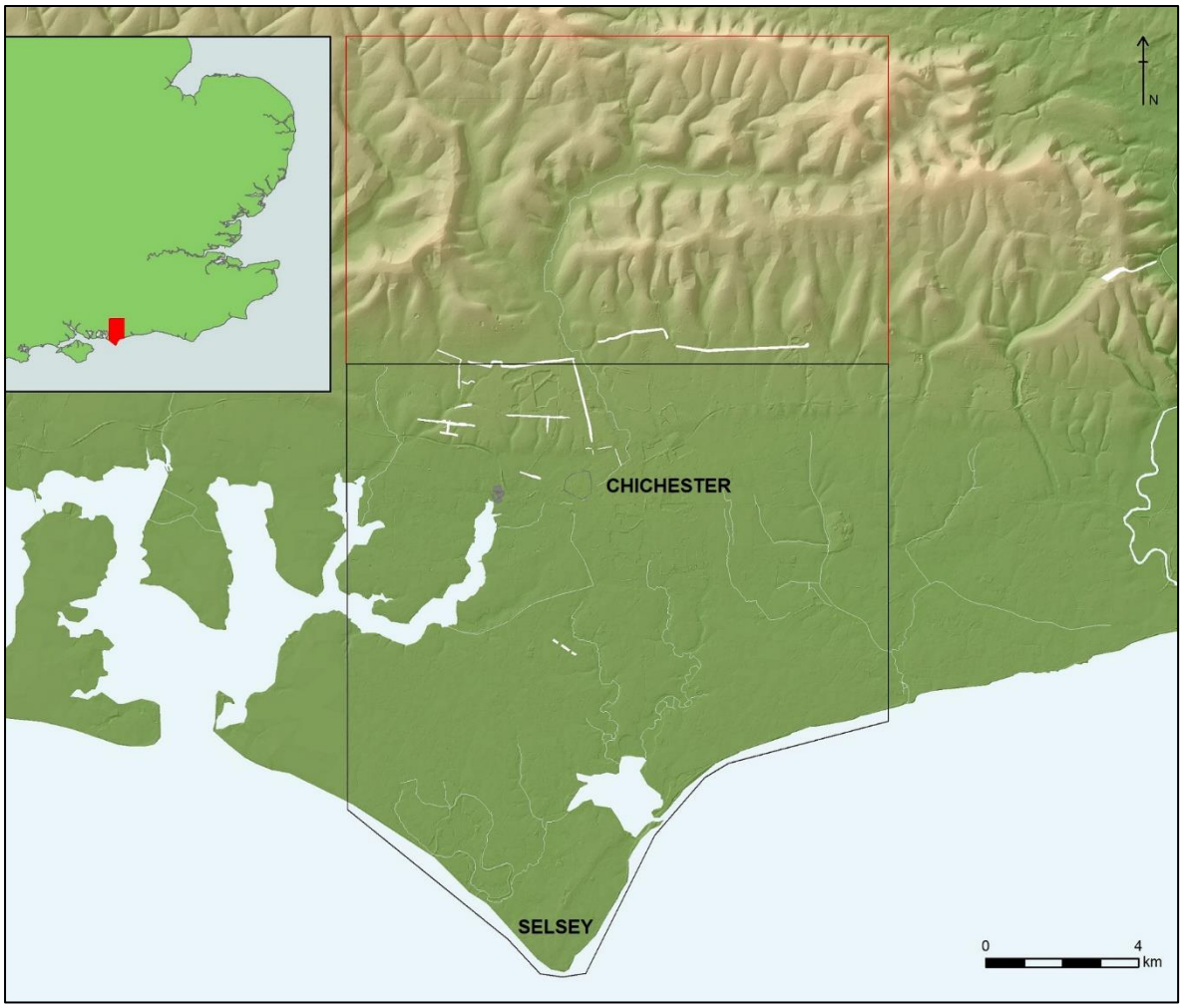


Figure 2.4 Chichester project area. The black outline shows the area for which new data was collected and the red outline shows the full extent of the area considered. Background map created from OS Terrain 5 © Crown copyright and database rights 2020 Ordnance Survey (100025252). Inset map contains Ordnance Survey data © Crown copyright and database right 2021

Sources

I have examined existing data from a variety of sources and combined that information with new data collected from the systematic analysis and interpretation of aerial photographs and lidar. Aerial photograph and lidar survey enables the relatively rapid discovery of newly identified archaeological features and the redefinition of the extents of known sites. The nature of archaeological evidence that can be seen on aerial photographs and lidar helps to define the distribution and type of archaeology that can be recorded. This usually comprises relatively large ditched and/or embanked features which are visible above ground as earthworks or as cropmarks representing sub-surface features (Wilson 2000) ranging in date from the Neolithic period onwards when monumental structures begin to appear more frequently in the landscape. It is possible to a certain extent to recognise relationships between features through time and space, but, combining the results of such survey with information from excavation, documentary sources and other forms of remote sensing contextualises the data and enhances its interpretation and utility. Consulting a historical sequence of aerial photographs makes it possible to chart changes to a particular area. Understanding the effects of later developments in the landscape, whether they were transient in nature, such as the creation of wartime installations, or the result of repeated activity, such as ploughing, enables a greater understanding of what can and cannot be seen through remotely sensed sources.

Aerial Photographs

Aerial photographs can provide information on buried archaeological features which – under certain conditions – can affect the appearance of soil, or the growth of crops above them. A cut feature, such as a ditch can provide a greater depth of soil for crops above it, which may have a greener, lusher, appearance as a result. Conversely, a buried wall can cause plants to ripen quickly giving them a lighter appearance than the crops around them. Collectively the changes in appearance of vegetation that can be observed from the air are known as cropmarks. Indications of buried archaeological features may also be seen in bare earth (soilmarks). The main archaeological uses of aerial photographs are as a means of prospection, as a way of defining the limits of a known site, or for illustrative purposes. The systematic examination of the historic and modern photographs for an area can result in the discovery of many previously unknown archaeological sites. Historic photographs may also show earthworks which have since been ploughed level or structures which have been removed.

The majority of the historic aerial photographs consulted are held in the national repository for England, the Historic England Archive. The contents of these archives are derived from military

sources, the Ordnance Survey, commercial enterprises, private collections, and modern programmes of flying. The other main sources photographic sources consulted were: APGB images, Google Earth, BING, local authority collections and the Colchester Archaeological Trust. The aerial photographs used fall into two main categories: vertical photographs, mostly taken for cartographic and planning purposes, and oblique photographs, generally taken as part of a specialist archaeological survey. Recent vertical digital photo mosaics such as Google Earth were routinely consulted online. The vertical photographs consulted within the project area have a date range of 1940 (the earliest Royal Air Force photographic coverage) to 2018 (the most recent Google Earth images covering the project area). There was good general coverage of vertical photographs, both historic and modern, across the project area. Oblique photographs ranged in date from the 1925 up until 2014 (the most recent Historic England digital reconnaissance photography). Specialist photography, both oblique and vertical, has been commissioned for *oppida* sites in southern England, such as Verulamium (see below), in association with earlier investigations.

The use of aerial photographs and lidar for landscape-scale survey

The potential of aerial photographs as a tool for discovering new archaeological sites has long been recognised (Riley 1987; Wilson 2000). Early developers of the technique, including O G S Crawford and Père A Poidebard working in the 1920s, highlighted the usefulness of aerial survey for identifying buried remains from the way they affected vegetation above them (cropmarks), or how the shadows cast by low sunlight could highlight low relief earthworks and structures (Riley 1987, 11). Cropmarks had been recognised to some extent in the pre-flight era; the earliest known recorded observation being an account by John Leland after a visit to Silchester in 1541 (Fagan 1959, 279). However, the ability to take an aerial view demonstrated the widespread nature of this phenomenon.

The use of aerial photographic interpretation in *oppida* studies

In 1933 a Royal Air Force (RAF) vertical survey was commissioned by O G S Crawford (Archaeological Officer, Ordnance Survey) for *Camulodunum*. It was used by A F Hall to produce a map which brought together a study of the ground, information from earlier ground surveys and the results of selective trial digging (Hawkes & Hull 1947, frontispiece, 9). A more detailed survey was flown by Dr St Joseph in the 1950s. This survey, flown at a lower height than the RAF, revealed the complexity of field systems around Gosbecks and enabled the identification of an earlier, pre-Roman phase. A Royal Commission survey followed this during the drought years of the 1970s and the detailed

results of the features around Gosbecks and Stanway led Crummy to suggest that Gosbecks, rather than Sheepen, formed the centre of the Iron Age settlement (Radford 2013, 38; St Joseph 1953).

In 1940 Crawford again commissioned the RAF to carry out a survey of oblique photography for *Verulamium* in order to create a mosaic of the landscape between the River Ver in the north and the outlying earthworks and The Fosse to the south. Aerial photographic interpretation and transcription was then undertaken to produce a plan of earthworks and features of the Roman town (Corder 1941, 120-122), but not the wider landscape. A review of existing photography up until the end of 1995 was undertaken for *Calleva* by the Royal Commission on the Historical Monuments of England (RCHME) extending to the Outer Earthwork, but earlier features were also mapped within the area covered (Bewley & Fulford 1996, 387-388). As with the *Verulamium* survey, the wider landscape context was not included; the principal reason for both surveys being to create new plans of the Roman towns.

A number of previous landscape-scale aerial interpretation mapping projects have been carried out within *oppida* locations in south-east Britain as part of the English Heritage/Historic England led National Mapping Programme (NMP). The programme is relatively widely known, but neither the mapping results nor the survey reports are extensively used by academics, one exception being the Bagendon project (Moore 2020). There has been a tendency to refer to earlier survey work which has been formally published, rather than using the grey literature produced during more recent surveys. NMP reports contain useful analysis of their project areas and their associated mapping can be analysed in a Geographic Information System (GIS). This source of information can be analysed in the same way that grey literature from development-led fieldwork has been used in other recent studies (eg, Garland 2017; Bradley *et al* 2016).

An NMP survey was carried out for the county of Essex (Ingle & Saunders 2003) and a follow-up project reviewing recent photography in the Colchester area has also been undertaken (Saunders 2016). Lidar is not referred to as a source in the follow-up project but is used here together with a new assessment of aerial photography for the Colchester area. “The High Woods from above” NMP project, covering the South Downs National Park, was undertaken by English Heritage and Cornwall Council (Carpenter *et al* 2016) and incorporated a specially commissioned lidar survey. The National Park area extends as far to the south as the Chichester Dykes, but does not continue further into the coastal plain. The South East Rapid Coastal Zone Assessment (Dickson *et al* 2012) includes Chichester Harbour and the Arun Valley. The results of these two projects have been used together with an assessment of the aerial photography and lidar of Chichester and its environs in the wider coastal plain.

A survey of aerial photographs in the extra-mural area of the Roman town at Silchester was undertaken by Mark Corney, with many important sites highlighted (Corney in Fulford 1984), but the University of Reading *Silchester Iron Age Environs Project* (Truscoe 2018; Barnett & Fulford (in prep)) shows the potential of systematic aerial photograph and lidar interpretation over a wider landscape around an *oppidum* site. This survey was carried out to the mapping standards developed by Historic England and in collaboration with them. Later prehistoric settlement was newly identified through the project both as earthworks on lidar visualisations and from cropmarks and earthworks on aerial photographs. The survey results were used to identify targets for further investigation in this multi-faceted project, including excavation and environmental analyses. Incorporating what can all too often be a stand-alone survey technique into a multi-disciplinary project was beneficial for interpretation of the aerial survey results and for future aerial surveys. The excavated and dated sites now form part of the body of knowledge that aerial photographic interpreters can call on to aid understanding of a site based on its morphology alone. For example, the layout of the farmstead at Windabout Copse, with its double-ditched enclosure, could suggest the separation of people and animals, possibly indicating an emphasis on livestock (see Figure 4.13). The subsequent excavation showed minimal processing and storage of grain, which may support this hypothesis (Fulford, Barnett & Clarke 2016, 19).

Lidar

Airborne laser scanning, or lidar (light detection and ranging), involves an aircraft-mounted pulsed laser beam, which scans the ground from side to side as the aeroplane follows a straight-line course across the target area. The laser pulses bounce off the ground, and any features on it, and the speed and intensity of the return signal is measured. 'First return' is the term used to describe the first beams to bounce back, whether they hit the ground, a rooftop or the tree canopy. 'Last return' describes those that, for example, follow a path between the leaves and branches before bouncing back from the ground within woodland. This information is used to create a precise Digital Elevation Model (DEM) of the ground and the features on it. As with aerial photographs, lidar captures images of the landscape at a particular moment in time. Outside wooded areas, they are very much complementary resources.

Lidar data was obtained from the Environment Agency for each of the case study areas (see Appendix II for coverage). Environment Agency lidar survey is generally undertaken for flood modelling and therefore survey coverage tends to concentrate on river valleys. Blanket coverage was not available for the project areas, but a large proportion of them was covered by 1 m resolution lidar.

A variety of factors can affect our ability to identify and interpret archaeological features on lidar and aerial photographs. For example, an appreciation of the nature of the aerial view and how it differs from observing at ground level is necessary before trying to interpret how features fit into a landscape. Soils and the underlying geology have a significant effect on how buried archaeological remains may appear on aerial photographs. Particular soils are more conducive to the formation of cropmarks while it is relatively rare to find them on others. Later and current land use also affects how archaeological features survive and the extent to which their remains can be identified on lidar and aerial photographs.

The use of lidar for archaeological survey

Airborne lidar was conceived in the 1960s for submarine detection and early models of Airborne Laser Bathymetry were tested in the early 1970s. By the 1980s there were operating systems in use in the United States, Canada and Australia. Current models include the US Geological Survey SHOALS system (Scanning Hydrographic Operational Airborne: Lidar Survey) which can collect hydrographic and topographic measurements, ie, above and below the surface of the water, down to a depth that is approximately equivalent to three times the visible depth. During the period that bathymetric lidar techniques were being developed, the concept was extended to topographic lidar, measuring surfaces on land. The wider implementation of lidar systems was dependent on the development of satellite navigation systems and Inertial Measurement Units (which measure the pitch, roll and yaw of an aircraft). The increased positional accuracy of measurements recorded made possible through these developments made lidar survey a practical reality The Environment Agency began to use topographic lidar in 1996 shortly after it became available and has continued to use it to produce terrain maps suitable for assessing flood risk (Crutchley & Crow 2010).

From 1 September 2015 the United Kingdom Environment Agency moved from providing lidar data via their Geomatics Group and made all their data freely available via the Data.Gov.UK portal. The data come in varying resolutions and while there is not blanket coverage for England, it is a very useful resource for archaeological survey (http://environment.data.gov.uk/). Similar access to government datasets is available in other European countries, for example, via the Informatyczny System Osłony Kraju (IT system of the Country's Protection Against Extreme Hazards) in Poland (http://www.isok.gov.pl).

The use of lidar, or airborne laser scanning, for archaeological survey has developed considerably in recent years and is now widely used (eg Opitz & Cowley 2013; Kokalj & Hesse 2017). Initially lidar was frequently captured at a relatively low resolution and the most commonly used visualisations

analysed in archaeological survey were the hillshade Digital Terrain Model and Digital Surface Model (for example, surveys of Savernake Forest (Wiltshire) (Crutchley *et al* 2009) and the Mendip Hills AONB (Somerset) by (Truscoe 2008). Lidar, where it is available, is also now used in conjunction with aerial photography for every mapping project carried out as part of the National Mapping Programme by the Historic England mapping teams and contractors. The highly detailed and accurate land surface models which can be produced from lidar data provide archaeologists with the capability to recognise and record otherwise hard to detect features. It is particularly useful in tree-covered areas (depending on the canopy type) but can also aid recognition of low-level earthworks in open ground. Developments in software have made processing by non-experts considerably easier, particularly the Relief Visualisation Toolbox developed by Research Centre of the Slovenian Academy of Sciences and Arts (http://iaps.zrc-sazu.si/en/rvt#v).

While lidar is frequently used alongside aerial photographs in British landscape survey, there are many international projects where it is used more exclusively, for example, on extensive wooded landscapes in France, or Ralf Hesse's survey of the entire federal state of Baden-Württemberg (Bofinger & Hesse 2011). Research has been carried out into the automatic detection of archaeological features in lidar data for these extensive landscapes, for example, by Hesse in Baden-Württemberg and in Auvergne (Toumazet *et al* 2017). There have been three meetings to date of the *Training and Research on the Archaeological Interpretation of LiDAR* international conference/training sessions and two volumes covering the use of lidar have been published through the ArchaeoLandscape Europe project (http://arcland.eu/).

The use of lidar in *oppida* studies

Lidar is a useful additional tool in remote sensing surveys, enabling rapid survey of woodland areas, dependent on local conditions, and, like aerial photographs and satellite imagery, allowing access to areas which are remote or difficult to traverse. Lidar has been used in landscape studies of *oppida* in France, for example in the environs of Bibracte. Use of lidar allowed mapping of terracing on a site in the Sources de l'Yonne area and aided the understanding of the process of settlement change associated with the *oppidum* (Moore *et al* 2013). While the use of lidar alongside aerial photographs is common in multi-period surveys in Britain, its use in *oppida* studies is more limited. However, the availability of Environment Agency lidar has increased its use in research projects where it may not have been possible to commission a specially flown survey. For example, lidar visualisations have been consulted in conjunction with aerial photographs and geophysics during a survey of the landscape around Stanwick (Haselgrove 2016, 30-31). Geophysical surveys and lidar have also been used to investigate the complex of sites at Bagendon, identifying rectangular stone structures which

are evidence of Roman occupation following the abandonment of the site in *c*. AD 60 (Moore 2020; https://www.bagendonproject.org/).

Lidar has been examined in two separate surveys in the Silchester area: looking at the immediate environs of the Iron Age and Roman settlement (Creighton with Fry 2016) and at a more extensive landscape area during the *Silchester Iron Age Environs project* (Truscoe 2018). The results of both surveys added to the picture of the *oppidum* landscape, but the latter revealed evidence of settlement beyond the extent of the dykes, for example, four previously unknown settlements in Pamber Forest to the south-west of Silchester, later found through post-excavation analysis to have been constructed in the Middle Iron Age, although one of the settlements continued to be occupied into the Late Iron Age (Barnet & Fulford in prep).

Other data sources

Other sources, including historic maps (accessed via Digimap, Digimap (edina.ac.uk)), soils and geology data (accessed via British Geological Survey), published and unpublished archaeological accounts, were also consulted. As mentioned above, an appreciation of the soils and underlying geology of an area are crucial to understanding the way that features might appear on aerial photographs and what types of archaeological site might be more, or less, visible. Historic maps are also a vital aid to the correct interpretation and recording of features. For example, building platforms seen on aerial photographs or lidar might be difficult to assign to a particular period, but can be shown to be farm buildings extant in the 19th century by consulting the 1st edition Ordnance Survey map. Reports of archaeological investigations add data to the survey and also aid interpretation of unexcavated sites. Comparisons can be made on a morphological basis to suggest a date for sites identified through remote sensing alone, although further investigation would be needed to confirm such inferences.

Historic and modern maps, and lidar formed the base layers for a project GIS (Geographic Information System) for each case study. To this were added data from the following sources:

- National Record for the Historic Environment
- National Heritage List for England
- Historic Environment Records (Chichester, West Sussex, Colchester, West Berkshire, Hampshire)
- Portable Antiquities Scheme

- Celtic Coin Index (Institute of Archaeology, University of Oxford)

Aerial photographs, satellite imagery and lidar were examined in the context of this collected information, in order to aid interpretation and understanding of landscape change.

Methods

Georeferencing of photographs

The historical vertical photographs were originally taken as overlapping sequences which enables two images of the same landscape area to be viewed at the same time using a stereoscope. The stereoscope allows the viewer to see the photographs in 3D and to look at the landscape in greater detail. The photographs on which archaeological features are identified, either vertical or oblique, are then scanned and rectified (using Aerial 5.36) in order to produce georeferenced digital images. A digital terrain model function, using APGB 5m interval contour data, was used to compensate for undulating terrain.

Processing of lidar

The raw lidar data can be obtained from the Environment Agency in two forms: a Digital Surface Model (DSM) and a Digital Terrain Model (DTM). A Digital Surface Model (DSM) is a digital elevation model of the first returns, i.e., the highest points encountered, including buildings and the tree canopy. Features on the ground are obscured by woodland and dense vegetation in the same way as on an aerial photograph. A Digital Terrain Model (DTM) for wooded areas is created using algorithms to remove first return data, a so-called 'bare earth' model then being generated from the last returns.

The raw lidar data (.asc files) are processed using the Relief Visualisation Toolbox (Kokalj et al 2016) and the different visualisations produced are outlined below. Several different visualisations were used because they highlight different aspects of the data. The multi-lit hillshade model provides the most straightforward depiction of lidar, but some features may appear clearer in other visualisations.

The DTM was processed as a hillshaded visualisation, where the virtual ground surface is 'lit' from multiple directions. This is arguably the most readily understandable visualisation as it offers a familiar view for those used to viewing archaeological earthworks in 3D or on oblique aerial photographs. This type of visualisation has been used for illustrations for the aerial survey results. The realistic height representations of a DTM make them easier for the human eye to interpret as

mounds or hollows. However, a potential weakness of the hill-shaded DTM is that the apparent position of features can move slightly from their true ground position if the direction of illumination is altered (Bennett et al 2012, 45).

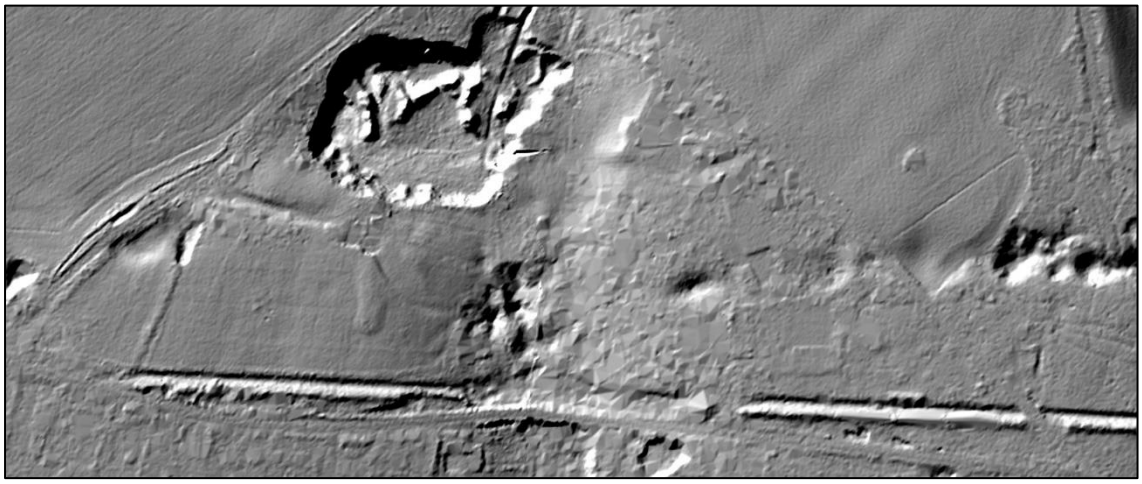


Figure 2.5 Multi-lit hillshade visualisation of lidar DTM. © Environment Agency

Use was also made of Openness-positive and Openness-negative visualisations. In contrast to the other various shading techniques, openness is not subject to a directional bias due to the angle of hill-shading and therefore relief features do not contain any false horizontal displacement. Additionally, it offers a distinction between archaeological relief features and the surrounding natural topography (Doneus 2013, 6427). The openness techniques highlight both the highest and lowest parts of features and the resulting visualisations clearly accentuate positive features (within Openness negative) and negative features (within Openness-positive). The openness visualisations were particularly suited for mapping and outlining archaeological features with sharp edges such as extractive pits.

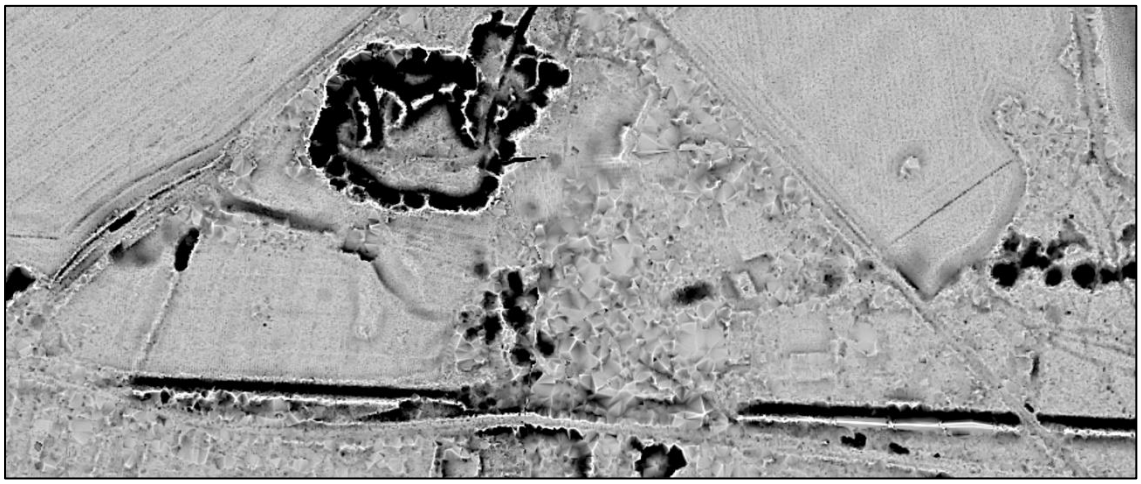


Figure 2.6 Openness-positive visualisation of lidar DTM © Environment Agency

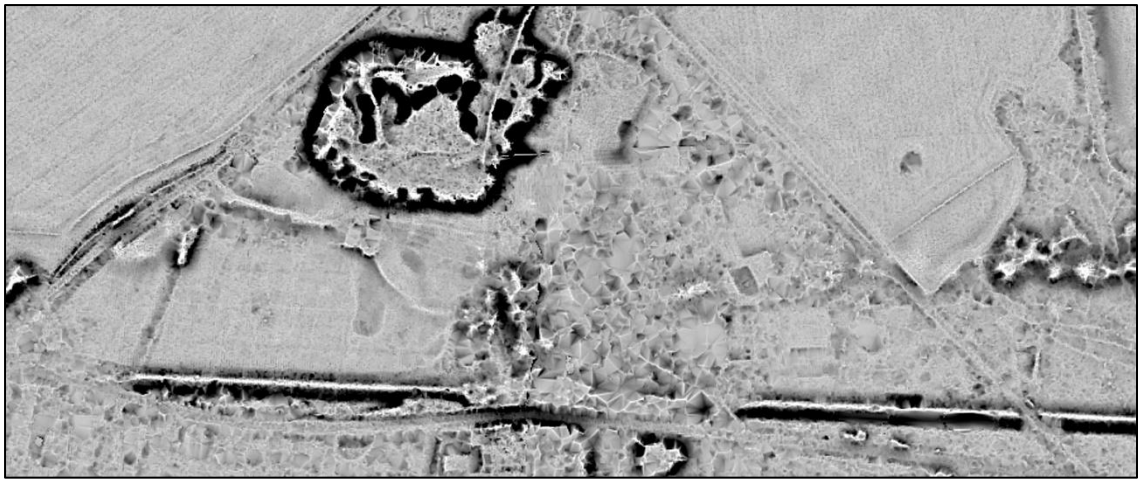


Figure 2.7 Openness-negative visualisation of lidar DTM © Environment Agency

The Local Relief Model (LRM) visualisation is derived from a high-resolution DEM. It isolates subtle local elevation changes from the large-scale global relief and therefore enhances the visibility of small-scale, shallow topographic features irrespective of the chosen illumination angle (Hesse 2010: 67).

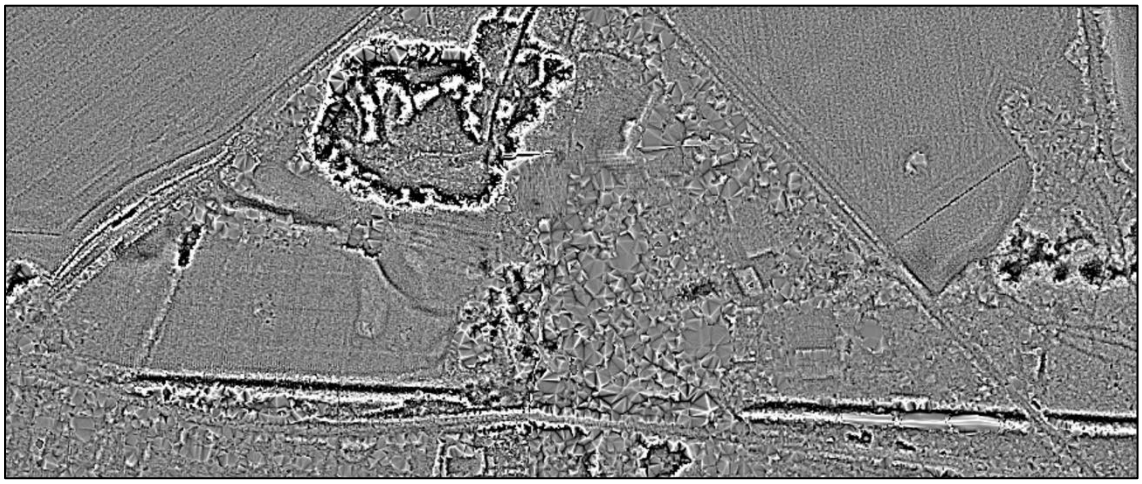


Figure 2.8 Simple Local Relief Model visualisation of lidar DTM © Environment Agency

Sky View Factor (SVF) is a technique from which a shaded image can be produced based on diffuse, rather than direct, illumination, with the landscape illuminated uniformly from a bright sky above. The shading is produced by the sky-view factor, a parameter corresponding to the portion of visible sky visible from a particular viewpoint; a greater amount of light is visible from a ridge top as opposed to a steep valley bottom. It can be used to show relief characteristics and can improve the recognition of small-scale archaeological features from high resolution DEMs (Zakšek *et al* 2011: 402).

Figure 2.9 Sky View Factor visualisation of lidar DTM © Environment Agency

The different visualisations were used together in order to better define and interpret the form and extent of those archaeological features which could be identified from lidar data. Only features which have a height or depth difference to their surroundings will be visible, and the degree of visibility will be further dependent on the resolution of the lidar data. Features with a slight change in elevation may not be visible on 1 m resolution lidar but may be seen on a 0.25 m resolution survey. Sub-surface remains which can result in the formation of cropmarks will not be visible on lidar data. In woodland areas, resolution was particularly important as lidar was often the only source of information. The visualisations were used alongside the aerial photographs in non-wooded areas in order to provide supplementary information on extant earthworks or structures.

Where gaps in lidar coverage occur, it has been necessary to glean as much topographic information from aerial photographs and other sources as possible. Height data was obtained from APGB in addition to the photographic layer: contours at 5 m intervals and Surface heights (including trees and buildings) at 2 m intervals. The values of these height data can be processed using the RVT in order to produce visualisations in the same manner as with the Environment Agency lidar.

Mapping methodology

The extents of archaeological features were interpreted and drawn in ArcMap 10.3.1 from photographs which had been georeferenced and rectified using Aerial. Archaeological features were depicted with different attributes based on the form of the remains, e.g., red for banks, green for ditches etc., conforming to drawing conventions developed and used by Historic England (Evans 2019, 76-9 and see Figure 10). The extent of the features to be described in each monument record (see below for recording method) was defined by a line drawn around the maximum extent of the site (a monument polygon). A unique identifier number was attached to each group of objects

corresponding to the monument record number in the Historic England (HE) database, the National Record of the Historic Environment (NRHE). Particular features can be retrieved from the NRHE and from a Geographic Information System (GIS) using this unique identifier. In the case of monuments which possessed an existing Historic Environment Record (HER) number, this information was added to the attached data for all the features drawn for the individual site. Spatial data was automatically generated, and the other data attached for each feature was as follows:

Layer (bank, ditch etc)	Monument type 2 (narrow)
NRHE record number	Summary description
HER record number	Source(s) (up to four)
Period 1	Evidence (e.g., cropmarks, earthworks etc)
Period 2	Scheduled Monument number
Monument type 1 (broad)	Comments

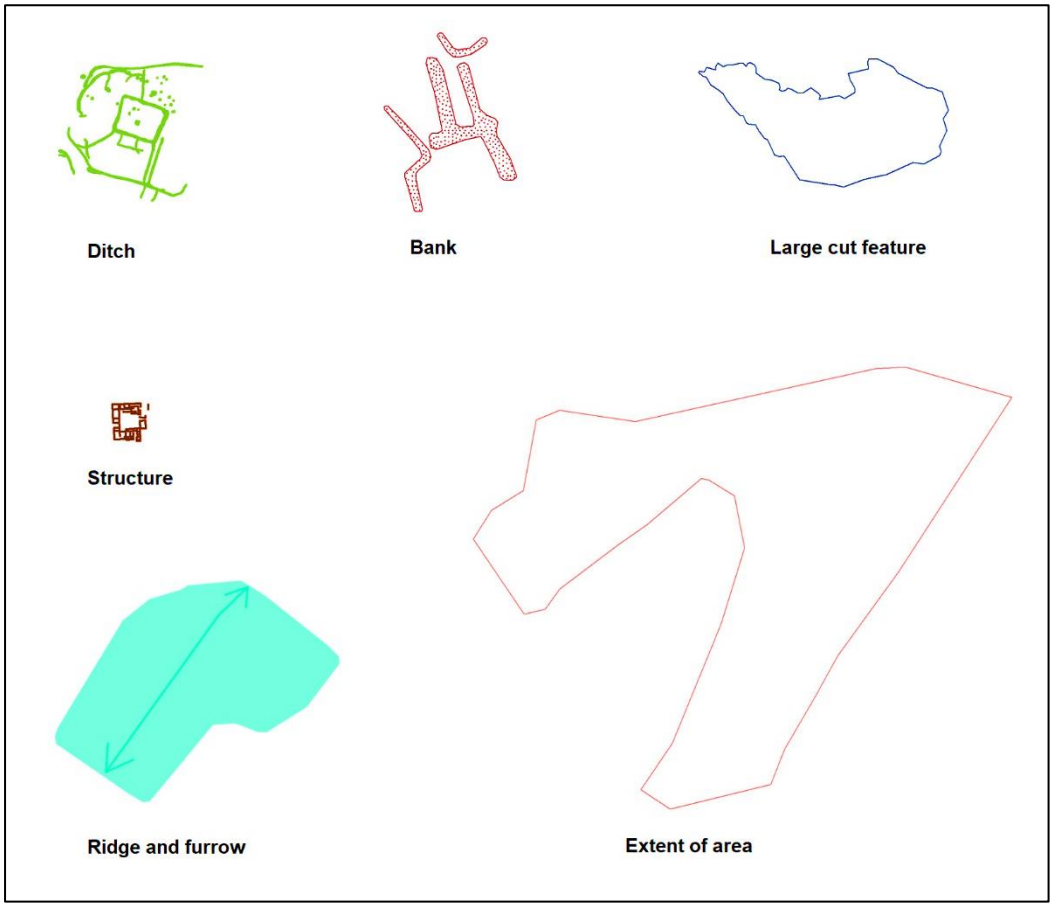


Figure 2.10 Drawing conventions used based on Historic England Aerial Investigation and Mapping guidance

Recording methodology

Monument records in the NRHE database were created or amended where appropriate for the Silchester and Chichester project areas. However, this was not possible for the Colchester area due to the implementation of a software change to the Historic England database. Additional information was added to the GIS attached data in order to provide the same initial level of recording. The GIS mapping will be provided to the relevant HERs, the addition of HER identifiers within the attribute data enabling a link to be made to existing records. The monument records that it was possible to create consisted of a textual description of the site linked to indexed location, period, type and form of evidence. The record also included digital cross references to other monuments and datasets (usually the HER or scheduling information) as well as a list of the main aerial photographs and other sources for the site. An Event record was created in the NRHE database for Silchester and Chichester to provide basic information on project aims, scope and procedures. Each monument record created or amended in the course of the project is linked within the database to the Event record.

Analytical earthwork survey

Analytical earthwork survey was used in a targeted area of the Chichester Entrenchments to the north of Fishbourne in Oak Wood, in order to clarify details of the monuments (see Figure 11). The area had been mapped from lidar imagery but the construction of early 19th century garden earthworks around sections of entrenchment EWD (i) and EWD (ii) meant that the details were obscured. A detailed analytical earthwork survey of the area at 1:1000 was carried out using differential GNSS equipment, Total Station Theodolite, and traditional tape and offset survey methods where appropriate. In the field, a detailed survey plan of the archaeological features was produced on polyester film using the electronically derived control plot and tape-and-offset techniques.

The survey work was undertaken in January 2020 when ground conditions were at their most favourable with minimal vegetation cover so that details of the Chichester Entrenchments in this area could be recorded with a greater degree of accuracy. The survey area was located in two areas with different landscape use and surface cover. The western half fell within Oak Wood, a heavily wooded area in the grounds of Oakwood Farm and the eastern half lay within pasture fields, the northernmost part of the farmland associated with Robin Hill Farm. The pasture fields were largely level within the survey area, with adjacent fields below them sloping to the south.

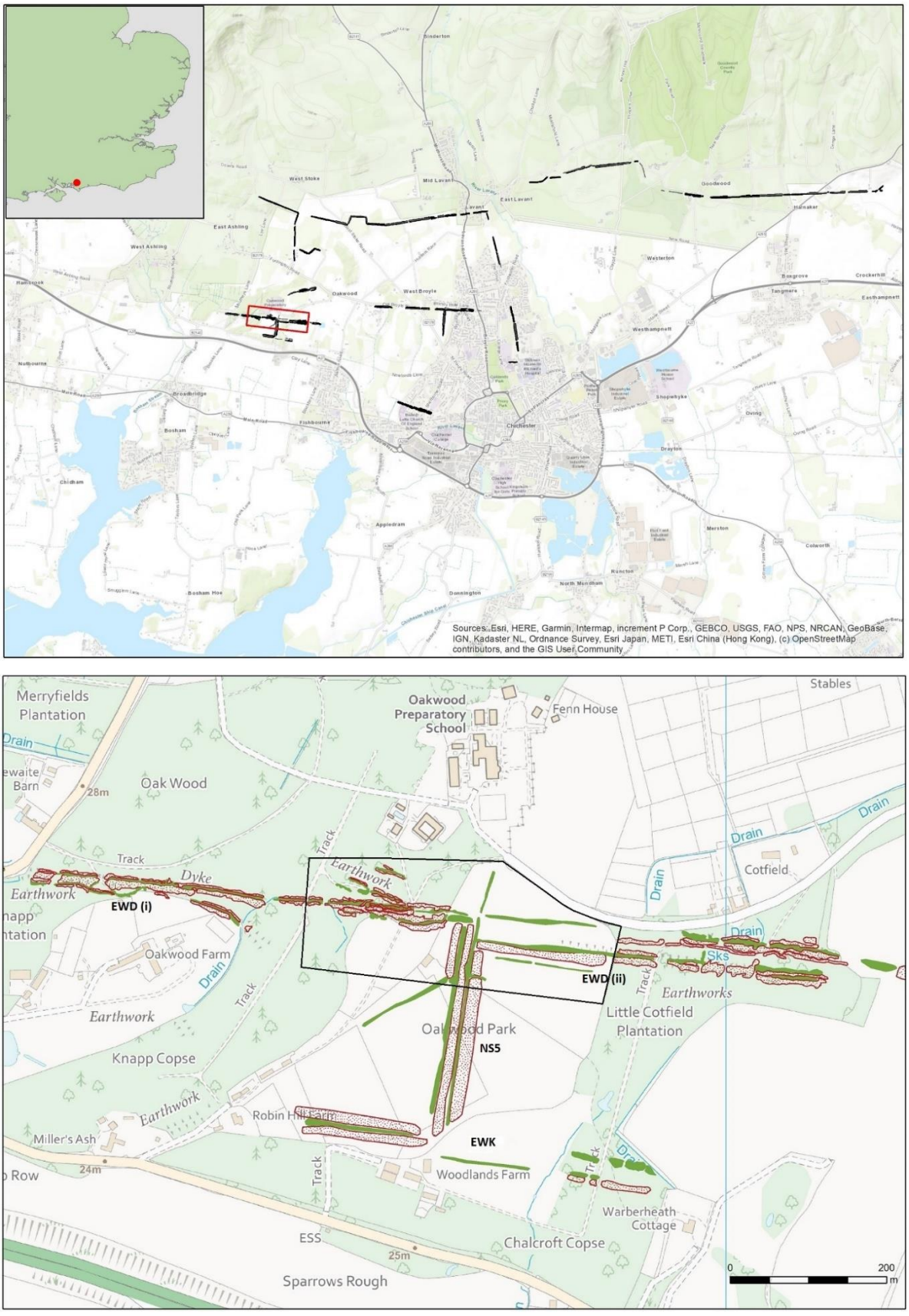


Figure 2.11 General location of survey area in relation to the Chichester Entrenchments (above) and detailed location with the notation of the individual earthworks and transcription from aerial photographs and lidar. Base map © Crown copyright and database rights

The sections of the dykes which survive as earthworks are protected by Scheduling, but all work carried out was non-intrusive. The aims of the fieldwork were:

- To create a detailed record of the earthworks in this area; Bradley was unable to access the Oakwood entrenchments on the ground, so this work fills in a gap in his survey.

- To establish the course of Entrenchment EWD (i) where it is obscured by 19th century garden features and could not be clearly understood on lidar imagery.

- EWD (i) lies mainly within Oak Wood and consists of several sections with breaks in between them. The fieldwork aimed to determine whether these breaks are actual gaps in the earthwork as constructed or caused by the creation of later park features or other disturbances.

- To examine the relationships between Entrenchments EWD (i), EWD (ii) and NS5.

For full results see Chapter 5 and Appendix I, but to summarise, analytical earthwork survey of this small area of the Chichester Entrenchments has revealed a level of complexity that was not apparent from the aerial photographs and lidar. A sequence of construction was established which suggests that while EWD (i) and EWD (ii) have a similar alignment, they are not part of the same entrenchment. The survey clarified the route and extent of EWD (i) within the wood and established the relationships between this feature and the east-west and north-south Entrenchments within the pasture field to the east. Observation of the relationships identified between the linear earthworks indicates at least three phases of construction:

1. An east-west oriented bank which straddles the woodland/pasture boundary.

2. EWD (i) is created overlying the western end of the phase 1 bank and extending to the west through Oak Wood and the NS5, formed of two parallel banks, cutting through the eastern end of the phase 1 bank and extending to the south. While these two features appear to postdate the phase 1 bank it is not clear if they are contemporaneous.

3. EWD (ii) an east-west earthwork formed of two parallel banks which abuts the eastern side of the northern end of NS5 and extends to the east.

The fieldwork demonstrates that the features classified as entrenchment EWD consists of three separate linear earthworks which represent three phases of earthwork construction. The point in time when the individual sections were constructed and how long a period of time elapsed between their creation, and that of the earthworks that followed them, is unknown. However, there is a similarity in layout between several of the earthworks: NS5, EWD (ii) and EWK which lies to the south of these entrenchments are all formed of two parallel banks. The survey has also identified a

partial parallel bank located to the north of the eastern end of EWD (i). Although the majority of this earthwork as it continues to the west through Oak Wood consists of a single bank only, the individual sections of EWD (i) may not have been constructed at the same time and may not necessarily follow the same plan. It would appear that even a comparatively small area of the Chichester Entrenchments can exhibit a complex biography. Further investigations would be necessary to attempt to establish dates of construction for the Oakwood entrenchments, although, as previous excavations have shown, dating linear earthworks can be a difficult process.

3 Colchester Territorial *Oppidum* Area

Introduction

Colchester, the location of the Late Iron Age and Roman settlement of Camulodunum, has a long history of investigation. The territorial *oppidum* is thought to include two main areas of settlement, Sheepen and Gosbecks, and a number of funerary sites, primarily the Lexden tumulus and cemetery and the Stanway mortuary enclosures, located within and around an area of land delineated by a series of dykes. The dykes associated with the settlement were first surveyed in full in 1722 and they have been the subject of further investigations up until the present day. The two suggested main occupation areas differ greatly in the extent of their investigation; the Sheepen site and the dyke adjacent to it were the subject of a major excavation in 1930-1939 (Hawkes & Hull 1947) and further excavation in 1970 (Niblett 1985), but, while an interpretation has been made of Gosbecks from aerial photographs, only limited excavation on presumed pre-Roman features has taken place there. Evidence of Middle Iron Age and Late Iron Age settlement has been found outside these two main areas, for example, at Colchester Garrison in the eastern part of the territorial *oppidum* area (Brooks & Masefield 2005) and Bell House Pit near Stanway (Pooley & Benfield 2005). Different burial rites have been identified at Lexden and Stanway, ranging from the simple placing of cremated remains in a pot, to the assembly of a rich array of items around the deceased person within a wooden chamber (Crummy 1997, 22-23). Evidence of burials within a third suggested cemetery have been found in the north of the Colchester Garrison area, adjacent to the Barnhall dyke (Hawkes & Crummy 1995, 170). In addition to the history of excavations and survey at this site, it has been examined during two aerial photographic mapping projects, by Philip Crummy (1979, 77-78) and as part of the Essex National Mapping Programme Project in 1993-2003 (Ingle & Saunders 2003). The extent of this previous work combines to make it a site with a wealth of investigation and analysis which acts as a good comparator to the relatively less well-studied site of Chichester.

Camulodunum has been considered to be in the area populated by the people known as the Trinovantes as suggested by coin evidence, although numismatists differ in their opinions as to whether coin distributions can be interpreted as tribal territories. Some favour an interpretation by broader geographic regions, identifying the Trinovantes as being part of an Eastern region together with other groups such as the Catuvellauni (eg Haselgrove 1987; Creighton 2000; Leins 2012) while others prefer to make a link to particular tribal identities (eg Allen 1960; Van Ardsell 1989). Creighton has associated the development of *oppida* with the emergence of kingship and interpreted *Camulodunum* as a royal site within an Eastern kingdom, which included land of both the

Trinovantes and Catuvellauni, controlled by the dynasty of Tasciovanus (Creighton 2000: 76-77). One narrative, based on distributions of inscribed coins, that has been applied to suggested changes in the control of Camulodunum, is that of constant violent conflict which resulted in the ascendancy of either the Trinovantes or the Catuvellauni (eg Van Ardsell 1989, 21-2). However, Crummy has suggested that, rather than constantly changing hands, *Camulodunum* was instead a Catuvellaunian colony with access to the sea within a neighbouring people's land (Crummy 1997, 21). Coins stamped with the name of Addedomaros, thought to be a leader of the Trinovantes, are found in the area around the Colne valley (Crummy 1997, 20), but the site was later linked, through numismatic evidence, with Tasciovanus of the Catuvellauni, whose coins are found over a large area to the north of the River Thames (Creighton 2000, 75). The Catuvellauni are generally assumed to have been based in an area that roughly corresponds to the modern county of Hertfordshire. However, Tasciovanus produced a small number of coins with a mint mark of CAMUL/CAMU (Camulodunum) early in his reign, the majority later being struck at Verulamium. Cunobelin, who claimed to be Tasciovanus' son, produced his coins using the same mint mark from around AD 5 (Hawkes & Crummy 1995, 92, 173). The distribution of coins of Tasciovanus and Cunobelin is centred on the Essex/Suffolk area but extends out to the Midlands, West Country and the south-east coast. Issues of Cunobelin are also found in north Kent (Cunliffe 2005, 160; Crummy 1997, 20) demonstrating the expanding influence of the settlement. The 'territory' or zone of influence appears to have included areas of Hertfordshire, Essex and Kent by the AD 20s and have been latterly controlled by Cunobelin from Camulodunum (Hill 2007, 32).

Case Study Area

The area under consideration (see Figure 3.1) encompasses the known and projected extents of the linear dykes, the occupation sites of Sheepen and Gosbecks, and the burial sites at Lexden and Stanway, the latter being located beyond the western extent of the dykes. These features have all been interpreted as being part of the Late Iron Age *oppidum* of Camulodunum and are located in a landscape area measuring approximately 42 square kilometres. The territorial *oppidum* zone might be considered to be the area lying within the Lexden group of linear dykes and the Berechurch/Barnhall dyke to the east. However, in addition to the funerary complex at Stanway, there are numerous archaeological sites that lie outside the linear dykes which may have had an association with the *oppidum*, for example, sub-rectangular farmstead enclosures some of which have been excavated and found to date to the Late Iron Age and Roman periods. In order to contextualise the territorial *oppidum* and consider developments in the landscape from the Middle Iron Age on, the case study area includes a buffer zone around the central features which includes

Pitchbury hillfort to the north of the dykes, a total area of 99 square kilometres. The linear earthworks and occupation areas are situated on a plateau between the River Colne to the north and the Roman River to the south. The linear dykes have a general north-south orientation, and their course runs predominantly between these two rivers.

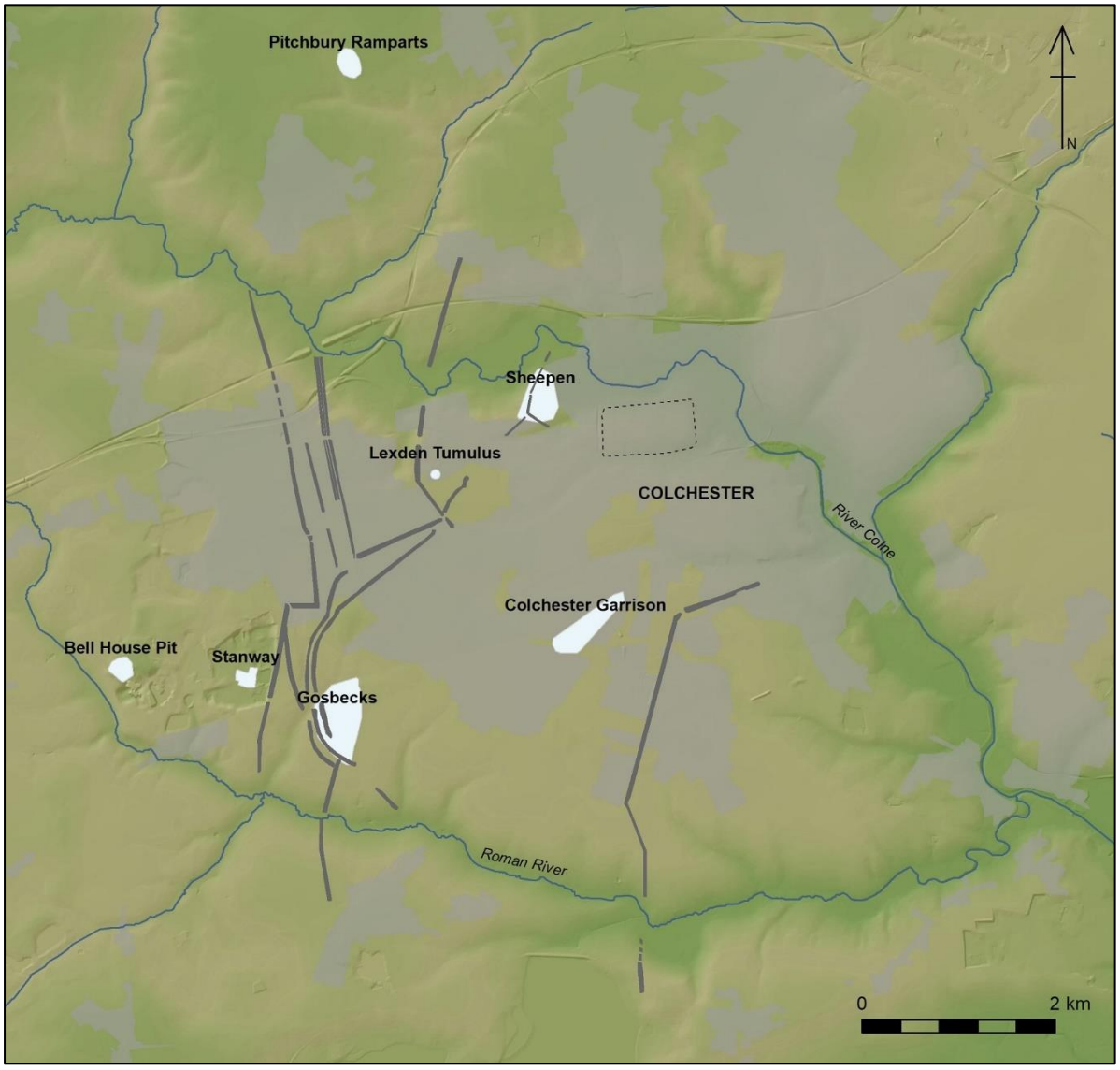


Figure 3.1 The project area with the linear dykes and main sites shown. The Roman colonia is shown as a dashed outline. Modern built-up areas are shown in grey. © Crown copyright and database rights 2020 Ordnance Survey (100025252)

The bedrock across the survey area is London Clay with drift deposits over it of: Glacial Sand and Gravel across the central plateau and particularly thick in the Stanway area; Brickearth, outcropping in the eastern part of the survey area; and Chalky Boulder Clay, outcropping to the west of the survey area. River Terrace Deposits and River Brickearth are found along the floor of the valley of the River Colne in narrow belts and Alluvium is present in discontinuous spreads in the river valleys (Ambrose 1974, 3-4). Gosbecks is located on a fairly level plateau at 35 m ASL. Sheepen Hill at the

northern edge of the plateau rises to a height of 30 m ASL, dropping gradually to the north towards the River Colne to a level of 10m ASL. Pitchbury Ramparts is located on the highest ground in the project area at 55m ASL.

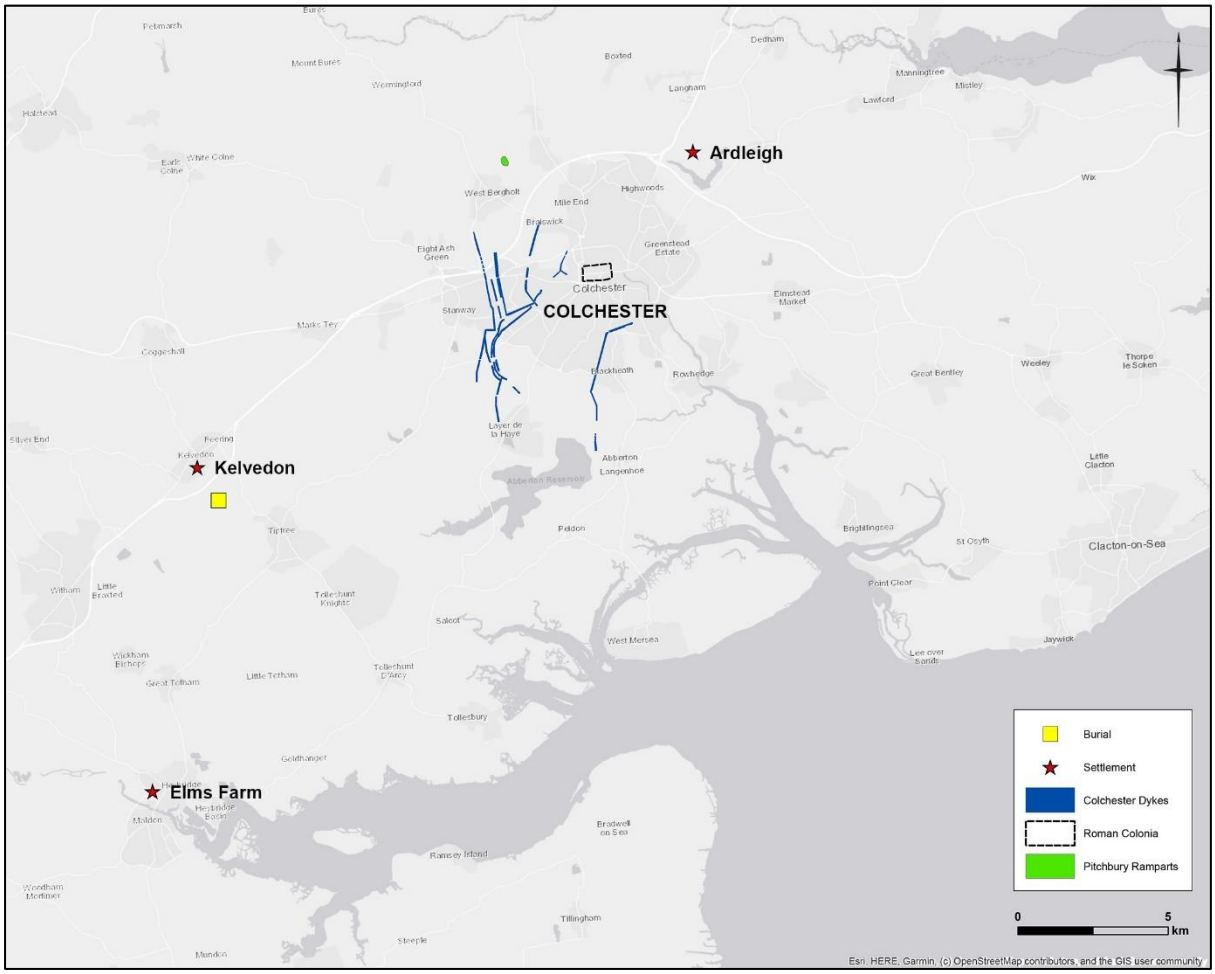


Figure 3.2 The Colchester Area in context. The Late Iron Age settlement, temple and warrior burial at Kelvedon are located to the south-west, with the Late Iron Age settlement and temple at Heybridge to the south of that site. A possible centre of Late Iron Age settlement is located to the north-east of Colchester at Ardleigh.

Other Late Iron Age areas of settlement are known within the wider area in which *Camulodunum* is situated, including Kelvedon and Elms Farm (see Figure 13). A Late Iron Age settlement preceded a Roman town at Kelvedon and included a temple site within a *temenos,* or precinct (Rodwell 1988). The rich burial of a warrior dated to c75-25 BC was situated on a slope overlooking the late Iron Age village at Kelvedon (Sealey 2007). A multi-phase settlement, of which the earliest occupation dated to the Late Iron Age, was excavated in the mid-1990s at Elms Farm, Heybridge, Essex (Atkinson and Preston 2015; Essex County Council via Archaeology Data Service 2015). The settlement evidence was fragmentary in nature but included a centrally located shrine and a series of strip-plots to the north and south. In around the mid-1st century AD, spanning the Late Iron Age/Roman transition period, a new temple precinct was created, the strip-plots were remodelled into enclosures and a

system of metalled roads were added to the site. A number of burials, pyre sites and pyre debris dumps were also identified to the north of the settlement (Atkinson & Preston 2015). A possible centre of settlement is also suggested for the area around Ardleigh, north-east of the *oppidum.* A Late Iron Age settlement consisting of one or more roundhouses within a D-shaped enclosure was excavated here and earlier Iron Age settlement was identified within the same area (Germany 2006). Other evidence of occupation which may be contemporary with the earlier or later phases of settlement are indicated by the considerable number of enclosures, trackways and other features recorded within this area by the Essex NMP project (Ingle & Saunders 2003).

Middle Iron Age

Camulodunum does not appear to have been established in an entirely unsettled area. However, the majority of the evidence for Middle Iron Age occupation of this area is located around the edges of the landscape defined by the linear dykes (see Figure 3.3). It is possible that other settlements existed in the central area since large areas have seen little excavation, principally around Gosbecks. Middle Iron Age settlement evidence has been found in some of the areas where there have been a greater number of interventions, for example, Colchester Garrison in the centre/east of the territorial *oppidum* zone. Other sites are located to the west of the Lexden dykes around Stanway, adjacent to Moat Farm Dyke, north of the River Colne, at West House Farm, and further to the north of the linear dykes at Severalls Hospital and Pitchbury Ramparts.

The earliest phase of activity on the site of the later burial complex at Stanway was found through excavation to be a Middle Iron Age (*c.* 200-50 BC) farmstead, the enclosure of which was later reused as a burial place in the Late Iron Age (Crummy *et al* 2007, 8). The farmstead was excavated during investigations of the Stanway funerary complex prior to its removal by gravel extraction. The core of the farmstead is located within a sub-square enclosure (see Figure 3.5, number 5 and Figure 29, Enclosure 2) with a possible droveway leading to the north from its north-east corner and scatters of pits to the north from which Middle Iron Age pottery was recovered (*ibid*, 8, 13). Internal features consisted of five stake- or post-holes, which were interpreted as the remains of a possible roundhouse, and a number of pits containing Middle Iron Age pottery (*ibid*, 28). Two currency bars were found placed within the ditch forming the eastern side of the enclosure, an event which, judging from the stratigraphy, appeared to have occurred fairly early in the life of the farmstead. A pit containing the cremated remains of a human adult was also found within this section of the enclosure ditch but relates to the later use of the site as part of the funerary complex (*ibid*, 26 and see below p92).

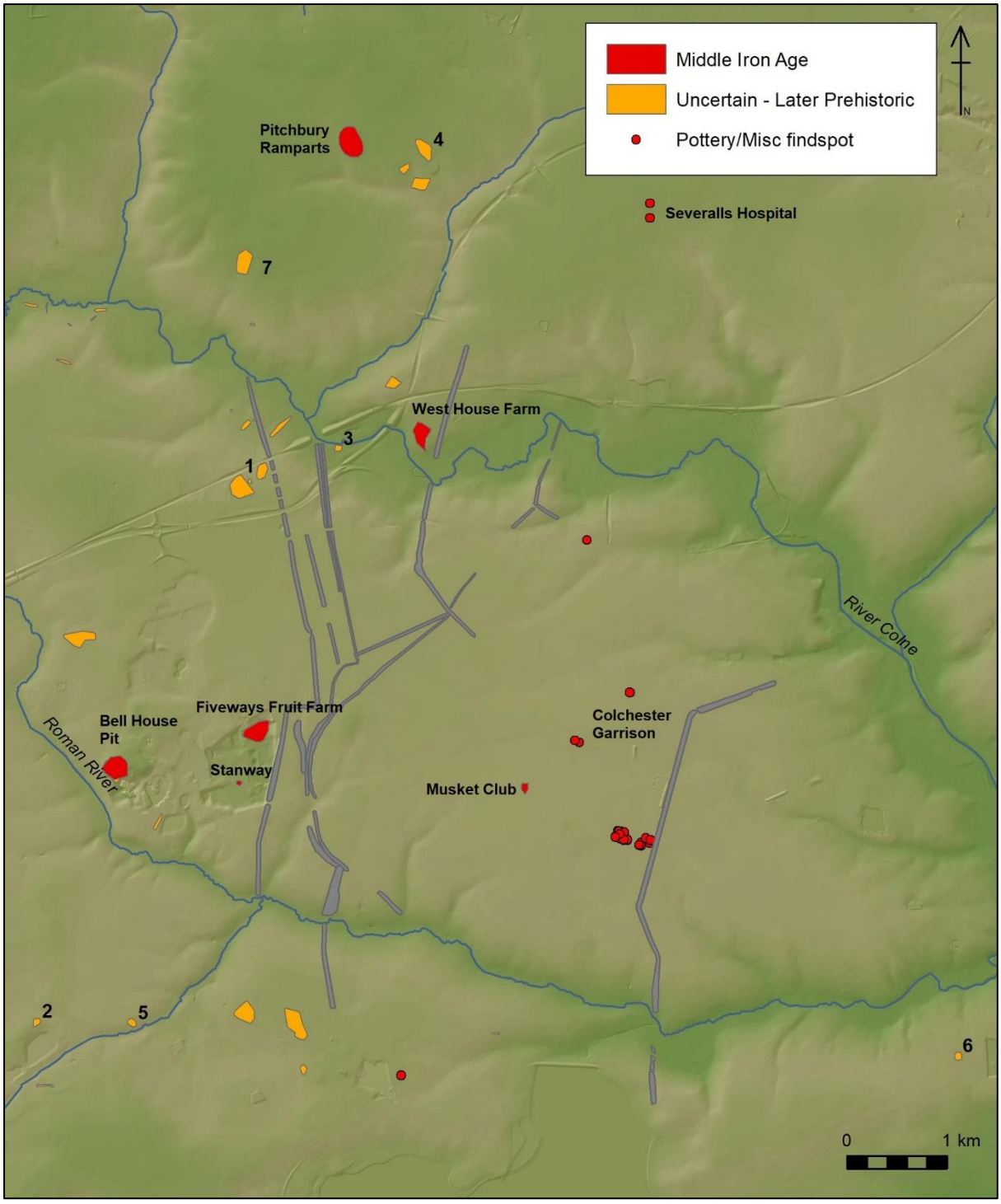


Figure 3.3 Distribution of Middle Iron Age sites (named) in the project area around Colchester (red) and suspected later prehistoric enclosures (numbered) and field systems (both orange). For comparative plans of the later prehistoric sites see Figure 3.6. The Colchester dykes are shown in grey. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Excavation at Bell House Pit, Abbotstone, 1 km west of Stanway, uncovered evidence of settlement dating from the Middle Iron Age through to the late 1st century AD (see Figure 3.5, number 2). The features comprised two sub-circular enclosures, one containing a roundhouse, an irregular enclosure and three droveways or trackways. (Benfield & Pooley 2005, 1, 6). The next phase of occupation on

the site was in the Late Iron Age to Roman period, represented by a sub-square enclosure and trackways overlying the southernmost of the two Middle Iron Age enclosures. Evidence of occupation later in the post-conquest period was also identified (*ibid,* 10).

Middle Iron Age pottery and a possible curvilinear enclosure, the latter identified through geophysical survey were found during investigations in 2008 at Fiveways Fruit Farm 500m to the north of Stanway Quarry (see Figure 3.4 and Figure 3.5, number 6). Traces of a possible sub-square enclosure associated with Roman material was also identified (Holloway & Brooks 2009). Excavations in 2015 confirmed the existence of the curvilinear enclosure which was located between two farmsteads of the mid-4th to late 1st century BC date defined by sub-square enclosures, and a number of field boundaries (Parmenter & Wightman with Pooley 2019, 4). Late Iron Age and Roman material was also recovered from the sub-square enclosure ditches and field boundaries, explaining the earlier interpretation of one of the enclosures, and suggesting that they remained in use during these periods (*ibid,* 11).

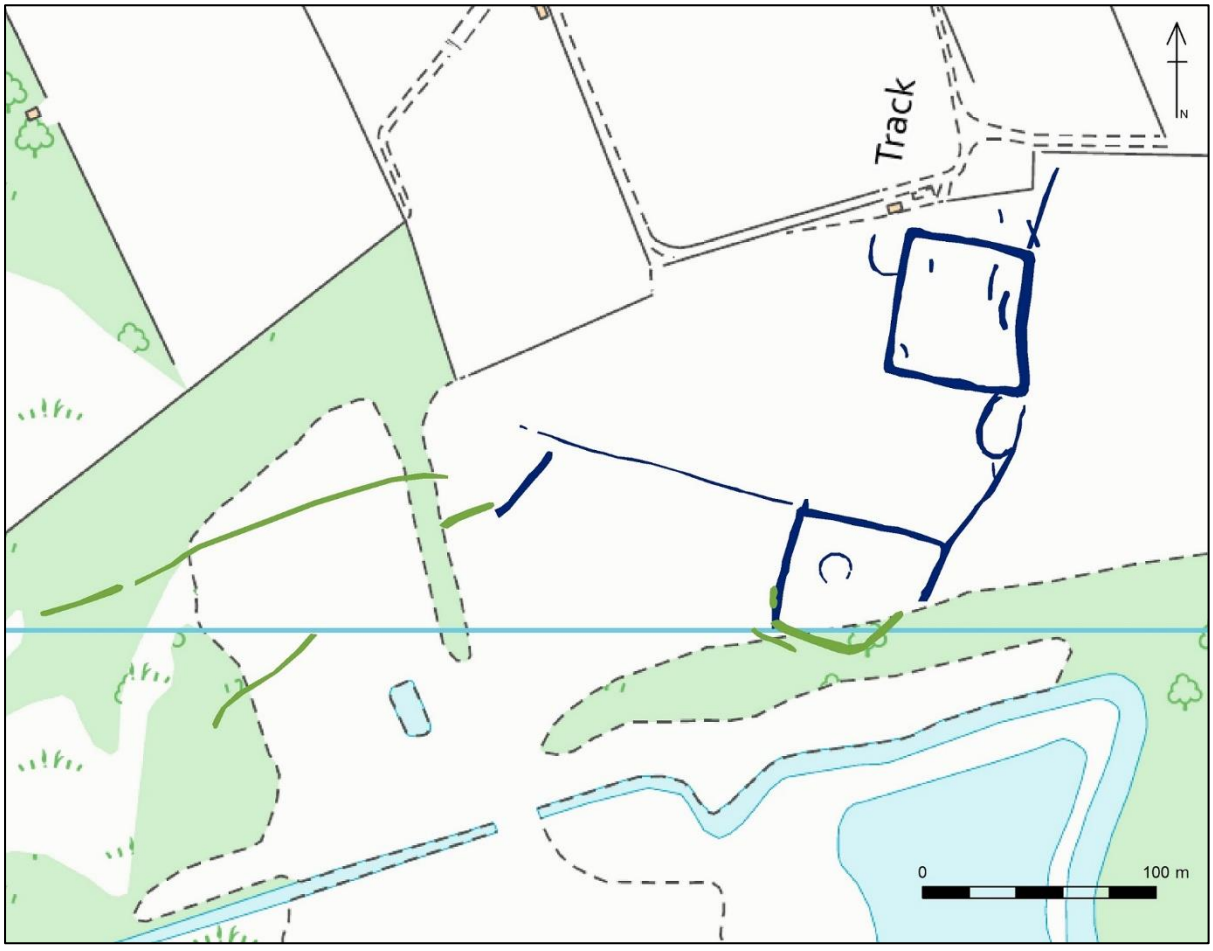


Figure 3.4 Middle Iron Age farmsteads at Fiveways Fruit Farm. Excavated features (dark blue) and cropmarks (green). Replotting of the cropmarks identified during an earlier survey using a DTM to rectify the aerial photographs shows that the features that form the southern enclosure (Enclosure B) align. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

On the eastern side of the Colchester Garrison site to the south of Ypres Road, a Middle Iron Age (*c.* 250-100 BC) roundhouse within an enclosure was recorded, underlying a Late Iron Age to Roman period trackway (see Figure 3.5, number 4). Residual pottery scatters suggest manuring, possibly indicating that arable farming was carried out in the area (Brooks & Masefield 2005, 8-11).

In the northern area of the *oppidum* zone, a square enclosure near West House Farm, located to the west of Lexden Dyke, was partly excavated by Appleby in 1952 (see Figure 3.5, number 3). Pottery dated to the Early to Middle Iron Age (*c.* 8th century BC to *c.* 50 BC) was recovered from loam or silt at the base of the ditch and a piece of Roman pottery was recovered from the probable backfill. The enclosure may be Early to Middle Iron Age in date, but the pottery has since been lost and this cannot be proved conclusively. (Hawkes & Crummy 1995, 137). The morphology of the site, without the excavated evidence, might suggest an Iron Age to Roman date. Sub-square and sub-rectangular enclosures are a common form of settlement during these periods and dated examples have been found in, for example, at Oving and North Bersted on the West Sussex Coastal Plain (Hamilton 2007, 87).

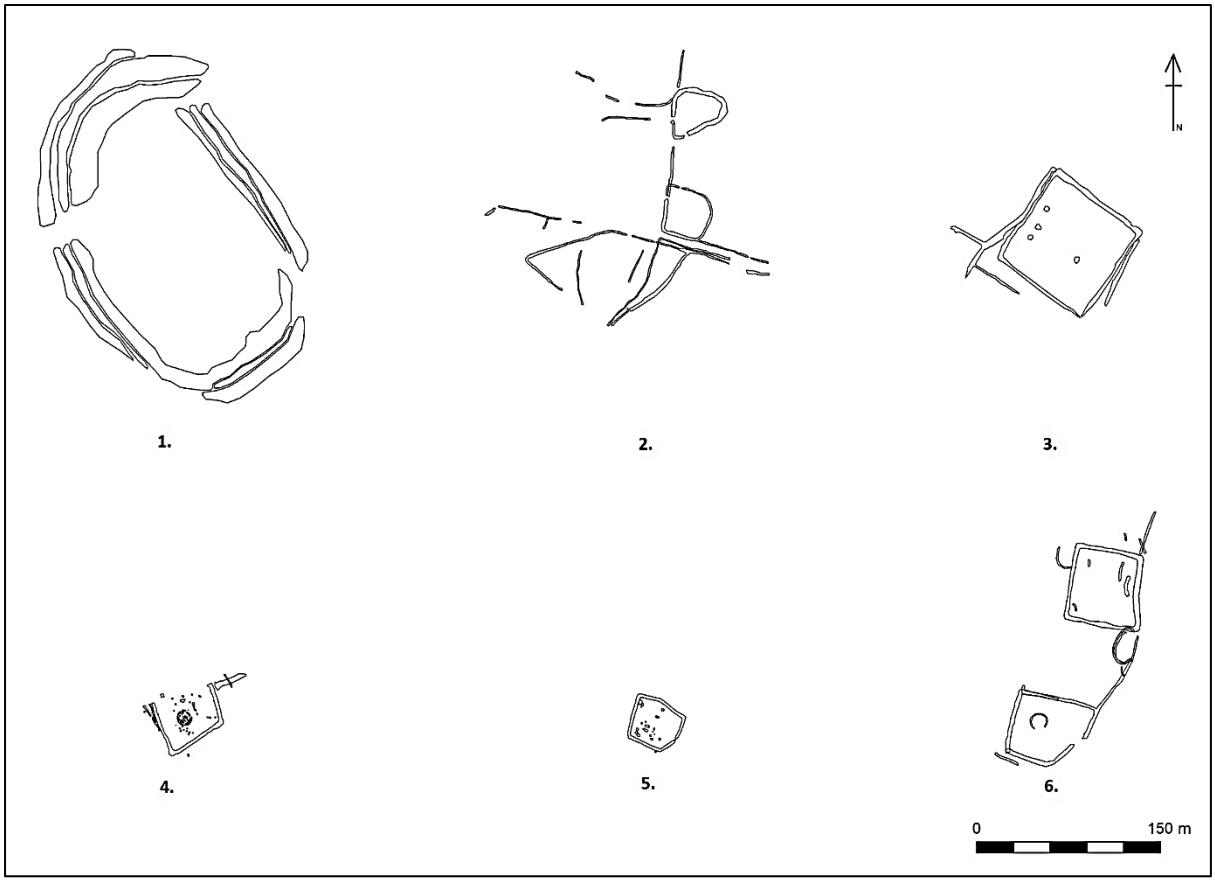


Figure 3.5 Excavated Middle Iron Age sites in the Colchester environs: 1. Pitchbury Ramparts, 2. Bell House Pit, Abbotstone, 3. Westhouse Farm, 4. Colchester Garrison, 5. Stanway, 6. Fiveways Fruit Farm. Mapping by the author.

However, there are several examples of sub-square enclosures in the Colchester area, such as at Fiveways Fruit Farm, which have proved to be Middle Iron Age in origin (see Figure 3.4). Pitchbury Ramparts is possibly the only hillfort in the region surrounding the oppidum (see Figure 3.5, number 1). The hillfort is located to the north-west of the oppidum overlooking the valley of St Botolph's Brook. It is a bi-vallate in form with an internal measurement of 1.9 ha. It has a single entrance in the north-western quadrant. Excavations carried out in 1933 and 1973 found no evidence of structures in the interior, only sterile pits of uncertain origin. While no positive date could be assigned to the hillfort, the excavators' opinion was that it was probably occupied or used in some way between the Early and Late Iron Age, and that it may have fallen out of use with the development of Camulodunum (Hawkes & Crummy 1995, 151; Crummy 1997, 19). A possible second hillfort is located to the west of Langham Moor, outside the current survey area, north-east of the *oppidum*. The low earthwork was identified on lidar imagery, a hexagonal enclosure defined by low banks and infilled ditches, with a possible internal measurement of 3.74 ha (Dennis pers comm 2015 quoted in Colchester Borough HER 10206).

An enclosure of possible Middle Iron Age date is located on land belonging to the Musket Club, Homefield Road, to the south of Colchester Garrison. Trial trenches across the ditch of the enclosure recovered little dating evidence, only a few sherds of Middle Iron Age pottery and one fragment of Early Iron Age pottery. A Middle Iron Age date was suggested for the construction, partly based on the pottery recovered and partly on the north-south alignment of the enclosure which possibly associated it with a pre-Late Iron Age to Roman pattern of field boundaries and settlement. It was hypothesised by the excavators that the enclosure may have been a ritual rather than a domestic site, but the lack of excavation in the interior meant that there was little evidence to support this. However, the similarity between the Musket Club site and the funerary enclosures at Stanway was remarked on (Brooks 2005, 4 and see Figure 3.20 for a comparison between the enclosures).

Two clusters of pits with a significant charcoal content were excavated in the grounds of Severalls Hospital in 2016. No finds were associated with them, but the charcoal returned a radiocarbon date within the 2nd century BC (Brittain 2016).

A number of undated enclosures which may be of Middle Iron Age date or earlier are found throughout the area around the landscape delineated by the Colchester dykes (see Figure 3.6). They can be identified from cropmarks on aerial photographs and are generally curvilinear in form but vary in size. While the date of these sites is unknown their distribution gives an indication of the possible extent of occupation in the later prehistoric periods (see above, Figure 3.3).

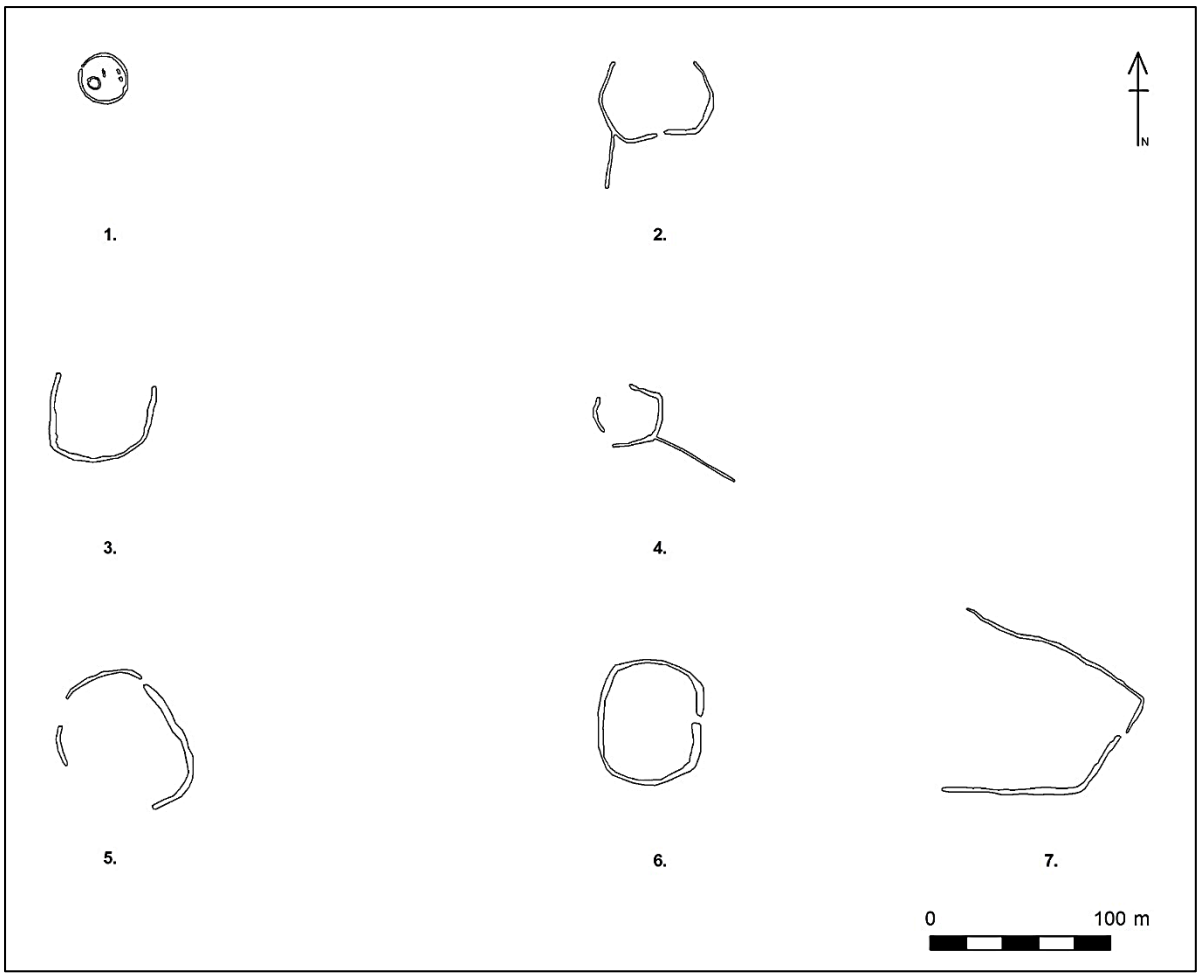


Figure 3.6 Comparative plans of undated, possibly later prehistoric, settlements. For their locations see numbered sites on Figure 3.3. Mapping by the author

Late Iron Age

The linear dykes

The linear dykes are one of the main features thought to be associated with the territorial *oppidum* of Camulodunum (see Figure 3.7). A number of the dykes are on an approximately similar north-south alignment to the west of Gosbecks, Sheepen and Lexden, between the River Colne to the north and the Roman River to the south, at the western end of a peninsula defined by the two waterways. The Barnhall/Berechurch and Abberton Dykes are located *c.*2.3 km to the east of the western group of dykes towards the eastern end of the peninsula. A summary of investigations into the dykes is given in Table 1 (see below pp73-76), but the first known field surveys of the linear dykes around Colchester took place in 1722 by Lufkin and Smith, and they have been the subject of further investigations up until the present day. Stukeley conducted a survey of the Lexden, Gryme's and Triple dykes in 1759, interpreting the latter as "Cunobeline's Circus" (Hawkes and Crummy 1995,

10-15). Chapman and André included the Colchester dykes in their county map of Essex in 1777 and they were surveyed by the Ordnance Survey for their Old Series sheet 48, printed from 1805 on, and re-surveyed in 1836 for inclusion in the 1st edition map of 1884. Dr Henry Laver produced a series of papers on the dykes from 1885 to 1905 and the results of his investigations were incorporated into the Royal Commission on the Historic Monuments (England) survey of Essex in 1922 (*ibid,* 20). The RCHME surveyors recorded all dykes surviving as earthworks to the west of Colchester, the "Lexden Earthworks", which they grouped into four main dykes ranged from east to west: the Lexden dyke together with Moat Farm Dyke; the Triple Dyke; Dugard Dyke together with Heath Farm Dyke, Kidman's Dyke, Gosbecks Dyke, Oliver's Dyke and the Layer Dyke; and Gryme's Dyke (RCHME 1922, 73).

A general survey of the dykes was also carried out by Cruso and Poulter in 1932 and Cruso also carried out an excavation of Lexden Dyke within Lexden Park (see below for a discussion of the dating evidence). Royal Air Force aerial photography of the Colchester area was commissioned by O G S Crawford in 1933 (Hawkes & Crummy 1995, 22). Following on from the earlier surveys, the dykes have been investigated to varying extents in order to establish their routes and relationships, which are summarised in Table 1 below. The dykes differ morphologically and have been shown through excavation to have been constructed at different times. The individual dykes also demonstrate variability in their profiles suggesting that they were constructed in sections, probably by different groups of people and possibly at different points in time. For example, sections along Heath Farm dyke have found it to be U-shaped in some sections and V-shaped in others (*ibid*, 32). The dykes that form this extensive north-south boundary were constructed in multiple phases between the Iron Age and early post-conquest Roman period.

The sequence of construction has been interpreted as demonstrating a gradual westward progression (Hawkes & Crummy 1995, 52-62; 174-5). Hawkes saw the Sheepen and the Gosbecks areas as separate developments associated with their own 'systems' of dykes; one associated with the River Colne and the other with the Roman River. The construction of the Sheepen Dyke and occupation on the site were interpreted by Hawkes as having been developed later than the Gosbecks site and associated with the ascendancy of Cunobelin. (*ibid*, 161). Crummy sees the Sheepen and Gosbecks areas as developing alongside each other and therefore eliminates a north-south division between the linear dykes. He suggests instead that they were essentially all part of one defensive line between the River Colne to the north and the Roman River to the south, protecting an area to the east of them which terminated at the Berechurch/Barnhall dykes. The latter form a single line which has been interpreted as protecting Camulodunum from attack either from the sea or overland from the south-east (Crummy 1997, 14).

The interpretation that occupation began at an earlier date on the Gosbecks site influences the sequences of construction of the dykes put forward by both Hawkes and Crummy. Hawkes sees the Heath Farm Dyke as being the earliest development in the pre-Roman period, protecting the Gosbecks site and an area of land extending down to the Roman River. This is followed in *c.* AD 10 by the construction of the Sheepen, Shrub End and Lexden Dykes. These three dykes form the Hawkes' northern group based on the River Colne. The next phase consists of the development of Kidman's Dyke and Prettygate Dyke at the northern side of the Gosbecks site and Oliver's Dyke and Layer Dyke on the southern side crossing the Roman River. Hawkes sees Gryme's Dyke as completing the defence of the peninsula in the Late pre-Roman period. The Berechurch and Abberton Dykes are the then added at the eastern end of the peninsula, suggested as being in response to a threat from the sea. The construction of the Triple Dyke and adaptations to Prettygate Dyke (moving the ditch from the north to the south side) were interpreted by Hawkes as being Roman developments (Hawkes & Crummy 1995, 52-59).

Crummy's suggested phasing of the dykes is as follows: the earliest constructed was Heath Farm Dyke, which runs on a curving route around the western side of the Gosbecks occupation area c 25 BC; by the time that Cunobelin is producing coins here, c AD5, the Lexden Dyke and Sheepen Dyke have been added to the north; the Prettygate Dyke in its original form with the ditch on the northern side is probably also Late Iron Age in date, but its orientation is reversed in the early Roman period, when the Shrub End Dyke/Triple Dyke and Kidman's Dyke may have been constructed; and the final dyke constructed to the west is Gryme's Dyke, suggested as being a response to the destruction of the Roman town during the Boudican revolt (Hawkes & Crummy 1995, 174-8). Crummy acknowledged that this interpretation was limited by the lack of dating evidence and might be subject to change (*ibid,* 175). Figure 3.7 below summarises the chronology suggested by Crummy for the development of the dykes (and see Figure 3.10below for a reinterpretation of the chronology).

The routes of the dykes shown in Figure 3.7 are derived from observations of earthworks and cropmarks and evidence from excavations along their length with projected lines joining known points. However, excavations in September 2019 carried out on one of these projected sections, the route of Gryme's Dyke between the A12 and Chitts Hill, adjacent to Holmwood House Preparatory School, found no below ground evidence of the feature (Graham 2019, 11). Cropmarks of a ditch of up to 10 m in width can be identified on aerial imagery to the north of this area and the dyke survives as an earthwork to the south. It is possible that the dyke took a different course from that projected, or, that the ditch to the north is part of a separate feature.

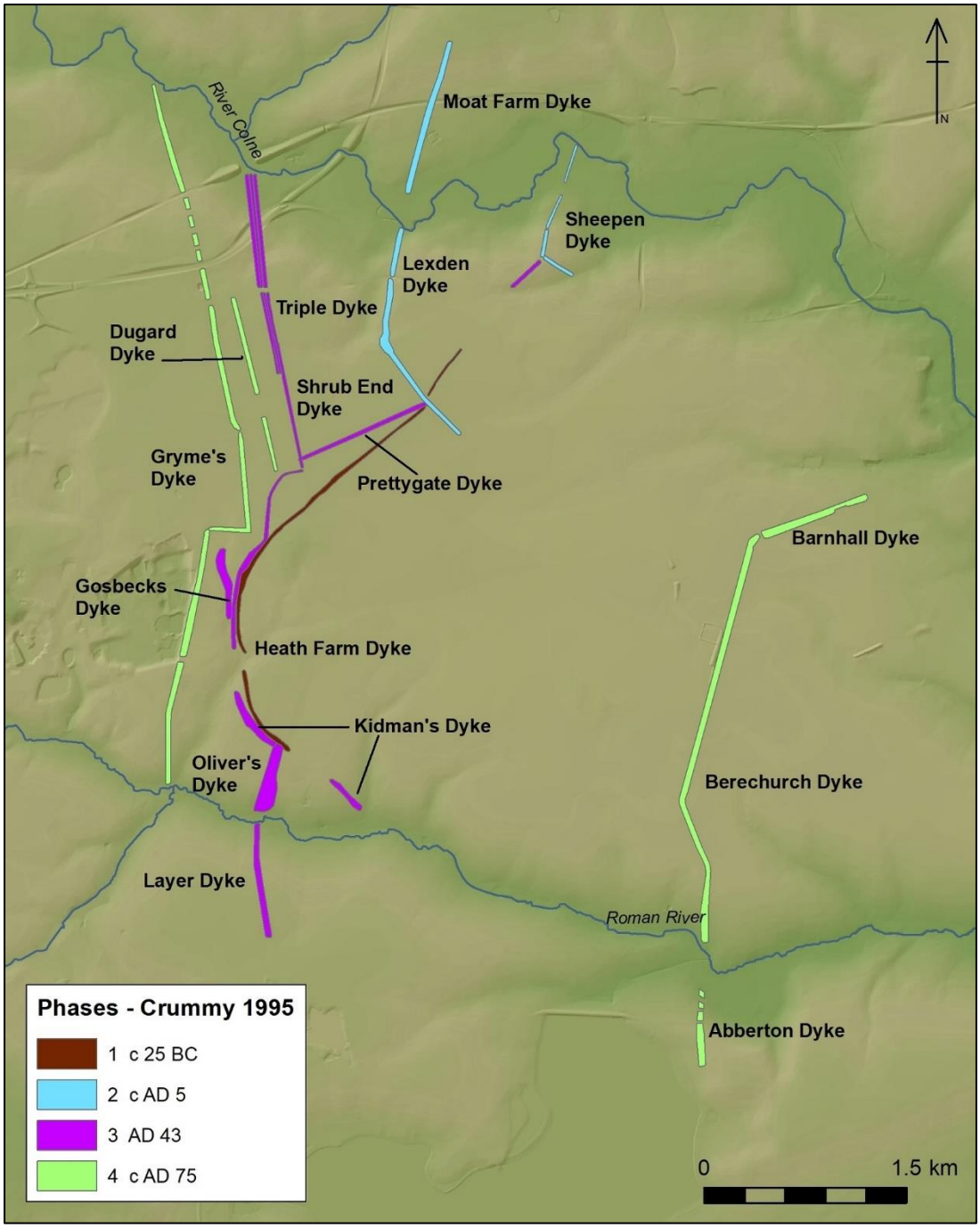


Figure 3.7 Known (solid lines) and projected (broken lines) routes of the linear dykes with phases of construction suggested by Crummy (after Hawkes & Crummy 1995, Fig 2.1; 176-7) and Essex HER) © Crown copyright and database rights 2020 Ordnance Survey (100025252)

The availability of Environment Agency lidar in some parts of the case study area has enabled a reassessment here of the extent to which the dykes survive as earthworks, combined with evidence of levelled sections recorded from cropmarks on aerial photographs (see Figure 3.8). Sections of Oliver's dyke, Kidman's dyke and Layer dyke can be observed on lidar as low spread earthworks with banks measuring up to 35 m in width and ditches measuring up to 16 m in width. Kidman's dyke had been recorded as an earthwork within Walk Wood, but it can be seen to continue to the south-east

on lidar imagery as a ditch flanked by banks. The northern section of Oliver's dyke was shown to survive as a broader earthwork on a slightly different south-west, north-east alignment to that depicted in previous surveys (see Figure 3.9). The section of Layer dyke to the south of Chest Wood is described as having been ploughed away in the HER entry (MCC7284) and was recorded from cropmarks on aerial photographs.

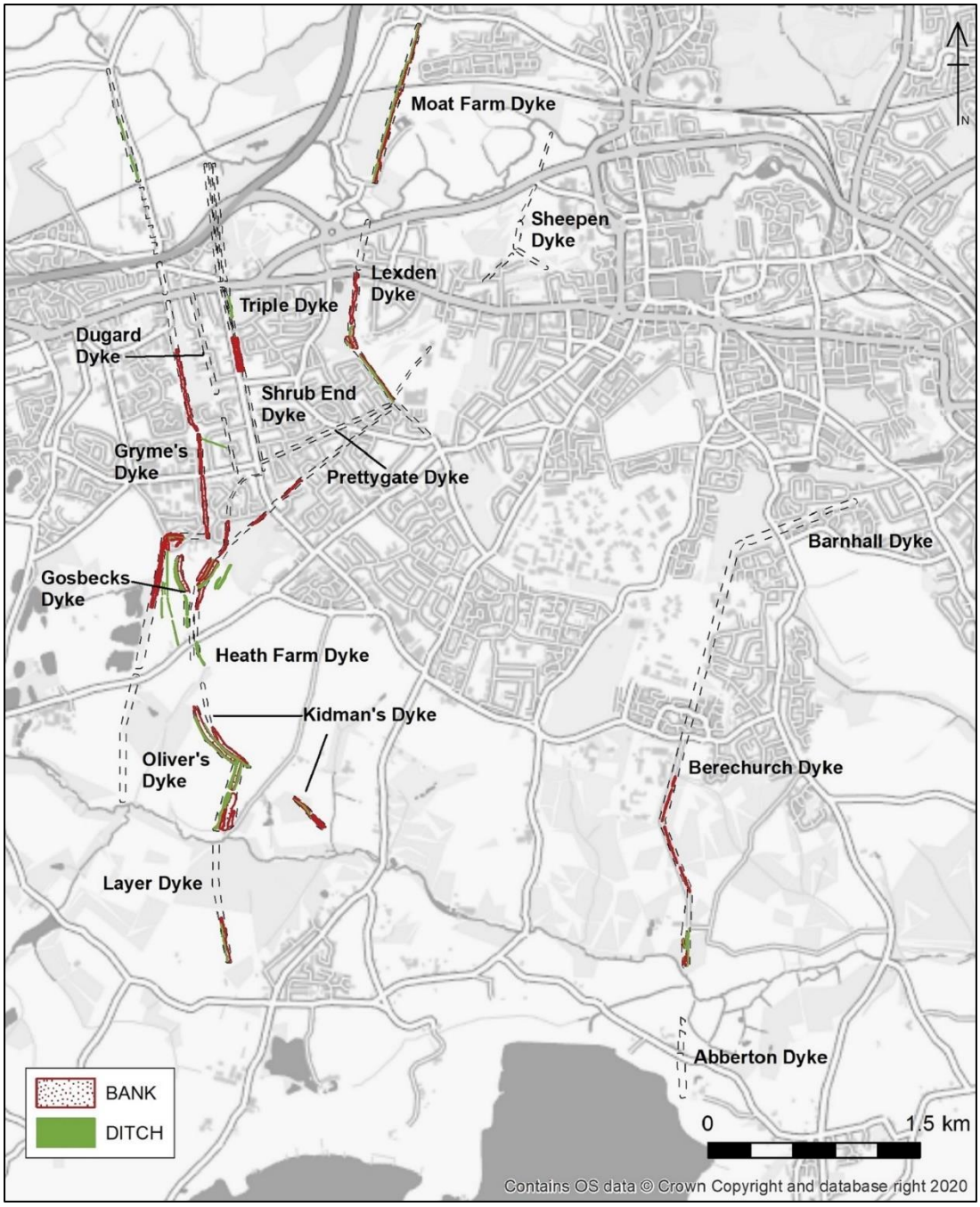


Figure 3.8 Areas of the Colchester dykes mapped from aerial photographs and lidar. The dotted black lines show the known and projected sections of the dykes as recorded on the Colchester HER. Key for features mapped during the current survey: banks (red), ditches (green)

Name	Type of Investigation
Heath Farm Dyke	A curving dyke with western ditch defining the western side of the Gosbecks settlement and around 2 km in length. Excavations: Middle section – profile and entrance recorded. The causeway through the entrance measured around 3 m in width; the ditch width was c. 7.3 m (Hawkes 1957) TL 9702 2376; Junction with Prettygate Dyke which established that Heath Farm Dyke was the earlier of the two (1956-70); Excavation on Heath Farm Dyke Middle ditch at New House Farm by Hawkes – 1.8 m deep and c. 5.5 m in width (1961) TL 9669 2348; Recording of ditch profile by of area within Shrub End gravel pit – V-shaped, 2.4 m deep and 7.8 m wide (Sewter 1974) TL 9641 2318; ditch observed by in pipe trench (Sewter 1974) TL 9641 2316; base of bank and ditch observed in excavation on Straight Road. The ditch only had a depth of 1.5 m and the bank was poorly defined (Crossan 1984) TL 9683 2360
Lexden Dyke/Moat Farm Dyke	Moat Farm Dyke is the possible extension to Lexden Dyke to the north of the River Colne. It was recorded by the RCHME as a well-defined earthwork extending between Great Horksley Church and the northern bank of the River Colne (RCHME 1922, 74). Lexden Dyke extends from the southern bank of the River Colne between Braiswick and Bluebottle Grove. Excavations: Lexden Dyke middle section – possible entrance and profiles recorded in sections within former Lexden Park – pre-Roman pottery found beneath bank including a rim fragment of a terra nigra platter of Cam Form 4A (found in Britain pre-conquest) (Hawkes and Cruso 1932) TL 9732 2481; junction with Lexden Dyke Middle – Prettygate Gate established as postdating Lexden Dyke (Hawkes and Hall 1954, 1956-7) TL 9764 2428; Excavation of Lexden Dyke Middle at Bluebottle Grove – bank partly eroded by Second World War tank trap, but profile of ditch recorded. No dating evidence. (Carter 1987) TL 9738 2459; Dyke ditch exposed by Tapwoods road construction. V-shaped, 3.81 m deep and about 6 m wide. (Crummy unknown date) TL 9972 2207
Sheepen Dyke	Located to the west of the Sheepen settlement area. Excavations: 30 sections were excavated through the Sheepen Dyke. The excavators established that the dyke was constructed in two phases: the first

	consisted of an L-shaped bank, to which a linear bank and ditch was added, extending from the join of the L to the south-west. Three entrances have been identified (north-west, west and south-west). The ditch was approximately 9 m wide and 2.4-3 m deep. The profile was V-shaped. Surviving sections of the base of the bank were of similar dimensions (Hawkes and Hull 1930-39); A section of the later extension to the Sheepen Dyke was uncovered at Kingswode Hoe School lying to the north-west of the line projected by Hawkes & Hull (1947). Pottery dated to the first half of the 1st century AD was recovered from the ditch fill, the majority of locally-made grog-tempered ware. Three joining sherds from a large cream-slipped flagon were found in an adjacent findspot (11). These types of vessels were imported from Central Gaul during the last quarter of the 1st century BC up to c. AD 25 and are found in relatively large numbers at Camulodunum (Essex County Council Field Archaeology Unit 2009). TL 9835 2528
Prettygate Dyke	Prettygate Dyke, aligned WSW-ENE, runs from Shrub End Dyke (west) to Lexden Dyke South (east). Initially the ditch was constructed on the northern side of the bank but was reversed in the early Roman period; the bank appears to have been slighted and a ditch excavated on its southern side. Excavations: at 'Peartree Junction' between Prettygate Dyke and Shrub End Dyke (Hull, 1936) TL 9669 2386; on junction with Lexden Dyke Middle – Prettygate Gate established as postdating Lexden Dyke (Hawkes and Hall 1954, 1956-7) TL 9764 2428
Berechurch/Barnhall Dyke	Berechurch Dyke extends to north from the Roman River and turns to north-east where it meets Barnhall Dyke and continues to the north-east through Colchester Garrison. Excavations: Three sections across Barnhall Dyke – found to be of shallow depth. Iron Age pottery recovered near base of Trench 2 (Hall 1945) TM 0080 2350; observations of the meeting of Berechurch Dyke with the Barnhall sector within the Borough cemetery on Mersea Road – a possible entrance existed between the two sections (Hall 1960) TM 0012 2330; section of bank, 1 m in height, and upper part of ditch in trench for new services (Crummy 1984) TL 9957 2156; northern extension to to Barnhall Dyke during excavations of the

	former Meeanee & Hyderabad Barracks, Colchester Garrison (Colchester Archaeological Trust 2010-2011) TM 0020 2430; Width of the dyke exposed in excavation on former Roman Way Barracks – possible timber revetting on front of bank suggested by post holes (Colchester Archaeological Trust 2012) TL 9972 2207
Abberton Dyke	Section of earthwork identified during Laver's survey and line projected to be in line with Berechurch Dyke – possibly the remains of a moated enclosure around Abberton House (Source: MCC7334) No excavations.
Shrub End Dyke/Triple Dyke	Aligned north-south on the east side of Straight Road, extends for c 2.3 km from the River Colne southwards to Heath Farm Dyke Middle. The south part of the dyke was a single feature, c.900m long; and two additional ditches were added to the section north of Heath Road to create the Triple Dyke. Excavations: Triple Dyke in Hunter's Rough (1961) TL 9537 2539; Observation of section by Blake in service trench, Straight Road (Hawkes 1963) TL 9673 2362; observation of ditch of Shrub End Dyke in excavation on Heath Road, possibly aligned on eastern ditch of Triple Dyke (Crummy 1979) TL 9657 2440; single ditch observed in excavation on Straight Road (Crummy 1984) TL 9660 2420
Kidman's Dyke	Located on western side of Gosbecks settlement, c.2.5km in length. Excavations: south of Dugard Avenue - identified that Kidman's Dyke was earlier in layout than Dugard's Dyke and to the Late Iron Age to Early Roman field boundaries adjacent to it (Crummy 1973-6) TL 9650 2360; ditch observed in pipe trench (Sewter 1974) TL 9641 2316; section of ditch (Crummy 1978) TL 9644 2329; observation of section of ditch (PC and N Smith date unknown) TL 9631 2310
Dugard Dyke	On similar alignment to Gryme's Dyke and located between it and the Triple Dyke. Excavations: section showing north end of dyke (Hawkes or Hall 1957), TL 9641 2412 and south end of dyke (Hawkes or Hall 1956-7), TL 9651 2375
Gosbecks Dyke	Outermost earthwork to the west of the Gosbecks settlement. No excavations. Known from aerial photographs and survey by Laver.

Oliver's Dyke	Extends to south of Kidman's Dyke and Gosbecks Dyke to north bank of Roman River; in alignment with Layer Dyke to south of river. No excavations. The dyke was surveyed by the RCHME and found to be in poor condition overall. It could be seen most clearly in its northern section where it runs alongside Oliver's Lane heading south-west to a ford in the Roman River (RCHME 1922, 74). Sections of the dyke have been recorded from cropmarks on aerial photographs (McMaster 1980), but the current research shows that elements survive as low earthworks which can be identified on lidar imagery (see Figure 3.9). No excavations.
Layer (de la Haye) Dyke	Extends to south from Roman River in alignment with Oliver's Dyke. The dyke was surveyed by the RCHME. A stream was found to run along the ditch where the earthwork passes through Chest Wood and into the garden of the Vicarage at Layer de la Haye (RCHME 1922, 74). Excavations: the course of the dyke was surveyed, and three sections were excavated, but the ditch of the dyke was difficult to distinguish from recent field ditches (Blake 1961). TL 9645 2050
Gryme's Dyke	Outermost of dykes to west of Gosbecks and Sheepen settlements. Excavations: Gryme's Dyke North, entrance and convergence of ditches to the south (Appleby between 1946 and 1958) TL 9626 2404; Gryme's Dyke North extension south of Stanway Green (Hawkes 1957) TL 9631 2330; south of Dugard Avenue – pottery from early 1st century AD beneath bank; terra sigillata sherd and coin of Claudius found in main body of bank – post-conquest construction date suggested (Crummy 1977) TL 9627 2370; excavations along the projected line of Gryme's Dyke North on land to the west of Chitts Hill, Stanway found no evidence of the feature (Graham 2019)

Table 1 Summary of investigations into the linear dykes where location and other details are known. Information from Hawkes & Crummy 1995, Hawkes & Hull 1947 and grey literature (Colchester Archaeological Trust, Oxford Archaeology)

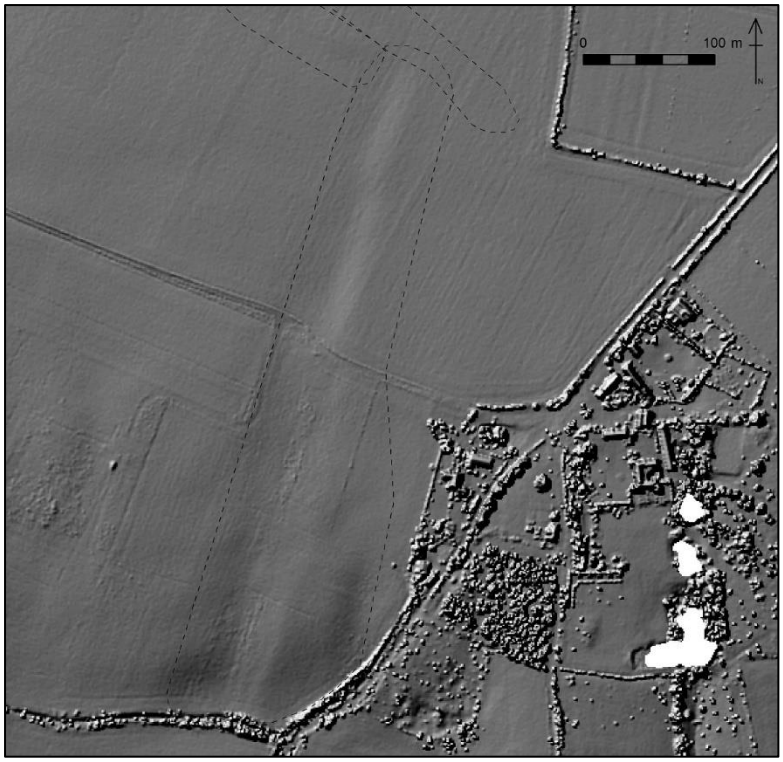


Figure 3.9 Oliver's dyke visible as a low earthwork on lidar imagery. Lidar 1 m resolution DSM Environment Agency. Hillshade model - Truscoe.

Discussion: dating of the linear dykes

While no dating evidence is available, the form of Heath Farm Dyke and the observation that it pre-dates Prettygate Dyke, may support Hawkes' and Crummy's interpretation that it was the first of the Colchester dykes to be constructed. There is slightly firmer evidence for the presumed last dyke to be built, Gryme's Dyke. Late Iron Age pottery was recovered from the ground surface beneath a section of the dyke during excavation to the south of Dugard Avenue. Comparison with pottery types at Sheepen suggested a date of the first quarter of the 1st century AD (Hawkes and Crummy 1995, 115). The dating of the dyke itself rested on the interpretation of a sherd of *terra sigillata* and a copy of an *as* of Claudius. The sherd was dated to *c.* AD 40-55 by Simpson and to *c.* AD 55-75 by Dannell, and the date of the coin loss to *c.* AD 45-65 (*ibid,* 114-5). The excavators concluded that, although a case might be made for the deposition of both artefacts before the conquest, an early post-conquest date of construction was more likely. The mid-point of the dates suggested in the specialist reports is put forward, with the need to fortify the settlement following the Boudican revolt suggested as the reason for its development (*ibid,* 115). The date of *c.* AD 75 given by Crummy for the final phase of dyke construction is then based on the end of the time span suggested by Dannell for the coin loss. However, the construction of Gryme's Dyke may have taken place over a long period of time and it is

possible that, following the various dates given by the specialists, the construction of sections of the monument began immediately before, or after, the Roman conquest.

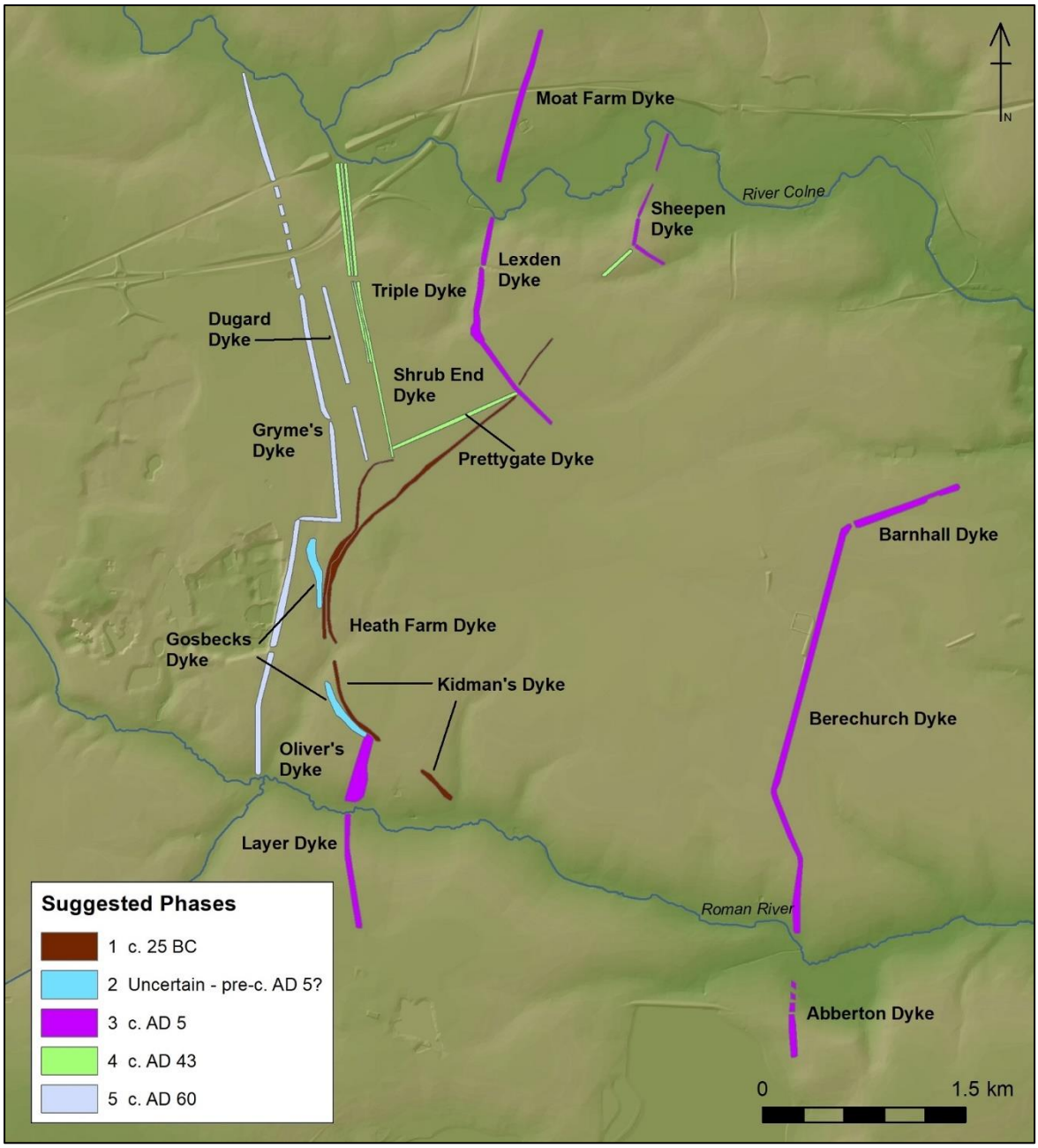


Figure 3.10 Suggested phases for the Colchester dykes based on observations of cropmarks and earthwork remains put together with excavated evidence. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Crummy also puts the Berechurch/Barnhall Dykes into the latest phase in his 1995 interpretation based on the information available at the time. However, pottery recovered during observations of sewer trenching by Hall in the Barnhall sector which was originally thought to be Anglo-Saxon (Hall 1960, 7), was interpreted by Sealey as being of the Little Waltham type, in use between the Middle Iron Age and c 50-25 BC (Hawkes & Crummy 1995, 24). A northern extension to Barnhall Dyke was

identified during the redevelopment of the former Meeanee & Hyderabad Barracks, Colchester Garrison in 2011 and Late Iron Age dating evidence was recovered (Brooks 2016, 84). The ditch was filled with dumps of domestic rubbish indicating settlement in the vicinity.

Pottery from the lower ditch fill comprised grog-tempered wares of forms similar to those associated with the earliest dated deposits at Sheepen (*c.* AD 5) and fragments of Italian amphora (Dressel 1 and Dressel 1B). An overall date range for the construction of the dyke was thought to be between the late 1st century BC and early 1st century AD. The absence from the lower fill of any Gaulish imports or local copies of Gallo-Belgic wares may support an early date. Such material was present in the mid and upper fills, but not in large quantities. (*ibid*, 93).

The dating of the Sheepen dyke is dependent on the description of the few fragments of pottery recovered from under the bank (Hawkes & Hull 1947, 60). The pottery has not survived so could not be re-examined prior to the publication of *Colchester 2* but Crummy interpreted it as being *c.* 50 BC at the earliest, but probably later in date (Hawkes & Crummy 1995, 161-2). Suggested phases for the dykes are shown in Figure 16 based on observation of the cropmarks and earthwork remains combined with excavated evidence.

The form of the dykes has been observed in many cases and generally found to comprise a V-shaped ditch with a bank created from the upcast. Little material has been recovered from excavations which would enable accurate dating, but some analysis of the relationships between the dykes has been possible through excavation, for example, the Lexden Dyke was shown to postdate Heath Farm Dyke and to be earlier than the Prettygate Dyke (Crummy 1997, 14). The dimensions of the larger dykes (Gryme's dyke, Kidman's dyke, Berechurch dyke and Lexden/Moat Farm) are fairly consistent with ditches measuring around 4 m in depth. An exception of the Sheepen dyke which measures around 3 m in depth. Where information is available, the ditches of the other dykes measure between 1.7 m and 2.4 m in depth (Hawkes & Crummy 1995, 162).

Hawkes and Crummy have described the primary role of the linear dykes as being defensive, with their banks referred to as “ramparts” (Hawkes & Crummy 1995; Crummy 1997; Crummy pers comm 2019). This interpretation is linked to the definition of Camulodunum as the fortified place or stronghold (*-dunum*) of the ancient British war god *Camulos* (Hawkes & Crummy 1995, 6; Crummy 1997, 13). However, Hawkes also discusses the role of entrances in the dykes and how they would have controlled movement of people across the territorial *oppidum* zone (Hawkes & Crummy 1995, 9) and Crummy suggests that they had a secondary purpose in controlling and protecting stock (Crummy 1997, 14). Depicting the linear dykes against the contour lines for the region (see Figure 3.11) demonstrates how the curvilinear dykes to the west of Gosbecks, Lexden and Sheepen, define

the peninsula between the River Colne and the Roman River. The routes of all the dykes cross the contours rather than following them, a feature they have in common with cross dykes, or cross ridge dykes, rather than with the contour dyke, Grim's Ditch, suggested as being the earliest phase of the linear earthworks at Chichester (Bradley 1969a, 10).

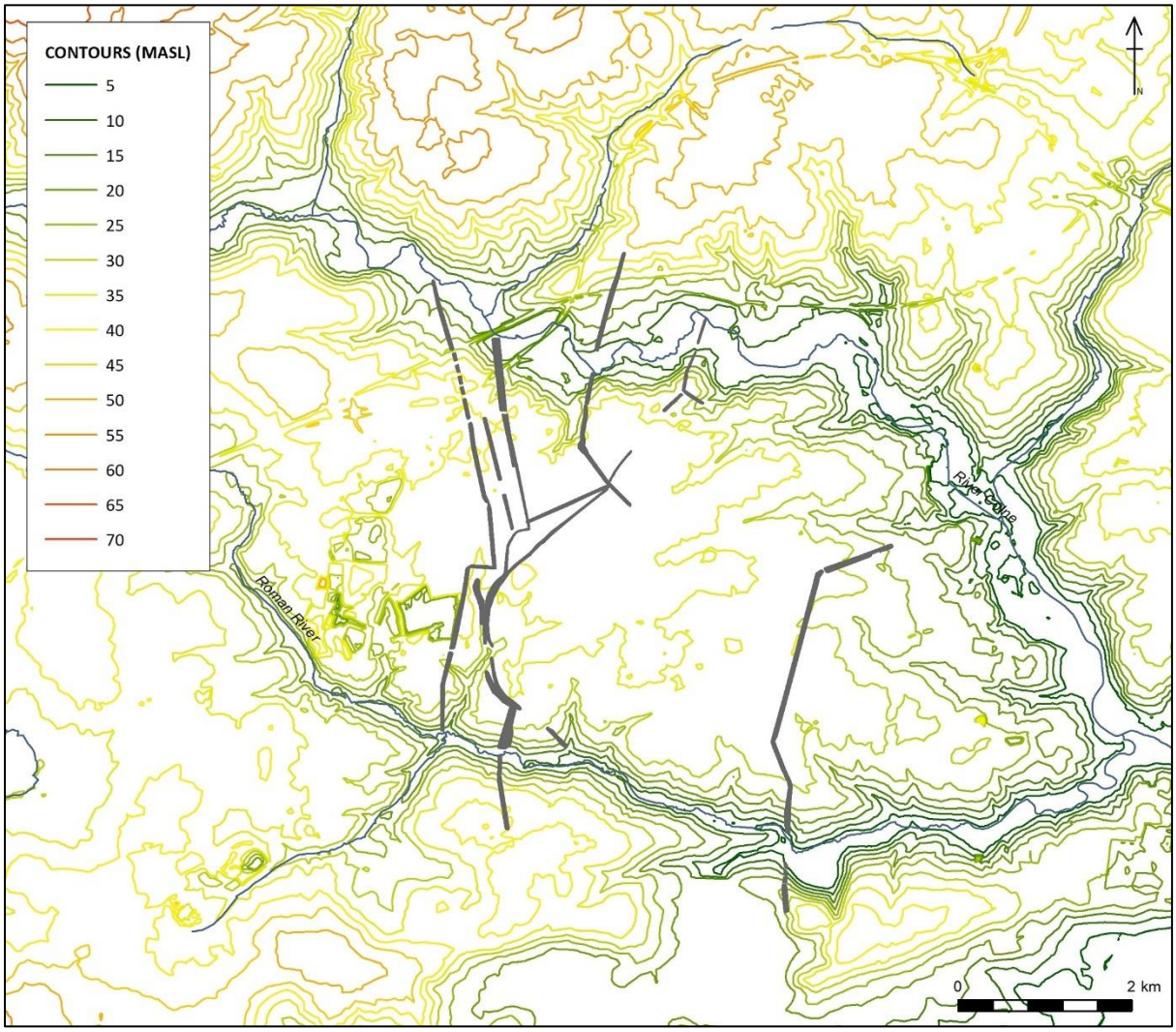


Figure 3.11 Colchester linear dykes against the contour lines © Crown copyright and database rights 2020 Ordnance Survey (100025252)

However, as they cross the centre of the peninsula, the curving routes of the Heath Farm and Gosbecks Dykes do follow the contour of the higher area of ground on which the Gosbecks enclosure and field systems are located. Moat Farm dyke to the north of the River Colne and the Abberton and Layer dykes to the south of the Roman River also cut across the contours. They have been interpreted as each blocking the approach to a river crossing (Hawkes & Crummy 1995, 163). The Berechurch/Barnhall dyke crosses the eastern end of the peninsula just to the west of the point at which it significantly narrows. The dating evidence for the Berechurch/Barnhall dyke may indicate that, along with the Heath Farm and Sheepen dykes at the western end, it helped to control

movement of people into the central part of the peninsula from dispersed farming communities to the east and west. The role of this dyke may have changed during the Late Iron Age/Roman transition period, or it may have gone out of use altogether. The continued construction of linear earthworks at the western end of the peninsula into the Roman period and lack of development at the eastern end suggests that it did not continue to serve a useful purpose.

Occupation sites

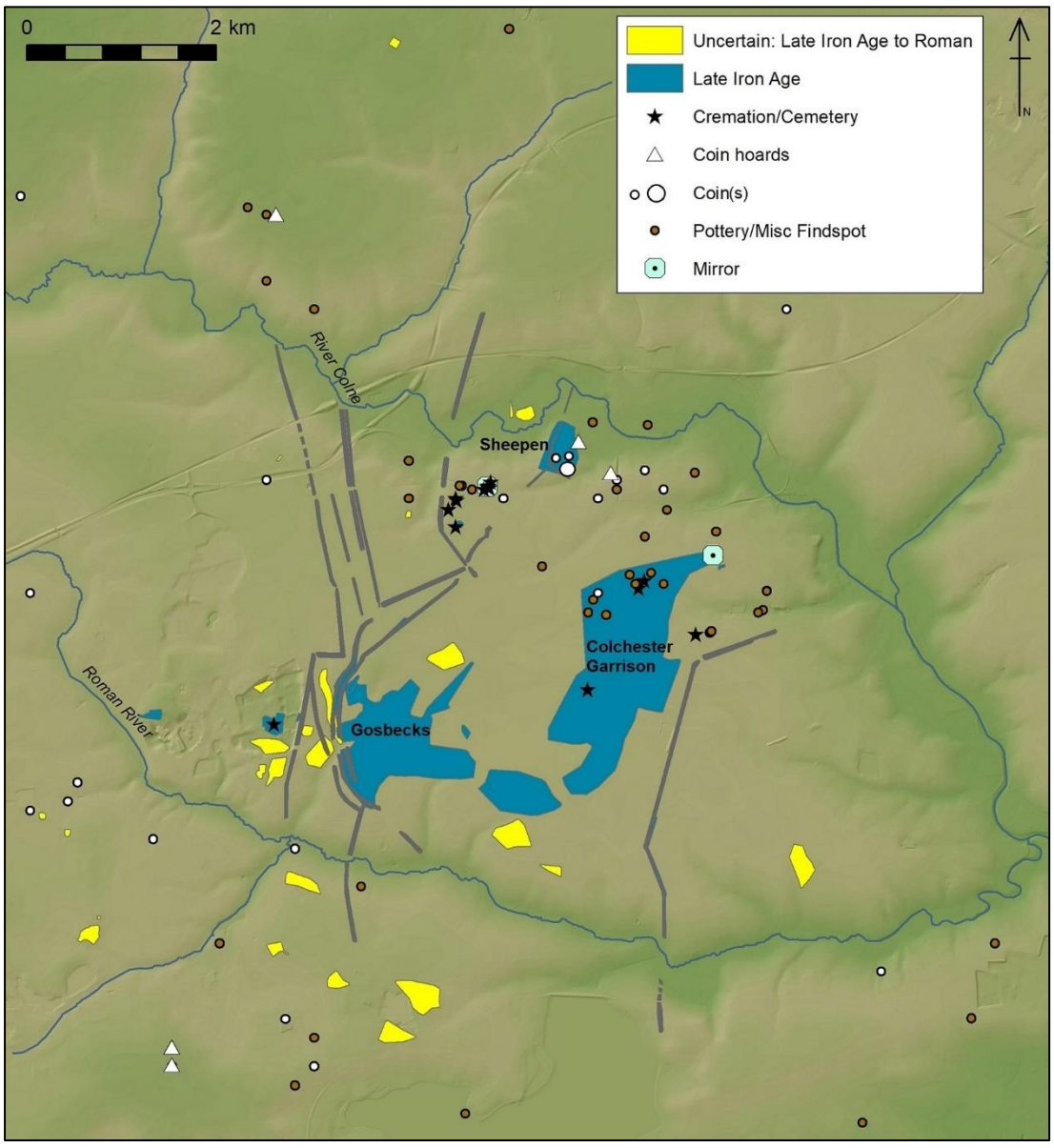


Figure 3.12 Distribution of known and possible Late Iron Age occupation sites in relation to findspots (HER/PAS). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Figure 3.12 shows the main areas of Late Iron Age occupation within the area of land defined by the linear dykes, or the territorial *oppidum* zone, and immediately around it. The polygons cover a mix of

occupation types consisting of domestic and industrial sites, communications routes, and agricultural areas. Three main areas with differing characteristics are located within the dykes: Sheepen, where excavations have uncovered both industrial and domestic settlement evidence; Gosbecks, where limited excavation suggests Late Iron Age settlement associated with a dense area of field systems and trackways; and Colchester Garrison which appears to be predominantly associated with agriculture, possibly with dispersed farming settlements located among field systems and trackways.

Also prominent within the territorial *oppidum* zone is the cemetery around Lexden and other Late Iron Age cremation burials in the Abbey Field area. While it must be acknowledged that a larger number of archaeological investigations have been carried out in this area, the comparative density of funerary sites in the north of the territorial *oppidum* zone suggests an association with the Sheepen site where the greatest density of artefactual settlement evidence has been found.

A number of sub-rectangular or sub-square settlement enclosures, field boundaries and trackways are located within and around the territorial *oppidum* zone (yellow polygons on Figure 3.12 and see below Figure 3.22). These features have been recognised from cropmarks and, as such, are undated but their morphology suggests a Late Iron Age to Roman date. The majority of these sites are found at the edges of the landscape defined by the dykes or outside them, particularly to the south-west. There are occurrences of Late Iron Age pottery and finds of individual coins and coin hoards in the south-western area suggesting that there may have been connections between the *oppidum* zone and settlements in the area surrounding it.

Sheepen

The Sheepen occupation site is located on a peninsula between a tributary and the River Colne, on and around a low hill. The Late Iron Age settlement is associated with the Sheepen Dyke which ran along the western and south-eastern sides of the site, but with few clearly identifiable structures. However, excavations have demonstrated that it had a rich material culture: 289 coins have been found here, 144 of which were stratified (Haselgrove 1987, 163); and the pottery assemblage included a large percentage of imported goods including Arretine *Terra Sigillata,* Gallo-Belgic ware pottery and amphorae (Hawkes & Hull 1947, 28; Hawkes & Crummy 1995, 73). It contains domestic elements and industrial areas, including the site of a possible mint (Hawkes & Hull 1947, 46), but has been characterised as primarily being an industrial site, interpreted as providing evidence of zoning of activities within the territorial *oppidum* area (Crummy 1997, 15).

Chance finds made during agricultural work in the 19th century led to a series of small-scale investigations on the Sheepen peninsula, including the discovery of a coin hoard, large amounts of

pottery and an area of 2nd century Roman pottery kilns (Hawkes & Hull 1947, 21-22). The Sheepen site then became the focus of a major excavation during 1930-1939 which established the form and course of the Sheepen Dyke and identified areas of occupation and industry on top of the hill predominantly to the east of the dyke, but with one possible domestic site located to the west (*ibid*, 23-27 and see Figure 3.13 below for locations of the main features). The course of the dyke was established during the excavations and the bank was found to have been almost completely destroyed. The dimensions of the ditch, around 9.1 m wide and 2.4 – 3.0 m deep give some indication to the size of the bank (Hawkes & Crummy 1995, 70). The dyke was found to have been constructed in two phases: first, an L-shaped dyke formed of Ditch I and Ditch IB, running north-east to south-west, then turning to the south-east; and second, Ditch IA extending to the south-west from the join of I and IB. Arretine Sigillata, Gallo-Belgic wares and locally made Late Iron Age pottery were recovered from the waterlogged base of Ditch I in several sections in the northern part of the excavated area (Regions 1 and 2) (Hawkes & Hull 1947, 59, 71). Pottery was found in smaller quantities in the central area (Region 3), either due to the fact that less silt was present or that occupation was less intense (*ibid*, 79). Entrances were recorded along Ditch I in the north-west and possibly also in the centre, where the route of a later Roman road crosses the site. Another entrance was identified on the angle between Ditch I and Ditch IB, at the point where Ditch IA appears to have been added to the dyke at some point in the later Late Iron Age, turning to the south-west (*ibid*, 58, 83, 108).

Suggested Late Iron Age occupation sites were found in the central, south-eastern, and north-eastern areas of the site to the east of the dyke, and to the north-west of the dyke, with what is characterised by Hawkes and Hull as a major occupation site in the north-eastern area (site D1). Eight of the smaller occupation sites had evidence of period I only (*c.* AD 10-43) and several appeared to have been destroyed by fire. The sites consisted of sub-circular or sub-rectangular levelled areas, interpreted as hut floors with the possible remains of basal walls, and spreads of occupation debris or pit fills (Hawkes & Hull 1947, 46). Larger occupation areas which varied in form were also identified, ranging from those which were similar in form to the small sites, some destroyed around the time of the conquest and others showing evidence of continuing occupation, for example sites F10 and F15, to larger, more amorphous sites, such as YI on the southern brow of the hill. YI was elongated in form and possessed clearer evidence of structural remains than seen elsewhere; two large beam gullies lying nearly parallel to each other, with a third crossing them at an angle. The site was interpreted as being domestic in nature. Large quantities of pottery were recovered from the gullies, predominantly “brown-black soapy-faced native domestic ware”, but also with some imported Gallo-Belgic wares, Terra Rubra and Terra Nigra (*ibid*, 118).

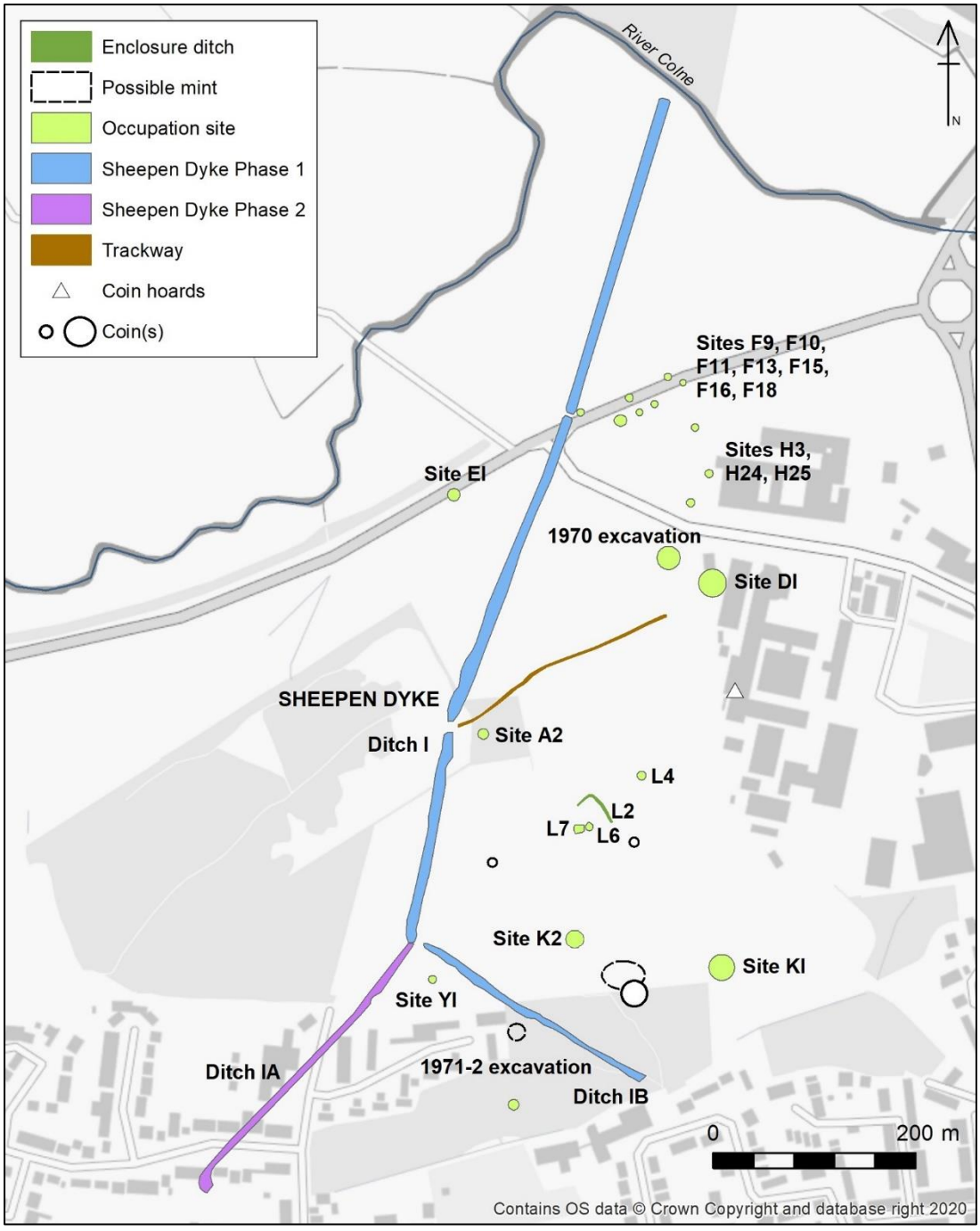


Figure 3.13 Late Iron Age features at Sheepen (after Hawkes & Crummy 1995, Fig 3.1, with additional information from Niblett 1985 and Hawkes and Crummy 1995). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

A pre-conquest period trackway was identified below a later Roman road running across the site on a south-west, north-east orientation and may have continued through the possible west entrance of the Sheepen Dyke (Hawkes & Hull 1947, 97). No structural remains were found associated with the route of the trackway, but pre-conquest imported pottery, including Arretine and Gallo-Belgic wares, was recovered from four rectangular pits (D9, D11, D12 and D14) associated with site DI. The pits were lined with clay and D9 showed remains of a timber lining. In addition to the imported pottery,

brooches of types III (La Tène II, *c.* 100-50 BC) and XII (pre-conquest examples dated to *c.* 50 BC) were recovered from pit D14. Ten bronze coins of Cunobelin were also found on the floor of pit D9. Roman rubbish deposits overlaid the earlier material in each of the pits. The quantity of pre-conquest imports and the absence of any Late Iron Age occupation structures suggested to the excavators that an important site might have existed here of which only the pits remain (*ibid*, 46; 100-101).

A partial possibly sub-quadrangular enclosure ditch (L2) was identified on the east slope of Sheepen Hill (the excavators' Region 6), in the centre of the area to the east of the dyke, associated with occupation debris. Sites L6, L7 and pits L40 and L42 appeared to form part of a single complex together with L2 (Hawkes & Hull 1947, 122). Large quantities of Late Iron Age pottery and a small number of coins, one of Addedomarus, were recovered from the area (*ibid,* 123-4). Site EI is located to the west of Sheepen Dyke and formed of a roughly circular depression cut in steps into the underlying gravel. Pre-conquest material including Arretine and Gallo-Belgic pottery, an iron fire-dog head and iron horseshoe, the latter two both stratified with the pottery (*ibid*, 73).

Site KI in the south-eastern area east of the site (Region 6) appeared to be domestic in nature and was formed of two ditch-like depressions and two small pits from which Late Iron Age pottery was also recovered (Hawkes & Hull 1947, 124). Pit KI to the west of this site yielded material associated with metal-working, including slag, furnace-clay, pieces of crucibles and a large number of pitted slab-moulds. Fragments of these moulds were also found, often residually in later contexts, in smaller quantities in other areas of the Sheepen site (*ibid*). These moulds were interpreted as having been use in the production of coin blanks or pellets, which can be an initial stage in the production of coinage. The coin blank is produced first, then the design is stamped on each side. The concentration of pellet moulds recovered from pit K1 together with material associated with metal-working suggested to the excavators that this was the site of a mint (*ibid*, 129; Crummy 1997, 15-16). Spectrographic analysis of the pellet moulds and samples of bronze issues of Cunobelin demonstrated that the same five metals which constituted the coins were also present in the pellet moulds (Hawkes & Hull 1947, 132). It has been suggested that pellet moulds might not have been associated with coin production (Haselgrove 2019) but analysis of metal residues in assemblages from other *oppida* sites have made the connection between that data and pellet mould size. For example, the presence of gold alloy residues in larger module moulds, and silver and copper alloys in smaller moulds at Bagendon was interpreted as having "parallels to common denominations of Iron Age coinage in circulation" (Morley-Stone 2020, 330). The pattern of dispersed finds of pellet moulds seen at Sheepen has been observed by Landon in other assemblages, for example, at Ford Bridge, Puckeridge. It is suggested that pellet moulds might have been made by many individuals in a variety

of locations (Landon 2016, 183), and possibly pellet manufacture also, beforе their collection in a centralised mint (Allen 2018, 257).

Further excavations were carried out on the lower, north-facing slope of Sheepen Hill in 1970. The trackway beneath the Roman road identified in the 1930s excavation was revealed in two sections. No datable artefacts were associated with the gravel surface of the trackway, but it was found to have been cut by slot 314, 2, which was dated to the Claudian period (AD 44-8) (Niblett 1985, 4). The only other pre-Conquest features found in the 1970 excavations were four rubbish pits in site i. Locally made pottery and late pre-conquest Gallo-Belgic wares were recovered, the latter suggesting that the pits had been filled in very close to the time of the invasion in AD 43 (*ibid*, 5). However, the quantities of Late Iron Age material found in early Roman contexts suggested to the excavators that greater evidence of pre-Conquest settlement might have once existed here (Niblett 1985, 22-23).

This is a point also made by the 1930s excavators who interpreted the conditions in which they uncovered the possible mint location as representing "the wrecking within a short time of the conquest, of a pre-conquest occupation" (Hawkes & Hull 1947, 129). Fulford points to the "issue of residuality" for the pre-Roman deposits at Silchester and its similarity to the conditions found at Colchester and Chichester; the true extent of a phase of occupation with few negative features may not be understood due to the destruction by development in the Roman period (Fulford 2018, 382).

The planned redevelopment of the southern side of Sheepen, immediately to the south of the south-eastern arm of the L-shaped dyke, occasioned further excavations by Crummy in 1971 (TL 9850 2520). Features associated with the Late Iron Age and Roman periods consisted of two large pits (F1 and F37) and a dump of 438 fragments of pellet moulds and pieces of partially vitrified clay from a furnace. 52 fragments were also found in pit F37, 12 in the backfill of the 1930s excavation trenches and a further 125 from the cover loam which sealed it. Pottery sherds recovered from the two pits were dated to the 1st century AD, the Late Iron Age or Early Roman periods (Hawkes & Crummy 1995, 133-4). A pit containing at least 56 pellet mould fragments was uncovered during later development work on the site in 1972, together with Late Iron Age and Roman period pottery. The large number of pellet mould fragments found during these excavations were interpreted as being evidence of a second coin production site, approximately 200 m to the south of the suggested mint site identified during the 1930s excavations (*ibid*, 136-7).

Occupation at the Sheepen site and, possibly, but not necessarily, the construction of the dyke adjacent to it, was thought by Hull to have begun *c.* 5 BC based on the imported pottery found there and a comparison with pottery sequences on Augustan forts on the Lower Rhine (Hawkes & Crummy 1995, 72). Another suggested date is *c.* AD 5, the point at which coin evidence points to the

ascendancy of Cunobelin in this area (*ibid*, 161; Hawkes & Hull 1947, 27-30). However, a re-examination of the Dressel 1 amphorae found on the site by Sealey suggested the possibility of an earlier date of occupation, since this type of vessel was not used for the transportation of wine after c.10 BC (Sealey 1985, 101). Around 50 examples were found at Sheepen which suggests that a settlement could have been operating here earlier in the 1st century BC, but there is little supporting dating evidence in the form of early local pottery or Roman imports (*ibid,* 104-5). Sealey suggests that reuse of amphorae or ageing of wine within them might explain their presence at Sheepen, if indeed, the settlement began at a later date (*ibid,* 107).

Sheepen was initially interpreted as being founded as the centre of operations for the new leader in the area, Cunobelin, from *c.* AD 5, possibly the location of his residence and other domestic settlement, with areas of industrial activity indicated particularly by the possible mint (Hawkes & Hull 1947, 29). It was later interpreted by Crummy as demonstrating an element of zoning within the territorial *oppidum*, as an industrial zone, or "works depot", which complemented the more agricultural and domestic site of Gosbecks (Crummy 1997, 15). However, the areas of domestic occupation debris and possible structures and the large quantities of imported pottery found across the site suggest that the people living here were probably primarily traders in the Late Iron Age period. Another factor supporting the interpretation that the Sheepen occupation site had a focus on trade is its location near to a ford across the River Colne. At this location the river ceases to be tidal (Hawkes & Hull 1947, 4), and it is the highest point on the river that a sea-going ship could reach (Hawkes & Crummy 1995, 76). The three entrances through the Sheepen dyke, one with a trackway approaching it, suggest that the settlement sat within a land- and river-based communications network. The phased construction of the Sheepen dyke and the presence of a domestic site (EI) `outside' it, but with a similar material assemblage to those `inside' may be an indication that the settlement area fluctuated in size over time. It may have initially been a larger, possibly more dispersed, site, which then contracted to the area defined on its western side by the dyke. Alternately, site EI may be a contemporary site which had a relationship with the main settlement, facilitated by the presence of the northern entrance through the dyke.

A sub-square enclosure with a number of boundary ditches leading off from it is located to the north of River Colne close to the Sheepen site (see Figure 3.14). An excavation was carried out on this site in 1952 by Appleby returning pottery from the upper fills of the ditch sectioned described as being "all earlier than 1400", but the base of the ditch below the water level was not investigated. Hawkes and Crummy interpret the site as likely to be post-Roman in date due to the fact that some of the boundaries align with the modern layout of the area (Hawkes & Crummy 1995, 131). However, a comparison of different photographic sources reveals different alignments in the boundaries,

suggesting that it is of more than one phase, so it is possible that elements of it relate to the Late Iron Age to Roman periods. It is also possible that those elements which align with currently used boundaries demonstrate continuity in use from the Iron Age into the modern period. Continuous use of boundary alignments has been noted to the north of Silchester (Truscoe 2018) and in the landscape around Stanwick (Haselgrove & Moore 2016). A settlement on the other side of a ford across the River Colne from Sheepen would appear to be a logical development and may have been associated with trading routes leading out from the settlement, but whether the two sites are contemporaneous is unclear.

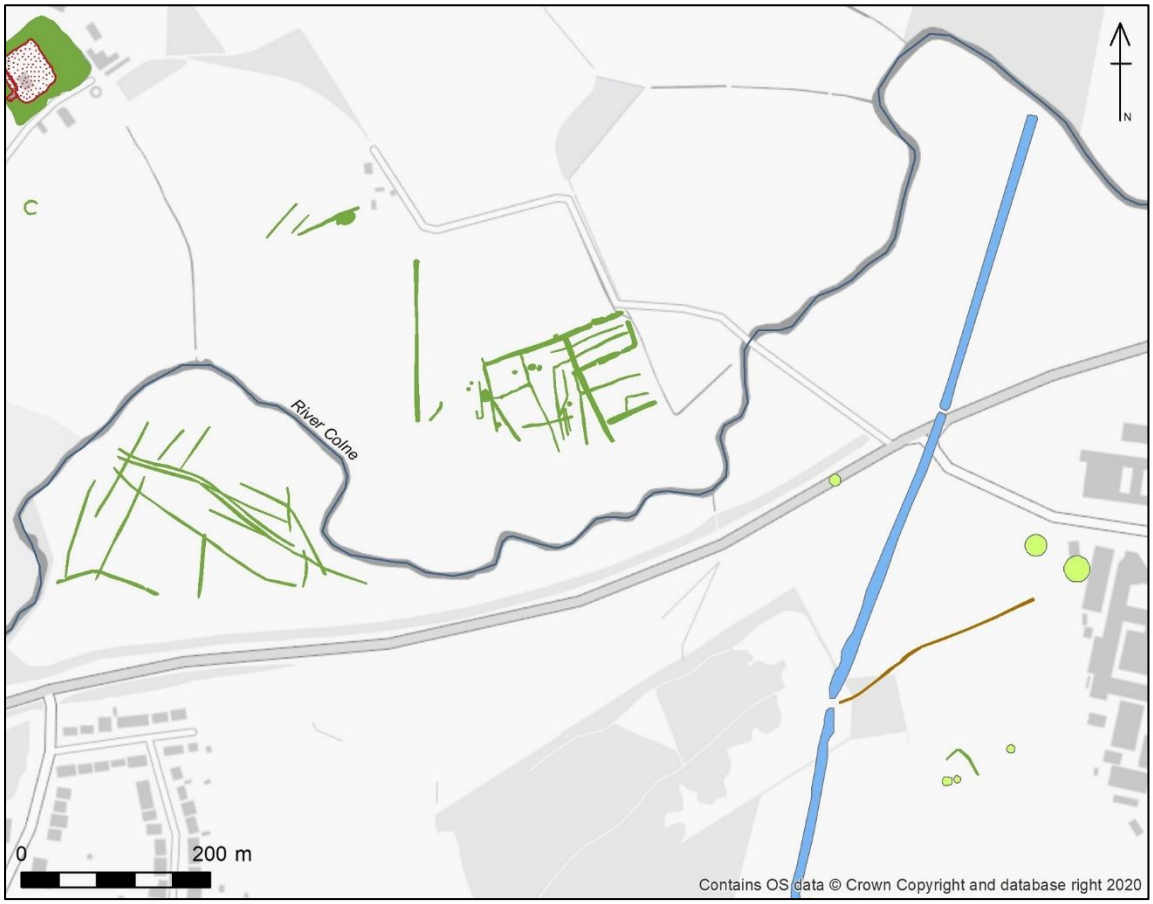


Figure 3.14 A possible settlement to the north of the River Colne near Sheepen. Mapping of cropmarks by the author. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Continuity of settlement into the Roman period was observed at some of the domestic sites, but it also becomes a location of religious significance. At least four Roman temples are known from the northern area of the Sheepen settlement, adjacent to the River Colne. The two southernmost temples are Romano-Celtic and formed of two concentric square structures. One is larger in size, located within a precinct wall, and was dated to the end of the 1st century AD. The other, located to the north-west of the precinct wall, was dated to the 3rd century AD (Hull 1958, 224-226). It is possible that the character of the area had changed significantly to that of a religious, rather than

industrial, centre (Crummy 1997, 107) or the proximity to the River Colne and the streams draining into it that define the promontory may always have had religious associations. No evidence of earlier ritual use of the temple sites at Sheepen is recorded in the excavation reports (Hawkes & Hull 1947, 67; Hull 1958, 226), only evidence of domestic use with a similar mixture of artefacts and Late Iron Age coins as were found at many of the other sites across the peninsula. However, Willis has suggested that the location of the Sheepen settlement may have had a religious significance in the Late Iron Age due to its position where the tidal and non-tidal sections of the River Colne meet (Willis 2007, 121). The association with water and marsh has also been suggested as being significant in the siting of Verlamion. Indications of ritual activity include the deposition of possible offerings of coins and brooches beneath the Roman temples in Insulae VII and XVI (Haselgrove & Millett 1997, 284). Willis suggests that, while such similar deposits are either not evident or not identified at Sheepen, the overall quantity and variety of finds from the site, including brooches, coins, amphorae and imported pottery might point to it having been a centre of ritual deposition and feasting (Willis 2007, 121). Rogers has combined Willis' reinterpretation of the location of the settlement at Sheepen with the suggestion that ritual processes were inherent in production (eg, Hingley 1997) to infer that these factors would have influenced the siting of the religious and secular elements of the later Roman town (Rogers 2008, 45).

Gosbecks

The extent of the site at Gosbecks, suggested as being the other main occupation area of the *oppidum,* was recognised through aerial photography taken during the mid-1970s drought years and consists of a very large trapezoidal enclosure, around 142 m by 119 m, surrounded by a multi-phase landscape comprising a number of trackways and a field system which appears to abut the Heath Farm dyke. A Roman theatre and temple complex is located immediately to the east of the Gosbecks enclosure and a number of features in this area are probably associated with the use of the site during that period. Deep ploughing in 1943 revealed an Iron Age pit to the west of the trapezoidal enclosure and an extensive spread of Roman pottery from the fields to the north of the enclosure and Roman temple and to the south of the theatre, where evidence of metal-working was also discovered (Hull 1958, 259). Crummy has interpreted the large trapezoidal enclosure as being the focal point of the Gosbecks area in the Late Iron Age and possibly being a royal residence (Crummy 1997, 17). He draws a parallel with the large, ditched, enclosure excavated at Stansted Airport which contained a sequence of roundhouses arranged around a possible shrine and evidence of imported goods (*ibid*, 11; Havis 2004) and with Orsett, which has a similar layout consisting of a main

enclosure with a smaller annex (Hawkes & Crummy 1995, 98), but appears more coherent, as though it were laid out in one phase.

Few recent archaeological excavations have been carried out on features thought to be Late Iron Age in date in the central Gosbecks area. The only limited dating evidence for this area comes from a small-scale excavation in 1949 on the main enclosure by Lt Col R J Appleby (see Figure 3.15). The enclosure ditch was found to be 18 feet (5.49 m) wide and 6 feet (1.8 m) deep. Nothing was recovered from the rapid silt at the base of the ditch but the lower fills above this contained Iron Age C pottery, a few fragments of Roman pottery and a Langton Down type brooch (*c.* 50-51 BC (Hawkes & Hull 1949, 317)). The upper fills contained locally produced pottery mixed with fragments of Gallo-Belgic wares and Roman period pottery. The ditch to the north had much smaller dimensions, around 3 m in width and around 1-1.5 m in depth and appeared to have lain open for a longer period of time than the enclosure ditch. A greater proportion of Roman wares were recovered from the upper and lower fills together with locally produced pottery. The conclusion was that the main trapezoidal enclosure and the ditch to the north were pre-Roman, with the former being earlier in date, but that they had both remained open long enough for Roman wares to accumulate within them (Hull 1958, 270-1).

The trapezoidal enclosure itself appears to be of multi-phase construction, consisting of an inner enclosure, an outer ditch, and an annex on its northern side. The first phase may have been just the inner enclosure, which has an internal measurement of approximately 1.58 ha. There is a possible entrance in the centre of its southern side but a curving, double-ditched, trackway appears to approach its south-west corner suggesting that there may have been another entrance at that location. The outer ditch runs parallel to the eastern and southern sides of the inner enclosure, then extends to the north-east at a greater distance from the western side before finally turning to the south-east and terminating immediately to the north of a possible annex to the main enclosure. The annex is sub-rectangular with a possible entrance on its western side and its southern side appears to be formed of the northern side of the trapezoidal enclosure. The fact that it abuts the enclosure and that it is formed of narrower ditches suggests that it is a later addition. The trackway which may lead to the south-west corner of the enclosure crosses the line of the outer ditch and may therefore predate it.

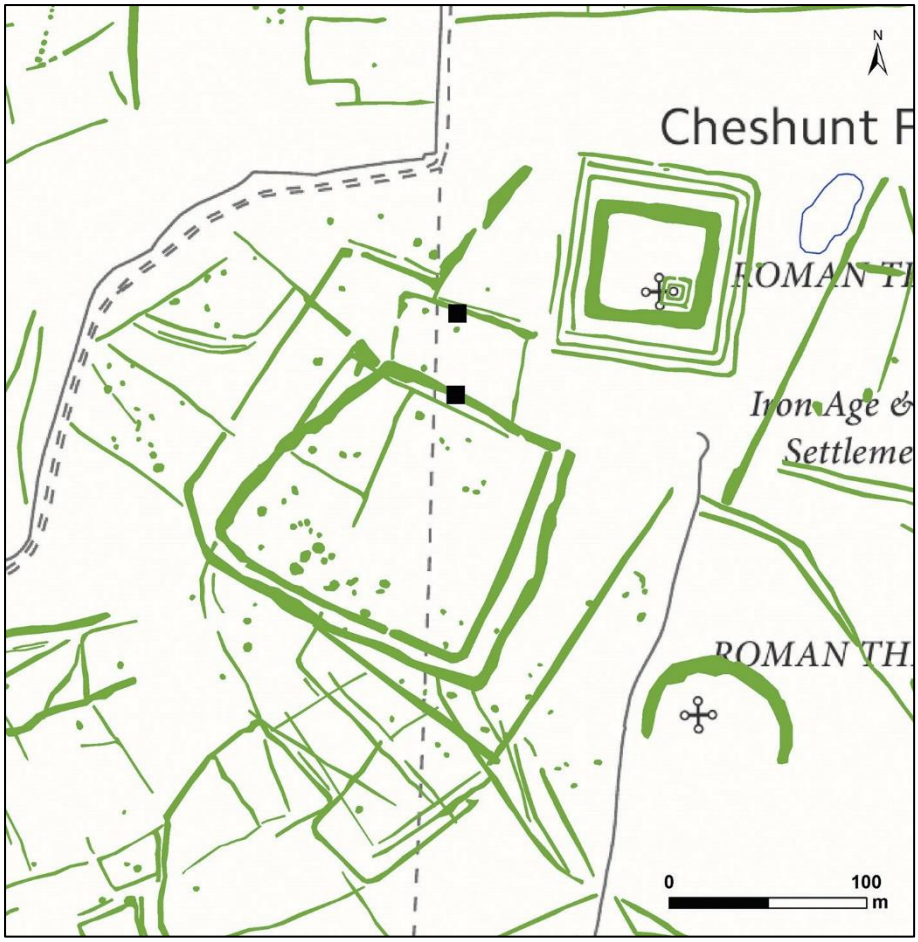


Figure 3.15 The Gosbecks enclosure with the location of Col Appleby's trenches (black squares) during his excavations on the trapezoidal enclosure. The site of the Romano-Celtic temple can be seen immediately to the north-east and the semi-circular theatre within an enclosure to the east. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

However, it is possible that the inner enclosure and outer ditch form one phase of use, followed by the creation of the annex, and that the trackway is a later development associated with the Roman period use of the site and it is coincidental that it appears to head for the corner of the enclosure. A later, possibly post-conquest, development is suggested by a sub-rectangular enclosure which appears to overlie the north-west corner of the trapezoidal enclosure suggesting that it might have gone out of use at some point in the Roman period. Alternately, it may have been modified and reused as part of the Roman temple and theatre complex as appears to have occurred at Frilford (Hingley 1985, 203). Numerous overlapping field boundaries and trackways are present in this area, also indicating multiple phases of use of the Gosbecks area, some focussed on the Late Iron Age enclosure and others on the Roman temple and theatre.

The Roman temple and theatre to the north-east of the trapezoidal enclosure at Gosbecks were investigated during the 1930s. The sites of a temple within a triple-ditched enclosure and a theatre had both been identified from cropmarks seen on aerial photographs, taken during a period when

features in the southern half of the Gosbecks site were not visible as cropmarks (see Figure 3.16 for the transcription from Hull 1958, figure 113). The distinct cut-off line at the field boundary suggests that at the time that the photograph was taken the field to the south was under a different planting regime to that in the north where the cropmarks have formed clearly. Previous excavations of the Gosbecks site were focused on the area of the temple structure itself and the ditch of the surrounding enclosing boundary or temenos (Hull 1958, 262-3). Therefore, a large area of the interior remains unexplored. The temple dates to the Roman period, but the enclosure around it may be of an earlier date, possibly with its origins as a funerary enclosure of the type seen at Stanway (see below p99).

Figure 3.16 Plan of the Gosbecks site taken from available aerial photography pre-1949 (Hull 1958, Figure 113)

The temple enclosure also has a possible parallel with the Folly Lane funerary site outside Verulamium (St Albans) (Crummy 1997, 27); a high-status burial with a wooden mortuary enclosure was discovered within an enclosure, and a temple of similar design to that seen at Gosbecks was added in a corner of the enclosure at a later date (Niblett 1992, 917-29). The burial dates from the mid-1st century AD, postdating the conquest, but Niblett states that it belongs to the pre-Roman funerary tradition (2001, 46). Crummy speculates that, while no evidence for a burial is known, the similarity in form to the Folly Lane funerary site, and its proximity to the large trapezoidal enclosure,

the temple at Gosbecks may be the burial place of a local leader, possibly Cunobelin (Crummy 1997, 28).

Philip Crummy carried out an interpretation of the Gosbecks area from mid-1970s drought-period aerial photographs and attempted to establish a chronology for the features within it (see Figure 3.17). He saw two main phases of activity: as a predominantly agricultural area during the Iron Age, with the large trapezoidal enclosure interpreted as a farmstead; then as an important "tribal sanctuary" after the reconstruction of Colchester following the Boudican revolt in AD 60-61 (Crummy 1979, 78). The relationship between the dykes and the field system was unclear from the appearance of the cropmarks. The field system might predate Heath Farm Dyke Middle and its construction may have destroyed the western section of boundaries. However, further to the south, the field boundaries appear to stop at the inner edge of what has been identified as Kidman's Dyke South, but which Crummy suggests may actually be part of Heath Farm Dyke South. The boundaries on the western edges of the fields either predate the dyke and were destroyed during its construction or the dyke forms their western boundary (Crummy & Hawkes 1995, 99).

Crummy also suggested that an extensive area of land might have been controlled from a centre at Gosbecks, possibly taking in the agricultural landscape identified during excavations at the Colchester Garrison site (see below p102). Field boundaries and trackways of possible Late Iron Age or Roman date can also be identified to the east of Gosbecks, to the south of Colchester Garrison (see below Figure 3.21). However, an area of regular land divisions described by Crummy in his initial interpretation of the area as evidence of possible centuriation (Crummy 1979, 81) was a misinterpretation of Second World War anti-glider ditches which were visible as cropmarks on aerial photographs of the 1970s (but see 1940s RAF photography for their original appearance, eg, RAF 106G/UK555 3069-70 28-JUL-1945).

Figure 3.17 Transcription of Gosbecks area by Crummy with phases suggested: Iron Age features in blue, Roman features in orange (Crummy 1997, 16)

The next aerial photographic interpretation of the Gosbecks area took place as part of the Essex National Mapping Programme project (Ingle & Saunders 2003). The relative accuracy of these surveys and the detail recorded in them was examined during the current research and compared with current data sources which were not available when the earlier projects were carried out. A comparison between the author's survey and the Essex NMP project showed many similarities in features recorded, but slight differences in their location. This is probably due to improvements made to the rectification software since the time of the survey.

A comparison with Crummy's transcription and interpretation does show some differences in terms of features recorded (see Figures 3.17 and 3.18), although this is partly due to extrapolation by Crummy of the routes of the trackways to the north of the site and to join with the south-west corner of the trapezoidal enclosure. It is possible that the trackways follow these routes, although no entrance is apparent in the enclosure at that point. A possible entrance was recorded during the current survey in the centre of the southern side of the inner enclosure ditch at TL 96648 22362, although this is only clear on one series of photographs (TL 9622/21 NMR 957/292-293 08-JUN-1976). The internal measurement of the enclosure is approximately 140m by 120m.

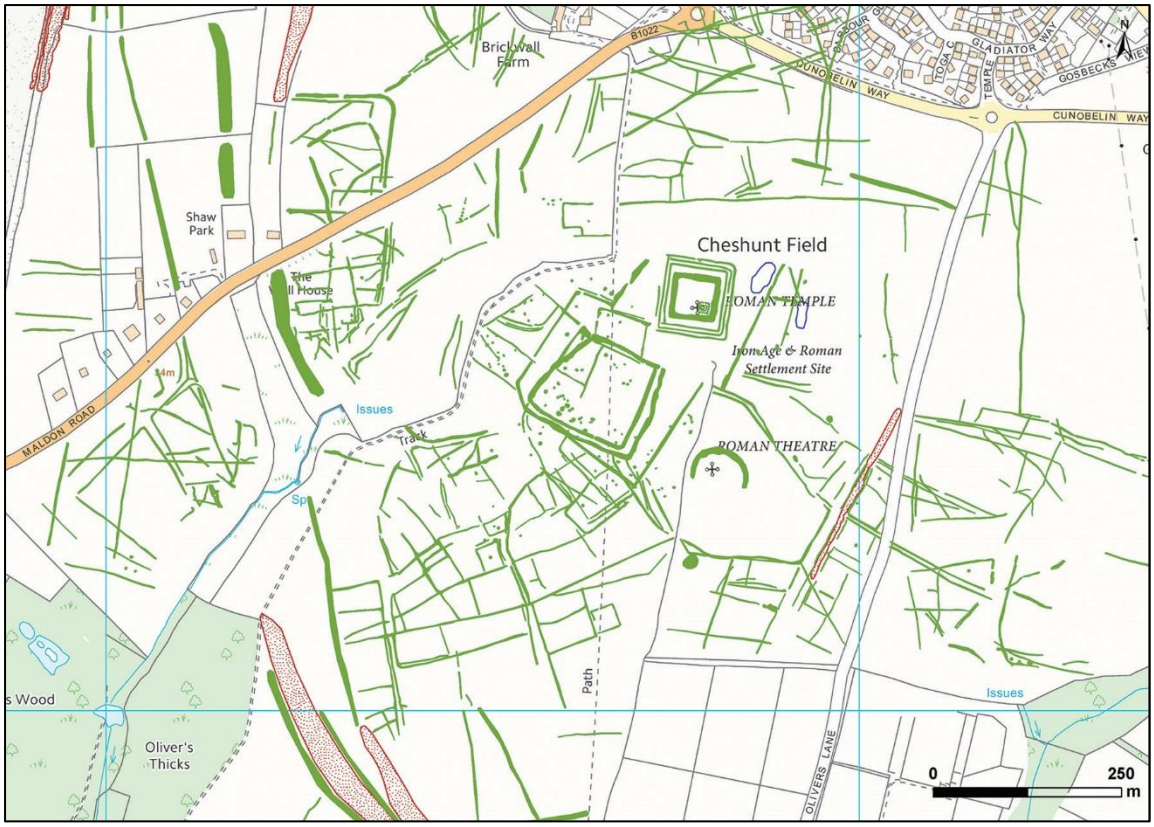


Figure 3.18 Transcription of the same area by the author. Key to mapped features: ditches (green), banks (red), large cut features (dark blue). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

The field system around the Gosbecks enclosure is interpreted by Crummy as being predominantly Iron Age in date, but the overlapping nature of the features, particularly to the south and east of the enclosure, suggests multiple phases. While the field system may have undergone modifications during the Iron Age period of use, some of those alterations may have occurred during the Roman period. It is difficult to assign dates to these based on aerial photographic evidence alone, but it appears to have been an area of intensive agriculture. The features around the theatre on the eastern side of the site do appear to have an orientation on the Roman road, but the overlapping nature, and different character, of the features to the east of Oliver's Lane suggests that some features are either earlier in date or relate to different phases of post-Conquest construction. Investigations carried out in 1995 on features to the north of the trapezoidal enclosure and field system, adjacent to the Roman road which runs between the Gosbecks area and the Roman town indicate continuation of settlement from the Late Iron Age to the Roman period. A large, ditched enclosure of Late Iron Age to Roman date was identified, a possible building or structure and a number of pits and ditches. Dating evidence was scarce, but the presence of Gallo-Belgic pottery suggests that occupation here occurred during the Augustan period, contemporary with the Sheepen settlement, but with a more limited range of imports. The settlement appears to have been

occupied continuously from the Late Iron Age into the first part of the early Roman period, after which the enclosure is replaced by a new arrangement of enclosures associated with a trackway or droveway (Benfield 2008, 46).

Funerary Sites

Two areas where high status Late Iron Age burials have been identified are at Lexden, the Lexden Tumulus, located within the area defined by the linear dykes, and at Stanway, to the west of the dykes or 'outside' the territorial *oppidum* zone (see Figure 3.12 for locations). Both funerary sites have become the focus of Roman period burials. The site of a possible cemetery has been hypothesised in the Barnhall area to north of the dyke of the same name, suggested by finds of Late Iron Age cremation burials and vessels from several locations in the vicinity (Hawkes & Crummy 1995, 170). Several burials and fragments of Gallo-Belgic wares were recovered from Colchester cemetery in Mersea Road in 1946 and 1951. Two urns (Sheepen Period 1, pre-conquest) were found in Abbey Field. A Late Iron Age pedestal urn was recovered from a sand pit in Bourne Road and a lidded bowl with copper-alloy and iron rings found at Winsley's Almshouses (Hawkes & Crummy 1995, 170).

Lexden Tumulus and cemetery area

Lexden Tumulus and cemetery are located immediately to the east of Lexden Dyke, but do not necessarily have a direct relationship with it. One cremation burial appeared to underlie the tail of the bank of the Lexden Dyke, suggesting that it may have predated its construction. However, the position of the burial under the tail rather than the main body of the bank makes the chronological relationship between the two features unclear (Hawkes & Crummy 1995, 169). The burials in the Lexden area span the Late Iron Age to Roman period. The earliest group of burials dates to *c.* 50-10 BC and the later burials date to between the late 1st century BC to the 3rd century AD, with the majority dating to the 1st century AD (*ibid*, 164, 169). Analysis of the pottery from the Late Iron Age burials found no Gallo-Belgic imports (Thompson 1982, 759-66) and a *terminus ante quem* of *c.* 15-10 BC is suggested (Hawkes & Crummy 1995, 169).

Lexden Tumulus was initially excavated by P G and H E Laver in 1924 when the central cremation burial was uncovered. The cremated remains were placed in several areas over the western half of a large oval pit together with a large collection of objects, also probably carefully placed. The objects include copper-alloy figurines, a Middle Bronze Age axehead, chain mail, a leather jerkin, at least 17 amphorae, and the possible remains of a folding stool. Another object was a medallion created from

a coin of Augustus which has been dated to between 18 – 16 BC, a date range which may link the tumulus burial to Addedomaros, a leader of the Trinovantes. The objects had been deliberately broken, probably as part of a burial ritual (Crummy 1997, 22-3). The Lexden Tumulus has been dated to *c.* 15-10 BC based on an analysis of the grave goods (Foster 1986, 177-8). Two trenches were excavated in 1973, across the suspected ditch of the tumulus and to the south, between the tumulus and Fitzwalter Road. (Hawkes & Crummy 1995, 127-130). A second tumulus, The Mount is situated 430 m to the west of the dyke. The Mount was excavated in 1910 by the Morant Club, but no burials were found within it (Hull 1958, 252).

Other groups of cremation burials were also uncovered during excavations in 1904, although these have never been fully published. These range from single interments within a vessel to those with groups of grave goods. One exceptional example is the Lexden mirror grave, found to the north of Lexden Road and south-west of Sheepen, which contained six pottery vessels, a bronze cup, a bronze pin and a decorated bronze hand mirror (Hawkes & Hull 1947, 13; Crummy 1997, 22).

Stanway cemetery

The Stanway cemetery (see Figure 3.19) is located to the west of Gryme's Dyke and the site was recognised by the cropmarks of five sub-rectangular ditched enclosures arranged in two groups: a linked group of two enclosures to the west (numbered by the excavators as 1 and 2) and a group of three enclosures to the east (numbered 3, 4 and 5). This site was excavated between 1987 and 2003 prior to its destruction by sand and gravel extraction. The earliest phase of activity on the site was Middle Iron Age, in the form of a farmstead (Enclosure 2), followed by the creation of Enclosure 1 in the second half of the 1st century BC. A pit with pyre debris was found to the east of Enclosure 2 containing a brooch placed within a pit which was dated to *c.* 50-10 BC. The next phase of activity occurs in mid-1st century AD (*c.* AD 40-60) when Enclosures 3 to 5 were constructed to the east of Enclosures 1 and 2, straddling the pre- and post-conquest periods (Crummy *et al* 2007, 8-11).

Enclosure 1 (north enclosure) contained a Late Iron Age (*c.* 50-1 BC) cremation in a pot, a mortuary chamber containing the fragments of two vessels and pit from which broken funerary goods and cremated human bone were recovered. The enclosure ditch cut through the droveway associated with the Middle Iron Age farmstead in Enclosure 2, indicating that it was constructed at a later date, and appeared to have been created specifically for funerary purposes (*ibid*, 69). Dating of Enclosure 1 was based on pottery, which was grog-tempered and wheel-thrown (no earlier than *c.* 75-50 BC). The absence of imported Gallo-Belgic wares led to the interpretation that the date range of the enclosure and burials within it was the second half of the 1st century BC (*ibid*, 436). No entrance was

Figure 3.19 Funerary enclosures, Stanway Sand and Gravel pit and features recorded to the south. Numbering of the enclosures from Crummy et al *2007, Fig 5. Mapping: Truscoe. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)*

identified through excavation and is not apparent on aerial photographs (*ibid*, 69). The cropmarks do show a break on the western side but from its appearance it has been caused by later disturbance to the enclosure. The three funerary enclosures on the eastern side of the site have entrances to the east, in the direction of the rising sun (Crummy 1995, 23) and it is possible that an entrance existed

on this side of Enclosure 1 (Crummy *et al* 2007, 69). Enclosures 3, 4 and 5 are arranged in a continuous row and were found to have been laid out in two stages: Enclosure 3 in AD 35-45 and Enclosures 4 and 5 as a conjoined pair in AD 40-50 (*ibid*, 438). The enclosures each contain mortuary chambers, but also secondary burials and pyre sites. The burials are associated with plentiful grave goods, the nature of which has led to an interpretation of the characters of those interred. For example, one burial has been termed the 'warrior's burial' and another, the 'doctor's burial'. The warrior's burial (Enclosure 3) contained a lance and shield boss amongst a host of other items. The doctor's burial (Enclosure 5) contained 'medical implements' and rods, in addition to a gaming board, leading to it also being described as the 'game' grave (Crummy 1997, 27).

The preferred dating of the excavators indicates that Enclosure 3 was constructed before AD 43, but with activity spanning the pre- and post-conquest periods. The construction of the Enclosure ditch, use of pyre site BF1 and the Warrior's burial (BF64) were suggested as being wholly pre-conquest in date, while the mortuary chamber deposition of broken pots within the ditch were dated to *c.* AD 35-50. The laying out and use of Enclosures 4 and 5 is judged to have occurred within a short period of time (AD 40-50) (Crummy *et al* 2007, 441). The narrow date range put forward for the construction and use of Enclosures 3 to 5 led to the interpretation that the burials were associated with the same kinship group (*ibid*, 441).

Hawkes states that Heath Farm Dyke, "disregards" the Lexden Tumulus and Lexden cemetery, though he professes uncertainty as to whether Lexden burial features were in existence by the period in which the Heath Farm Dyke was constructed (Hawkes & Crummy 1995, 33). The route of Heath Farm Dyke runs to the south of cemetery area and, if they are contemporary features, it is possible that the cemeteries were placed outside the suggested earliest line of the dykes. Lexden Tumulus is located c 310 m to the north of Heath Farm Dyke North and the funerary enclosures at Stanway are located c 500 m to the west of Heath Farm Dyke Middle and the location of these sites in relation to what is possibly the earliest phase of the linear dykes may be significant. Creighton has associated these sites with the development of a leadership cult, designed to focus the loyalty of their people in the same way as the Roman Imperial cult. He suggests that these types of monuments were deliberately placed at the entrances of these new important centres, the *oppida.* In the case of Colchester, he posits main entrances to the site at the north and south, which to enter you would have to pass either the Lexden Tumulus or the Stanway enclosures (Creighton 2000, 197). However, the uncertainty in date of origin of the linear dykes, the fact that much of the use of the Stanway funerary site postdates the burial in the Lexden Tumulus and occupation at Sheepen militates against the view that these features could necessarily be seen as part of a unified landscape system.

Another possible funerary enclosure lies to the south of Colchester Garrison at the Musket Club, Homefield Road (see Figure 3.20). It measures 50m by 45m and has a possible entrance on its eastern side and a pit in its centre. Trial trenching across the enclosure ditch returned few finds, and this fact together with the appearance of the enclosure suggested to the excavators that it might not be a domestic site (Brooks 2005, 4). The central pit, enclosure size and orientation of entrance make it similar in appearance to funerary enclosures 3, 4 and 5 at Stanway (Crummy *et al* 2007, Fig 8, p11). It may be that the Musket Club enclosure also originated as a farmstead and was reused as a funerary enclosure.

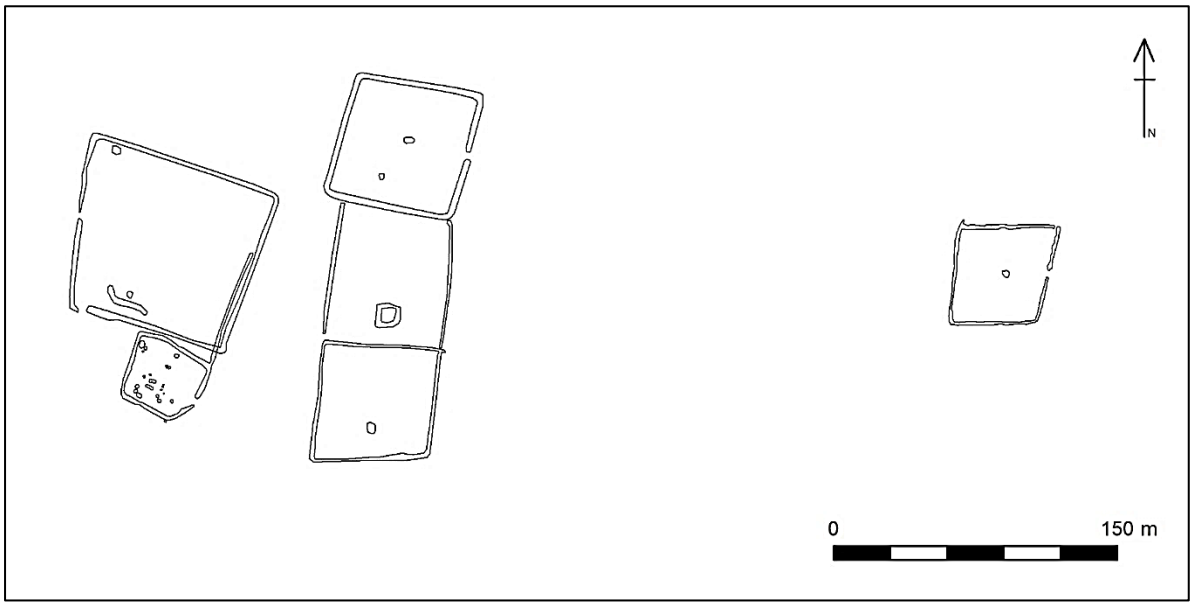


Figure 3.20 Comparison between forms of Stanway burial site on the left and the Musket Club enclosure on the right. Mapping: Truscoe

East of Gosbecks: Colchester Garrison

The character of the area to the east of the densely farmed landscape at Gosbecks and west of the Berechurch/Barnhall Dyke appears, from the aerial photographic and excavated evidence, to be agricultural, with dispersed enclosures which may be farmsteads or paddocks set within field systems connected by a network of trackways. There is evidence for Middle Iron Age occupation in area (see above p65), although not necessarily continuity of use of particular sites into the Late Iron Age period. The area to the east of Gosbecks was formerly covered by Colchester Garrison and the site was the subject of a large-scale programme of excavation between 2002-2011 prior to redevelopment (see Figure 3.21 for a summary of the Late Iron Age features within this area). Overall, the evidence for the later prehistoric periods in the area, including the Middle Iron Age, suggests that it was continually occupied, rather than being newly settled in conjunction with the

creation of the *oppidum* in the Late Iron Age. The excavators (Colchester Archaeological Trust) have interpreted the evidence as pointing to two successive layouts of boundaries and settlements, dating to the Early/Middle Iron Age and the Late Iron Age/early Roman periods, suggesting that a widespread change in the use and management of the land occurred with the development of the *oppidum* zone. The Middle Iron Age landscape (land form 1) is defined as being associated with the Ypres Road enclosure and possibly the Musket Club enclosure, with boundaries and settlements predominantly oriented north-south. The Late Iron Age to early Roman landscape (land form 2) is interpreted as coaxial, with north-west, south-east, and north-east, south-west alignments. Land form 2 is thought to have been associated with the *oppidum* initially and later with the Kirkee McMunn Barracks Roman farmstead (Brooks and Masefield 2005, 88-89).

Features within the area to the east of Gosbecks that may have their origins in the Late Iron Age have been predominantly associated with agricultural activities, including stock enclosures, field boundaries, possible farmstead enclosures identified from cropmark evidence and trackways or droveways. A number of these features follow the form 2 coaxial alignments including the track- or droveways, field boundaries and two possible enclosures to the north-east of the Musket Club site. Three enclosures interpreted as relating to stock management rather than being domestic were found through excavation at the former Meeanee & Hyderabad Barracks. The stock enclosures were dated broadly to the Late Iron Age to Roman period but were cut through by a later Roman period field boundary ditch (Brooks 2016, 64). The remains of two multi-phase ditched enclosures, also interpreted as being Late Iron Age to Roman in date, were identified through excavation on the site of Goojerat Barracks. Loom weights of Middle Iron Age types were also found, suggesting activity during this period, but there was no evidence of associated structures (Brooks *et al* 2012, 1). Traces of Late Iron Age activity, in the form of two ditches, were also identified at the Kirkee McMunn Barracks site underlying a 2nd to 3rd century Roman villa (Shimmin 1998, 262).

A Middle Iron Age enclosure with a roundhouse within it was excavated to the south of Ypres Road in 2003 (see above p65). It appears to have been levelled in by at least the Late Iron Age period when a trackway was constructed across it (Brooks & Masefield 2005, 12). Sections of double-ditched trackways and field boundaries to south and east of the Ypres Road site which are known from cropmark evidence were identified and dated through excavation to the Late Iron Age period, the eastern area of which appeared to have their origin in the Early Iron Age, while those to the south appeared to have been newly created in the Late Iron Age (*ibid,* 80-81). Two Early Iron Age cremation burials, four-post structures and pottery were found in the eastern area of the Colchester Garrison site (Area DR). Field boundaries which may also have their origin in this period were also

identified which appear to have been recut and adapted through the Late Iron Age and up until the 2nd and 3rd centuries AD.

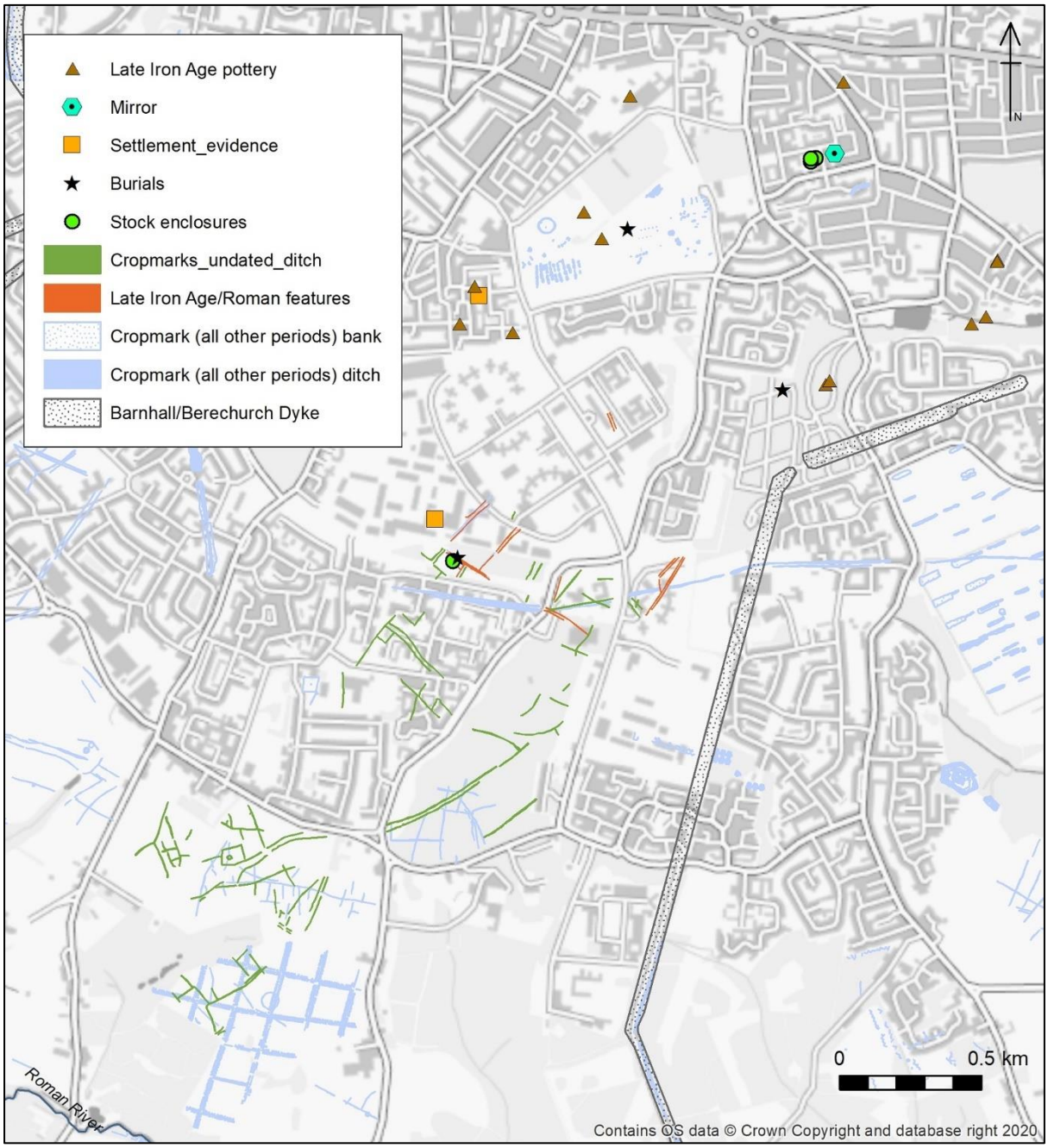


Figure 3.21 Late Iron Age features in the Colchester Garrison area. Features recorded from cropmarks to the south of the built-up area which are grouped around a trackway continuing to the south-west from the Garrison are also shown. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Late Iron Age field boundaries were also found in the south-eastern area of the Garrison site (Area S2 north) dated by sherds of Late Iron Age pottery. Some of the field boundaries appear to have continued in use into the Roman period, but in one area a double-ditched trackway interpreted as being mid-Roman in date cut across them. Material from the field ditches dated from the Early Iron

Age up to this point, although there was scarce evidence from the Middle Iron Age (Benfield & Masefield 2012, 29).

A number of other double-ditched trackways which run through this area appear to have been in use during the Late Iron Age and were re-cut and metalled in the Roman periods (*ibid*, 22-23). A double-ditched trackway, measuring 15 m in width, is visible as a cropmark on aerial photographs running north-east to south-west from the eastern side of the Garrison site, east of Berechurch Road. The trackway was excavated at several points to the east of Berechurch Road and Maypole Green in 2002 and dated to the Late Iron Age/Roman period (Brooks 2002, 7). This trackway appears to link areas of field boundaries and enclosures as it continues to the south-west from the Colchester Garrison site to Maypole Green. A multi-phase area of trackways and enclosures is located around Maypole Green and, while these features are undated, the alignment of the trackway would suggest that this section is of a similar date, and, by inference, also the features that respect it.

The *oppidum* environs

The pattern of settlement in the area around the territorial *oppidum* zone, as defined by the Lexden and Gosbecks dykes to the west and the Barnhall/Berechurch Dyke to the east, is one of dispersed and occasionally grouped farmsteads, with some evidence of trackways and field boundaries. There are no areas of field systems with the coherence of that to the south of the Gosbecks enclosure. The possible farmsteads vary in form but generally include a sub-square or sub-rectangular enclosure and less frequently a sub-circular enclosure. Some examples have internal features, such as pits or roundhouses, but in other cases the enclosing ditch is the only feature of the site sufficiently well-preserved to form a cropmark. Rectangular or square enclosures are increasingly common from the Iron Age into the Roman period. They may have been the province of a single-family group and contained a range of buildings, including domestic, agricultural and storage buildings (Hingley 1989, 55). Moore suggests that the construction of enclosures indicates "an increasing sense of permanency of settlement" in the later Iron Age, from around the 4th to 3rd centuries BC, (Moore 2007, 45), making a connection with the land which would then be renewed each time that maintenance needed to be performed on their banks and ditches (Wigley 2007, 185). However, it must be noted that evidence of these types of sites is more likely to survive than open settlements because of that incised boundary. It is probable that the settlement pattern is incomplete because unenclosed sites leave fewer traces in the landscape.

The distribution of these sites within the *oppidum* environs (see Figure 3.12), while always fairly dispersed, although see caveat above, is relatively concentrated in the area to the south and south-

west of the dykes that run along the western side of the Gosbecks area. This type of enclosure is also found within the *oppidum* zone, for example, at Maypole Green and with the Colchester Garrison site (discussed above), but they are less visible to the north and east. Two enclosures, one with a smaller enclosure within it, and an area of field boundaries are located to the south of the Stanway funerary site, adjacent to Stanway Hall Farm to the south of Maldon Road (Figure 3.22, number 8). The function of these enclosures is uncertain, but it is possible that they could have either some association with the funerary site to the north or represent the type of farmstead that pre-dated it. An area of relative density of settlement is located to the south and south-west of the dykes at Gosbecks (Figure 3.22, A) around Birch Green. Rectilinear enclosures can be identified from cropmarks underlying the post medieval and modern field system, together with sections of trackways.

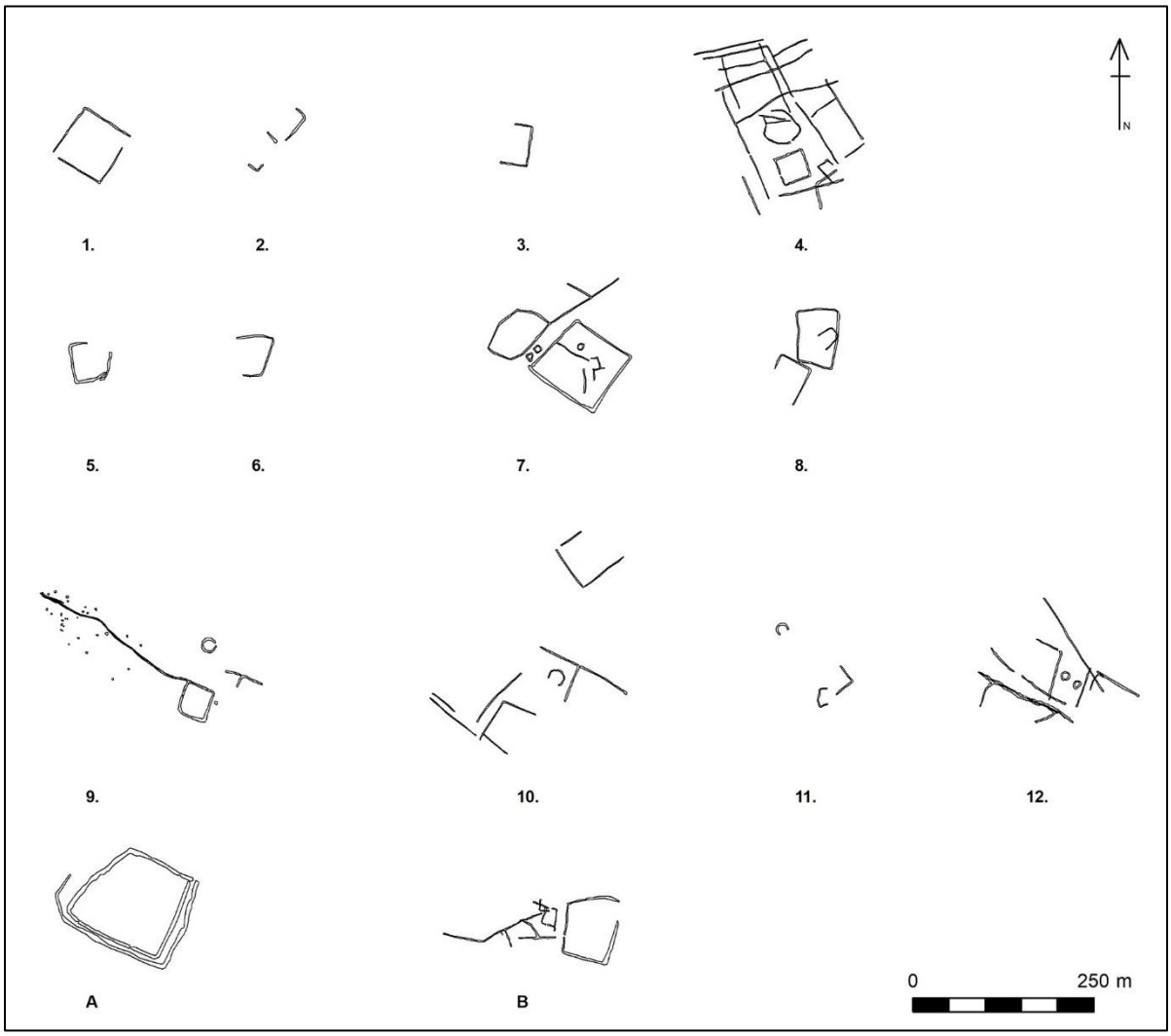


Figure 3.22 Examples of undated settlements which may be Late Iron Age to Roman in date: 1. Ponders Farm, 2. Chitts Hill, 3. Lexden, 4. Donyland Woods, 5. and 6. North of Hardy's Green, 7. South-east of Hardy's Green, 8. South of Stanway 9. Hill Farm, 10. Oakwood House, 11. Great Billet Wood, 12. south of Birch Road. Excavated sites: A. Gosbecks, B. Abbotstone. Mapping: Truscoe

Excavation at Bell House Pit, Abbotstone (Figure 3.22, B), uncovered evidence of two curvilinear enclosures dating to the Middle Iron Age (see above p65) which are replaced by a square ditched enclosure in the Late Iron Age (Benfield & Pooley 2005, 10). Several trackways on an east-west alignment are located between this site and the Middle Iron Age farmstead and Late Iron Age funerary enclosures at Stanway and it is possible that they formed part of a route way linking the two areas.

On the western edge of this area of settlement are two enclosures, located around Bockingham Hall to the north of Hardy's Green (Figure 3.22, numbers 5 and 6). They are both sub-square in shape, possibly small farms and measure 47m by 45m and 52m by 43m. These enclosures are at the smaller end of the range of sizes located around the *Camulodunum oppidum*, the largest being found to the south-east of Hardy's Green, north-west of Birch (Figure 3.22, number 7). This site appears to be multi-phase and consists of a square enclosure, measuring 90m by 95m, trackways and a sub-oval enclosure to the west. A possible Iron Age square barrow, or funerary enclosure is located to the north of the site. There is no significant change in the terrain between the two features, although even a minor difference in local topography might have made the possible square barrow visible from the settlement.

Another example of settlement features in the western area of the *oppidum* zone can be seen at Hill Farm, north-west of Layer de la Haye and at the southern end of Oliver's Dyke (Figure 3.22, number 9). A rectangular enclosure measuring 42m by 36m, with a trackway or boundary leading from it to the west sits to the south of a circular enclosure measuring 20m in diameter with an entrance to the east. Field boundaries, which are probably later in date, appear to cut through both enclosures.

A probable multi-phase settlement is located to the north-west of Donyland Woods, in the eastern part of the *oppidum* zone, to the south-east of the Maypole Green area (Figure 3.22, number 4). A well-defined square enclosure, measuring 37m by 37m and with a possible entrance on its western side, sits within a complex of overlapping boundaries, some of which may be north-west, south-east oriented trackways. Two other enclosures are sited within the boundaries, one irregular and one sub-rectangular, while another possible partial enclosure crosses the boundary to the south. The phasing of the site is hard to determine but may have Late Iron Age and Roman periods of use.

Two examples of possible dispersed farmsteads in the northern part of the *oppidum* zone can be found at Ponders Farm to the north of Pitchbury Ramparts hillfort (Figure 3.22, number 1) and on Chitts Hill (Figure 3.22, number 2). The site at Ponders Farm is a square enclosure possibly cut through by post medieval field boundaries. The enclosure measures 75m by 74m and is on a similar orientation to the enclosure at West House Farm.

Two possible partial enclosures are located on Chitts Hill (Figure 3.22, number 2), adjacent to a group of possible Bronze Age barrows and to the line of Gryme's Dyke which runs on a north-south alignment to the east of the site. Two barrows which are probably Bronze Age in date lie to the north, possibly outliers of a cemetery to the east which was excavated in 1973 (Hawkes & Crummy 1995, 106; Crummy 1977). The enclosure measures 49 m in width but it is hard to determine whether it would have been square or rectangular in shape. If it were square in shape the whole enclosure would be located on land sloping to the north on the 20m contour. An L-shaped ditch, possibly part of a second enclosure lies to the south of the first. The date of the enclosure is hard to determine, as is whether it predated the construction of Gryme's Dyke.

While many of these dispersed farmsteads are undated, their morphology is similar to excavated examples of later prehistoric or Late Iron Age/Roman sites. Fragments of trackways found on or near many of the enclosures (see Figure 3.23) both within and without the linear dykes suggest fluidity of movement through these features, supported by the identification of entrances through five of the dykes (Hawkes & Crummy 1995).

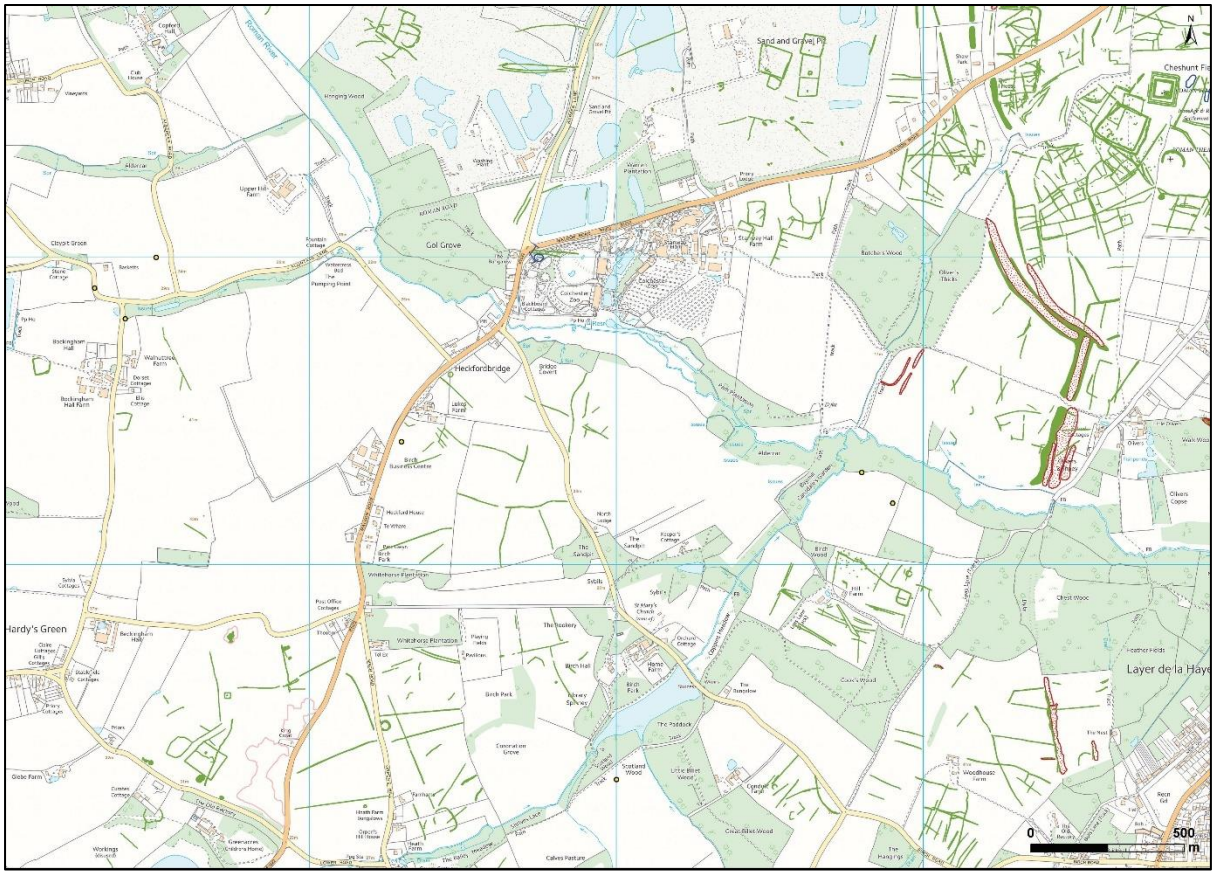


Figure 3.23 Enclosures and trackways to the west of the dykes. Mapping of cropmarks by the author. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Discussion

The picture of the Colchester territorial *oppidum* area can probably never be made completely clear due to the large number of factors that affect what data can be collected, either through remote sensing or through excavation. These factors are primarily related to human actions, but the effect of the natural geology is also significant. Frost cracking is widespread in the Colchester area, a phenomenon which causes confusing cropmarks which can obscure real archaeological sites. The human actions are concerned with later land use. Redevelopment, initially in the Roman period, causes the destruction of sites and obscuring of earlier features. This is illustrated well at Sheepen where the majority of Late Iron Age material was found in residual contexts due to the apparent destruction, which included the levelling of the Sheepen Dyke, and reconstruction of the site in the Roman period. Agriculture has a detrimental effect on both earlier sites and earlier forms of the landscape. This is seen repeatedly, as for example, medieval ridge and furrow cultivation obscuring later prehistoric earthworks which is then itself removed by Enclosure-era field systems, of which, in turn, many of the boundaries are then taken out for the purposes of agricultural intensification. In the Colchester area the relatively level land of the plateau was also ideal for military installations and a large proportion of it has been covered at various times by airfields, firing ranges and the extensive garrison. The town has also expanded greatly since the Second World War covering more areas where cropmarks either have been seen or might have been seen. However, a large body of evidence can be identified from remotely sensed sources and analysed together with the excavated evidence. A key problem in interpreting this data is determining chronological relationships which are not always apparent, particularly in the case of cropmarks, to order to define what constituted the Late Iron Age phase of the site and later Roman developments.

The territorial *oppidum* of Camulodunum has been defined as consisting of two main settlement areas, Sheepen and Gosbecks, located within an area of land defined by the Lexden group of dykes on the western side, the Berechurch/Barnhall dyke on the eastern side, the River Colne to the north and the Roman River to the south. A distinction is made by archaeological investigators between what is considered to be `inside' or `outside' the *oppidum* based on these boundaries (eg Brooks 2016). Several of the dykes extend this area to the north and south of the rivers: Moat Farm dyke continues on the same alignment as the Lexden dyke to the north of the River Colne and the Layer and Abberton dykes continue to the south of the Roman River from Oliver's dyke and the Berechurch dyke respectively. However, despite the recognition that the features considered to be part of Camulodunum did not all come into existence at the same time (Hawkes & Crummy 1995, 175-178), it is unclear whether the dykes and settlement areas thought to be earlier in date would have still been functioning during the period when the latest features were constructed.

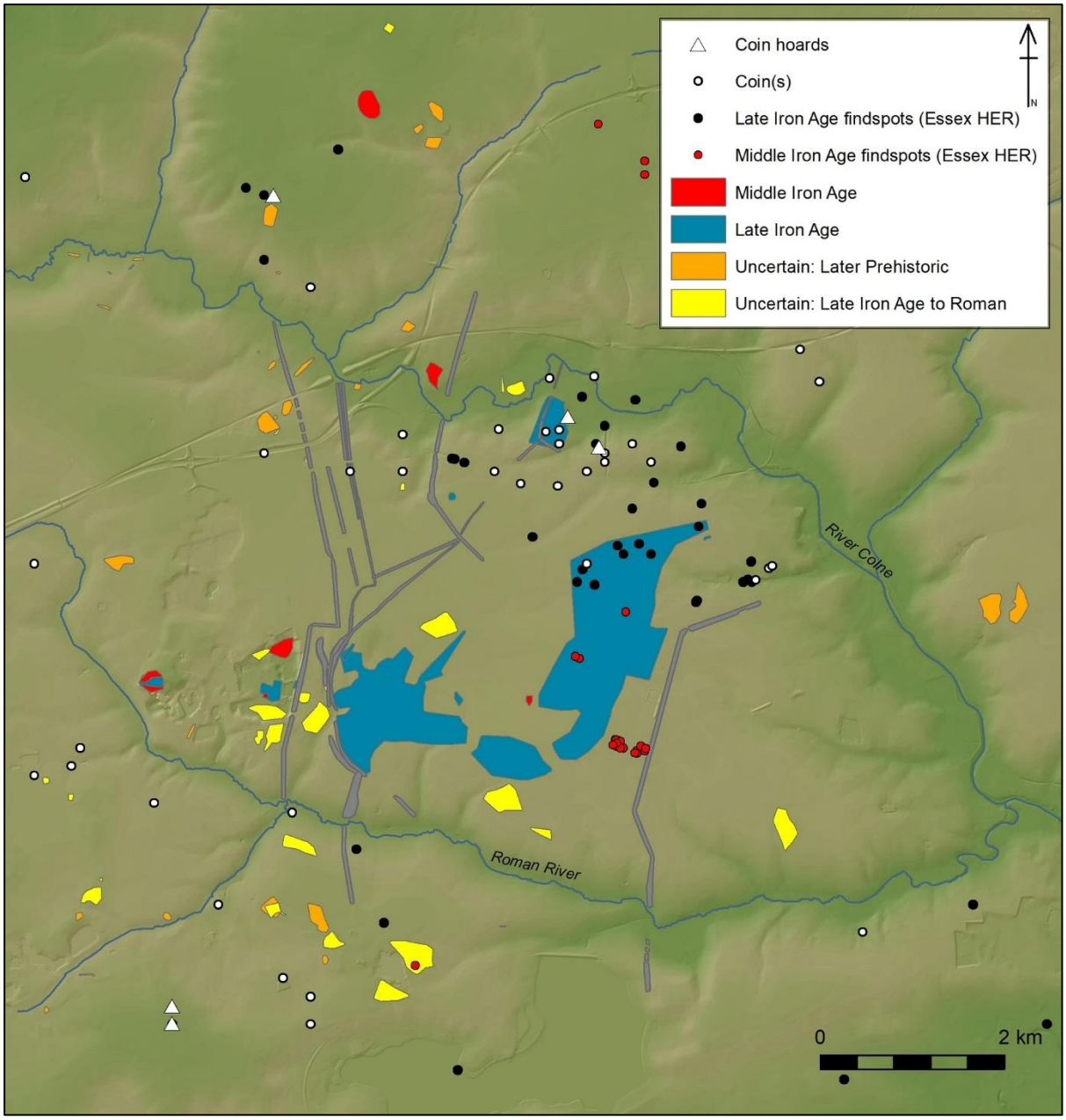


Figure 3.24 Summary of evidence for settlement patterns in the Middle Iron Age and Late Iron Age. Sources: Coins (Celtic Coin Index), Findspots (Essex HER; PAS). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

The territorial *oppidum* did not necessarily develop in a previously unsettled area; evidence of Middle Iron Age occupation has been found here, but, as the distribution of these sites shows (see Figure 3.24) they tend to be located around the edges of the landscape later designated as 'inside' the *oppidum* zone. However, this distribution is probably affected by the possible destruction caused by development from the Roman period on and the extent and location of archaeological investigations. For example, the extensive protected landscape of Gosbecks (now an archaeological park) is largely unexcavated, but investigations during the redevelopment of the Colchester Garrison did identify a Middle Iron Age farmstead. The extent to which earlier settlement influenced the later

pattern within the *oppidum* zone is therefore unclear, but continuity of use of locations has been demonstrated on excavated sites `outside' the linear earthworks, such as Abbotstone. While the Garrison farmstead went out of use, and its site was overlaid with a trackway, it is possible that occupation did continue from the Middle to Late Iron Age in other locations `inside' the *oppidum* zone.

Areas of the Late Iron Age settlement pattern within the linear earthworks are distinctively different to those outside; the field system around the Gosbecks enclosure is larger and more clearly defined than any other areas of field boundaries either within or around the *oppidum* zone, and the size of the industrial and domestic occupation site associated with the Sheepen dyke is not paralleled at any other location. While the biases caused by selective excavation must be kept in mind, it is striking that the greatest concentrations of findspots of Late Iron Age artefacts and coins (see Figure 30) are found in the northern part of this zone around Sheepen. Dispersed farmsteads are found to the west of the curvilinear dykes which define the western side of the Gosbecks site and around at their southern end. An area of trackways and boundaries which form a less coherent or dense field system is located to the east between Maypole Green and Abbey Field at the northern end of the Colchester Garrison site.

The overall distribution of Iron Age coins (see Figure 3.25) shows a particular focus on Sheepen, supporting the interpretation that important functions of this settlement were coin production and trade. Hoards by contrast are found in both settlement and non-settlement contexts. Breaking down the coin data by region of origin emphasizes the links that the settlement had with the outside world. The majority of the coins come from the east of England, but there are also examples from Continental Europe, Western and South Eastern Britain. Coins are virtually absent from the rest of the *oppidum* interior, but single coin losses and hoards occur some distance away from the land within the linear dykes to the south of the Roman River in an area where settlement is characterised by dispersed farmsteads. The adoption of coinage has been described as "a controlled and socially embedded process", the main role of which was the distribution between the issuers and their subordinates (Haselgrove 1987, 212-3). Coins communicated the symbolic legitimacy of a ruler through the use of classical imagery and association with a particular power base (Sharples 2010, 159). Leaders reinforced their right to rule through association with a dynasty, for example, the coins of Cunobelin where he is identified as the son of Tasciovanus (Hawkes & Crummy 1995, 173). The evidence for coin production and the large number of coins that appear to have been in circulation on the Sheepen site indicate that they were crucial to the functioning of the settlement. The wider distribution of coins minted at Camulodunum demonstrates their importance in establishing political

relationships. However, their limited distribution within the *oppidum* zone and its environs suggests that coins may not have regularly been part of more local transactions.

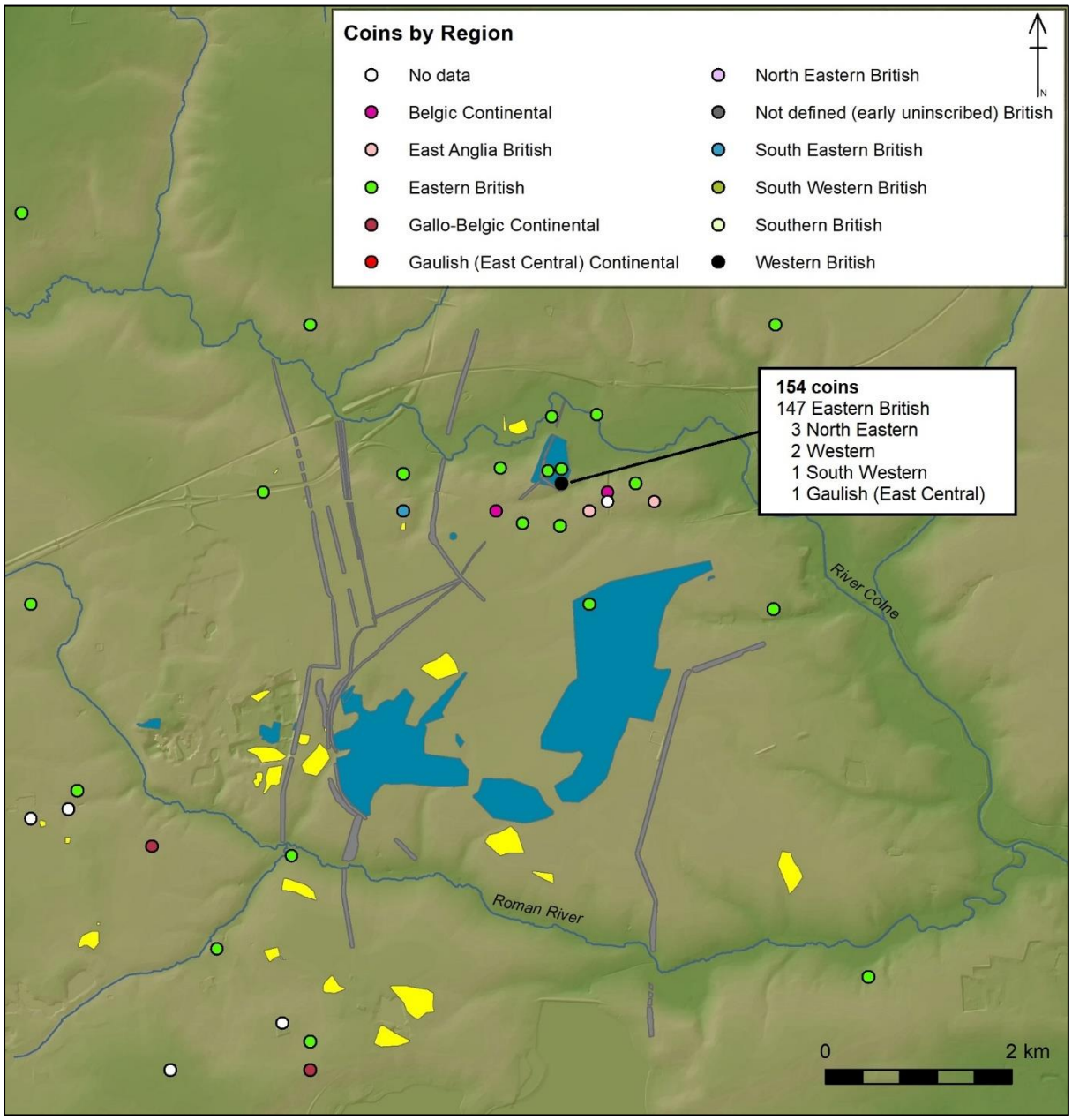


Figure 3.25 Distribution of coins displayed by region of origin. Source: Celtic Coin Index. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Analysis of the linear dykes that have been associated with territorial *oppida* tends to assume that, while there may be modifications to their structure and function, they are part of a developing system. However, the extent to which even structures given the same approximate date would have been in use at the same time is unclear. Limited dating evidence has been recovered from the majority of the excavations carried out on the Colchester dykes, but the observations of the relationships between them gives some indication of their sequence of construction, if not their

phases of use. The Heath Farm dyke has been judged to be the earliest and, in common with Kidman's dyke, is more curvilinear in form and follows the contours to the west of the higher ground in the centre of the peninsula (Hawkes & Crummy 1995, 162). Elements of the field system at Gosbecks appear to terminate at the line of the Heath Farm dyke, indicating that either they were laid out with respect to the earthwork, or its construction destroyed the western boundaries of these fields. The cropmarks do not appear to overlap, so the first explanation seems most likely. The curving nature of the Heath Farm and Kidman's dykes suggests that they were designed to delineate and protect the Gosbecks area with its large trapezoidal enclosure and field system. Crummy puts the Lexden dyke in his second phase of development together with the Sheepen dyke, and the two echo each other's alignments. The Lexden dyke is seen as continuing this line of the dykes to the River Colne to the north (and beyond at the Moat Farm dyke), but it follows quite a different route. It cuts across the line of the Heath Farm dyke at its southern end, a relationship noted during excavations at Bluebottle Grove (Hawkes & Crummy 1995, 23).

Figure 3.26 shows suggested activity zones within the *oppidum* landscape and its environs, although these areas may not be contemporaneous. Sheepen is defined as being both domestic and industrial in character. The field system at Gosbecks is interpreted as a high intensity agricultural zone, with areas of lower intensity defined by the dispersed farmsteads found around the site, but particularly to the south and west of Heath Farm Dyke and Oliver's Dyke. The coherent pattern of small fields at Gosbecks may represent arable cultivation, taking place within a close distance to Sheepen and possibly overseen from the large enclosure. The dispersed farming settlements both inside and outside the linear dykes may have focussed on different types of farming, possibly on livestock. An archaeobotanical analysis of plant remains at Silchester, Insula IX, indicated that wheat consumed there was cultivated in the local area (Lodwick 2018, 308) and the presence of field systems and numerous farmsteads at Colchester, both inside and outside the linear dykes, suggests that the same situation probably existed here. The quantity of small farmsteads within and around the *oppidum* zone also emphasizes the importance of agriculture to the economy of Camulodunum.

A number of east-west and north-south oriented trackways have been identified both within and around the *oppidum* area and may have led through the entrances in the dykes. Trackways are difficult features to date based on their appearance only but excavated examples on the Colchester Garrison site originated during the Late Iron Age and continued in use into the Roman period. Therefore, the undated examples might relate to the Roman use of the landscape rather than the Late Iron Age. A trackway crossing the Sheepen settlement and possibly continuing through an entrance in the dyke was replaced by a Roman road following the same route.

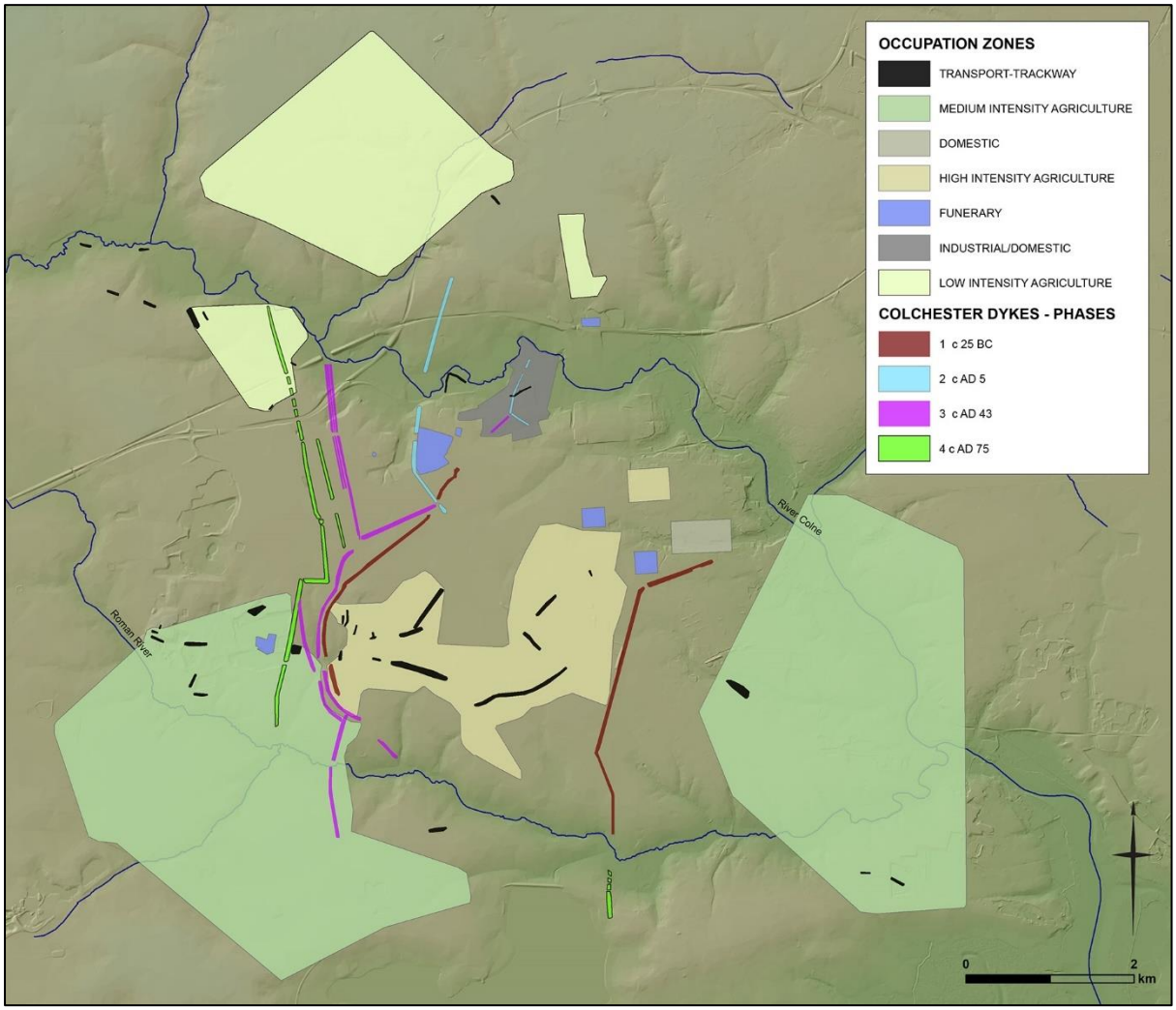


Figure 3.26 Suggested zones of activity in the possible extent of the oppidum zone based on the available evidence. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

The dykes were interpreted by earlier excavators as defensive and they tend to describe them in militaristic terms similar to, for example, the stop lines constructed during the Second World War (Alexander 1998; Dobinson 1996). Hawkes and Crummy suggest that new dykes were added to an existing system in the pre-Conquest period in order to further reinforce the site from attacks from the west (Hawkes & Crummy 1995). However, the continuing embellishment of a boundary might be carried out for more reasons than defence. The succession of dykes on the western side of the Colchester *oppidum* zone may have been constructed with the motive of increasing the prestige of the settlement and confirming the status of its inhabitants (Bowden & McOmish 1987, 77). Moore speculates that there are two phases of dykes at Bagendon, the later embellishing the earlier and both together creating a series of elaborate entrances into the complex of sites within them (Moore 2012, 395). Linear earthworks across the later prehistoric period may have had a symbolic as well as

a practical purpose, reinforcing the connection of people to the land in which they lived and helping to define their identity as a community. The creation of multiple-ditched earthworks by adding dykes to an existing location emphasises the importance of that boundary without increasing its efficiency (Bevan 1997, 184). The presence of entrance in the dykes suggests that they were used to channel movement through the *oppidum* zone, possibly as Crummy proposes as part of the management of livestock, but maybe also in order to direct people to particular locations where, for example, tax or tribute were collected. Garland suggests that the presence of these earthworks changed the way in which the inhabitants of the area interacted with the landscape, directing patterns of movement for religious and secular purposes, and emphasising both the importance of particular sites, such as Sheepen, Lexden and Gosbecks. Garland also sees a role for the linear earthworks as highlighting the importance of the natural setting of the *oppida* landscape (2016, 131, 134-5). However, these interpretations assume that creation of the linear earthworks was a cumulative process. The lack of dating evidence for the Gosbecks enclosure and the field system and trackways around it means that it is unclear whether it was part of a contemporary pattern of land use with the Sheepen settlement and dykes. Therefore, Crummy's view that the area consisted of specialised zones of activity functioning together within a developing, but unified, system of linear dykes (Hawkes & Crummy 1995, 161), and Hawke's view that the Sheepen settlement and the northern dykes superseded an occupation area at Gosbecks (*ibid,* 52-55), may have equal validity.

Haselgrove suggests that, rather than seeing the extensive linear earthworks around territorial *oppida* as a unique development, they should instead be regarded as a manifestation of a phenomenon of land division that had been seen in Britain over a long period of time. He divides the occurrences of this method of delineation of areas of landscape into two main phases: the Late Bronze Age to Early Iron Age, and the Middle to Late Iron Age. While these, often impressive, earthworks are associated with important political centres in southeast England, linear earthworks on a comparable scale have been identified in other regions, such as East Yorkshire, Wessex, the Cotswolds, East Anglia, and the Midlands. The earthworks are also discontinuous, but still appear to be demarcating a particular area of land, with room within it for various activity zones (Haselgrove 2001, 59). While acknowledging Silchester as an exception, Haselgrove suggests that southern British territorial *oppida* such as Colchester should be regarded as polyfocal settlements encompassing the various roles of urban centres but functioning in a quite different way (*ibid)*.

Crummy has proposed a model for Camulodunum that fits this polyfocal view of *oppida* in which Gosbecks and Sheepen operate contemporaneously, the former as a possible royal residence sited adjacent to an intensive agricultural zone and the latter as an industrial area, both located within a developing system of linear dykes (Crummy in Hawkes & Crummy 1995, 161). While I would argue

that the Sheepen site appears to be domestic as well as industrial they may have functioned together in a single *oppidum* zone. The Gosbecks trapezoidal enclosure is larger than the majority of the other farmstead enclosures in this area (see above Figure 3.22) and the ditches from which it is formed are broader, indicating a more substantial structure overall. The overlapping nature of the cropmarks suggests that at some point the enclosure has gone out of use, but whether this occurred within the life of the Sheepen settlement or post-conquest is unclear. The Lexden dyke may have been created in order to provide a continuous barrier between the River Colne and the Roman River, superseding part of the route of the Heath Farm Dyke but not rendering the entire earthwork obsolete. It is possible that they were originally created in order to clearly delineate a territory or as a defensive measure, but, as discussed above, the western group of dykes probably also constituted a symbolic barrier. Their entrances would seem to have a primary role in directing people to enter and move about the different areas of the site in a particular way. Diodorus Siculus, writing in the late 1st century BC, stated that British leaders "for the most part live at peace amongst themselves" (Diodorus Siculus 5.21.4). Rather than the creation of the linear dykes being seen as a reaction of a community under threat of permanent warfare (e.g., Van Arsdell 1989; Hawkes & Crummy 1995), they could be interpreted as both controlling movement and reinforcing relationships between the community within and around them, with the land they inhabited.

This chapter has reassessed the evidence for the Colchester territorial *oppidum*, using landscape analysis to identify settlement patterns within and without the linear dykes. The comparison of excavated sites with those identified through remote sensing has demonstrated that there may have been communicating areas of settlement in what has been considered to be the interior and exterior of the *oppidum*. Consideration has been given as to whether there is sufficient dating evidence to show that the settlement areas of Sheepen and Gosbecks, and the linear earthworks in the vicinity of the two sites operated contemporaneously. Past investigations have shown that there is evidence of both industrial and domestic settlement at Sheepen; it may not have been a solely industrial zone as Crummy suggests, but that activity may have occurred on a smaller scale (Gascoyne & Radford 2013), and domestic and possibly ritual activities may have been of similar importance. The limited excavation at Gosbecks indicates that there is a Late Iron Age phase to the construction of the trapezoidal enclosure, but the overlapping nature of the cropmarks that form the enclosure itself and the field systems and trackways around it means that it is difficult to determine which features relate to which phase of use. The picture of limited dating evidence is also reflected in the investigations of the linear earthworks. It is possible to draw some inferences as to phases of construction, but difficult to assume that their creation was a cumulative process, or that they were part of a unified system.

4 Silchester *oppidum* zone

Introduction

The area regarded as being associated with the Late Iron Age territorial *oppidum* of Calleva has varied between a relatively discrete area in approximately the same location as the later Roman town, to a landscape or territory defined by the linear earthworks of Grim's Bank in the north and the Bye's Lane/Bridle's Copse dykes adjacent to Little London in the south (see Figure 4.1 for the locations of the linear dykes and main sites mentioned in the text). A consideration of the post-Roman landscape of Silchester by O'Neill, who regarded the dykes to the north-west as belonging to this period, saw it associated with a much larger territory associated with linear earthworks as far away as Newbury (O'Neill 1943, 192; 1944, 120). The Society of Antiquaries, who excavated Silchester between 1890 and 1909, interpreted the large earthworks on the west and south-west sides of the walled town as being pre-Roman in origin but did not associate the site with the linear dykes in the landscape around it (Hope and Stephenson 1910, 319). In his survey, Williams-Freeman described Calleva as having dykes radiating out from the site, referring to the Dicker's Farm Dyke and Oldhouse Lane Dyke, taking the extent of the site as far as Little London in the south (1915, 317).

Boon was the first to put forward the idea that all the surrounding linear earthworks have a pre-Roman origin and are associated with the territory of Calleva, including Grim's Bank and the Little London group of earthworks, but not Brocas Lands (Boon 1974, 38ff, Fig 5). Cunliffe developed the category of `territorial *oppida'* (1976, 136) which are described as being associated with extensive linear earthworks. Silchester does not appear in the section on *oppida* in the first edition of *Iron Age Communities in Britain* but is given as an example of a territorial *oppidum* in subsequent editions (eg, Cunliffe 1991, 154; 2005, 406). Haselgrove has suggested that Silchester could be regarded as an enclosed *oppidum* but included the site in his synthesis of territorial *oppida* due to the presence of the outlying earthworks (2016, 253). However, radiocarbon dating evidence obtained during the Silchester Environs Project (Barnett & Fulford in prep) shows that at least some of the linear dykes predate the main phases of occupation in the central settlement at Calleva in the latter part of the Late Iron Age. The development of the linear earthworks within the Silchester landscape, in common with all sites defined as being territorial *oppida*, probably occurred in a number of phases and the earthworks may not have all had the same function or have been in use at the same time. It is even possible that, rather than being an indicator of a possible territorial extent, a number of these features were largely disassociated with the site. Calleva was an important site which probably had

influence over an extensive area, but, while the linear dykes may have still been in use in some manner, the borders of that territory might have fluctuated over time and may have been marked in a less substantive manner.

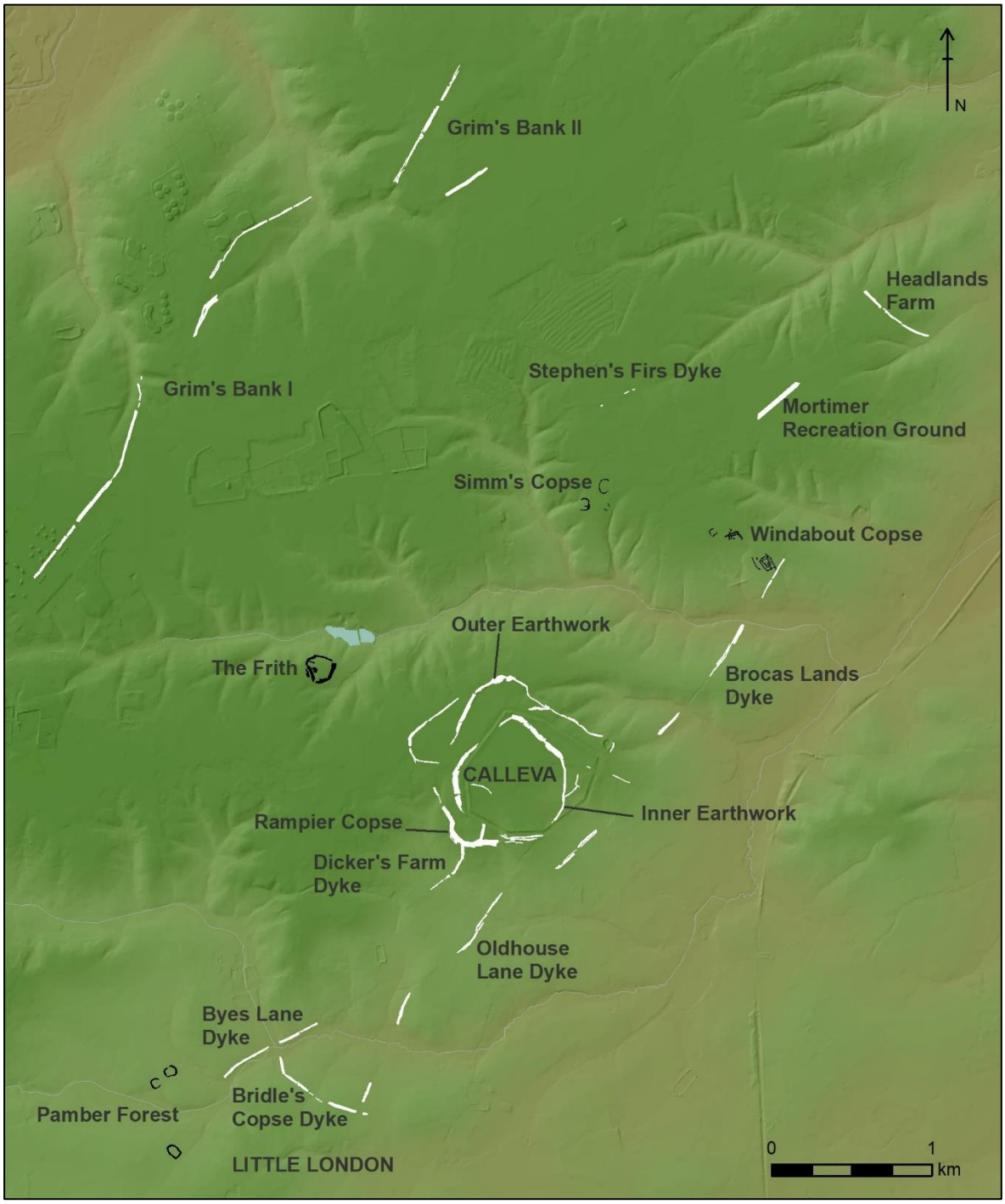


Figure 4.1 The central settlement at Silchester defined by the Inner and Outer Earthworks, all features suspected of being linear dykes around it and the main sites mentioned in the text. Background map created from OS Terrain 5 © Crown copyright and database rights 2020 Ordnance Survey (100025252).

The landscape area considered in this chapter includes all the earthworks that have been associated with the territorial *oppidum* at any point, from Grim's Bank in the north to the Little London dykes in

the south, a total of 47 square kilometres. Silchester is situated at the eastern end of a locally prominent gravel plateau, with good visibility to the south and east. The plateau extends west across Silchester Common and Pamber Heath and is defined by a number of minor waterways, including the Foudry Brook, which are tributaries of the Rivers Loddon and Kennet. The settlement was located within easy access to the Loddon and Kennet, which flows into the River Thames, providing access to communication routes that extend beyond the region. It has been suggested that Calleva was established in an area with poor agricultural potential because it was positioned in a deliberately chosen neutral zone at the edges of established territories (Cunliffe 2012,15), possibly alternating in control between the Iron Age Southern and Eastern kingdoms (Creighton with Fry 2016, 355).

Silchester has shown evidence of dense occupation located around a street grid within a nucleated settlement, which is rare for a territorial *oppidum* in Britain, the nearest comparator probably being Sheepen (Colchester). The nucleated centre of settlement is surrounded by the Inner Earthwork and, beyond this, the Outer Earthwork that can be identified lying to the west and south-west, although the construction date and extent of the latter is disputed (cf Williams-Freeman 1915, Cotton 1947, Boon 1969; 1974, Fulford 1984, Creighton with Fry 2016). While the extent of the earthworks associated with Calleva are unclear the significance of this settlement underlying the Roman town, with its wealth of imported goods and evidence of coin production, has been demonstrated through excavation. The dating evidence obtained through the forum basilica and Insula IX excavations shows that settlement within the *oppidum* was a very late development in the Late Iron Age (Fulford and Timby 2000, Fulford *et al* 2018). Accordingly, throughout this chapter the Late Iron Age will be divided into two periods: Late Iron Age I (the period preceding the creation of the nucleated settlement) and Late Iron Age II (the period during which the territorial *oppidum* was active, just prior to the Roman conquest of Britain).

Previous work

The site of the Roman town of Silchester had been known to antiquaries including Leland, Aubrey, Camden, Stukeley and others. The walls and Outer Earthwork were noted by many of those previous writers and the phenomenon of cropmarks showing the existence of buildings within the walls had also been commented on (Boon 1974, 19; Creighton with Fry 2016, 10-12). The soils associated with the gravel terrace are free draining drift gravels, conducive to the formation of cropmarks, while the majority of surrounding area is situated on clayey loams, moisture retentive soils on which cropmarks are identified less easily. The extent that favourable conditions for cropmark formation

are achieved on different soils can lead to a bias in focus for archaeological study in many areas, for example, the Wessex chalks, and clay landscapes are less frequently a topic for study. In the area around Silchester past research has mainly focused on the gravel promontory itself, the Thames river gravels to the north and the chalk downland to the south.

The earliest documented excavations took place in the mid-18th century by John Stair, whose appreciation of stratigraphy is evident in his descriptions of the two layers of buildings that he uncovered. He considered the earlier structures to be part of a pre-Roman town (Chandler 1821, 3). Isaac Taylor produced a plan of Silchester which appears on his 1759 map of Hampshire, showing both Stair's excavations and sections of the Outer Earthwork on the western side of the town (Taylor 1859 via geog.port.ac.uk and see Figure 4.2).

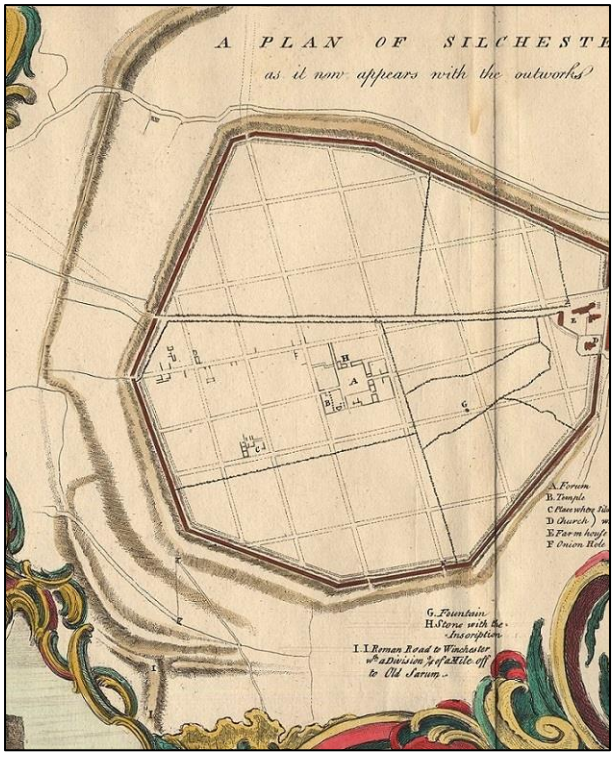


Figure 4.2 Silchester as depicted on Isaac Taylor's map of 1759 showing Stair's excavations (Taylor 1859 via geog.port.ac.uk). Public domain.

Sir Richard Colt Hoare produced a plan of the site in 1818 showing the Town Walls and sections of the Outer Earthwork. His depiction of the earthworks in Rampier Copse suggest that it might once have been a separate, sub-circular, earthwork with a spread bank on the eastern side. He also shows it as being a separate earthwork from the Dicker's Farm Dyke, which is shown as connected to it on Taylor's map. Colt Hoare also shows the stream that cuts through an area of woodland to the north of Rampier Copse, the centre of a system of drains probably from this period but does not show the

area of quarry pits on the northern side of the possible enclosure (the drains and quarry pits can both be identified on lidar imagery (1821, 57).

Several small-scale investigations followed Stair's work at Silchester, but the next systematic excavations did not occur until the Reverend James Joyce, rector at Stratfield Saye, was encouraged to carry out work here by the second Duke of Wellington between 1864 and 1878. Joyce excavated, with a small workforce, at the amphitheatre, the forum-basilica, the temple in Insula VII and several houses (Boon 1974, 24-27). After Joyce's death excavations were continued by his successor, Reverend Horace Monro and the rector at Silchester, Reverend Thomas Langshaw (Creighton with Fry 2016, 20-21). An overall plan of Silchester was produced by Sir Henry Dryden in 1865 during Joyce's investigations (Museum Committee Northampton 1912). [1]

Figure 4.3 Maclauchlan's 1850 plan of Silchester and the earthworks in its immediate vicinity (1851)

However, the most comprehensive plan of Silchester and the earthworks in its immediate surroundings up until that date was by Henry Maclauchlan in 1850 (see Figure 4.3). Maclauchlan added hachures to the Silchester tithe map to depict the earthworks and also mapped the topographic background. He puts Silchester into a wider context than shown in earlier plans,

[1] Dryden went on, in 1898, to illustrate aspects of the next large-scale investigations by the Society of Antiquaries (Museum Committee Northampton 1912) of which the originals are held in the Northamptonshire Archives.

including the earthwork in Rampier Copse, the northern ends of the Dicker's Farm and Oldhouse Lane Dykes, the Sandy's Lands section of the Outer Earthwork and a narrower linear earthwork extending across the northern side of the town to the amphitheatre. Maclauchlan does not show any remains of an Outer Earthwork on the south and east of the town. He speculates that "when complete, may have been continuous all round, but at present there is no reason to suppose it to have been carried round on the south-east side", adding in a footnote that it may have been destroyed on the southern side due to "the value of the ground and its southern aspect" (Maclauchlan 1851, 230 and foldout plan).

The Society of Antiquaries carried out large-scale excavations at Silchester between 1890 and 1909 under the direction of George Edward Fox and William Henry St John Hope (Boon 1974, 27-30; Creighton with Fry 2016, 22). The majority of the excavations were concentrated both within and focusing on the Roman town, but the final season in 1909 investigated the city's defences. The excavators appeared to have been working on the assumption that the exterior earthworks pre-dated the Roman town, partly based on the observations by Karslake of cremation burials inserted into the earthwork at Rampier Copse. They stated: "It may therefore be taken for granted that the outer works are in all probability pre-Roman, but whether they belong to the Late-Celtic period or even to the Bronze Age there is so far nothing to show" (Hope and Stephenson 1910, 319).

Williams-Freeman reviewed the earthworks around Silchester including the Outer Earthwork, which he believed to be a continuous circuit, Rampier Copse and the Little London earthworks (Bridle's Copse and Byes Lane Dykes) He describes the Dicker's Farm dyke, Oldhouse Lane dyke and the Little London group (see above Figure 4.1, for locations) as being "radiating intrenchments" associated with Silchester (Williams-Freeman 1915, 406) and makes no mention of any of the linear earthworks that lie to the north of the town.

O'Neill reviewed the post-Roman landscape of Silchester and included a description of Grim's Bank and its relationship to the Silchester to Dorchester-on-Thames Roman road (see Figure 4.4). He associated the earthwork with Silchester, but with the Roman town rather than the Late Iron Age settlement. O'Neill identified two parts to the earthwork: a northern section (Grim's Bank II) and a southern section (Grim's Bank I). He surmised that Grim's Bank was Roman or post-Roman in date due to its relationship to a possible promontory fort on Raven Hill (O'Neill 1943, 192) and to its position between two Roman roads, to Speen and Dorchester-on Thames. He suggested that the function of Grim's Bank was, in common with other linear earthworks, as a line not of defence but of demarcation, denoting the border of British-held land against the invading Saxons in the post-Roman period (*ibid* 193; O'Neill 1944, 121).

Figure 4.4 Map showing Silchester with linear dykes to the north-west and in the context of linear earthworks elsewhere in the region (O'Neill 1944)

O'Neill saw Silchester as part of a wider landscape, associated also with linear earthworks on Greenham Common and Crookham Common (*ibid* 120), but makes no mention of closer linear dykes on the southern side of the town. The theme of O'Neill's article is the threat from the north-west coming from the Saxon invaders and the plan accompanying his article (reproduced below) shows Silchester at the heart of its network of Roman roads, Grim's Bank to the north-west and the possible dyke on Mortimer recreation ground to the north-east, but none of the other dykes.

Cotton undertook two seasons of excavations in 1938-9 on the earthworks around the central settlement, in the area between the town wall and the Outer Earthwork and on the Outer Earthwork itself. One of the purposes of the excavations was establish the chronology of the defensive earthworks and the areas of settlement (Cotton 1947, 123). Cotton excavated trenches in the Outer Earthwork at Sandy's Lands and Rampier Copse. She concluded that, while the earthwork appeared to be constructed in a style that might be associated with the pre-Roman occupiers of Calleva, and that there was sufficient evidence to show that the settlement itself was pre-conquest in origin, the date of material recovered suggested that the Outer Earthwork was Claudian in date. (*ibid,* 141).

The existence of the cropmark of a substantial bank and ditch within the northern half of the walled area was first demonstrated through the aerial photography of J K St Joseph (St Joseph 1953). The

feature was undated but lay within the area covered by the Roman street grid. Boon carried out excavations between 1954 and 1958 on the feature which he termed the Inner Earthwork. He uncovered traces of a hut beneath the Inner Earthwork to the south of the town, which was associated with pre-Roman pottery, in particular, pedestal urns, which Boon associated with the presence of the Catuvellauni. He also re-examined all pre-Roman material from earlier excavations. (Boon 1969, Boon 1974, 42). Boon connected Calleva with a wider landscape suggesting that the linear dykes to the north-west and south-west of the settlement were evidence of developments associated with the actions of its successive occupants (Boon 1974, 37-46, 38ff, Fig 5).

Boon's investigations have been followed by the ongoing series of excavations carried out since 1974 by Fulford under the auspices of the University of Reading. The defences of the Roman town and the Outer Earthworks were investigated between 1974 and 1980 (Fulford 1984). An earlier programme of field-walking (1969-1981) and aerial photographic interpretation in the extra-mural area was conducted by Corney and colleagues and published together with the excavations on the defences (in Fulford 1984, 239-297). A second programme of field-walking took place in the landscape around the walled area between 1981 and 1989 (Ford and Hopkins 2011, 21-30).

Late Iron Age streets and occupation features were recorded for the first time beneath the Forum-Basilica 1980-6 (Fulford & Timby 2000) and further evidence of pre-Roman occupation was uncovered during the Insula IX *Town Life Project* (Fulford *et al* 2018). These two open area excavations have provided a significant amount of detail to the picture of life in the Late Iron Age settlement (see below p157). Recent excavations on the Roman public baths uncovered a section of the Late Iron Age Inner Earthwork, formed of a substantial ditch, and revealed evidence of its structure and possible ritual deposition (Fulford *et al* 2019).

A large-scale programme of geophysical survey was carried out around Calleva as part of the Silchester Mapping Project (Creighton with Fry 2016). The survey revealed evidence of possible settlement features and mortuary enclosures around the town, in addition to exploring the interiors of the enclosures at Rampier Copse and The Frith. The project also included a synthesis of all previous mapping and investigation of Calleva and combined the geophysical survey results with information from these other sources together with Environment Agency lidar (*ibid*).

Further investigations to explore the Late Iron Age origins of the settlement have been carried out as part of the Silchester Environs Project (2015-2018), using multiple investigative techniques. These included aerial photograph and lidar survey to examine the wider landscape (Truscoe 2018); excavation and coring on The Frith (Fulford *et al* 2015, 3-8), linear earthworks at Wood Farm and Brocas Lands, (Fulford *et al* 2016, 5-13), a farm and mortuary enclosure at Windabout Copse (*ibid,*

14-19), settlement enclosures in Pamber Forest (Fulford *et al* 2017, 2-8) and Simm's Copse (*ibid,* 8-13); analytical earthwork survey at The Frith (Bayer and Bowden 2016) and Rampier Copse (Bayer 2019); and geophysical survey at various sites including Bridle's Copse (Linford *et al* May 2016), Simm's Copse (Linford *et al* July 2016). (See above Figure 4.1 for locations of main sites).

New settlement sites have been identified in the landscape around Silchester which were occupied either prior to, or contemporary with the *oppidum.* It is possible that some of the settlements characterised by rectilinear enclosures, identified through aerial survey, may have spanned the transition period between the very Late Age construction of the *oppidum* and its development into a town in the Roman period. A chambered cremation burial with imported grave goods and complete vessels was excavated in the mortuary enclosure at Windabout Copse, the first example of a burial of this type in the Silchester area or indeed the region (Fulford *et al*, 2016, 19). It is another example of a high-status burial in the vicinity of the *oppidum* to accompany the Latchmere Green mirror burial excavated in in 1994 (Fulford and Creighton 1998).

A number of excavations have also taken place in the environs of Silchester under the auspices of developer-funded archaeology. For example, Late Iron Age to Roman settlements were discovered at Raghill Farm, Aldermaston (Wessex Archaeology 2008) and Little London Road, near Silchester (Moore 2011, 93-107).

Earlier settlement

Early Iron Age

There are few sites dated to the Early Iron Age within the Silchester area, but it is possible that various of the undated sites might also have their origins in this period (see Figure 4.5). One that has its origins in this period is a farmstead adjacent to Windabout Copse, located to the north of Silchester and south of Mortimer. The farmstead is visible as a rectangular enclosure with possible sub-divisions within an outer, ditched boundary, other boundaries or trackways around it. The site was excavated in 2016 as part of the Silchester Environs Project (Barnett & Fulford in prep) and analysis of artefacts from the enclosure ditches indicated an initial phase of use in the Early Iron Age, from around 800 BC (760-410 cal BC 2454±35 SUERC-75082). A break in use followed until the Late Iron Age when the ditches were recut (Wheeler and Pankhurst in Fulford *et al* 2016, 19 and see below pp135-137).

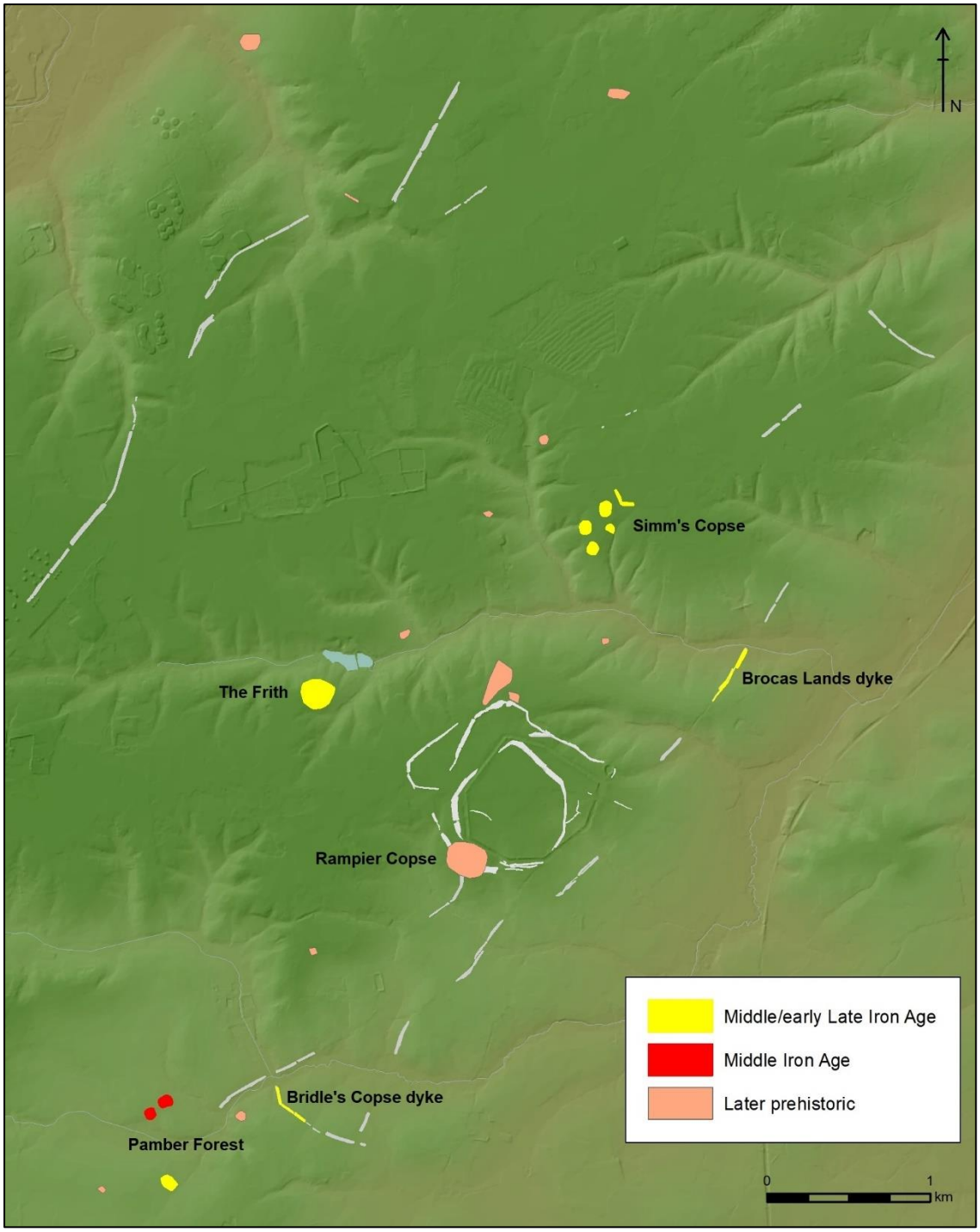


Figure 4.5 Settlement from the Later prehistoric (undated sites) to those spanning the Middle Iron Age to Late Iron Age I. Background map created from OS Terrain 5 © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Late Bronze Age/Early Iron Age (11th – 5th century BC) settlement evidence, consisting of a number of pits containing pottery, charcoal and burnt flint, was identified through excavation to the east of Church Lane Farm (Fulford 2011, 154). The settlement features were located immediately to the north of an area containing a trackway and field boundaries recorded from cropmarks (Corney in Fulford 1984 279-80; Truscoe 2018, 98-99). No dating evidence was recovered from the trackway or

field system and, while it was thought that it might have been contemporary with the settlement, a Late Iron Age and/or Roman date was deemed more likely (Fulford 2011, 158).

Middle Iron Age

Settlements with a known date of origin in the Middle Iron Age are located to the west of the later site of the central settlement of Calleva. Curvilinear settlement enclosures of a relatively similar size are found at Simm's Copse and Pamber Forest, while two larger enclosures, The Frith and the undated Rampier Copse are located to the north-west of Calleva and within its Outer Earthwork respectively (see above Figure 4.5 and see below Figure 4.11, for a comparison in size).

The Frith, or Pond Farm, is a hillslope enclosure covering an area of approximately 1.6 ha, located on heathland to the north-west of Silchester. The earthworks can be seen clearly around the western, northern, and eastern sides, but has been almost levelled by ploughing on its southern side (see Figure 4.6). An analytical earthwork survey carried out by Historic England identified a single entrance, with an outwork which may have been contemporary in date, on its western side and a possible entrance on its eastern side (Bayer and Bowden 2016, 17). Interim field survey results had suggested that the enclosure's defensive circuit was unfinished on its southern side (Fulford *et al* 2016, 3), but evidence of a more complete structure is indicated by evidence from historic maps (Bayer and Bowden 2016, 12). The south-eastern boundary is preserved in field boundaries shown on the 1802 Stratfield Mortimer Enclosure map, suggesting that the structure existed at this time. However, this southern boundary is shown to have been removed on the 1840 tithe map (*ibid,*5-6).

Geophysical (magnetometer) survey was carried out as part of the Silchester Mapping Project and little evidence of activity was found within the hillfort (Creighton with Fry 2016, 324). Creighton and Fry suggested that the hillfort was one of a number of non-settlement enclosures, potentially together with the promontory cut off by the Flex Ditch and the enclosure at Rampier Copse, located on the edge of the gravel plateau (*ibid*, 340).

The site was reinvestigated using GPR geophysical survey and 10% of the monument excavated during the Silchester Environs Project in 2015. Two trenches were excavated in the hillfort interior and two trenches were placed across the western entrance and the plough-levelled southern rampart. A timber palisade was found to have crossed the entrance way on the western side and a radiocarbon date of (late) Middle to Late Iron Age 200-30 cal BC (2083 ± 29 BP. SUERC-65355) was obtained from the outer rings of a piece of mature oak wood which had been located within the foundation cut of the palisade. The lower fills of the southern terminus of the ditch of the outer work contained a substantial dump of flint nodules, possibly from some type of reinforcing structure

or small building. Little evidence of settlement activity was found within the hillfort, consisting mainly of charcoal rather than artefacts. Analysis of the site suggested that the evidence of occupation had not been destroyed, but rather that it had not been deposited in large quantities, indicating a focus other than domestic. The excavators concluded that the site was used for another purpose, probably seasonal livestock management during the Late Iron Age. (Fulford *et al* 2015, 5-6). Evidence of repeated phases of reuse in the Roman and early medieval periods were also found (Fulford *et al* 2015, 3-8). The proximity of The Frith/Pond Farm to the large *oppidum* to the east may have been an additional factor in its lack of development into a permanent settlement. The episodic, but continued, use of the hillfort has parallels with Nettlebank Copse enclosure in the Danebury environs, also suggested as being used for seasonal activities concerned with livestock (Cunliffe and Poole 2000, 134).

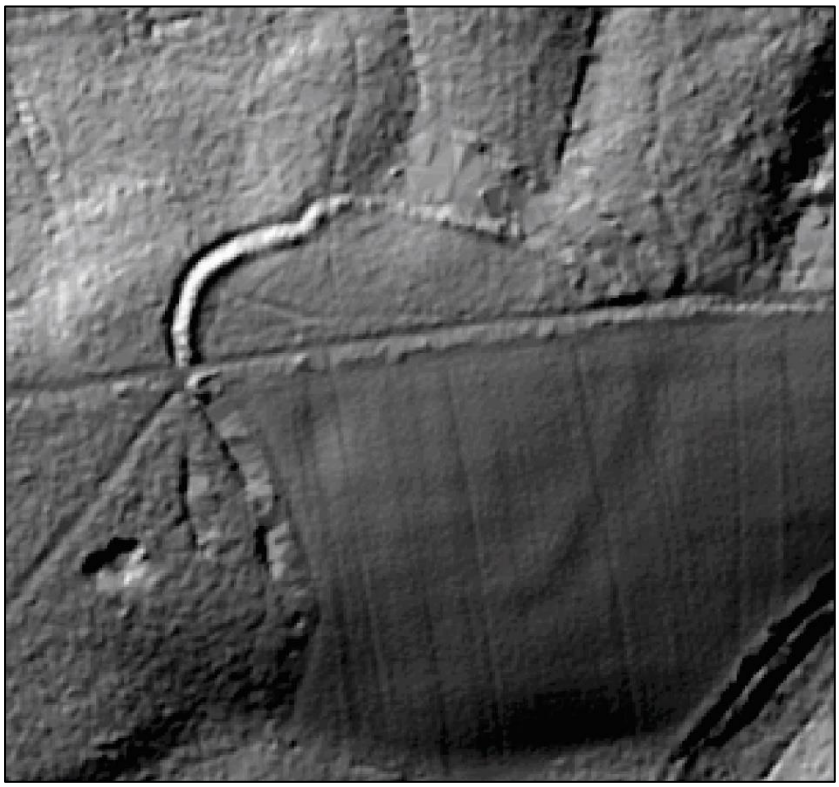


Figure 4.6 The Frith/Pond Farm © Environment Agency lidar DTM hillshade model

While the majority of the potential settlement sites and other features in the Silchester area are undated, there are several excavated examples of enclosures which were found to have their origins in the Middle Iron Age. These enclosures are located in two groups, one on the northern edge of the gravel promontory south of Mortimer, and one to the south-west in Pamber Forest on London Clay. The features on the promontory are plough-levelled and were initially identified from cropmarks, while the forest enclosures survive as low earthworks. Three banked enclosures, initially identified on lidar imagery of Pamber Forest (Truscoe 2018, 48; Barnett in Barnett & Fulford in prep, Chapter

7), on London Clay to the south-west of Silchester, were also excavated during the University of Reading Silchester Environs Project in 2017. A pair of subcircular enclosures are located in the central part of the forest in Bentley Green Copse (numbers 1 and 2 on Figure 4.7), measuring approximately 0.25 ha and 0.33 ha respectively. A sub-rectangular enclosure (number 3 on Figure 4.7) lies to the south of the paired enclosures in King Hogsty's Copse and also encloses an area of approximately 0.33 ha. The enclosure bank is more substantial than the other two instances. A fourth enclosure is located in Gold Oak Copse is smaller in size (54 m by 30 m) and appears to have been damaged by a network of later trackways (number 4 on Figure 4.7). Dates obtained through post excavation analysis put the date of construction of all three enclosures in the Middle Iron Age. Enclosures 1 and 2 were heavily degraded, probably by some period of ploughing in the past, and no internal features were identified and very few finds (Fulford *et al* 2017, 2-4). Enclosure 3 was better preserved and had evidence of habitation, consisting of a ring gully and numerous postholes, which hinted at the presence of a number of roundhouses. The first secondary fill of the ditch, the basal bank deposit and the ring gully were dated to the Middle Iron Age (SUERC-77658, -77659, -77662), at 400-205 cal BC) (*ibid,* 5). The majority of the finds were collected from enclosure 3 and the pottery assemblage indicated a single-phase, pre-1st century BC period of use. The area of the enclosure was reused during the Roman period for charcoal manufacture (*ibid,* 6-7).

Two enclosures were identified from cropmarks on aerial photographs to the east of Simm's Copse, north-west of Silchester, on the northern edge of the gravel promontory (see Figure 4.8). Geophysical survey carried out by Historic England (Caesium Vapour Magnetometer and Ground Penetrating Radar) demonstrated that a further two possible enclosures lay to the south and excavations were carried out on all the features in 2017 as part of the Silchester Environs Project. The two northernmost enclosures each covered an area of around 0.5 ha and the north-western of the two had a suggestion of possible entrances on the eastern and western sides. Assessment of the finds, predominantly pottery, indicates that the enclosures had a single phase of occupation which spanned with Middle to Late Iron Age. The majority of the 86 sherds recovered came from the north-western enclosure and the presence of saucepan-style vessels and the lack of grog-tempered wares suggest that the enclosures pre-date the 1st century BC (Wheeler, Pankhurst and Barnett in Fulford *et al* 2017*,* 13).

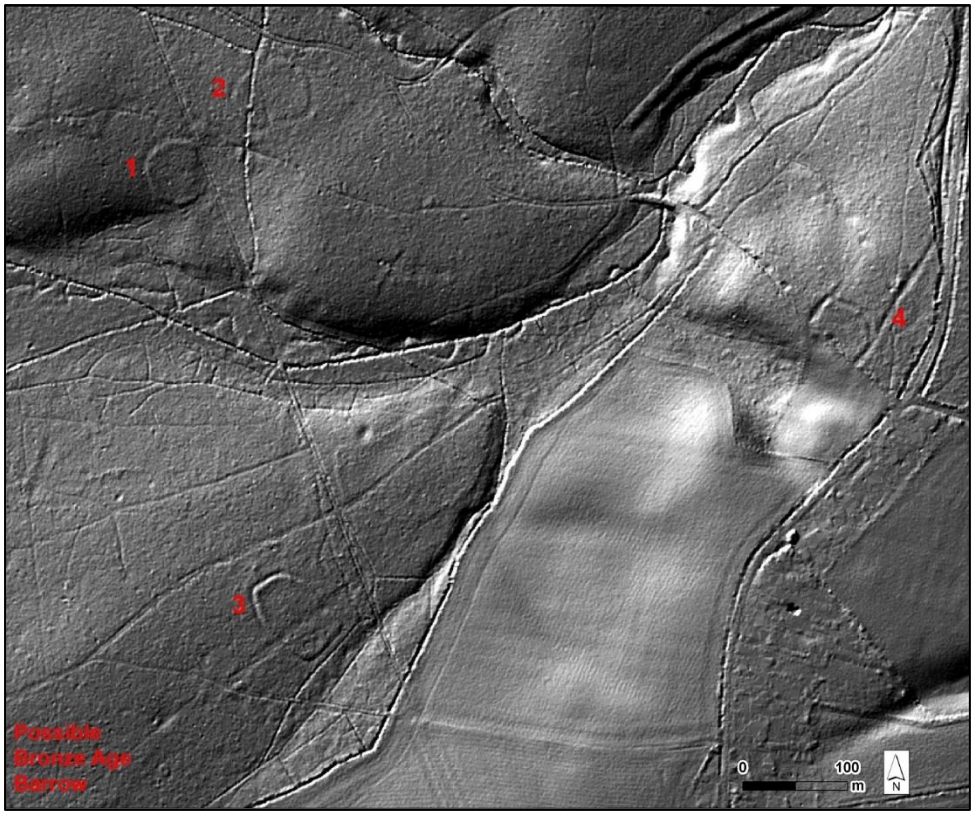


Figure 4.7 Enclosures within Pamber Forest. © Environment Agency Lidar 1m DTM hillshade model

Figure 4.8 Enclosures to the east of Simm's Copse, Mortimer. © Aerial photograph Google Earth 01-Jan-2005; Trench locations - Wheeler, Pankhurst and Barnett in Fulford et al *2017, 9*

A linear earthwork was also identified during a walk-over survey within Simm's Copse to the west of the north-western enclosure. This earthwork is formed of a bank and ditch which extends for approximately 200 m and appears to cut across a promontory created by small, incised combes on either side in the manner of a cross-ridge dyke. No dating evidence was recovered through excavation and the association between the linear earthwork and the enclosures is unclear (*ibid*, 8-9).

There are numerous undated features in the Silchester landscape identified from aerial photographs, comprising possible open and enclosed settlements, many of which can only be assigned a general later prehistoric date, although comparison with excavated sites which are morphologically similar means that a period of origination can be inferred. Two undated sites which might have had a period of use into the Middle Iron Age are the probable enclosure in Rampier Copse, which was incorporated into the south-west corner of the Outer Earthwork, and a site shown on the 1st edition Ordnance Survey map (1878) in Pickling Yard Plantation, west of Mortimer.

The earthwork in Rampier Copse forms a semi-circular bulge to the west in a section of the Outer Earthwork (see Figure 4.9). The eastern side of it appears to have been almost completely levelled, while the western side was increased in height after its incorporation into the later earthwork. The site has been recognised as an enclosure sporadically, with some surveyor's mapping the trace of an eastern bank, and others showing no sign of it. As discussed above, Richard Colt-Hoare's map of 1818 does show an earthwork bank inside the Outer Earthwork (Hoare 1821, 57) but the feature is not mapped by Maclauchlan (1851) or the Ordnance Survey (Six Inch 1874 and 1896). The north/north-eastern section of the earthwork appears to have been completely destroyed and no traces of a bank or ditch in this area appear on any of the earlier drawings.

Environment Agency lidar imagery shows the remains of the eastern bank as a low earthwork. An extensive area of quarry pits is visible in the north, central, area. Their date of use is uncertain, but they cut through the location of a possible northern bank to the suggested enclosure (Truscoe 2018, 58; Bayer 2019, 19). Boon attributed them to the quarrying of material needed for the raising of the western and southern banks, suggesting that this might have happened following the Boudican revolt of AD 60-61 (Boon 1974, 46).

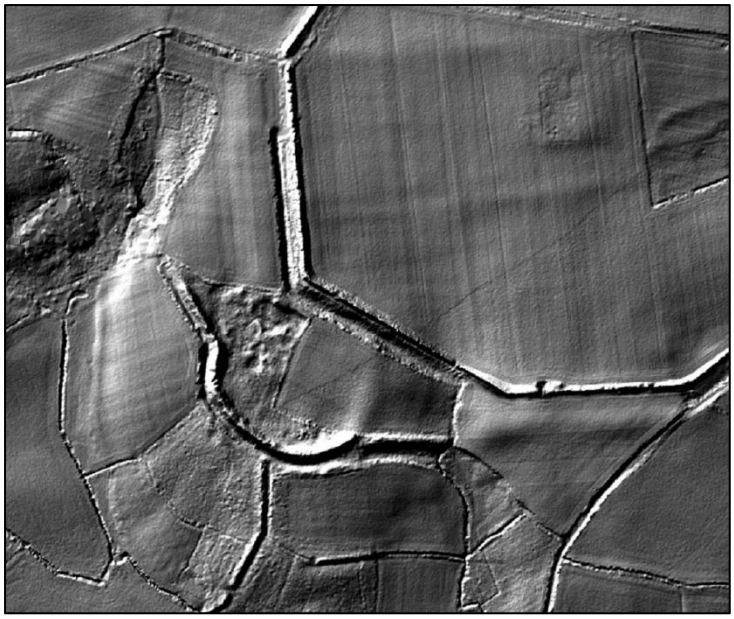


Figure 4.9 Rampier Copse to the south-west of the Roman town walls. A curving bank is visible on the eastern side suggesting that it was originally an enclosure. An extensive area of quarrying can be seen on the northern side. Lidar 1m resolution DTM hillshade model ©Environment Agency/University of Reading

The Rampier Copse earthwork has been interpreted by previous researchers as pre-Roman in date, and possibly being a Middle Iron Age structure incorporated into either, a Late Iron Age earthwork, or, as a post-conquest construction (see Outer Earthwork below p153). Karslake reported from his excavations in 1900 encountering numerous Roman cremation burials, presumably of 1st or 2nd century date, inserted into the inner slope of the bank (Karslake in Hope & Stephenson 1910). Further evidence of cremation burials was found during excavations by the Society of Antiquaries in 1909, but no further material came to light that might help date the earthwork (Hope & Stephenson 1910). Boon and Creighton and Fry have suggested that it is a similar size and type of earthwork as The Frith (Boon 1969, 17; Creighton with Fry 2016, 322-5) and with a similar absence of settlement activity within it. As described above, the construction date of The Frith is Mid- to Late Iron Age (200-30 cal BC -2038 +/-29 BP, SUERC-65355) and Bayer suggests that the Rampier Copse enclosure may have been constructed at a similar time (Bayer 2019, 38).

Bayer carried out an analytical earthwork survey on the Rampier Copse monument and the northern end of the adjacent Dicker's Farm dyke, which extends to the south-west from it. He concluded that the first phase of the monument was a sub-circular enclosure with similarities to the Frith hillfort, possibly constructed in the Mid- to Late Iron Age (Bayer 2019, 38). At some point after its construction the southern and western sides of the enclosure are incorporated into a longer curvilinear earthwork. The height of the central section is increased, and the earthwork is extended by slighter banks which continue to the north-west and south-east. Geophysical survey results

suggest that the south-eastern bank continued until it merged with the Inner Earthwork at the south-west corner of the settlement (*ibid,* 40).

An undated enclosure, which based on its morphology may have its origins in the Middle Iron Age, is shown on the 1st edition Ordnance Survey map (1:2500, 1878) within Pickling Yard Plantation, west of Mortimer (SU 6406 6463). The site is mapped as an oval, banked enclosure, but gravel extraction has since removed any trace of it. It is similar in size to the Pamber Forest enclosures (see Fig 4.11 for comparison in size).

A complex series of overlapping features are located immediately to the north of *Calleva*, including several small, sub-square enclosures, two conjoined oval enclosures, isolated ring ditches (possibly the sites of roundhouses), field boundaries and double-ditched trackways (see Figure 4.10). In addition to these features, two streets extend from the Roman town crossed by an east-west road. The line of this road possibly continues as a double-ditched trackway, although it is not certain whether they are contemporary features.

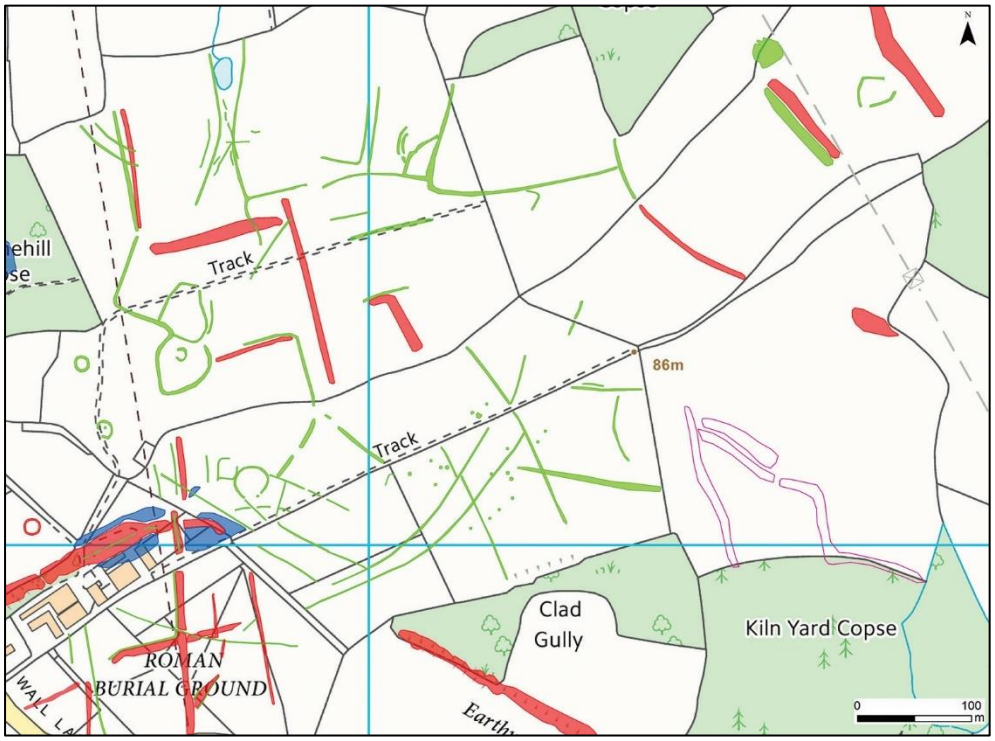


Figure 4.10 Probable later Prehistoric small enclosures and field systems to the north of Calleva. The small circular banked enclosure on the left-hand side of the image may be associated with the settlement area or may be the remains of a Bronze Age barrow. KEY: Ditch (green), bank (red), post medieval field boundary (purple). Mapping: Truscoe. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

The complexity of the picture, built up from photographs from a range of years, contrasts with the photography available to Corney when he carried out his transcription, based on RCHME

photographs from June and July 1970 and the Cambridge University Collection. Corney also recognised the Roman streets and the circular enclosure which he suggested as being pre-Roman in date. It was not possible to undertake fieldwalking in this area therefore no material could be collected which might help to date the features. (Corney in Fulford 1984, 277). A stone sarcophagus was found in this general area in 1852 leading to speculation that it might have been the site of a Roman cemetery (Boon 1974, 186). However, no evidence for the presence of a cemetery was identified during the excavation of a pipeline trench against the north wall of the town (Fulford *et al* 1997, 131). Whether any of the enclosures, boundaries and trackways recorded from aerial photographs relate to that use of the area, or are much earlier in date, is unclear. It is possible that they could relate to an earlier, unenclosed, phase of Late Iron Age settlement at Silchester.

It would appear that even if the entirety of the eastern end of the gravel promontory on which *Calleva* sits was not settled by the Middle Iron Age, there are numerous indications of settlement in the surrounding area, particularly if the undated sites are also considered. A number of the sites identified lie just outside the extent of the linear dykes which are constructed in this area from the Middle Iron Age on (see below pp144-151 for the dating evidence for the dykes).

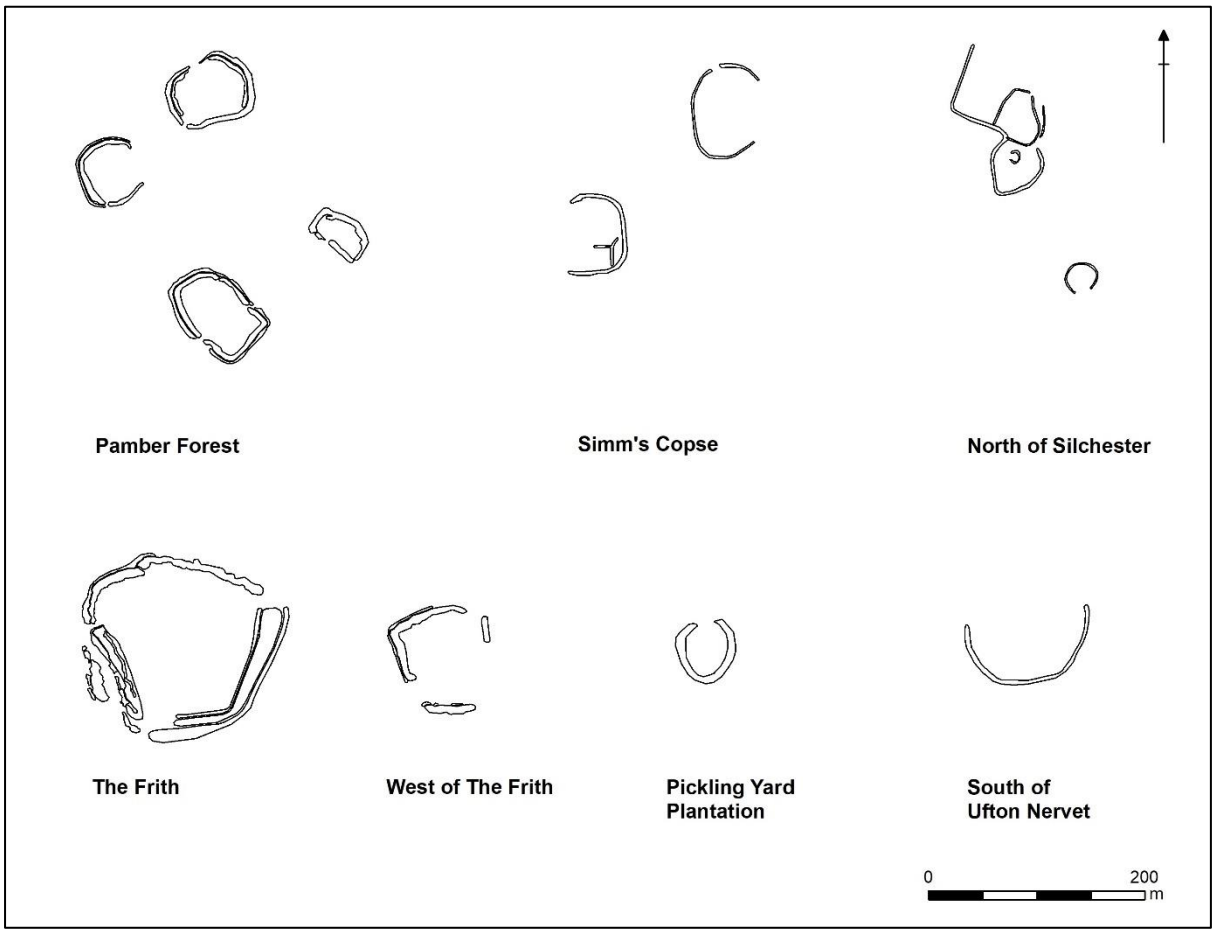


Figure 4.11 Comparative plans of earlier settlements in the Silchester area. Mapping: Truscoe

Late Iron Age settlement

Late Iron Age I

There are few dated settlements in the landscape surrounding Calleva, but numerous undated features can also be identified from aerial photographs and lidar imagery (Young 2008; Creighton with Fry 2016; Truscoe 2018 and see Figure 4.12). They include settlement enclosures, fragments of field systems and possibly also trackways. Trackways can be particularly difficult to assign to a period based on analysis of cropmarks alone, but their alignments and relationships with other features can give some indications. The formation of a cropmark over a trackway, particularly one that is seen repeatedly over many years of aerial photography, suggests extensive use in the past.

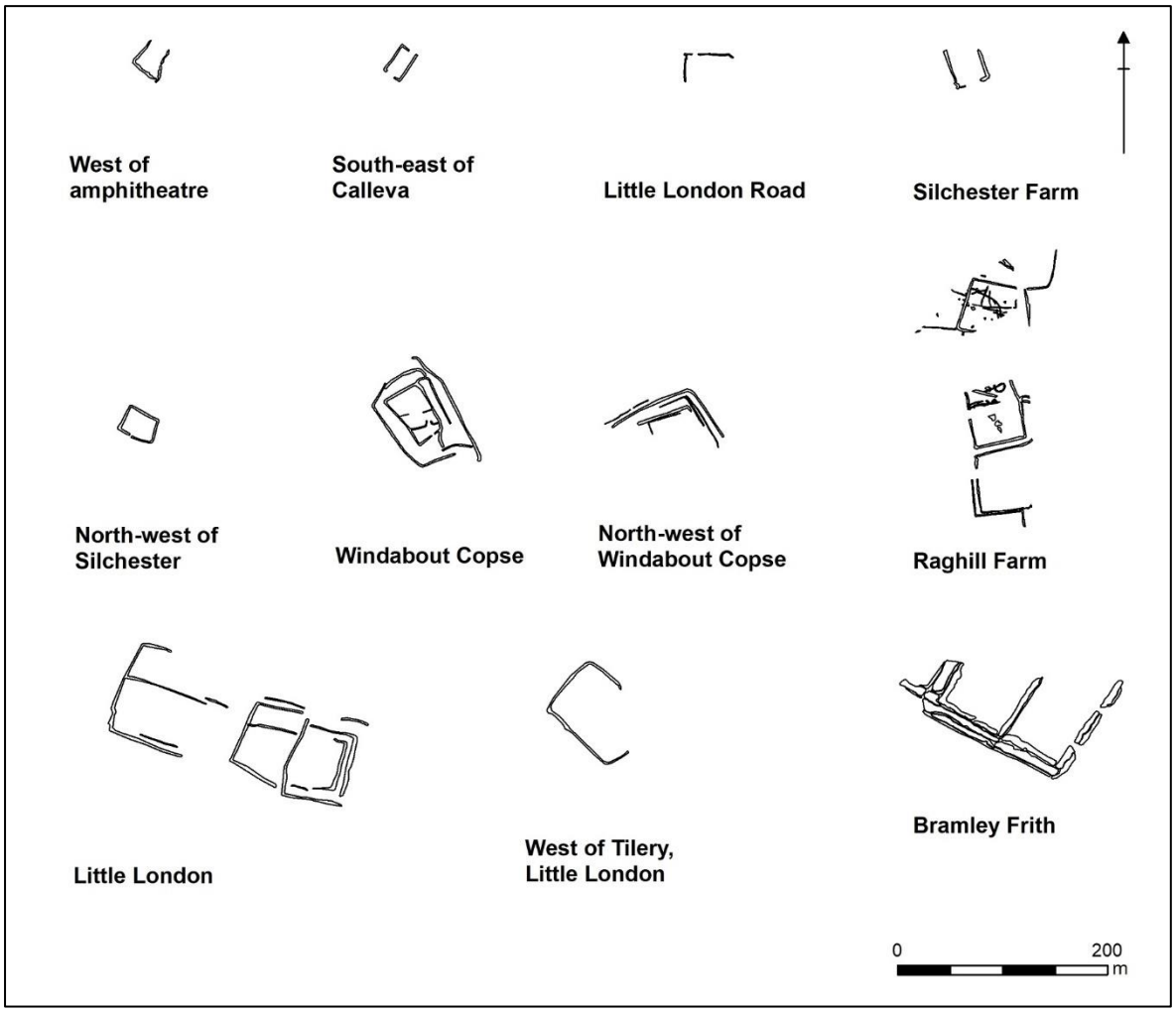


Figure 4.12 Settlement sites dated to, or suggested as being, Late Iron Age I and Late Iron Age II. Background map created from OS Terrain 5 © Crown copyright and database rights 2020 Ordnance Survey (100025252).

A settlement at Windabout Copse is located on a hill at the edge of the gravel plateau which gently slopes to the south (see Figure 4.13). Excavations in 2016 by the University of Reading found that the site had a second phase of use from the Middle to Late Iron Age which continued into the Late Iron

Age and possibly into the early post-conquest period, following a gap in occupation of approximately 200 years (Fulford *et al* 2016, 19; Barnett in Barnett & Fulford in prep, Chapter 7). The farmstead is formed of a complex of enclosures and trackways, two almost concentric. The central enclosure is sub-divided with an in turned funnel entrance which was found on excavation to have a possible gate structure, formed of two large postholes on either side and a smaller posthole in the centre. A possibly ritual deposit of a broken Sarsen saddle-quern in a pit within the eastern side of the funnelled entrance. The site of a rectangular wooden building was indicated by beam slots in the centre of inner enclosure and further activity was indicated by dumps of burnt material and pottery and a small oven or kiln (Fulford *et al* 2016: 18-19).

An unexcavated group of partial enclosures and trackways is located to the north of the farmstead, indicating further, if undated, activity in the area. To the north-west of this second group lies a small, D-shaped enclosure, within which a single, square negative feature could be identified on aerial photographs. On excavation, the negative feature proved to be a rich Late Iron Age burial within a wooden chamber of the type found in Stanway, Colchester (Crummy *et al* 2007) and Folly Lane, St Albans (Niblett 1999). The cremated remains were surrounded by six pottery vessels comprising: two imported Gallo-Belgic *terra nigra* platters, two locally-made imitations and two imported Gallo-Belgic drinking vessels, all dating to about the mid-1st century AD. Copper alloy rings found across the floor of the chamber would have been attached to the wooden box within which the cremated remains and grave goods were placed. Charred oak planks overlay the burial and vessels, possibly the burnt roof of the chamber or the remains of a pyre platform (Fulford *et al* 2016, 14-19). Pyre remains and debris are known from burials in Enclosure 3 at Stanway (Colchester). Another similarity is the creation of the structure of the grave. The chambered burials at Stanway were roofed but had no floors and hay or straw appeared have been spread over the floor surfaces (Crummy *et al* 2007, 424, 426). The floor of the Windabout Copse chamber "appeared trampled and mixed" and also lacked oak planking (Fulford *et al* 2016, 15). Several large sherds of a 1st century AD amphora, imported from southern Spain, were recovered from plough soil approximately 5 m to the south-east of the burial chamber, suggested as being a satellite offering (*ibid* 2016, 16). The individual buried at Windabout Copse was clearly of some importance, as evinced by the imported pottery buried with them and possibly also left as an offering. Evidence of this type of burial rite, within a wooden chamber which is placed within an enclosure can be found in France, for example Avaux and Avançon in the Champagne region (Crummy *et al* 2007, 453). The D-shaped mortuary enclosure is located on a south-facing hill in a prominent position in the landscape, probably further demonstrating the prestige of the person buried here.

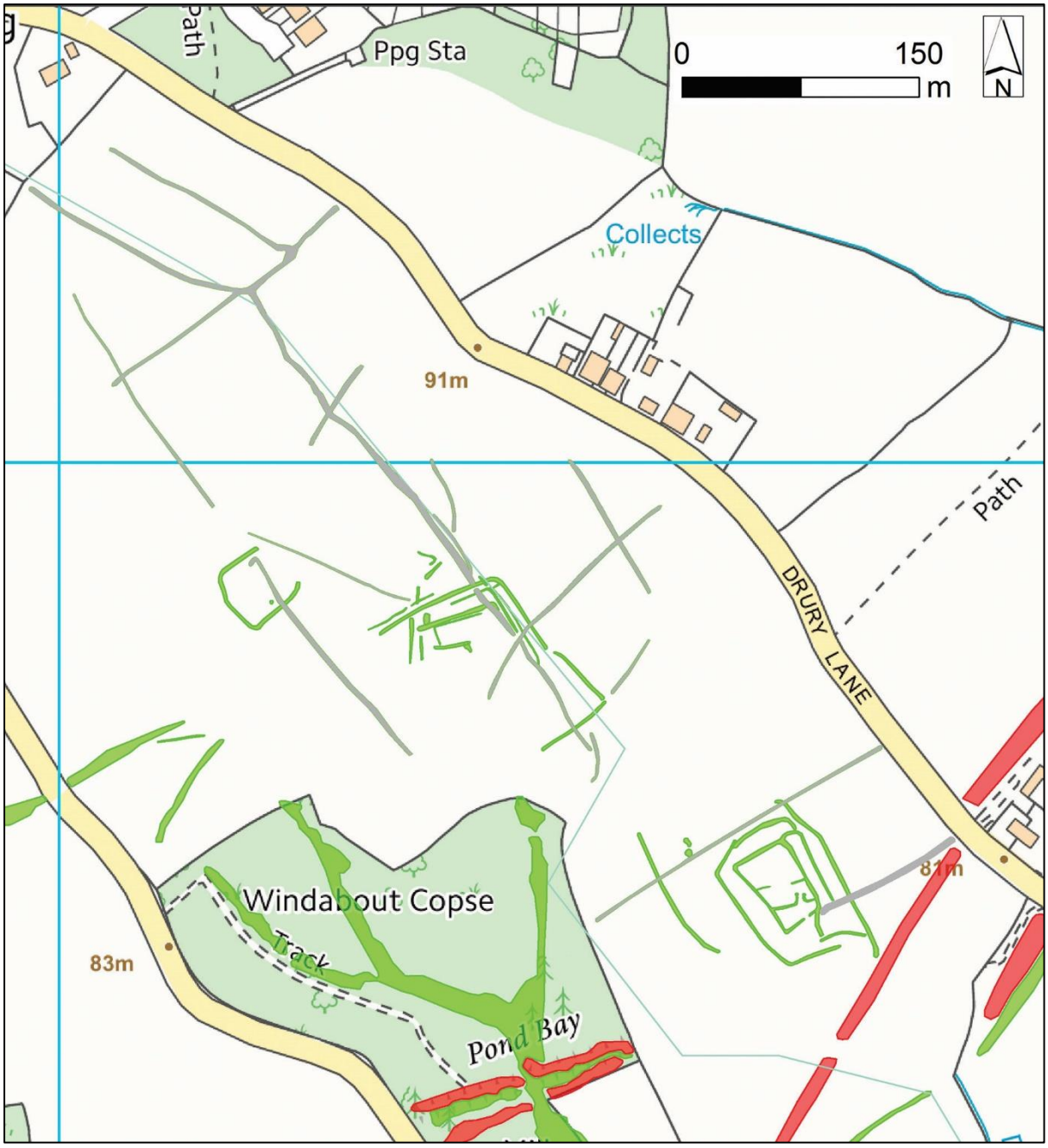


Figure 4.13 The farmstead and mortuary enclosure adjacent to Windabout Copse. Later features are shown in grey. Mapping: Truscoe. © Crown copyright and database rights 2020 Ordnance Survey (100025252).

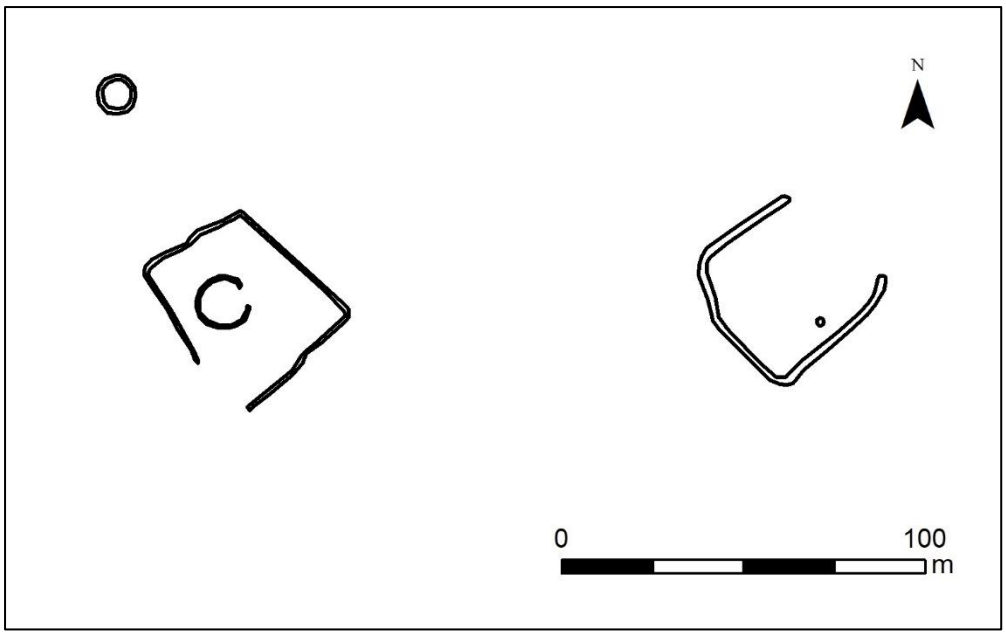


Figure 4.14 Mortuary enclosure, Windabout Copse, on the right compared with possible mortuary enclosure at Mortimer on the left. Mapping: Truscoe

A second possible mortuary enclosure is located to the north-west of Windabout Copse, south of Mortimer. The enclosure is rectilinear but similar in size to the Windabout Copse enclosure and has a ring ditch in the centre. A second ring ditch lies immediately to the north (see Figure 4.14). This site was recorded from cropmarks on aerial photographs (Truscoe 2015 transcription, Historic England Archive) and its date and function are unknown. An alternate interpretation is that the enclosure and ring ditch represent a small settlement.

An isolated cremation burial of an adult with a child was discovered at Latchmere Green, 2 km to the south of Calleva in 1994 (Fulford and Creighton 1998). The accompanying grave goods included a bronze, decorated, mirror, the first such burial identified in Hampshire. It was dated on a stylistic basis to the early 1st century AD. Pottery and iron fibulae also associated with the burial gave a *terminus post quem* of late 1st century BC. Cremated pig remains also accompanied the burial, with a preference shown for the right side of the animal. This burial rite has parallels with King Harry Lane cemetery, Verulamium, and the Westhampnett cemetery near Chichester. Mirror burials have been found in Buckinghamshire, Hertfordshire and Essex, but this is one of two known examples to the south of the Thames, the other being near to Canterbury (Kent) (*ibid*, 339-40). This burial and the chambered cremation burial at Windabout Copse give a further demonstration of the different lifestyle and status of the inhabitants of the Calleva area.

An unexcavated sub-rectangular enclosure is located 0.58 km to the west of The Frith/Pond Farm. The site is under heavy tree cover, but is visible if still relatively unclear, on the Environment Agency lidar digital terrain model. The enclosure has an internal measurement of approximately 0.6 ha. It

has previously been interpreted as being a medieval coppice enclosure, but it is possible that it has its origins in this period (OS Archaeology Division Field Investigator's comments 11 May 1987, National Record of the Historic Environment).

Late Iron Age II

A Late Iron Age to early Roman settlement was found through excavation at Raghill Farm, Aldermaston, to the west of the southern section of Grim's Bank (see above Figure 4.16 for distribution of Late Iron Age II sites and below, Figure 4.15 for comparative plans). The site comprises a sub-square enclosure with two conjoined rectilinear enclosures to the south. A roundhouse was uncovered within the northernmost of the conjoined enclosures. Field boundaries were found around the settlement and two Late Iron Age cremation burials were also identified to the east and north-east (Wessex Archaeology 2008, 17). A site which is similar in appearance was identified from cropmarks to the west of Little London and east of Pamber Green. It is also formed of a complex of linked enclosures, possibly a settlement enclosure with attached paddocks (Truscoe 2018, 84). While the site is undated it may have been occupied during a similar period to Raghill Farm. Another site formed of two conjoined enclosures was identified from lidar imagery at the northern edge of the woodland of Bramley Frith (Truscoe 2018, 87). The site was previously surveyed during investigations associated with work on the Bramley to Ashford Hill electricity cable route and suggested as being Late Iron Age to Roman in date. The enclosures appear to be truncated on their northern side, but no evidence was found of their continuation during excavation of the cable trenches in the field to the north (Brading 2011, 120).

An enclosure which was possibly originally rectangular in form, and a ditch system was excavated at Little London Road. The settlement is located on a spur of land cut off from land to the north by the Flex Ditch. The Flex Ditch may also be of this period or be an earlier development in the landscape. Creighton has suggested that this earthwork is one of a group of enclosures on the edge of the gravel plateau possibly dating to the Middle to Late Iron Age (Creighton with Fry 2016, 322-325). The Flex Ditch originally had a bank on its northern side, which was destroyed during the construction of modern houses, but the ditch still has a maximum depth of around 6m (NHLE entry 1008725). It is unclear whether this earthwork did demarcate the spur of land or was excavated for some other reason. It has the appearance of the linear quarry pits visible on lidar imagery alongside the Roman road to Speen (Truscoe 2018, 71, 73) and, due to its location to the north of the Portway, might be a similar type of feature.

The earliest pottery recovered from the Little London Road settlement was handmade calcareous ware which was not paralleled in the pre-Roman assemblage from excavations at the forum-basilica. This suggested to the excavators that the enclosure might be slightly earlier in date than the *oppidum.* The enclosure appears to have silted up naturally over a period of between 50 and 100 years, as indicated by the presence of pottery dating to the 1st century BC and 1st century AD, giving a period of use from the Late Iron Age and possibly extending into the Roman period (Moore 2011, 105).

Unexcavated, single, rectilinear, settlement enclosures which might be very Late Iron Age to Roman in date, are found throughout the area around Calleva (see Figure 4.15 for comparative plans). Dating of these types of enclosures when they have been found using remote sensing methods can only be based on morphology and comparison to known excavated examples. Examples of these types of sites have been identified from cropmarks to the west of the Tilery, Little London (Truscoe 2018, 81), north-west of Silchester (Corney in Fulford 1984, 278; Truscoe 2018, 81), and north-west of Windabout Copse (Truscoe 2018, 53). Further examples have been found through geophysical survey at Silchester Farm (Linford *et al* 2019, 4) to the west of the amphitheatre, possibly associated with industrial activity (Creighton with Fry 2016, 220-1) and to the south-east of the Roman town (*ibid*, 258).

The Silchester Farm site is located to the east of Little London Road, close by to the excavated enclosure to the south of the Flex Ditch (described above) and it is possible that it is of a similar date. An example of an excavated single, rectilinear, enclosure which may be comparable in date to the site to the west of the Tilery, Little London, is located in Ufton Nervet to the north of Silchester, investigated by Manning in 1961-63. The enclosure forms part of a multi-phase site which lies to the south of a Bronze Age barrow cemetery. The earliest enclosure was found to have been built shortly before the Roman conquest and replaced by a second structure in the early post-conquest period (Manning 1973, 1). Manning points to a comparable example of an excavated enclosure at Prior's Park Gravel Pit, Cookham, where occupation was shown to span the very Late Iron Age and early Roman period (*ibid,* 17).

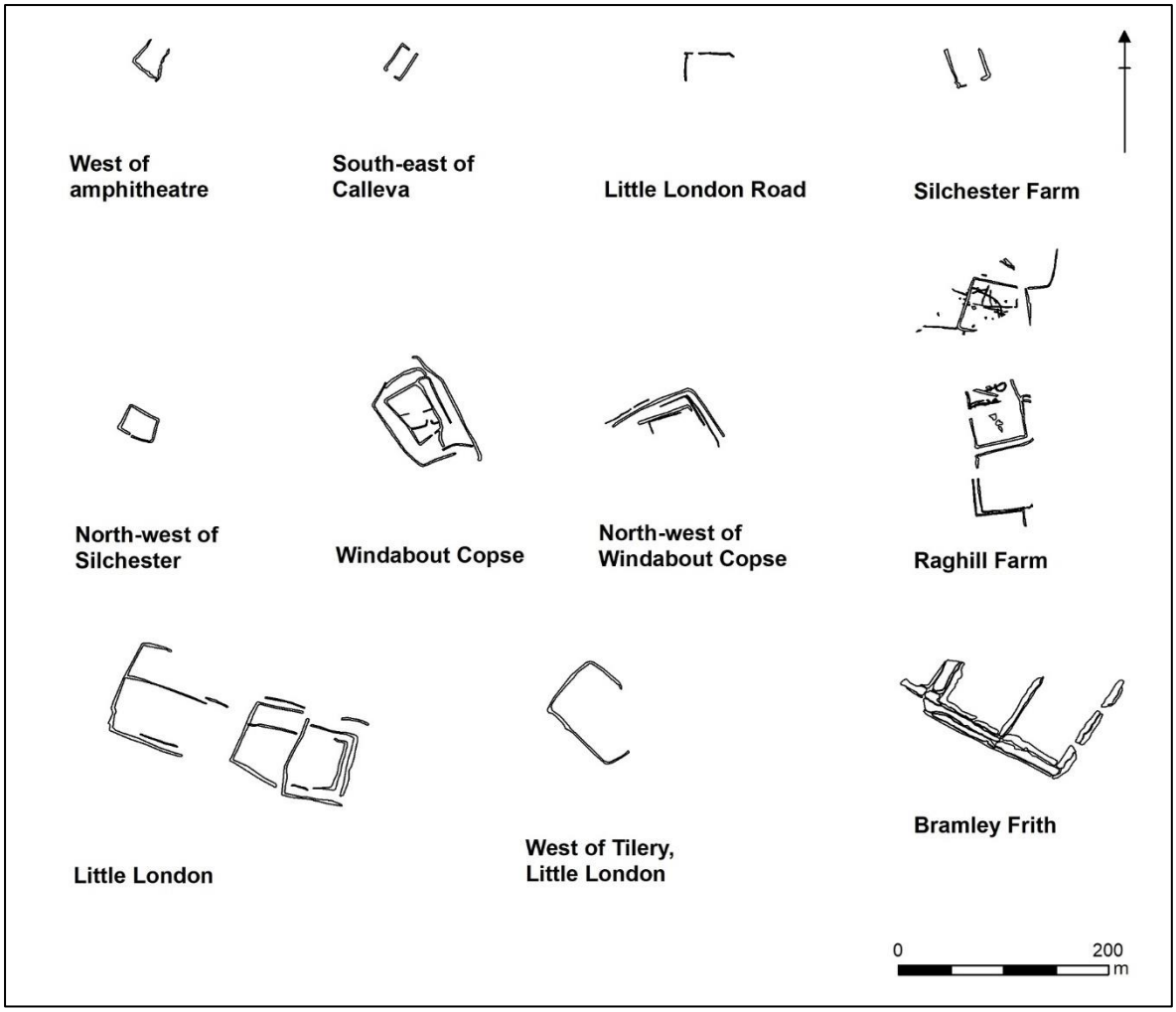


Figure 4.15 Late Iron Age I and Late Iron Age II (very Late Iron Age to Roman) settlement in the Silchester oppidum area. Mapping: Truscoe

Field systems and trackways

There is scarce evidence in the Silchester landscape of the type of extensive field systems located around the enclosure at Gosbecks (Colchester) or across the South Downs and coastal plain (Chichester), but fragments can be identified from faint cropmarks to the north and south of the central settlement (see Figure 4.16). If they are contemporary with the *oppidum,* they may show a history of cultivation in the area which would support Lodwick's findings from the Insula IX excavations. A degree of local cultivation is also indicated by the charred plant remains from Insula IX. Analysis of cereal processing debris points to a low level of arable farming being carried out in the vicinity of Calleva; arable weed seeds found together with spelt wheat crop-processing waste indicate that cultivation was likely to have been carried out on the slightly acidic soils associated with the gravel plateau (Lodwick 2018, 308). This suggested low density farming accords with the limited evidence for field systems that can be identified from cropmarks in the area around Calleva

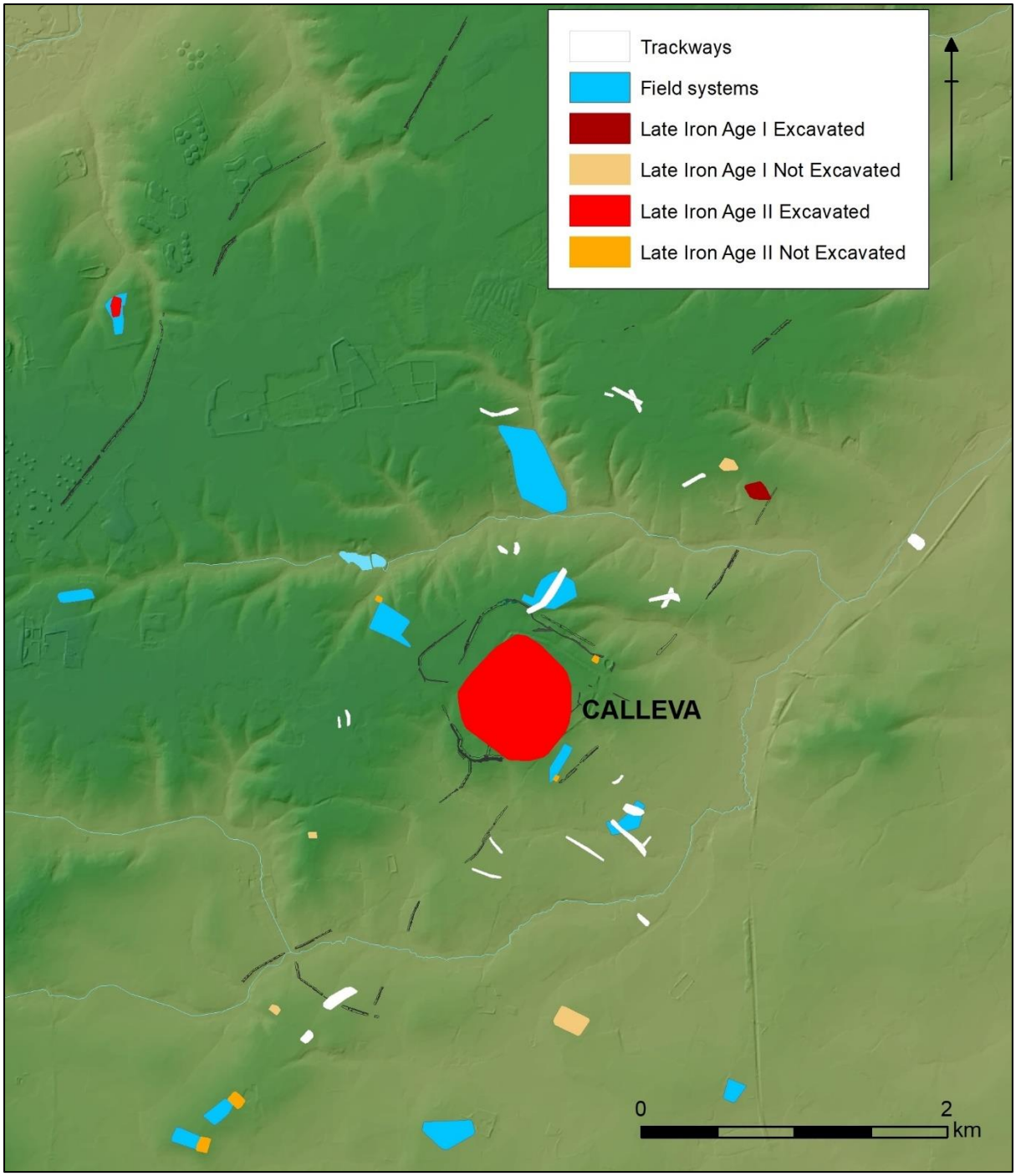


Figure 4.16 Locations of trackways and field systems in relation to Late Iron Age I and II settlement. Background map created from OS Terrain 5 © Crown copyright and database rights 2020 Ordnance Survey (100025252).

(Truscoe 2018, 44-7). Isolated fragments of possible later prehistoric, field systems are located to the north and south-east of the central settlement within the linear dykes, while other areas of scattered field boundaries can be identified to the south and north-west outside the dykes. The areas of field boundaries are sometimes associated with probable farmstead enclosures which are rectilinear in form. It is possible that these small areas of field boundaries that can be identified from

cropmarks were each part of a larger system in their particular areas, but later cultivation and development may have removed any further evidence.

Trackways are difficult features to date from examination of cropmarks alone, but by focusing on their form and alignments and comparison with historic maps, it is possible to suggest which features might have an earlier origin than others. Fragments of trackways are found across the Silchester study area and may be associated with movement through the *oppidum* zone, or relate to earlier, or later, phases of settlement. A double-ditched trackway crosses from west to east past the north gate of the Roman town (see above, Figure 4.10). This trackway is also located within an area of field systems and immediately to the south of possible later prehistoric settlement enclosures. It is unclear which phase of settlement the trackway is associated with. It appears to be on the same

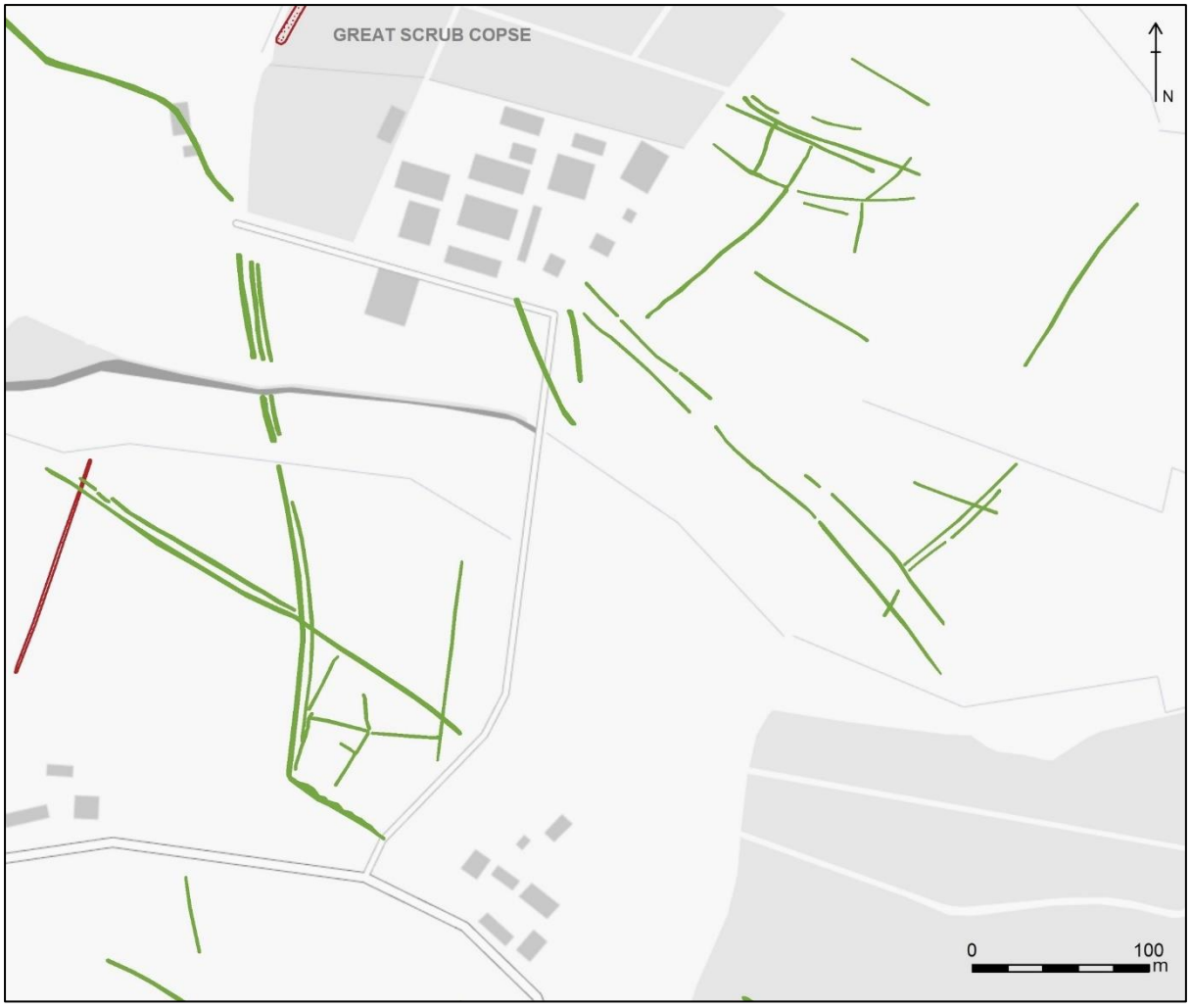


Figure 4.17 Trackways to the south-east of Calleva. The line of the park pale can be seen in the centre of the picture extending to the south from Great Scrub Copse and then turning to the east. Possible double-ditched, later prehistoric, trackways, predominantly on a north-west, south-east alignment can be seen across the area. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

alignment as a Roman street, possibly continuing from that feature's eastern end, but it could also be associated with earlier settlement in the area.

Two earlier trackways appear to underlie the medieval pale of Silchester deer park to the south-east of Calleva, which would have been a substantial earthwork during its period of use (Truscoe 2018, 99). They are located within an area of field boundaries which are also undated but are possibly associated with the Late Iron Age II/Roman occupation in this area. Both are formed of well-defined single linear ditches, with some sections visible as two parallel ditches (see Figure 4.17). The northern trackway, runs from Newersland to the south of Church Lane Farm, crossing the triple ditched section of the park pale, and the southern trackway runs to the north of Lower Farm Bungalow, again crossing the route of the park pale. It is possible that these trackways relate to movement through the landscape in a period predating the medieval development of the deer park, but whether they were contemporary with the *oppidum* can only be discovered through further investigation.

The linear dykes

There have been several surveys of the linear dykes within the immediate area of Calleva, including by Williams-Freeman (1915), O'Neill (pre-1943) and Creighton with Fry (2016), but no surveys of the entirety of the linear earthworks in the surrounding area until that undertaken during the Silchester Environs Project (Barnett & Fulford in prep). The table below summarises the surveys and excavations to date over all the linear dykes, or suspected dykes, around Silchester.

Table 2 Summary of investigations into the Silchester dykes

Linear Dyke Name	**Investigations**
South of Calleva	
Dicker's Farm	Lidar transcription as part of the Silchester Mapping Project (Creighton with Fry 2016, 335-6) and the Silchester Environs Project (Truscoe 2018, 73) Survey by Bayer, Historic England, (2019) – observed that linear dyke probably post-dated the Rampier Copse enclosure, but this site itself is undated.

Oldhouse Lane / Wood Farm	Survey by Williams-Freeman (1915*,* 406). Lidar transcription as part of the Silchester Mapping Project (Creighton with Fry 2016, 333) and the Silchester Environs Project (Truscoe 2018, 72). Excavation as part of the Silchester Environs Project 2016. Evidence for a Late Iron Age date of construction, overlying earlier occupation (Fulford *et al* 2016, 10-13).
Byes Lane, Little London Group	Survey by Williams-Freeman (1915*,* 406). Lidar transcription as part of the Silchester Mapping Project (Creighton with Fry 2016, 332-3) and the Silchester Environs Project (Truscoe 2018, 71).
Bridle's Copse, Little London Group	Survey by Williams-Freeman (1915*,* 406). Lidar transcription as part of the Silchester Mapping Project (Creighton with Fry 2016, 332). Geophysical survey by Historic England / Aerial photographic transcription as part of the Silchester Environs Project (Truscoe 2018, 71-2) Coring as part of the Silchester Environs Project (Fulford *et al* 2016, 6-8). Northern section - Middle to Late Iron Age date, Southern section – Middle to Late Iron Age with modifications in Medieval period.
North of Calleva	
Brocas Lands	Aerial photographic transcription as part of the Silchester Environs Project (Truscoe 2018, 78). Excavation as part of the Silchester Environs

	Project in 2016. Evidence for a Middle Iron Age date from primary fill and Middle to Late Iron Age date from first secondary deposit (Fulford *et al* 2016, 8-9).
Stephen's Firs	Lidar transcription as part of the Silchester Environs Project (Truscoe 2018, 77)
Recreation Ground, Mortimer	Aerial photographic transcription as part of the Silchester Environs Project (Truscoe 2018, 77)
Grim's Bank	Survey of Grim's Bank II and section in gap in southern earthworks (Grim's Bank I) in Padworth Gully by O'Neill pre-1943. Section in southern section of Grim's Bank I by Gilyard-Beer in 1952 (1954-55, 56-7). Section by Berkshire Archaeological Unit in southern section of Grim's Bank I in 1978 (Astill 1980, 57-65). Late Iron Age/Roman date of construction suggested through pollen analysis. Auger transect and sections by Oxford Archaeology in 2005. No dating evidence. Aerial photographic transcription as part of the Silchester Environs Project (Truscoe 2018, 74-75)
(Possible Dyke) Headlands Farm	Identified through aerial photographic transcription as part of the Silchester Environs Project (Truscoe 2018, 79)

The scientific dates recorded during the excavations carried out as part of the Silchester Environs project suggest that the linear earthworks were constructed in a number of phases: two (Bridle's Copse and Brocas Lands) predating the enclosed phase of settlement at Calleva; and one (Wood Farm) returning dates prior to and contemporary with the *oppidum* (see Figure 4.23 below for a

summary of the radiocarbon dates). It is probable that there are also variations in date of construction within earthworks which have been regarded as being a single feature. For example, Grim's Bank appears to be a group of separate earthworks rather than a single feature. Grim's Bank is the most distant of the dykes from Silchester, approximately 2.4 km to the north-west of the Outer Earthwork (see Figure 4.18 for dyke locations). It is regarded as being formed of two main sections, the northern section, Grim's Bank II being relatively straight, and the southern section, which is also formed of two parts, being more curving in nature. The earthworks approximately follow the same south-west, north-east alignment. The best-preserved sections within the grounds of the Atomic Weapons Establishment at Aldermaston are formed of a bank measuring up to 9 m in width with a ditch on the north-western side measuring up to 11 m in width. Excavations by Gilyard-Beer in 1952 and Astill in 1978 demonstrated that on the same length of the southern section of Grim's Bank I, there were similarities in construction, but O'Neil's excavation on the northern section of Grim's Bank I showed marked differences. The face of the bank showed evidence of revetting and in addition O'Neil found a berm measuring approximately 2.5 m in width. The ditch could not be completely excavated, and no dating material was recovered from the fills (O'Neill 1943, 195). In the area of Astill's excavation the bank survived to a height of *c.* 1 m and was around 9.4 m wide. The original profile of the ditch could not be determined since it was occupied by a stream (Astill 1980, 57; 63).

Excavations were carried out on three of the linear dykes in 2016 as part of the University of Reading Silchester Environs Project: Brocas Lands, north-east of Calleva; Wood Farm, part of the Oldhouse Lane dyke south of Calleva; and Bridle's Copse, near Little London, south-west of Calleva. Radiocarbon dates were obtained from primary contexts from each of the sites (Fulford, Barnett and Clarke 2016, 12; Barnett in Barnett & Fulford in prep, Chapter 7).

The linear dyke at Brocas Lands survives as a low earthwork, visible on lidar imagery, crossing Brocas Plantation and Turks Lane to the south of the settlement adjacent to Windabout Copse, on a south-west, north-east alignment. The dyke then appears to continue on the same alignment to the east of Drury Lane, where a wood bank defining a plantation is shown on the first edition OS map (1:2500, 1872) and it is possible that a section of the linear dyke was reused here. A further continuation of the dyke to the south-west is suggested by a broad bank visible on lidar (up to approximately 20 m in width and 190 m in length) the southern end of which is located approximately 260 m to the east of the Roman amphitheatre. Where visible, the ditch is on the south-eastern side of the earthwork. A field boundary is shown in this area on the 1st edition OS map (1:2500, 1872) but the similarity in alignment and breadth of the bank suggests that it may be an earlier boundary reused by post medieval land surveyors. A trench was excavated through the earthwork at a point to the north-east

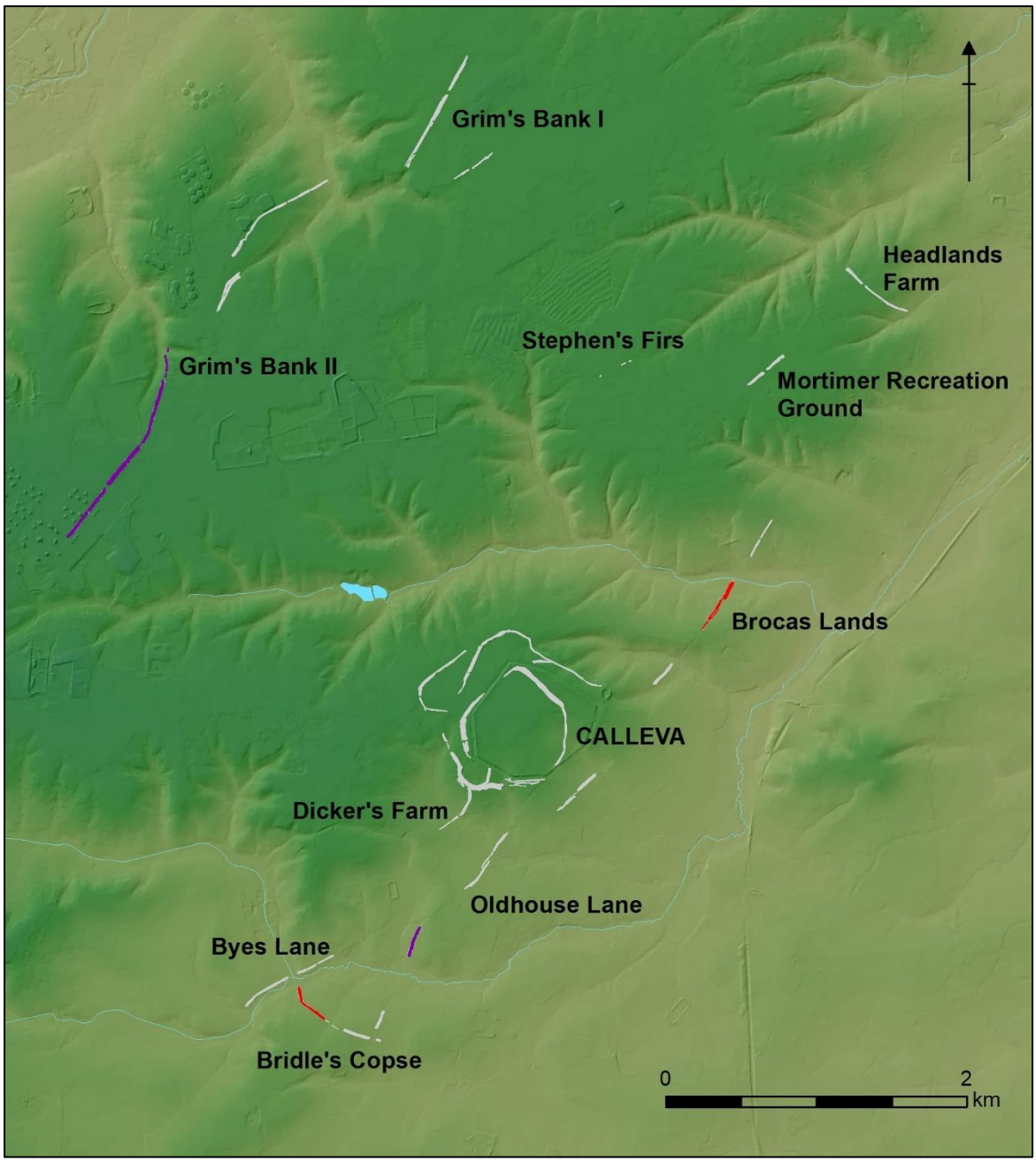


Figure 4.18 Linear dykes around the oppidum. Key (where some kind of dating evidence exists): Middle Iron Age (red), Late Iron Age (purple). Background map created from OS Terrain 5 © Crown copyright and database rights 2020 Ordnance Survey (100025252)

of Brocas Plantation and cores were taken at points across the dyke and at its potential junction with the floodplain of the West End Brook. Very few artefacts were recovered but radiocarbon dates were obtained from charred oak twigwood from the upper portion of primary ditch fill and from hazel roundwood charcoal from a second deposit. Both returned Middle Iron Age dates ((400-205 cal BC, 2257±28 BP, SUERC 69389) and (165 cal BC-25 AD 2047±29 BP, SUERC 69388); Barnett in Barnett & Fulford in prep, Chapter 7), thus predating the founding of the *oppidum*. The ditch was around 4.8

m wide but could not be bottomed due to the high-water table in this area at 1.5 m below ground (Fulford *et al* 2016, 8).

The Oldhouse Lane dyke, of which the Wood Farm section forms a part, is located around 300 m to the east of the Dicker's Farm dyke. It has a similar north-east, south-west alignment and form, with the bank on the north-western side and ditch on the south-eastern side to the Dicker's Farm dyke. The dyke is visible in three main sections, the first extending from Churchlane Copse south-west to Byes Lane and the second and third sections lying to the north and south of Wood Farm. The southern sections of the dyke are extant earthworks visible on lidar, while the northern section partially survives as an earthwork and partly as sub-surface remains which can be observed as cropmarks. It was the section to the north of Wood Farm where excavation took place.

Late Iron Age Silchester ware sherds were found sealed under the bank and a radiocarbon date taken from charcoal from the basal dump of the bank returned a date of 170 cal BC – 5 cal AD (*Ilex aquifolium* charcoal 2063 ±28 BP SUERC 69371) supporting a Late Iron Age date of construction. Further dates were obtained from the remains of a cultivated soil washed downhill and underlying the bank. The dates obtained spanned the Early Iron Age to the earliest Roman period and related to material laid down during the period of the dyke's construction and to earlier settlement in the vicinity. A Middle Iron Age radiocarbon date was obtained from a piece of *Corylus avellana* roundwood in the primary fill of the ditch. However, this material is associated with earlier occupation and had been washed into the ditch at some point. The ditch itself was convex in shape, around 7 m wide and 2.2.m deep (Fulford *et al* 2016, 12).

The Bridle's Copse linear dyke is one of a group of dykes which intersect at the Silchester Brook, around 1.9 km south-west of *Calleva*. The Byes Lane dyke survives as an earthwork on a north-east, south-west alignment, formed of a bank with a ditch on its south-eastern side. It runs along the southern side of Byes Lane for around 260 m until it meets the north-south Silchester road, east of the Silchester Brook. It continues on the same alignment to the west of the brook within Pamber Forest for a distance of about 340 m. The northern end of the Bridle's Copse dyke lies around 80 m to the south of the Byes Lane linear and runs to the south for a distance of 105 m. The dyke then turns sharply to the south-east through Bridle's Copse and continues into open farmland. The dyke survives as an extant earthwork within Bridle's Copse and as sub-surface remains in open land, where its course can be traced through a combination of aerial photographic interpretation (Truscoe 2018, 71-2) and geophysics (Linford *et al* 2019, 4). The southern section of the dyke appears quite different in character from the northern section. At the point where it changes alignment, it becomes markedly narrower and straighter.

Coring was carried out by the University of Reading along two transects across the earthwork section of the dyke within Bridle's Copse to the north and south of the sharp-angled change in alignment. Charcoal was recovered from the cores from the northern transect, suggesting burning or domestic activity in the immediate area during the construction period. The results of geoarchaeological analysis demonstrated that the earthwork had been excavated into existing palaeochannels and the presence of moving water within the ditch was also indicated above the primary fill. A radiocarbon date obtained from the basal deposit of the northern bank section indicates a construction date in the Middle Iron Age (365-170 cal BC (SUERC-69367, 2183±29 BP). Dates obtained from alluvial material present in the cores through the ditch in Transect 2 in the southern section were from the Late Iron Age (105 cal BC-60 cal AD (SUERC-69368 2021±29 BP), but also the early medieval period (660-770 cal AD (SUERC-69369 1295±29). The character of this section of the dyke is different to the northern part and it may have originated in the Middle to Late Iron Age but have subsequently been modified in the medieval period (Fulford *et al* 2016, 6-8; Barnett in Barnett & Fulford in prep, Chapter 7).

The Dicker's Farm dyke was surveyed as part of the Silchester Environs Project, both from aerial photographs and lidar (Truscoe 2018, 73) and through analytical earthwork survey of its northern end by Bayer adjacent to the Rampier Copse enclosure. His observation of the relationships between the earthworks suggested that it was most likely "a linear boundary appended to the initial enclosure or hillfort at Rampier Copse but predating its enhancement and extension as part of the outer earthwork/bank" (Bayer 2019, 38). The dyke extends to the south-west from Rampier Copse to Dicker's Farm. The northern section of the dyke running through Dicker's Copse is broader than its southern end, which runs through open ground alongside a modern trackway, narrowing from up to 12m to around 7m in width. This earthwork has probably been eroded by the later trackway and may have originally been the same width as the northern end. It may have continued to the south-west along the side of the trackway and a field boundary west of Bramley Road.

Three sections of a possible linear dyke, with no evidence of a ditch, cross through the Stephen's Firs area of Mortimer from St Catherine's Hill to Victoria Road. The banks are visible in open spaces within an area of housing and were recorded from lidar as measuring 13 m, 31 m, and 16 m in length. The dyke is shown on the Original Series OS One Inch mapping (1816-1830) and the first edition OS map (1:2500, 1872) as a continuous bank with its south-western end at a point to the west of St Catherine's Hill. O'Neil associated this earthwork with Grim's Bank, suggesting that it was part of a system protecting settlement in the Mortimer Common area (O'Neil 1944, 193-4).

A possible linear dyke is visible as a cropmark on Mortimer Recreation Ground, formed of a straight bank flanked by ditches, on a south-west, north-east alignment. It measures approximately 21 m in total width, similar to both the outer earthwork and dykes at Brocas Lands and Dicker's Farm. It has been suggested that this feature might be part of the Roman road heading to Silchester from St Albans (Woodward 1983, 32-4). The width of the earthwork is similar to some of the surviving sections of the Silchester to Speen Roman road, which measure between 19 m and 26 m in width. However, it is on a different alignment to two sections of parallel ditches visible as cropmarks located to the north-east of Burghfield in the Kennet Valley. These sections were identified during the Thames Valley NMP project (Fenner and Dyer, 1994) and the Silchester Environs Project (Truscoe 2018, 112) and both are positioned 16 m apart, identical to that recorded for the cropmarks of the road to Dorchester-on-Thames at Sulhamstead (*ibid,* 110). Therefore, it is possible that this is an earlier feature.

Another feature which could be interpreted as a linear dyke, based on its form and alignment, was identified from cropmarks adjacent to Headlands Farm, east of Mortimer. It is formed of a bank with a ditch on its eastern side measuring approximately 500 m in length. The feature is on a similar north-west, south-east alignment to the north-eastern side of the Iron Age boundary bank around the oppidum, echoing its orientation in the same way that Grim's Bank parallels the alignment of the north-western side. However, the date of this feature is unknown, and it may relate to earlier or later developments in the landscape (Truscoe 2018, 79).

The central settlement - Inner Earthwork

The existence of the Inner Earthwork was first identified by J K St Joseph from his aerial photographs taken in 1953. St Joseph noted the appearance for the first time of "a further massive ditch and rampart running within the outer enclosure and overlapped both by the later polygonal defences and by the grid of streets contemporary with the outer enclosure…a south-west gate is also visible" (1953, 89). The south-eastern section of the Inner Earthwork is not visible on aerial photographs, even in the drought years of the late 1970s when the bank and ditch can be clearly identified with the northern part of the town and to the west of the town walls. A broad ditch and less defined sections of banks can also be seen to the south of the walls, with the Roman road to Winchester visible as a linear bank through the centre of this section (RCHME photographs, Historic England Archive). The course of the earthwork in this area has subsequently been traced through geophysical survey, with clearer results visible in the section outside the South Gate. A number of cuts and recuts were evident in the results of fluxgate gradiometry and earth resistance survey creating a confusing

mixture of signals (Creighton with Fry 2016, 309). Caesium magnetometer and Ground Penetrating Radar survey carried out in 2016 identified the infilled banks either side of bank which appeared to be a continuation of the Rampier Copse earthwork (Linford *et al* 2016, 5, Fig 12) as recorded by Bayer in his analytical earthwork survey. The route of the Inner Earthwork has been unclear in the area to the east of Rampier Copse but Bayer, combining the geophysical and analytical earthwork survey results, concluded that the routes of the Outer and Inner Earthworks merged at this point (Bayer 2019, 40). The two earthworks have previously been assumed to have run parallel with each other (Boon 1974, 38ff, Fig 5), with the course of the Inner Earthwork possibly destroyed by the Roman town wall (Creighton with Fry 2016, 252, 309).

The total length of the Inner Earthwork measures at least 2.25 km enclosing an area measuring approximately 35 ha, similar to that of the later walled town which has an internal measurement of 43 ha. The construction of this earthwork, probably around the end of the 1st century BC/beginning of the 1st century AD, was a monumental undertaking, a fact made especially clear when comparing its size to the other relatively large earthworks in this area. At c 3.4 ha, the internal measurement of Bullsdown Camp is around ten times smaller than the central area of the *oppidum*.

The identification of what Boon termed the Inner Earthwork led to excavations by him between 1954 and 1957 (Boon 1969; Boon 1974). Boon excavated trenches at points around the earthwork: B and K within the north-eastern quadrant, A on the north-western section outside the town walls, and H and J to the south of the South Gate (Boon 1969, 4-5). Traces of a hut and a rubbish pit were uncovered below the Inner Earthwork in trench J to the south of the South Gate in the Roman town walls. The pottery assemblage was dated by Boon to after c AD 25 due to the presence of pedestal urns (Boon 1969, 14; 1974, 42), but the date has been taken back earlier through re-examinations of the material, suggesting an earlier date of construction, to an Augustan date by Corney (1984, 251) and to the late 1st century BC or early 1st century AD by Timby (in Fulford & Timby 2000, 308).

Trench K was excavated in order to determine the hypothesised existence of an eastern entrance through the earthwork, in line with the entrance observed to the west on aerial photographs, but no trace of such a feature could be found (Boon 1969). Fluxgate gradiometry survey identified the course of the Inner Earthwork in this area, but no entrance was evident (Creighton with Fry 2016, 307). Dating evidence recovered from trench B in the north-east section indicated that the ditch infilling began in the Claudio-Neronian period, but no date of construction could be determined (Boon 1969, 6).

Excavations by the University of Reading on the public baths in 2018-19 uncovered part of the east section of the Inner Earthwork. The ditch was bottomed at a depth of 4.8 m below the current

ground surface. Claudio-Neronian pottery (c AD 40-60) and building rubble from the baths was discovered in the primary fills, providing a *terminus post quem* for the construction of the earthwork (Fulford *et al* 2019, 10-11). The pottery recovered by Boon from below the earthwork suggests a date of construction of after c 10 BC, but could it be up to 50 years later, which would bring it in line with the date of the pottery from the primary fills of the ditch?

The central settlement - Outer Earthwork

Both the overall plan and the date of construction of the Outer Earthwork have been disputed by antiquarians and more recent researchers. As discussed above, this earthwork has either been depicted as a continuous circuit around the core of *Calleva*, with projections of its hypothesised course being made, particularly on the eastern side, or as several sections of earthworks extending around the western and northern sides. From the remains that can be traced on aerial photographs, lidar and geophysics, it does not appear to be a complete circuit and is best preserved on the western side in the areas of Sandy's Lands and Rampier Copse and possibly merges with the Inner Earthwork to the east of the latter, at the south-west corner of the settlement (Bayer 2019, 40).

The final season of excavations by the Society of Antiquaries at Silchester in 1909 focused on the defences of the Roman town. They concluded that there were no definite remains of the Outer Earthwork on the eastern side of the town unless it "coincided with the Roman line of defence" (Hope & Stephenson 1910, 37). Excavations were carried out on the standing earthworks at Sandy's Lands and Rampier Copse. The former returned no dating evidence, but pottery was recovered from what appeared to be a primary context from the latter. The pottery was assumed to be of British manufacture but is described only as showing "British influence from the cordons and profiles and was probably of the first century". The assemblage also included a possible 3rd century AD sherd (*ibid,* 326). Karslake's excavations at Rampier Copse in 1900 had identified Roman cremation burials interred in the bank of the earthwork (in Hope & Stephenson 1910, 330) and pottery associated with them gives a *terminus ante quem* of late 1st century to 2nd century AD (Fulford 1984, 79). The Antiquaries concluded from these findings that "it may therefore be taken for granted that the outer earthworks are in all probability pre-Roman" (Hope & Stephenson 1910, 319).

In 1938-39 Mrs Cotton carried out excavations on the Outer Earthwork, also at Sandy's Lands and Rampier Copse. No material was recovered from a primary context which could provide a construction date for the earthwork at Sandy's Lands, but the structure of the mound was recorded; a primary mound of dirty gravel surmounted by a layer of clean gravel, followed by a number of tips

of peaty turf and mixed gravel and evidence for a possible dry stone wall revetment (Cotton 1947, 137).

Cotton's excavations at Rampier Copse in 1939 focused on the curved portion of the main earthwork, with her only trench, cut into the tail of the bank. She uncovered a hearth which sealed a hollow which contained pottery, which she interpreted as a bivouac used by the builders of the earthwork. The presence of red brick of a Roman appearance in what Cotton interpreted as the primary build of the bank suggested to her that it had been constructed in the post-conquest period, but "in a native tradition rather than a Roman, and it would therefore seem that it must have been erected by a collective of native peoples under the direct stimulus of Roman leadership" (Cotton 1947, 140). Boon made a comparison of Cotton's sections and those from the 1909 excavation and concluded that her excavation had been made into a secondary earthwork and therefore the post-conquest date of construction was incorrect (Boon 1969, 17). Fulford re-examined the pottery collected from Cotton's excavations and the context from which it came and concluded that it probably came from one of a number of quarry pits in the area which had then been sealed by material which had eroded from the back of the bank and therefore, that the post-conquest date was not secure (Fulford 1984, 80).

Excavations were carried out on the Outer Earthwork by Fulford in 1978 to investigate its hypothesised eastern and southern course and to identify the southern end of the Sandy's Lands earthwork. A trench located on the north-western side at the southern end of the Sandy's Lands standing bank revealed a shallow, wide-bottomed trench measuring up to 1 m in depth (Fulford 1984, 82). This compares with the depth of 3 m excavated by the Society of Antiquaries in 1909. Fulford suggested that the shallowness of the ditch at this point and the lack of a standing earthwork between the southern end of Sandy's Lands and Rampier Copse pointed to the earthwork not having been completed (*ibid*). The results of a programme of fieldwalking conducted by Corney in the extra-mural area found Roman material to be abundant in the fields immediately outside the town wall and, putting that information together with the lack of finds recovered from excavations into the Sandy's Lands earthwork, and particularly from underneath the rampart, Fulford concluded that it was probably constructed in the pre-Roman period, and long before the late 1st century AD when the street grid was laid out in the town (*ibid*, 83).

Creighton and Fry suggest that a later date of construction is appropriate, following a reappraisal of Cotton's 1938-39 research and geophysical survey carried out as part of the Silchester Mapping Project. Cotton claimed to have traced the Roman street grid beyond the town walls into Rye Meadow and found that the northernmost of the east-west roads followed a straight route, then

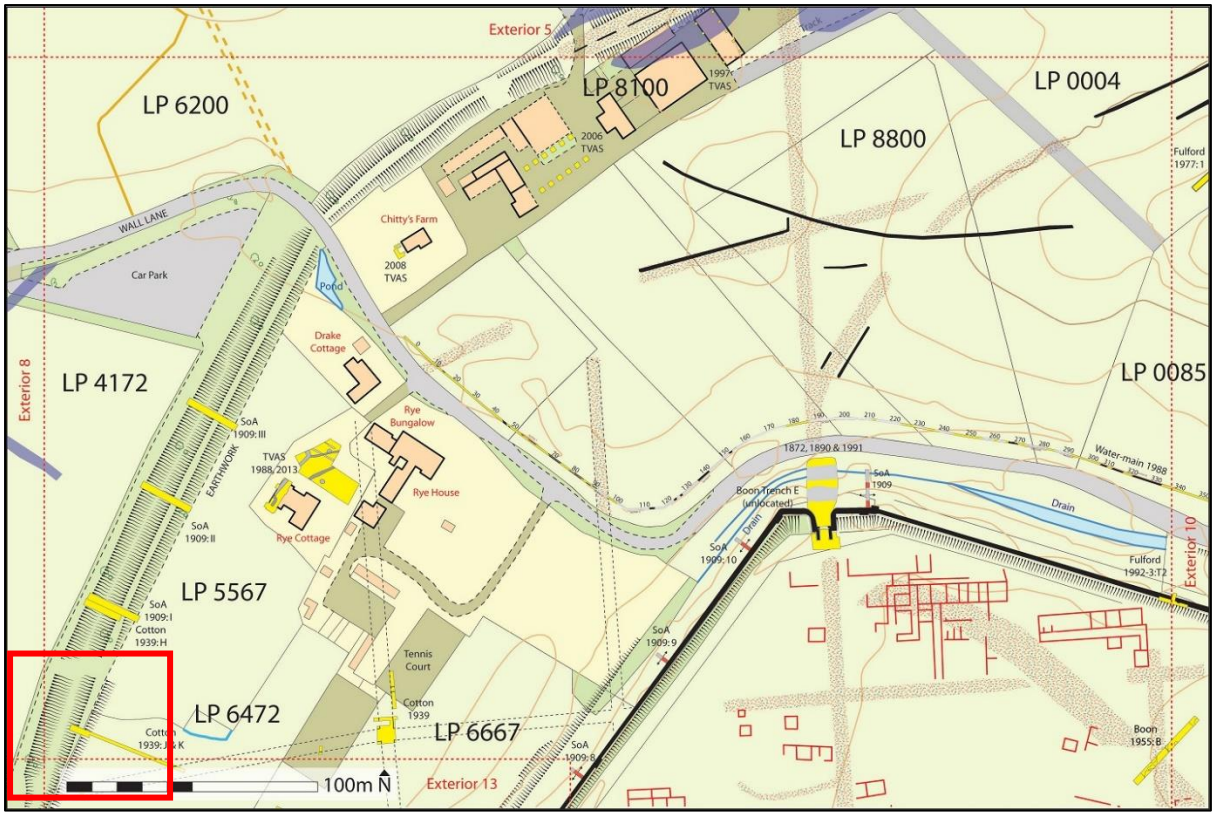


Figure 4.19 Projection of street grid by Cotton in Exterior 9. Area where road is projected in red box (Creighton with Fry 2016, Fig 6.26) Archaeology Data Service (distributor) (doi.10.5284/1038434)

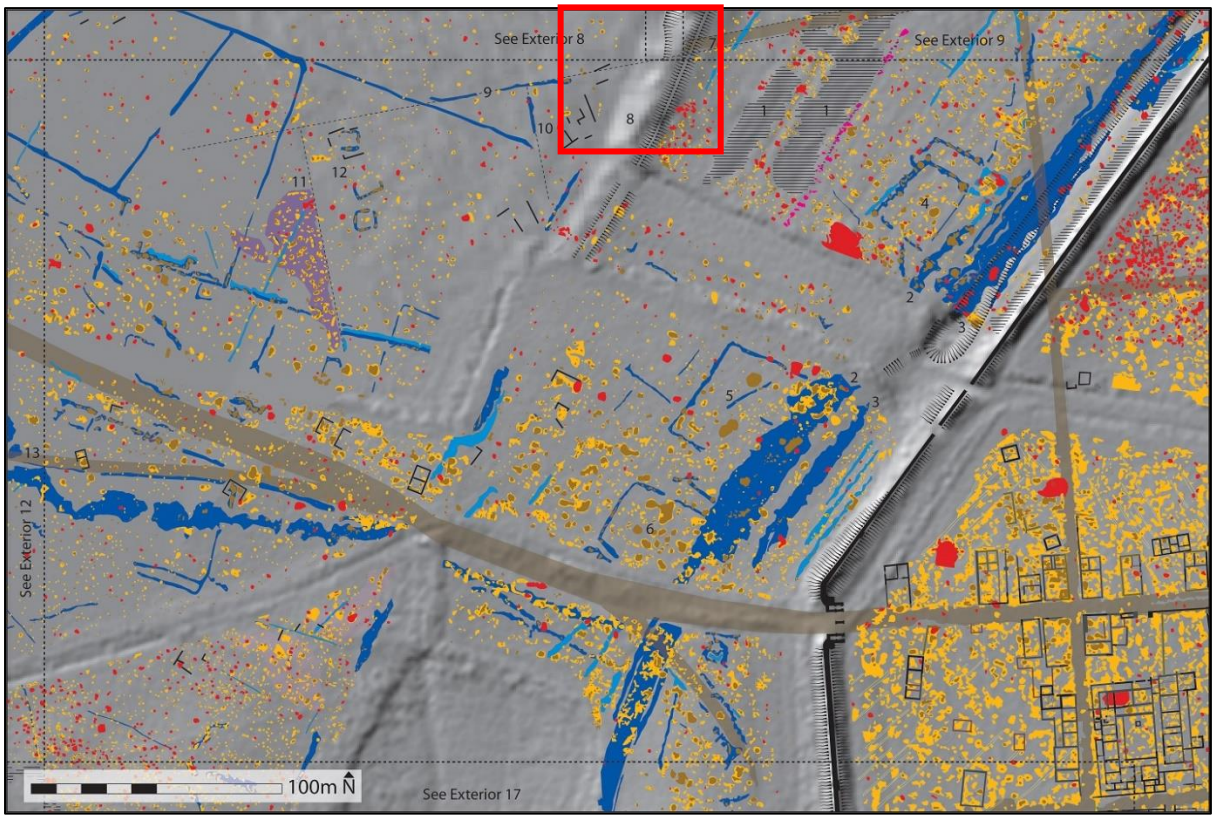


Figure 4.20 Geophysical survey results in Exterior 9. Area where road is projected in red box. (Creighton with Fry 2016, Fig 6.40) Archaeology Data Service (distributor) (doi.10.5284/1038434)

dipped slightly to the south reaching the Sandy's Lands earthwork, but not appearing to terminate, at the point where it begins to narrow at its southern end (Creighton with Fry 2016, 193, Fig 6.26 and below Figure 4.19). A faint linear feature was identified during Creighton and Fry's survey, on the same alignment as the road and on the western side of the Sandy's Lands bank, which they interpreted as being the side ditch to a street, suggesting that it might have continued from Rye Meadow where it was identified by Cotton. Therefore, they inferred that it was laid out before the bank was constructed and interpreted the Sandy's Lands earthwork as being a Roman construction (*ibid*, 314, Fig 6.40 and see Figure 4.20).

However, within her excavated area, Cotton describes the street as terminating at the Outer Earthwork which she suggests was the boundary of the original road scheme. She states that the streets are poorly metalled, showing little sign of use or repair, and *lacking* the side ditches identified adjacent to the roads within the walled area. She suggests that it was possibly an ambitious plan for the expansion of the town that never came to fruition (Cotton 1947, 135). Cotton also states that the regularity of the Roman street plan within the walled area suggests that it was laid out by a surveyor "who planned it as a whole" but offers no explanation for the southward-turning route she traces for the street in Rye Meadow which diverges from the overall plan (*ibid*). It is possible, therefore, that the linear feature identified on Creighton and Fry's geophysical survey is a boundary or trackway which may either predate the Outer Earthwork, or, be Roman in date, but laid out beyond the Sandy's Lands earthwork.

The exterior earthworks were thought to be continuous by the Society of Antiquaries excavators, and the lack of evidence for them on the eastern side was explained as "possibly through their coinciding with the Roman line of defence" (Hope & Stephenson 1910, 317). The belief in the continuous nature of the Outer Earthwork is one reflected in other surveys following this period of excavation. Williams-Freeman's survey in his 1915 publication describes the Outer Earthworks as being of 'British' appearance, encircling the Roman city and lying at a distance "in most places, about 100 yards (91.44 m) outside its walls" (Williams-Freeman 1915, 318). In a somewhat contradictory manner, he first maintains that "the entire circuit can be easily traced", but then states that beyond Church Lane on the southern side of the town "it is not discernible, and probably turned with the road, merging here with the line of the Roman wall" (*ibid*, 319). This view that the Outer Earthwork follows a complete route around the settlement is also accepted by Cotton (1949, 122) and Boon (1974, 38ff, Fig 5).

The nucleated settlement interior

Considerable information has been added to the picture of life within the central settlement of the territorial *oppidum* by the open area excavations at the sites of the forum-basilica (Fulford and Timby 2000) and Insula IX (Fulford *et al* 2018). The total area of the two excavations is *c* 0.4 ha or 1.2 per cent of the whole area (*ibid*, 4). The settlement appears to have expanded fairly rapidly as demonstrated by the decline in the proportion of arboreal pollen recorded in the pollen sequence in wells F762 and F718/19 in the Forum/Basilica site and the increase in non-arboreal species, including the pollen of grass and pasture plants. This indicates the transition from a wooded to a largely open landscape. (Wooders and Keith-Lucas in Fulford and Timby 2000, 523). Evidence of the links that the people who lived here had with continental Europe, particularly northern France are evident in the range of imported goods and foodstuffs identified. As Fulford points out there "appears to be a real congruence between the arrival of imports and the physical development of these settlements" (Fulford in Fulford and Timby 2000, 546). The large size and planned nature of Calleva are not the only features that make it distinctive in comparison to other settlements of the same period. Fulford has noted the similarity in artefact assemblages with other sites also identified as *oppida*, including Camulodunum, Verlamion and Braughing-Puckeridge (*ibid*, 546). The largest part of that assemblage, pottery, recovered from both the forum basilica and Insula IX demonstrate the trading links between the settlement and continental Europe, consisting of transport amphorae, table ware and domestic ware. (*ibid*, 549). The pottery from both excavated areas contains a high proportion of imported fine wares, with great typological variety. Imports came from Italy, South, Central and North Gaul and include Italian and provincial sigillata, South Gaulish samian and Gallo-Belgic *terra nigra* and *terra rubra* (Timby in Fulford *et al* 2018, 203). The high incidence of imported ceramics demonstrates the importance of Calleva as "a major commercial centre" (Timby in Fulford and Timby 2000, 305) and suggests that trade was probably "a major, if not the major, non-domestic activity at Calleva" (Fulford *b* in Fulford *et al,* 2018, 379).

The numerous *amphorae* sherds from both sites provide evidence of the importation of wine, olive oil, and other foodstuffs (*ibid*, 379) with a far greater incidence at the forum basilica site if the numbers are adjusted to account for the smaller size of the excavated area. Overall, the forum basilica assemblage is earlier in date and shows a greater preference for wine, whereas the emphasis is for olive oil in Insula IX, which may reflect the chronological difference in the amphora types present (Timby in Fulford *et al* 2018, 207), or might suggest a more domestic character to the settlement at Insula IX. The presence of olives and seeds of celery, coriander and dill, associated with the flavouring of food in the Roman diet, suggest a population with close ties to the continent. The use of these condiments at Calleva may be part of a wider pattern of adoption of elements of the

Roman diet which has been observed at Late Iron Age sites including *oppida*, across north-western Europe (Lodwick 2014, 547).

Cereals or seed corn also appear to have been included among the imports, suggested by the presence of a weed, *Agrostemma githago*, which is associated with arable crops of Mediterranean origin (Fulford in Fulford and Timby 2000, 551). However, a degree of local cultivation is also indicated by the charred plant remains from Insula IX. Analysis of cereal processing debris points to a low level of arable farming was being carried out in the vicinity of Calleva: arable weed seeds found together with spelt wheat crop-processing waste indicate that cultivation was likely to have been carried out on the slightly acidic soils associated with the gravel plateau (Lodwick in Fulford *et al* 2018, 308). This suggested low density farming accords with the limited evidence for field systems that can be identified from cropmarks in the area around Calleva (Truscoe 2018).

Over half of the faunal assemblage from Insula IX and the forum basilica consists of cattle, followed in popularity by sheep and pig. Unlike pigs, sheep and cattle were slaughtered when mature, at an age between two and four years, suggesting that they were reared elsewhere and then brought into the settlement for consumption following their use for other by-products, such as their milk, traction or fleece (Ingrem with Clark in Fulford *et al* 2018, 270). This may demonstrate trading links between Calleva and farms in the locality or indicate the year-round occupation of many of the inhabitants, for whom trading only occurred on a seasonal basis (Fulford in Fulford *et al* 2018, 380). The level of consumption within the central area of the settlement appears to have been higher (*ibid*, 382) which may have implications for the social structure of Calleva.

While local connections with other groups might have been evidenced by the presence of mature animals, other artefacts point to links with other regions of Britain and add to the picture of Calleva as a trading centre: oysters are also being consumed, particularly in the forum basilica area, demonstrating further importation from other regions, possibly also associated with the salt trade (Fulford in Fulford and Timby 2000, 551); greensand querns from Lodsworth (West Sussex); and Kimmeridge shale from Isle of Purbeck (Dorset) (Fulford in Fulford *et al* 2018, 379). Coins from both areas show links to East, West and South-West Britain, the East Midlands and Kent. The composition of the coin assemblage at the forum basilica showed an emphasis on links with eastern regions, with issues from Catuvellaunian, Trinovantian and Cantian sources (Fulford in Fulford and Timby 2000, 551). The coins from Insula IX include issues of rulers in the Eastern region, Tasciovanus and Cunobelin, but also from Western and South Western Britain. An Eppillus minim and two Verica minims were also recovered from Insula IX, both thought to have been minted at Silchester in around 20 BC – AD 10 and AD 10-40 respectively (Haselgrove in Fulford *et al* 2018, 81).

While trading may have been the dominant occupation within the *oppidum* there is also evidence for metal-working, including the manufacture of coins and horse gear, and textile production. As seen with the extent of local arable cultivation, the production of horse gear, brooches and other person items also appears to be carried out on a relatively small scale, possibly sufficient only to meet local demand (Fulford in Fulford and Timby 2000, 561). Metal-working may have been carried out by itinerant smiths, possibly working on a seasonal basis (Fulford in Fulford *et al* 2018, 380). No direct evidence for coin production was found in either area, but pellet moulds used for the production of coin blanks were distributed widely across the forum basilica and Insula IX sites (Northover and Palk in Fulford and Timby 2000, 413; Allen in Fulford *et al* 2018, 256) and crucibles were numerous at the forum basilica site (Fulford in Fulford and Timby 2000, 561). This widespread distribution is similar to that seen at Camulodunum (Sheepen) and Ford Bridge, Puckeridge (Landon 2016, 183). Allen interpreted the Silchester distribution as evidence that manufacturing of coin blanks was possibly undertaken by many people within a settlement, before passing to a centralised, more controlled, coin production location (Allen in Fulford *et al* 2018, 257).

Textile production is indicated by the frequent incidence of pottery spindlewhorls from both Insula IX and the forum basilica, suggesting that spinning wool was an important activity in Late Iron Age Calleva, supported by the evidence of mature sheep in the faunal assemblage. Flax was also present in Insula IX and may have been used in cloth production (Fulford in Fulford *et al* 2018, 381).

Street layout and structures

Two phases of Late Iron Age occupation were identified in both the forum basilica and Insula IX excavations: Periods 1 and 2 at the former, corresponding to Period 0 at the latter, spanning the period from *c.* 10 BC to *c.* AD 45-50 (Fulford *et al* 2018, 7). The earliest phase of settlement at the forum basilica was thought to have consisted of round houses and wells. However, the round houses were only partially defined, the most complete comprising a curving drip gully, possibly representing half of a building. This building was adjacent to a rectangular structure, and it was unclear whether the roundhouse predated the other building or was contemporary with it (Fulford in Fulford and Timby 2000, 545).

This was followed by the development of a planned layout, Period 2, consisting initially of two bands of natural gravel, oriented north-west, south-east and north-east, south-west, associated with several subsidiary divisions and possible rectangular buildings. The southern street was then given a metalled surface and an area was enclosed with a palisade. Numerous rubbish pits or scoops were also associated with this later period of occupation. Imported pottery is associated with the earliest

deposits identified; sherds of Dressel 1 and 2-4 amphorae were recovered from the lowest excavated fills of wells F423 and F762 and also from the curving drip gully, but no imported finewares were found alongside them. The fills of the assumed later contexts, construction slots associated with rectangular buildings, produced Gaulish finewares and imported amphorae, including Dressel 2-4 and 20. This suggests a sequence of occupation beginning in the last two decades of the first century BC (*ibid,* 546). The coin evidence supports this date; the absence of inscribed issues of Commios or Tincomarus from either the forum basilica site or the immediate area suggests that the nucleated settlement originated in the period after *c.* 25 BC and possibly from as late as *c.* 15 BC (*ibid*).

Three phases of pre-conquest occupation were identified on the Insula IX site. The earliest phase consisted of a north-west, south-east aligned ditch (Ditch 11631) and isolated pits and post holes. Ditch 11631 appears to have been filled in after c 10 BC. The second phase saw the laying out of two trackways: Trackway 1 overlying Ditch 11631 and following a different north-west, south-east alignment and Trackway 2 lying perpendicular to it. The alignment of Trackway 1 was found to match up with the northernmost of the two streets in the forum basilica area and it seems likely that they form part of the same planned layout (Fulford in Fulford *et al* 2018, 13; Fig 2, and see Figure 4.21). The footprints of possible small rectangular buildings are suggested by post hole clusters found across the excavated area (*ibid*, 377).

A large rectangular building (Structure 9) is located next to Trackway 1 and appears to have been in use up until the mid-40s AD. The third phase of occupation consists of the replacement of Structure 9 by a new rectangular building, Structure 10, which may be post-conquest in date. These rectangular buildings have been interpreted as being halls and they are significantly larger than any other buildings around them. Structure 9 covered an area of approximately 350 square metres and Structure 10 measured around 280 square metres. This compares with the best surviving of the smaller buildings, Structure 15, which measured around 25 square metres. The halls appeared to be located within a compound, similar to an area identified on the forum basilica site defined on its north-east and south-east sides by trackways (Fulford in Fulford *et al* 2018, 377-378). The overall impression is of a less formal, arrangement of round houses located in an initial focus in the centre of the gravel promontory, the forum basilica area, gradually expanding to a more permanent planned settlement bounded by the Inner Earthwork. Haselgrove's assessment of the coin data illustrates this; he identified that coin numbers were highest in coin phase 7 (c 20 BC – AD 10) on the Forum-Basilica site, while the peak occurs later on the Insula IX site, in phase 8 (c AD 10-40) (Haselgrove in Fulford *et al* 2018, 84).

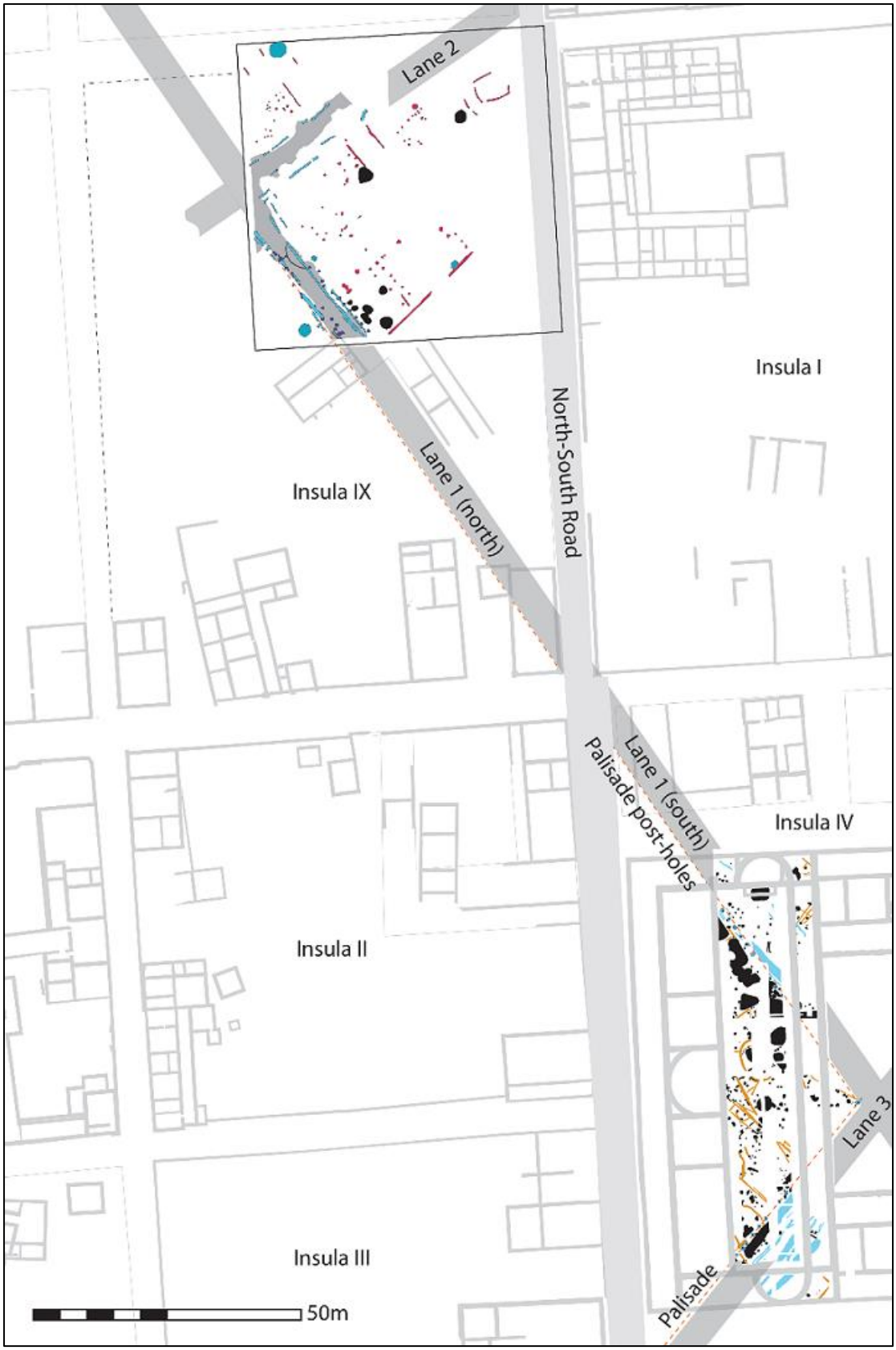


Figure 4.21 Late Iron Age evidence from the Forum-Basilica and Insula IX excavations showing Lane 1 potentially connecting the two areas. (Source: Creighton with Fry 2016, Fig 11.1) Archaeology Data Service (distributor) (doi.10.5284/1038434)

Discussion

The pattern of settlement that can be observed in the landscape of the central settlement at Silchester and surrounding linear earthworks is one of dispersed settlements, with evidence of both continuity and abandonment (see Figure 4.22). Locations of Middle Iron Age settlement do not always continue into the Late Iron Age; continuity of occupation has been demonstrated at Simm's Copse and the southern enclosure in Pamber Forest, but the two settlements to the north have only a Middle Iron Age phase of use. Undated settlements identified by the author, in addition to those targeted for excavation and subsequently dated, suggest that the central settlement of Calleva was created in a landscape which was relatively well-populated, but not intensively occupied, both prior to its establishment in the Middle to Late Iron Age, and during the period that it was occupied in the latter part of the Late Iron Age. The distribution of Iron Age coins as found through excavation and from reports to the Celtic Coin Index, Portable Antiquities Scheme and Historic Environment Records, shows a concentration within and around the central settlement and another, although composed of smaller numbers, to the west of Grim's Bank. A total of 73 coins have been found within the central settlement comprising Gaulish and Belgic imports and issues from the following regions of Britain: South, South East, South West, East, North East (Celtic Coin Index). A hoard of coins found to the north of Grim's Bank consisted of 11 coins, of which eight were Southern British gold staters and three were Gallo-Belgic gold staters, with a date range of *c.* AD60-AD20 (Portable Antiquities Scheme).

The radiocarbon dates obtained for both the Silchester Environs Project and the Insula IX excavations (shown in Figure 4.23) demonstrate that there are few features which have been investigated in the landscape around the Calleva that are contemporary with it (Barnett & Fulford in prep). The Middle Iron Age dates of construction obtained for two of the linear earthworks are particularly interesting, since these features are the reason that the site is described as a territorial *oppidum.* It is probable that the linear earthworks were constructed over a long period of time and at least one, the Wood Farm section of the Oldhouse Lane dyke has been found to have a phase contemporary with the *oppidum*. However, each individual earthwork was probably also formed in a number of phases. While the date of construction of all features in the Silchester landscape is not known, the additional dating information, and discovery of sites, provided by these recent investigations suggests that a different sequence of development to those previously outlined might be proposed.

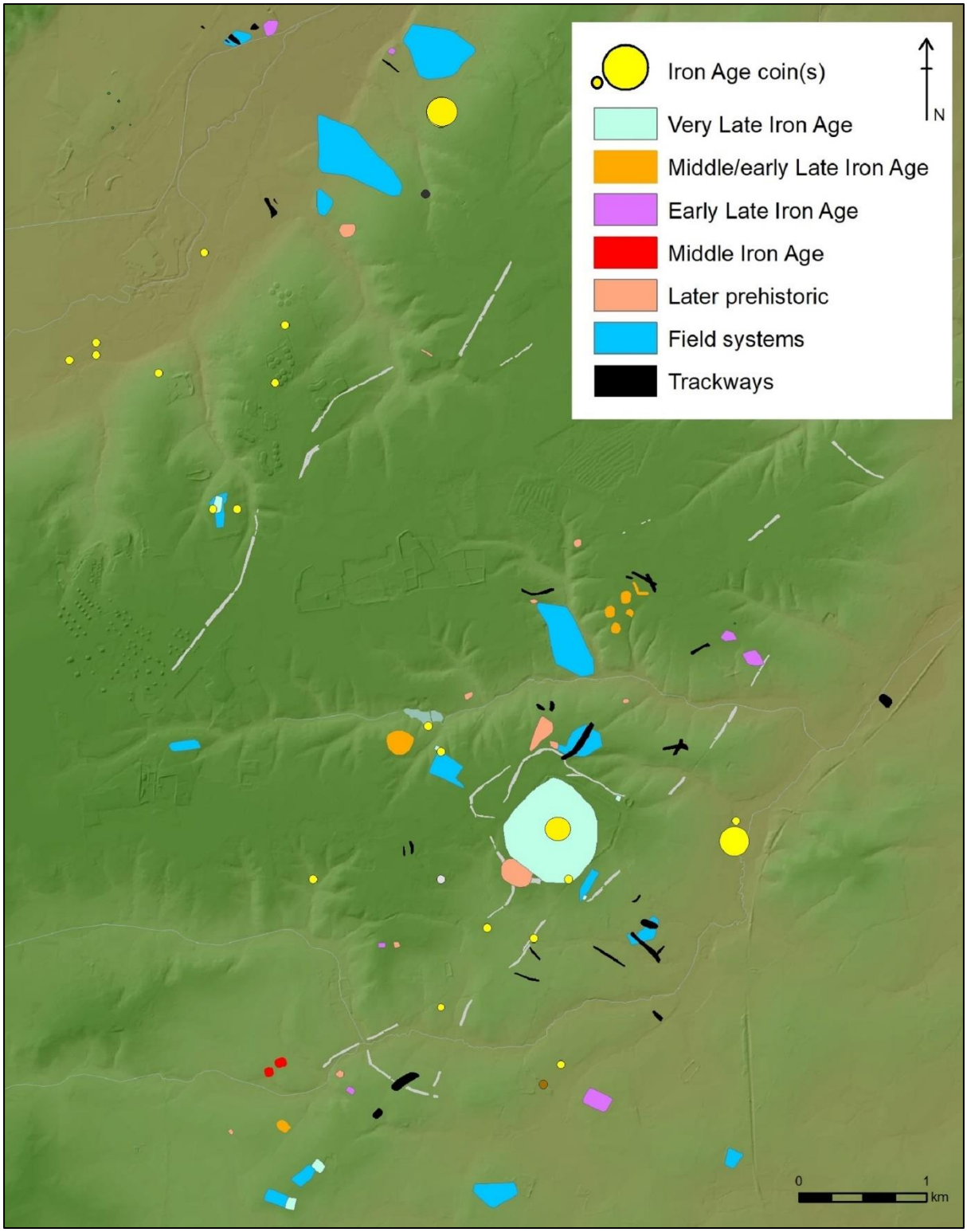


Figure 4.22 The distribution of Iron Age coins against the pattern of settlement in the Silchester landscape derived from aerial photographs and lidar, and excavated evidence. Sources of coin data: Celtic Coin Index, PAS, Hampshire HER, West Berkshire HER. Background map created from OS Terrain 5 © Crown copyright and database rights 2021 Ordnance Survey (100025252)

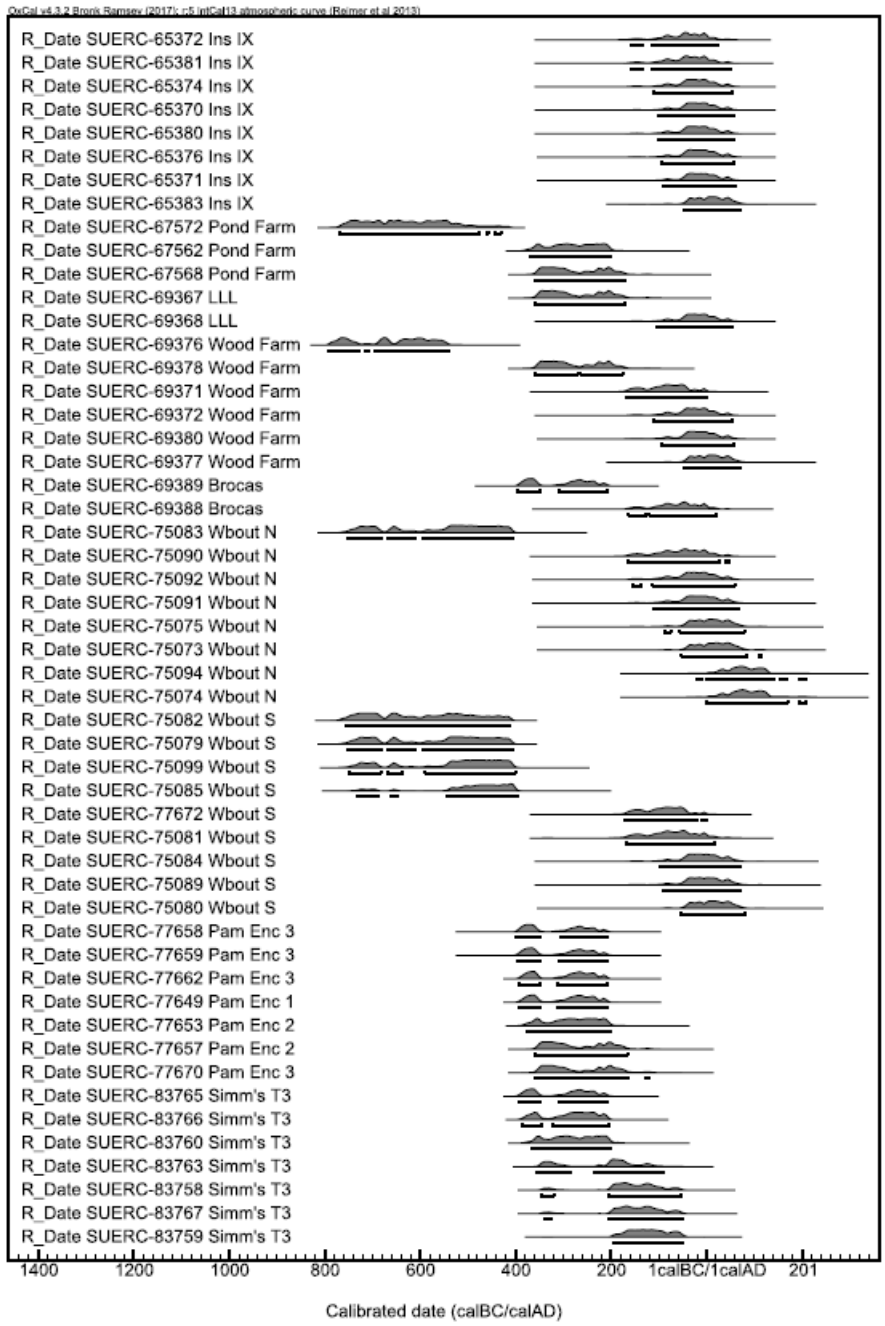


Figure 4.23 All Iron Age radiocarbon dates including Insula IX (Barnett & Fulford in prep)

The apparent decline in the earlier settlements indicated by the radiocarbon dates does not necessarily mean that the landscape around the *oppidum* remained devoid of habitation. The creation of rectilinear enclosures that span Late Iron Age II and the early Roman period suggests that a pattern of dispersed farms continued, although the population of these sites may have been associated with Calleva. Fulford has suggested that farming was probably the year-round occupation of many of the inhabitants (Fulford in Fulford *et al* 2018, 376) and they may have moved between the central settlement and these possible farmsteads as circumstances required.

Various sequences of development of the earthworks associated with the *oppidum* on the Silchester promontory have been proposed over the years based on the available knowledge at the time. Boon proposed a trajectory of development which begins with the suggested enclosure at Rampier Copse standing alone on the gravel promontory, a period when the area is suggested as being initially under the control of Tincomarus and ending at his expulsion. This phase is followed by the construction of the Dicker's Farm Dyke which extends from the earlier earthwork, a period Boon associates with the control of the area by Eppillus and possibly Verica. The next phase in his sequence is the construction of the Oldhouse Lane Dyke in a period where Calleva is under the Catuvellaunian control, followed by the building of the Inner Earthwork when Calleva has passed back to control of the Atrebates under Cogidubnus. Boon then sees the creation of what he terms the 'Primary Outer Earthwork' under Cogidubnus, surrounding the Inner defensive ring and incorporating the Rampier Copse enclosure, expanding the settlement at the end of the Late Iron Age and early post-conquest period (Boon 1974, 38-46).

Creighton hypothesised a new model for the sequence of development looking at a slightly larger landscape. Creighton developed his theory following his extensive campaign of geophysical survey (with Fry), examination of Environment Agency lidar, and reconsideration of the evidence from previous excavations and surveys. He incorporated the results of the aerial survey carried out by the RCHME (Bewley & Fulford 1996) and interpretations by Corney (in Fulford 1984), but not the Cornwall Council assessment of the area which included more recent Historic England (then English Heritage) photography (Young 2008). He also sees the Rampier Copse enclosure as being part of the first stage of settlement on the promontory, but as part of a group of enclosures situated in prominent locations on the gravel terrace edge. Rampier Copse is the most easterly of these earthworks, with The Frith, or Pond Farm, to the north-west and the spur cut off from the plateau by the Flex Ditch to the south-west. While a Late Iron Age settlement enclosure has been excavated on the spur delineated by the Flex Ditch, no evidence of occupation has been identified within Rampier Copse or Pond Farm. Creighton concluded that the earliest evidence for Iron Age activity within the area was "a series of non-settlement enclosures on the terrace edge, possibly from the Mid- to Late Iron Age" (Creighton with Fry 2016, 322-325). While further information can be added from more recent surveys on features in the wider landscape, Creighton's theory that the enclosures were not intended for permanent settlement, but had some other use, concurs with the suggestion by Fulford that the earliest use of the promontory might have been seasonal in nature, possibly associated with trading and other activities (Fulford in Fulford *et al* 2018, 375-6; 384).

Creighton's second phase comprises the construction of the Inner Earthwork, possibly in the late first century BC. The relationship with the Rampier Copse enclosure is unclear; it may have had a

connection with the new earthwork or have existed alongside it. Several possible Late Iron Age or Early Roman burial enclosures are created on the north-western side of the Inner Earthwork, (Creighton with Fry 2016, 325), although their function is unclear, and these may be features truncated by the Inner Earthwork. This is the extent of the features that Creighton ascribes to the pre-conquest period. The creation of the north-east extension, which extends from a point to the east of the North Gate towards the amphitheatre, and the infilling of the north-eastern section of the Inner Earthwork, are the earliest post-conquest additions. This is followed by the extension of the town street grid and the creation of the outer earthwork (*ibid,* 325, 327). However, the features found through geophysical survey have no dating evidence as yet.

An amended sequence of development of the landscape based on the most recently available scientific dates, where possible, might be as follows:

- Middle Iron Age: The possible enclosure at Rampier Copse may have been constructed; the enclosures in Simm's Copse and Pamber Forest are created; the Brocas Lands and Bridle's Copse linear dykes are constructed and possibly also the Flex Ditch.

- Middle Iron Age to Late Iron Age I: the paired enclosures in Pamber Forest go out of use, but occupation continues in the southern enclosure and the Simm's Copse enclosures; Windabout Farm, where Early Iron Age activity has been identified, is reoccupied; The Frith is constructed but not permanently occupied; Little London Road settlement is constructed on the promontory of land cut off by the Flex Ditch.

- Late Iron Age I: the Dicker's Farm Dyke is added to the south of the Rampier Copse enclosure; the Oldhouse Lane dyke is constructed; at least Grim's Dyke I and possibly II is constructed and other undated linear dykes are possibly also laid out at this time, although they may also be Middle Iron Age in date (Byes Lane, Stephen's Firs, the possible dykes on the Recreation Ground, Mortimer and at Headlands Farm); the Wood Farm dyke is constructed.

- Late Iron Age II: Creation of the *oppidum*. The Inner Earthwork is constructed and new roads and building compounds are developed; creation of the possible mortuary enclosures against the exterior of the Inner Earthwork, north-west quadrant; the mortuary enclosure containing the chambered cremation burial to the north of the farm at Windabout Copse is constructed; the Sandy's Land earthwork may have been created and the Rampier Copse earthwork modified and extended.

While phasing of the linear dykes is necessarily limited by the available evidence, the dykes for which we have a Middle Iron Age date of construction are located on the south-west and north-east of the gravel promontory. The course of the Brocas Lands earthwork, oriented north-east, south-west, may have been created with the purpose of directing, or limiting, movement towards the promontory. Moore has suggested that the Iron Age dyke system at Bagendon, Gloucestershire, was designed to control the movement of people through the landscape, funnelling people towards particular focal points and defining areas of landscape (Moore 2012, 410), although it unclear whether a similar situation existed at Silchester; the suggestion that the Brocas Lands dyke had a definite association with the Late Iron Age settlement on the promontory is open to question. Haselgrove has suggested that there may have been an earlier focus of settlement in the Silchester area, as a possible explanation for the source of early imported Gaulish coins found here (Haselgrove in Fulford *et al* 2018, 91) and it is possible that some of the linear earthworks might have been associated with a precursor to Calleva, should it exist, or may be earlier territorial boundaries relating to the wider landscape.

The Oldhouse Lane dyke, which has a Late Iron Age date of construction, extends from the southern side of the promontory on a similar alignment to the Brocas Lands dyke. Grim's Dyke, Byes Lane Dyke and the Dicker's Farm Dyke also follow this alignment. If Sandy's Lands and the modified Rampier Copse were envisaged as being part of the same earthwork, it may have followed a curving route around one side of the *oppidum* in the manner of the Heath Farm Dyke and Sheepen Dyke at *Camulodunum*.

Fulford has proposed a model of seasonal use of the gravel promontory beginning around 20/10 BC and gradually became more permanent, although not necessarily with a particularly large population. Settlement of what appears to have been a peripheral area begins around 10 BC coinciding with "a distinct import horizon marked by the appearance of types of imported arretine" (Fulford in Fulford *et al* 2018, 384). He suggests that the development of the *oppidum* is not the end result of a gradual process of centralisation, a model that has been put forward by Cunliffe (1978: 286; 2005: 406), but that this distinctive community represents "a deliberate implantation, an imposed centralisation of power in order to take control of territory from which to procure the resources required by Rome across the Channel" (Fulford in Fulford *et al* 2018, 384). The suggested nature of the settlement as a trading hub and the continental influences seen in diet and tableware would appear to support this. The dating evidence provided by the Silchester Environs Project points to Calleva being a late development in the Late Iron Age in a period when many other settlements appear to be going out of use. The ground may have been laid for the *oppidum* in seasonal use of gravel promontory prior to its development, possibly in unenclosed settlement and associated with

the earlier linear earthworks. There may have been interaction with the existing population of this area, possibly including the embanked settlements at Simm's Copse and Pamber Forest, and Bullsdown hillfort. The landscape prior to the development of Calleva has been shown to have a greater proportion of tree-covered areas and appears to have consisted of dispersed farms, the most obvious of which in the archaeological record are contained within embanked oval or sub-circular enclosures.

The major change in the landscape on the gravel promontory comes with the development of the *oppidum* which involves large-scale tree clearance and the creation and modification of extensive earthworks, including the huge bank and ditch around the settlement itself and outlying linear earthworks. The location of the site has been a matter for discussion by previous researchers. The apparently poor soils and distance from the connections provided by the Thames Valley led Cunliffe to suggest that the site may have been deliberately chosen as being in a neutral zone at the edges of established territories (Cunliffe 2012,15). Creighton concurs with the view that the *oppidum* appears to lie in a liminal location, suggesting that it was between the Iron Age Southern and Eastern kingdoms, alternating in control between the two (Creighton with Fry 2016, 355). The decline seen in earlier settlements in the area, possibly including the hillfort at Bullsdown, might accord with Sharples' suggested reconfiguration of the power relationships between hillfort populations and peripheral settlements in Hampshire and Sussex. He suggests a connection between the rise in significance of the use of coinage and increase in wealth and importance of peripheral communities during the period of the Gallic Wars. These communities consisted of artisans and traders producing materials which were exchanged with hillfort groups. Gradually the power relationships are reversed, and the chalk downland communities become the suppliers of agricultural produce to the newly important settlements and find themselves on the periphery (Sharples 2010, 173).

Coins originating from the southern and eastern regions, but also from the west, south-west and south-east, have been found at Silchester, which may represent regional trading links, suggesting that Calleva had influence over an extensive area (Haselgrove in Fulford *et al* 2018, 83-4). Evidence suggests that the settlement originated in 20-10 BC (Fulford in Fulford and Timby 2000, 560) and in his assessment of the evidence Boon posited a sequence of occupation of the site by different groups, beginning with the central southern group the Atrebates (Boon 1974, 38). Coins of Eppillus, a leader of the Atrebates, bear the CALLE/CALLEV mint mark suggesting that he was based here (Haselgrove in Fulford *et al* 2018, 81; Fulford in Fulford & Timby 2000, 560). Coins of Atrebatic leaders Tincomarus and Verica were found at the forum basilica site, but also issues of Eastern kingdom figures Tasciovanus and Cunobelin (Boon 2000, 165; Haselgrove in Fulford *et al* 2018, 89). A significant antiquarian find was a plated silver issue of Epaticcus, brother of Cunobelin, who may

have taken over this region from Verica before it possibly passed into the hands of Caratacus (Boon 2000, 165) Verica sought help from Rome in c AD 40, but it is unclear whether the Atrebatic leaders retained control of the settlement up until that point (Fulford in Fulford and Timby 2000, 560).

This chapter has combined a review of previous research into the landscape around Silchester with information from the author's survey of aerial photographs and lidar, and the ongoing results from the Silchester Environs Project. The scientific dates provided through that project have enabled the formulation of a new sequence of landscape development and provided further excavated examples of sites with which to compare those identified through remote sensing. The discovery that sections of the linear dykes had construction dates in the Middle Iron Age may be evidence of earlier organisation of the landscape. These earthworks may have retained their significance into the latter part of the Late Iron Age when the central settlement came into being. The identification of areas of field systems and settlements of possible Late Iron Age date in the author's survey related to excavated examples, suggest a pattern of occupation in the environs of the central settlement and contemporary with it.

5 The Chichester Territorial *Oppidum* Zone

Introduction

It has long been speculated that an important settlement of probable pre-Roman Iron Age date was located within the Chichester area due mainly to the presence of the linear dykes, known as the Chichester Entrenchments or Chichester Dykes, that are located at the foot of the South Downs on the West Sussex Coastal Plain (eg, Williams-Freeman 1934; Cunliffe 1971a; Cunliffe 2005; Down 1996). The location of a possible nucleated settlement associated with the entrenchments has not been located, but possible candidates have been put forward based on accumulated archaeological evidence. The main suggested locations are Fishbourne and Chichester (Frere 1972; Bedwin 1983; Davenport 2003), possibly destroyed by later Roman development, or the Selsey Peninsula, where rapid coastal erosion may have resulted in the destruction of the site (Cunliffe 1971a; 1991; Aldsworth 1987).

The suggestion that the site of an *oppidum* was located within this region is supported by the finds of pre-conquest imported pottery and amphorae and Iron Age coins ranging from Gallo-Belgic imports to British dynastic inscribed issues found across the West Sussex Coastal Plain area. Imported fine wares have been found from the Fishbourne/Chichester area in the west, where there is a particular concentration, to Selhurst Park and Ounces Barn at the eastern end of the entrenchments, and at North Bersted on the coast (Manley *et al* 2008, 44; Down 1996, 15). Coins have been found both individually and in hoards across the northern and central area of the coastal plain. The process of erosion on the Selsey peninsula revealed a large quantity of Atrebatic gold coins on the coast of the peninsula (Heron-Allen 1911, 85-86; Cunliffe 1971a, 15) and some evidence of Iron Age occupation has been found (White 1934; Kenny 1998, 10). A coin pellet mould found at Ounces Barn suggests local production, a feature which has been seen in other locations to be associated with the presence of an *oppidum* (Bedwin 1984, 87; Davenport 2003, 103) and this may be supported by the concentration of particular coin issues at Hayling Island and Selsey (Bean 1994, 139; 236). Ritual and funerary sites of some significance are also found in this area: the shrine at Hayling Island (King & Soffe 1998), which lies to the west of the coastal plain but may have been important to the people living there, and an extensive cremation cemetery at Westhampnett (Fitzpatrick *et al* 1997), although the use of this latter site is thought to have ceased *c.* 50 BC and might predate the development of a possible *oppidum* (Haselgrove, Fitzpatrick & Hamilton 2018, 377). The evidence for the location for a possible nucleated centre of a territorial *oppidum* will be

considered in this chapter, taking into consideration the location, form and relationships between the Chichester Entrenchments, and the patterns of Middle/Late Iron Age settlement and agriculture.

Project Area

The project area is located on the coastal plain around the town of Chichester (West Sussex), between the Bosham Channel in the west, the Aldingbourne Rife in the east, the South Downs to the north and the Selsey peninsula in the south (see Figure 5.1), encompassing the Chichester Entrenchments and the suggested *oppidum* centres of Chichester, Fishbourne and Selsey Bill.

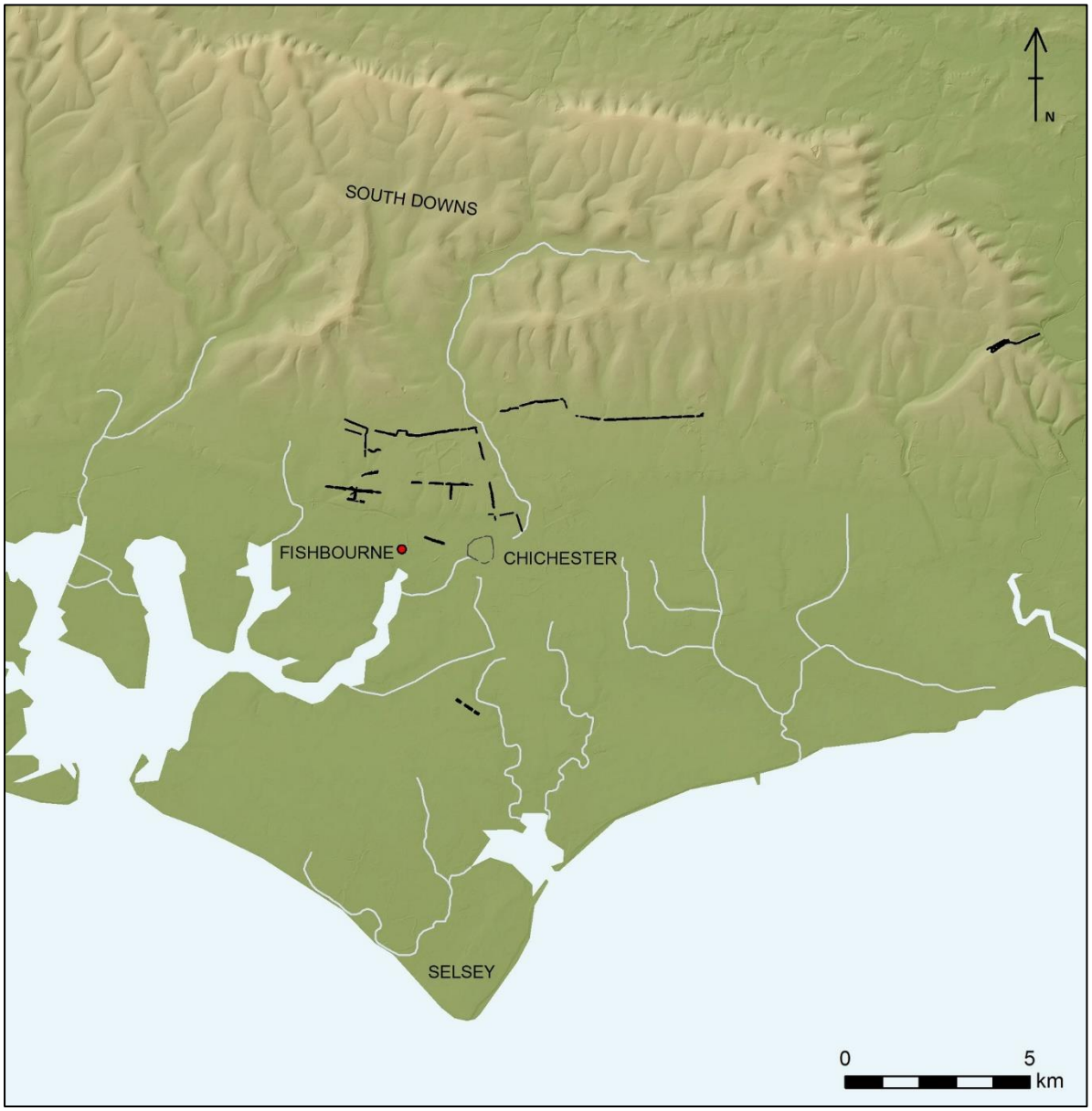


Figure 5.1 Location of the Chichester case study area with the entrenchments shown in black. © Crown copyright and database rights 2020 Ordnance Survey (100025252)

New data were collected for this research from aerial photographs and lidar over an area to the south of the entrenchments encompassing the West Sussex Coastal Plain down to Selsey Bill (166 square kilometres). The results of two previous aerial photograph and lidar surveys carried out on the South Downs and the coastal strip have also been utilised as part of this research (Carpenter *et al* 2016; Dickson *et al* 2012).

The geology of the area is predominantly Brickearth on the southern part of the coastal plain between Chichester and Selsey Bill, and Valley Gravel from Chichester up to the southern edge of the Chalk of the South Downs (Ordnance Survey Geological Survey sheets 317 and 332). The majority of the project area is located on the coastal plain, a flat, low-lying area, located between the 45 m and 15 m contours (Bedwin 1983, 31). The land to the south is at sea level and the terrain gradually rises to over 100 m on the South Downs. The area has a drainage pattern of rivers and small streams running north to south. The majority of the project area is used for agriculture or recreation (Manley 2008, 3) and the only urban areas are Chichester in the centre and Bognor Regis in the southeast. The different geological types affect the visibility of archaeological features on aerial photographs: in general, sites recorded from complex, detailed groups of cropmarks are found on the Chalk Downland and to the east of Chichester on soils derived from Valley Gravel and Marine Gravel. Features are slightly less coherent to the south of Chichester where Marine Gravel gives way to Brickearth. Freer draining soils, such as those associated with gravels, are more conducive to cropmark formation than the heavier clay soils and continued programmes of drainage on the heavier soils of the West Sussex Coastal Plain may mask earlier features.

Middle Iron Age

A number of sites formed of complexes of enclosures are located at the foot of the South Downs, to the north and south of the northernmost of the Chichester Entrenchments (EWA). Several of these rural sites have been shown through excavation to have originated in the Middle Iron Age and to sometimes continue in use into the Late Iron Age and Roman period, an example being a farmstead at Copse Farm, Oving which originated in the 2nd to 1st centuries BC. This site is included in the distribution on Figure 57 but discussed further below in the context of Late Iron Age occupation (see pp 199-201). There are also examples of sites where occupation begins in the Early Iron Age and ceases in the Middle Iron Age. An example of the latter is an enclosure at Rummage's Barn, Binderton, which underlies the Chichester-Silchester Roman road. The enclosure ditch was found to have a deliberate fill which included 7th century BC – 5th century BC pottery and a saddle quern (Kenny 1985, 61-72). Figure 5.2 shows the distribution of sites dated to the Middle Iron Age and also

sites recognised as low earthworks on lidar imagery or as cropmarks, which are undated, but have the appearance of later prehistoric settlements.

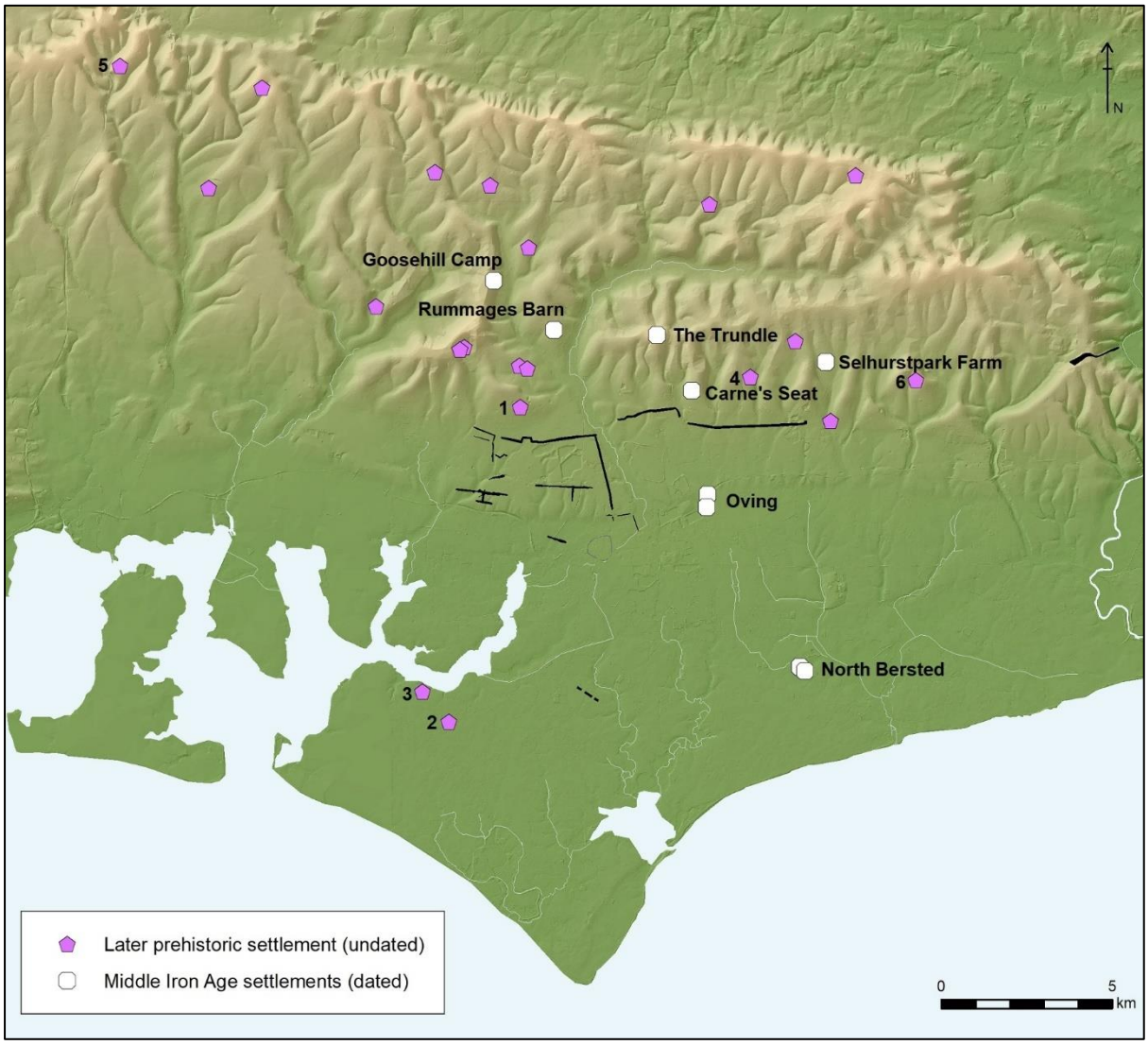


Figure 5.2 Location of excavated Middle Iron Age sites (white and labelled) and probable later prehistoric unexcavated sites identified from aerial photographs and lidar (purple – numbered sites are shown in Figure 5.4). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252). Sources for undated sites: South Downs (Carpenter et al 2016), Coastal Plain (Truscoe)

Carne's Seat, Goodwood, is one of a number of settlements located at the foot of the South Downs and immediately to the north of the northernmost of the Chichester Entrenchments (see Figure 5.3). The three concentric, oval, enclosures located to the north of the small banjo enclosure were excavated in 1984 (Holgate 1986a, 48). Two other settlements formed around banjo enclosures are known in this area, both identified from cropmarks, at Selhurstpark Farm and Denge Bottom, and also positioned close to the interface between the South Downs and the coastal plain (Hamilton 2003, 78).

The construction date of the enclosures at Carne's Seat was determined as being Middle Iron Age, although material collected here indicates that it was in use in some form into the Roman period (Holgate 1986a, 48). Pottery, amphorae and quernstone fragments were recovered from the enclosures. Fabric types associated with 'saucepan' pottery were recovered from the ditch fills, together with a large quantity of domestic debris including amphorae and quernstone fragments. Saucepan pottery may have an overall date range of the 4th to 1st centuries BC in Wessex, but an end date of the 2nd century BC has been posited for a local tradition in Sussex, based on previous finds at nearby sites such as Torberry (Cunliffe 1978, 24). Saucepan pottery from Norton (East Sussex) was dated to the Middle Iron Age based on stratigraphy, numismatic evidence and radiocarbon dates, for example, 400–200 cal. BC (GU-11244: 2260±50 BP) (Thomas 2005, 85, 95). However, Middle Iron Age pottery styles could well have been used into the Late Iron Age and an overlap with later wheel-thrown styles was observed at Carne's Seat and has also been seen at Copse Farm, Oving (Hamilton 1985, 220) and Oldplace Farm (Hamilton 2003, 77). Material from the Roman period was found in the upper fills of the ditches of the central enclosure of Carne's Seat and in the surface of plough soil around the site, dated to two periods: 1st/2nd centuries and late 3rd/4th centuries AD. It is possible that the site was occupied during the Roman period, but it could have been used for corralling animals (Holgate 1986a, 48).

Middle and Late Iron Age settlements and field systems were found through excavation prior to development at North Bersted, Bognor Regis in 1974 and 1975 (Bedwin and Pitts 1978), and between 2007 and 2010 (Taylor *et al* 2014). A single circular hut and rectangular or sub-rectangular fields defined by drainage ditches were identified during the earlier excavations. The settlement was dated by pottery as being occupied from the 3rd century BC to the late 1st century BC (Bedwin and Pitts 1978, 310). Saucepan pot forms were found in large quantities suggesting the main phase of settlement occurred during the Middle Iron Age (3rd to 2nd centuries BC with a possible continuation into the 1st century BC) (Morris 1978, 338). Late Iron Age pottery was found in probable rubbish deposits within seven of the ditches and one pit. This seemed to imply deliberate infilling of the ditches at some point in the late 1st century BC (Bedwin and Pitts 1978, 310). A complex of enclosures and field systems covering over two hectares and also defined by ditches were found during the 2007 to 2010 excavations. Dating based on pottery in association with radiocarbon dates demonstrated that the field systems were laid out in the Middle Iron Age and continued to be used and modified into the Late Iron Age (Taylor *et al* 2014, 39). Middle Iron Age pottery recovered from the earlier phases of the field system was associated with a radiocarbon date of 409 - 381 BC (KIA 31459) (*ibid* 2014, 40, 42, 155). The construction and maintenance of the field systems in this area

would have required considerable time and probably communal effort, comparable to the construction of hillfort ditches (Hamilton 2007, 87).

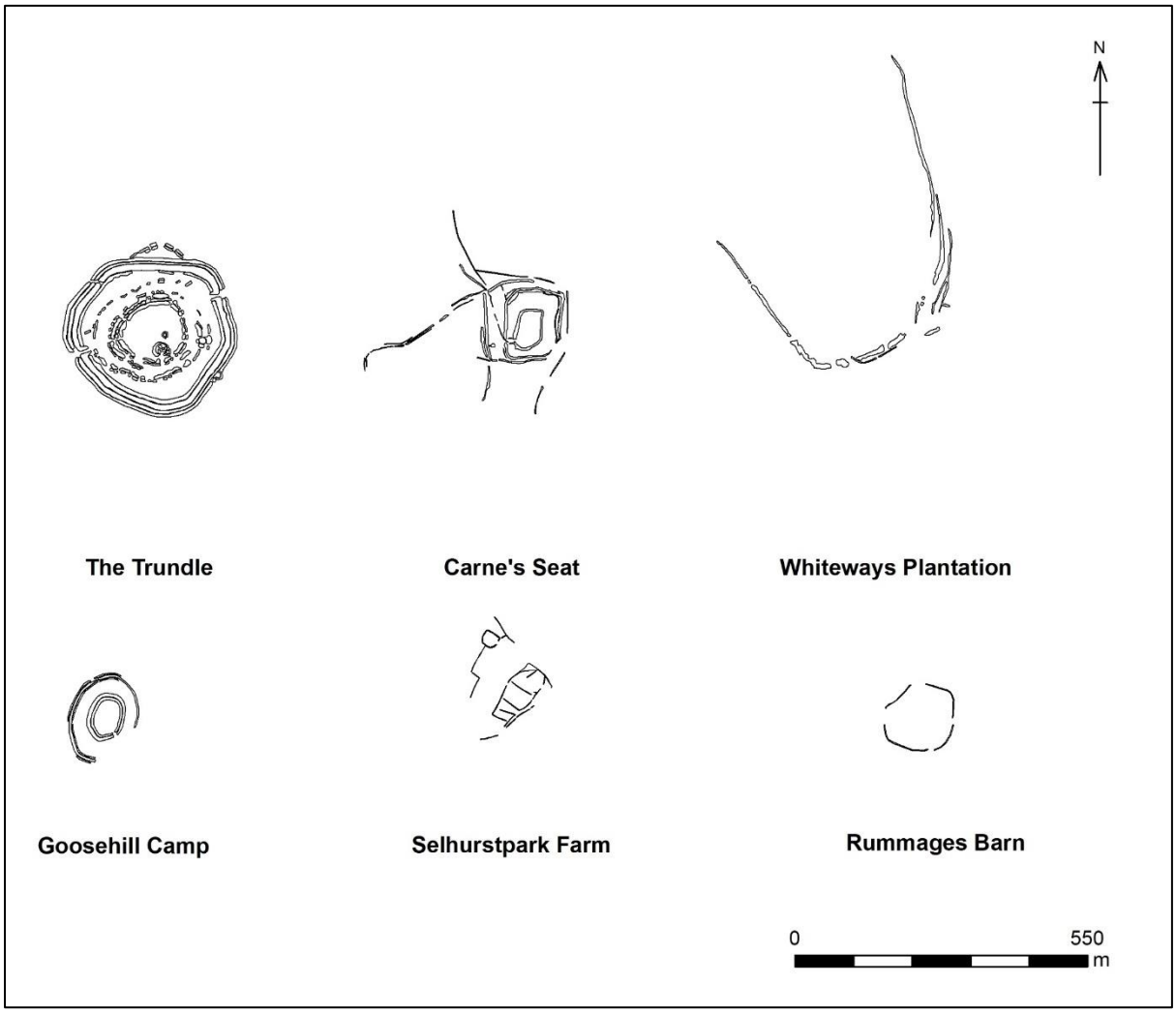


Figure 5.3 Comparative plans of dated Middle Iron Age sites on the South Downs. Mapping © Historic England

Features spanning the Late Upper Palaeolithic to the Roman periods, but with significant discontinuities in settlement, were found during an evaluation preceding the construction of the A27 Westhampnett Bypass in 1991. Unenclosed settlement of Middle Iron Age date was found in Area 5 comprising five possible circular post-built structures recognised from groupings of postholes, part of a hollow way, linear ditches, pits and a hollow with evidence of ironworking (Fitzpatrick *et al* 2008, 147, 150, 157). Many of the features could not be closely dated from pottery types, but three stratified La Tène I brooches with a Middle Iron Age date were recovered, two from pits and one from a well (Montague 1997, 159-160).

Excavations at the Tarmac quarry at Shopwyke in 1991 and 1992, immediately to the south of the Westhampnett Bypass site, also uncovered evidence of Middle Iron Age settlement, consisting of a possible enclosure ditch measuring up to two metres in depth, pits and post holes, with some

continuity of settlement into the Late Iron Age and Roman periods also indicated. The features were dated by pottery, the majority of identifiable sherds being of the saucepan style (3rd – 2nd centuries BC), (Kenny 1991, 35).

Excavations along the line of the River Lavant flood alleviation channel in 2000 uncovered a Middle Iron Age round house, a curvilinear enclosure and a trackway at Shopwyke (Howe 2000). Further possible evidence of settlement in this period was uncovered during excavations at the Drayton Sand and Gravel site in 2002, consisting of several ditches from which small quantities of Middle and Late Iron Age pottery were recovered (Griffin 2002).

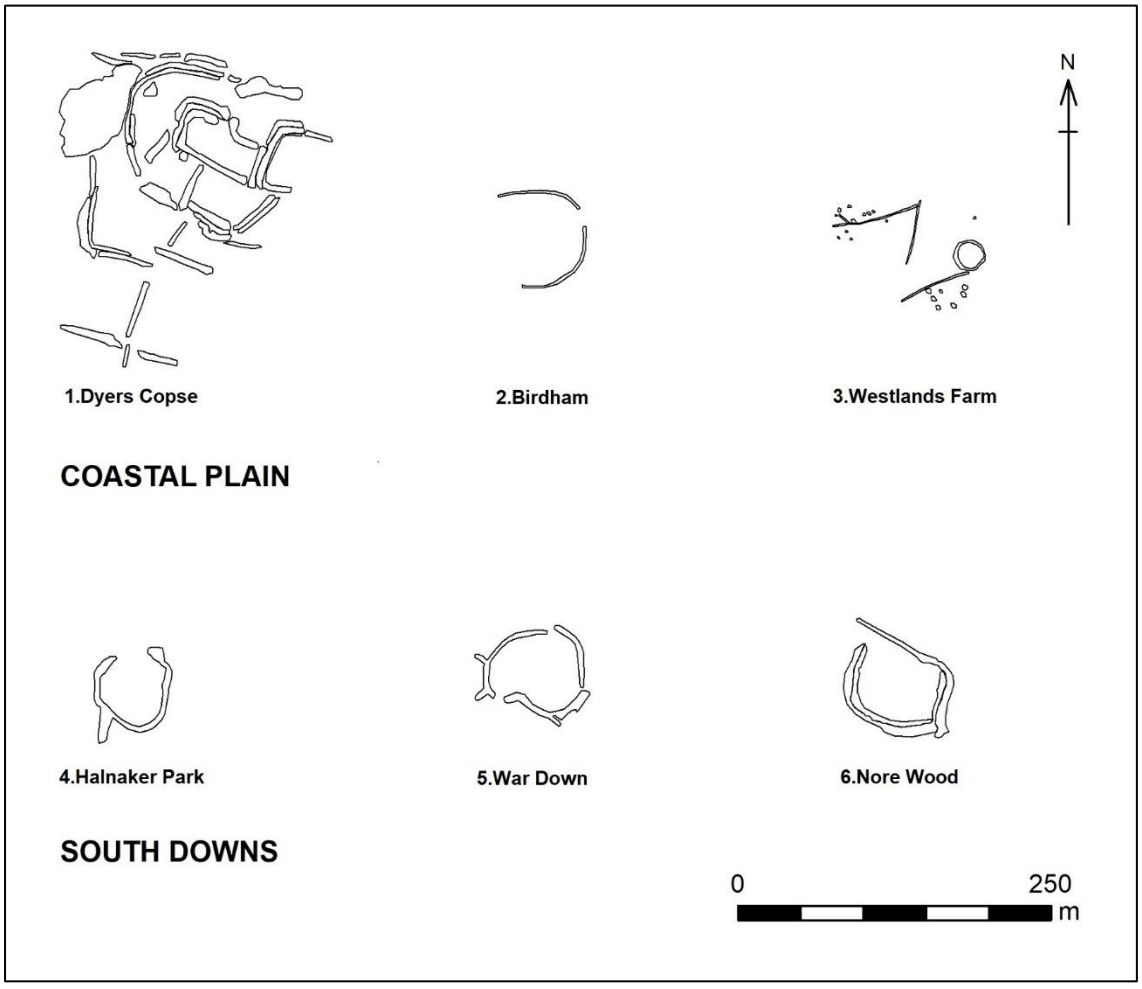


Figure 5.4 Undated possible later prehistoric sites identified from aerial photographs and lidar imagery. Coastal Plain mapping: Truscoe; South Downs, © Historic England

The excavated evidence of Middle Iron Age occupation on the West Sussex Coastal Plain is significant in a discussion of the possible location of an *oppidum*. *Oppida* are often assumed to have developed in areas with little previous evidence of occupation (eg Hill 2007, 23), but Hamilton puts forward a hypothesis that Late Iron Age occupation sites on the Coastal Plain developed out of a pattern established in the Middle Iron Age (Hamilton 2007, 86), a period when it has been suggested that

there was an expansion in settlement which continued into the Late Iron Age (Bedwin 1983, 38). At the beginning of this period earlier hillforts go out of use and a smaller number of new hillforts are established across the central downland, including the Caburn and the Trundle (Hamilton and Manley 2001). Hamilton suggests that socio-political changes influenced a dispersal of people from the South Downs to the Coastal Plain, pointing to the establishment of sites in new locations such as Carne's Seat (*ibid*, 85). It is possible that there was a movement of people away from the South Downs onto the Coastal Plain later in the Middle Iron Age, but there are only a small number of excavated sites on which to base this hypothesis. Figure 5.2 shows the distribution of undated, but suspected, later prehistoric sites found through lidar and aerial photographic interpretation, showing a spread of possible settlements across the South Downs (and see Figure 5.4 for comparative plans). While it is possible that these sites predate the Middle Iron Age, further investigation would be needed to establish their precise period. Evidence of Late Iron Age settlement is also found on the South Downs and there are similarities in layout between the extensive relict field systems to the north of the coastal plain and those on the plain itself (see below p217), so the picture may be more complicated.

Late Iron Age

Evidence for an *oppidum*: The Chichester Entrenchments

The presence of the substantial linear earthworks known as the Chichester Entrenchments is the principal reason for the area being suggested as the site of a territorial *oppidum* (see Figures 5.5 and 5.6). However, the precise period during which the Chichester Entrenchments were constructed is a matter of debate and, while some datable artefacts have been recovered from excavations, the evidence is limited and contradictory in some cases. Scientific dating has also failed to narrow down the period during which they were laid out. The entrenchments are located on the gravels mainly to the north and west of Chichester at the foot of the South Downs, although two linear dykes lie to the north-east (EWA (i) and the War Dyke) and another on the Selsey peninsula to the south (EWI). The east-west entrenchments are formed of linear banks and ditches, with the ditch on the northern side of the bank. Many of the north-south oriented entrenchments have their ditches on the western side of the banks, but the two easternmost dykes, NS1 and NS2, have ditches on the eastern side. Sabatier, surveying the entrenchments in 1797 assumed that they were "Roman military works" associated with the Roman town of Chichester (*Noviomagus Reginorum*) (Steer 1963).

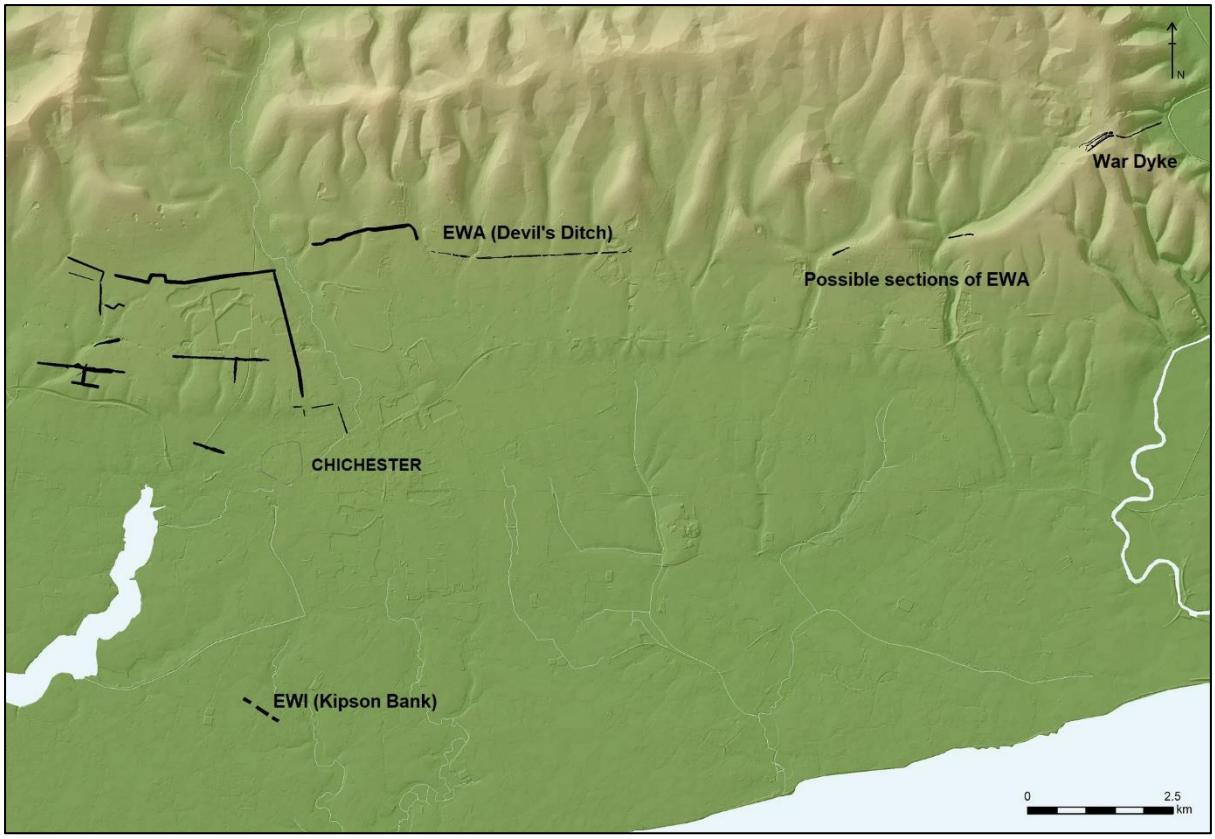


Figure 5.5 The Chichester Entrenchments showing the extent of the features that have been associated with them, including the War Dyke and EWI (Kipson Bank). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Subsequent surveyors and investigators have made the association between the earthworks and pre-Roman occupation, suggesting that they define the extent of an oppidum which controlled a large area of the West Sussex Coastal Plain. Williams-Freeman (1934) and Bradley (1971) have suggested that they were laid out in phases rather than in one operation. It does seem likely that the entrenchments were constructed in several phases rather than necessarily being a `system' (Bedwin & Orton 1984, 63), but what the specific time periods and durations of these phases were, is unclear. It is also uncertain whether the assumed older earthworks would have been in use concurrently with those constructed later, or if they would have been obsolete features in the landscape.

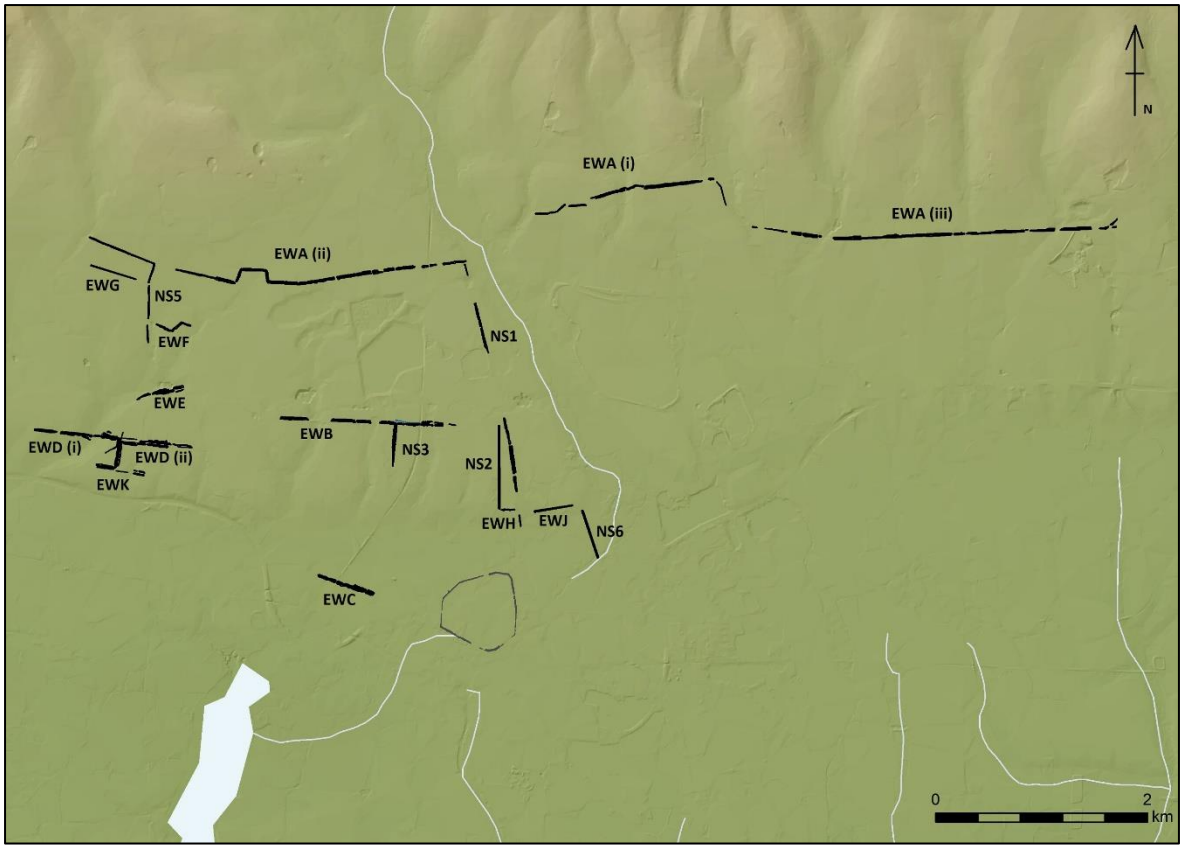


Figure 5.6 The entrenchments in the Chichester/Fishbourne area. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Excavations and dating of the Entrenchments

The majority of the excavations carried out on the Chichester Entrenchments have been on EWA, the most northerly of the east-west dykes located at the foot of the South Downs (see Figure 5.7 below). EWA consists of three sections but was defined by Williams-Freeman as a single earthwork, presumably because of the similar orientation of the perceived constituent parts. Bradley divided the earthwork into two parts, denoting the western section (from West Stoke to East Lavant) as EWA (ii) and the eastern section (from Goodwood Park/the Valdoe to Halnaker) as EWA (i). Magilton further subdivided the eastern section into two parts, with the central section (Goodwood Park/the Valdoe) as EWA (i) and the remaining earthwork to the east as EWA (iii).

Murray carried out an excavation on EWA at a point immediately to the south of West Lavant House (Bradley's EWA (ii)) in 1954-5 (Murray 1956, 140). Modern pottery was found in the top layers, but pre-Roman pottery was recovered from the clay underlaying the bank. A rim sherd from a saucepan pot was found in a ditch fill approximately six feet (1.83 m) below the ground surface. A small fragment of pottery in the basal deposit could not be identified. The saucepan sherd was identified by Hawkes and described as being typical of that used by societies in the mid-1st century BC. Murray, therefore, dated this section of EWA to the Late Pre-Roman Iron Age based on the presence

of the saucepan pot and the V-shaped profile of the ditch (*ibid*, 143). Murray's interpretation, assuming a Late Iron Age date for the earthwork, was that EWA had been constructed by the invading Belgae "as a defence against the people living on the Downs", although she does point out that the lack of excavations on the entrenchments means that there is no evidence to indicate that any of the other earthworks belong to the same period (*ibid*, 143). However, later interpretations indicate that the local tradition of saucepan style of pottery is characteristic of the Middle Iron Age in Sussex, probably in use in the 3rd to 2nd centuries BC, but with a possible continuation into the 1st century BC (Hamilton 2003, 77; Morris 1978, 338). The dating evidence for the excavation is extremely limited but could suggest an earlier date of construction for at least this section of the earthwork.

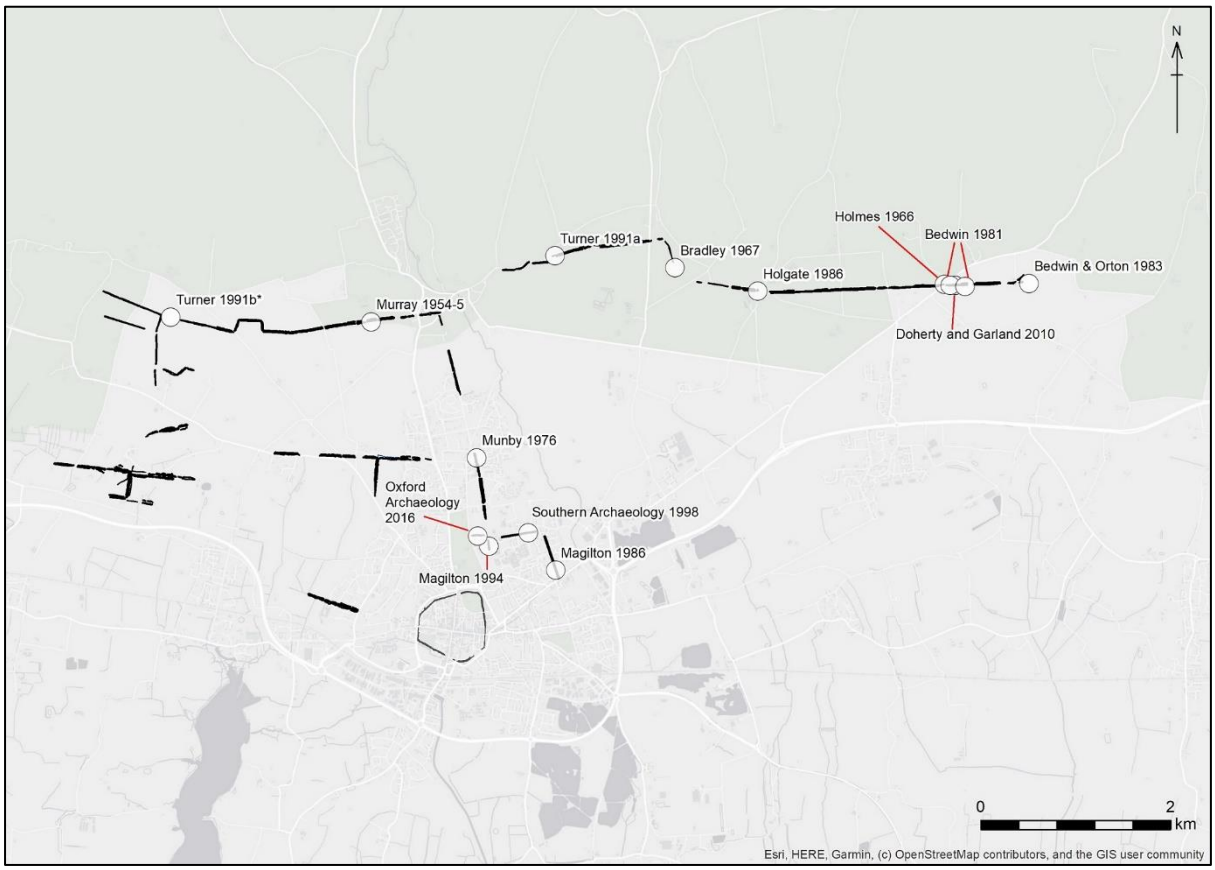


*Figure 5.7 Locations of excavations of the Chichester Entrenchments. *Turner 1991b – approximate location. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).*

John Holmes carried out an excavation on the eastern terminal of the Devil's Ditch north of Halnaker, Boxgrove (Bradley's EWA (i)) in 1965 where it was thought to intersect with the side ditches of the Roman road Stane Street. Holmes uncovered medieval material in the ditch fills and suggested that the entrenchment cut obliquely across the Roman ditch. The entrenchment is depicted on Holmes' plan as having a broad, flat, bottom. He therefore put forward the hypothesis that this dyke was post-Roman in date and that many of the other linear earthworks were also

related to medieval park and estate boundaries (Holmes 1968, 65-67). Bradley criticised the fact that Holmes disregarded the results of Murray's excavation and did not include all the entrenchments in his argument (Bradley 1969b, 140). Also, Holmes does not mention the possibility of re-use of the earthwork during the medieval period, or that the dating material obtained may be appropriate to that part of the earthwork only.

Bradley carried out his own excavation on the tail of the rampart of the Devil's Ditch, or EWA (i), in Goodwood Park in 1967. A pot sherd identified as being of Late Iron Age, early 1st century AD date was found from the fill of a shallow scoop at the rear of the bank and a sherd of 1st century BC date was recovered from the ground surface sealed beneath the bank (Bradley 1971, 35). Bradley surmised that the date of construction fell between the two dates of the stratified pottery (*ibid*, 36).

Further excavations have taken place towards the eastern terminal of the Devil's Ditch (EWA (i)) at Boxgrove in the vicinity of Holmes' investigation, in 1981, 1983 and 2010. The 1981 excavation was located in a similar position to that carried out by Holmes and produced similar results. The ditch was found to have a similar profile, with gently sloping sides and a wide, flat, bottom. Medieval pottery was recovered from fills throughout the ditch, although not within 20 cm of its base (Bedwin 1982, 41). Bedwin speculated that the ditch profile might have been the result of a recut during the medieval period or that the difference in style might be explained by variations in construction during the Late Iron Age, possibly indicating that it was constructed in several phases. He also stressed the need to avoid extrapolating from one excavation, suggesting that the results should instead be considered to have "a restricted, local validity" (*ibid*).

An excavation was carried out on the eastern terminal of EWA (i) to the east of Stane Street and the site of the previous investigation, and to the west of a Roman period settlement at Ounces Barn (Bedwin and Orton 1984, 63). The ditch was similar in profile to that uncovered by Murray at West Lavant House but differed from the sections recorded during the two excavations at Halnaker. The bottom two fills were sterile, but a good sequence of pottery was recorded from this point on. The pottery dates suggested that infilling of the ditch occurred from around AD 50-60, although it was not possible to determine the date of construction. The excavators suggested that it was likely that the ditch was Late Iron Age in date and that it became obsolete in the early post-conquest period (*ibid*, 65).

During a pipeline trench evaluation two excavations were carried out on EWA (i) at West Stoke (Turner 1991b on Figure 62), and on EWA (ii) at Lavant Lodge (Turner 1991a on Figure 62). Both excavations took place in gaps in the entrenchments. The Lavant Lodge location was in an area where the entrenchment was thought to have been levelled in order that it be replaced by a

medieval gated access way. The entrenchment ditch was excavated running across the gap, measuring 7 m wide and 3 m deep with a V-shaped profile. The excavation at West Stoke also uncovered the ditch of the entrenchment, demonstrating that it had originally run across the gap. The West Stoke ditch was also 7 m wide with a V-shaped profile, but only 2 m in depth. No datable artefacts were recovered during either excavation, and it was assumed from the similarities in size and profile to the section cut by Murray that they were Late Iron Age in date (Turner 1997, 22-23).

The most recent excavation was carried out in 2010 on a section of Devil's Ditch in Windmill Park, Halnaker, in the same area as Bedwin's 1981 investigation. The ditch was found to have a broadly V-shaped profile and the excavators suggested that the flatter profiles recorded by Holmes and Bedwin might be a consequence of a failure to excavate fully into the Iron Age deposits. Post-Roman material was found in the upper fills from a level around 1.5 m from the base and the mid fills contained very small quantities of Roman pottery of probable 1st or 2nd century AD date. However, the sequence was hard to interpret, and redistribution of material may have been caused by a recut of the ditch in the medieval period. The primary fills were devoid of finds but five deposits were examined through a programme of Optical Stimulated Luminescence (OSL) dating. Three of the samples gave a date of 500-400 BC (± 410-530 years, University of Oxford), but, given the broad range of dates provided by this method, an earlier date of construction could not be ruled out (Doherty & Garland 2015, 43). The construction of the entrenchment may have been associated with a process of enclosure and settlement on the West Sussex coastal plain during the Middle Iron Age (*ibid*, 45).

EWA (ii) was uncovered during pipe-laying by Portsmouth Water to the west of Goodwood Park. There appeared to be a gap in the ditch at this point (SU 8134 0810). The ditch was found to have a V-shaped profile and measured at this point 7 m in width and 2 m in depth. No finds were recovered to provide any dating evidence for the infilling of the ditch (Turner 1997).

Two sections of entrenchments have been newly identified through developer-funded excavation to the north-east of Chichester at Swanfield Drive in 1986-7 (NS6) and south of Graylingwell Hospital in 1998 and 2016 (EWJ) (Magilton 2003, 158; Allen *et al* 2018). EWJ was identified at a point to the south of Graylingwell Hospital and west of the River Lavant. The 1998 excavations uncovered the entrenchment ditch and found that it had an approximately V-shaped profile and measured 7.5 m in width and 3.3 m in depth at that point. A mixed assemblage of fragmentary and abraded pottery was recovered from the entrenchment ditch, dating to between the end of the 1st century AD and beginning of the 3rd century AD. The western side of a sub-rectangular enclosure was uncovered around 2 m to the south of the entrenchment line and dated by pottery to the very late Iron Age (15

BC – AD 50) (Allen *et a*l 2018, 15, 17). The 2016 excavations identified the westward projection of the entrenchment ditch, which measured 7.52 m in width and 2.6 m in depth (*ibid*, 18). A sample was taken from one of the primary silts near the base of the ditch and a radiocarbon date was obtained using Accelerator Mass Spectrometry of AD 80-220 1866 ± 17 BP? (SUERC-70667 (GU42531)) (*ibid*, 20).

NS6 was identified through excavation beneath the cemetery of St James' medieval leper hospital which was located to the north-east of the city. The entrenchment is on a similar north-west, south-east alignment to NS1 and if its line is extended, may have had a junction with EWJ (Magilton 2003, 158).

The line of the southern section of NS1 was identified through two excavations, in 1976 and 1994, but no finds were recovered in either case. The 1976 excavation was carried out on the line of Winterbourne Road to the north of Graylingwell and the ditch and bank of NS1 were recorded (Down 1989, 61–5). The ditch was sectioned during the 1994 excavation which was located to the south-west of the previous site, at the northern end of Bishop Otter College (Magilton 1994, 20). However, neither of these investigations produced any finds.

While dating evidence for the Chichester Entrenchments is limited, it is possible that sections of EWA, at least, were initially created in the Middle Iron Age. It seems likely that a number of phases of construction followed, probably motivated by different reasons, possibly spanning the Middle to very Late Iron Age periods, but they may have also continued into the Roman period. Whether the earliest earthworks had become relict features in the landscape during the period of use of the latest entrenchments, or whether they were used concurrently, is uncertain.

Surveys of the Chichester Entrenchments

The Entrenchments (see Figures 60 and 61) have been the focus of several surveys and a number of limited excavations from the 18th century on. The earliest recorded survey is by William Sabatier in 1797 (see Figure 5.8) who described them as "Roman military works near Chichester" (Sabatier 1798, published in Steer 1963). Sabatier's description of the entrenchments works on the basis that they are connected with the Roman road system in the area. He sees the entrenchments in the vicinity of Chichester as defining a military encampment to the north of the walled town (*ibid,* 3). He aligns the westernmost group of earthworks at Oakwood on the east-west linear dyke which crosses the Broyle to the north-west of Chichester on his plan, seeing it as a continuation, although stating in his text that it lies to the south-west of this line. The earthworks are described as being "in an excessive thick coppice", and forming the boundary line between two estates, running continuously for a distance of "about thousand yards". Sabatier notes a section about halfway along the route of

the earthwork where it has a second bank running parallel to it. He could not identify a ditch associated with it but noted that it was "raised as high as the principal work" (*ibid*, 4). Rather than seeing them as separate earthworks, Sabatier seeks to explain the gaps between the entrenchments as due to destruction by some means in the past, noting as he does the damage caused in his time by quarrying and military actions (on the line of the Funtington road, north-west of Chichester, and the Valdoe coppice, East Lavant, respectively) (*ibid,* 4-5).

Figure 5.8 Detail of William Sabatier's plan of the Chichester Entrenchments ((1798) (in Steer 1963)

The next archaeological survey of the entrenchments was carried out by Williams-Freeman in the early 20th century (see Figure 5.9). He recorded the north-south and east-west sections separately rather than trying to connect them in the form of "rectangular camps" as Sabatier had to the north of Chichester (Williams-Freeman 1934, 66). Williams-Freeman developed the notation still used for the individual earthworks: east-west sections were appended with a letter, for example, the Devil's Ditch was identified as EWA, and north-south earthworks were appended with a number, for example, NS1 (*ibid,* 65). This notation system has continued to be used by later surveyors and is still being added to. While he considers them separately, Williams-Freeman noted "a uniformity in size and structure" of the banks where they had not been damaged by later use as woodland boundaries and hedge banks. He found the banks to generally be around four or five feet (1.2 m to 1.5 m) above

the level of the ditch and the ditch to measure around eight or ten feet (2.4 m to 3 m) in width (*ibid*, 68).

Although he states that he is considering the sections of the entrenchments separately, Williams-Freeman does make connections between them. He puts together all the northernmost linear earthworks to form EWA, extending from West Stoke to Halnaker, "the "outer line" in the old descriptions" (*ibid,* 65). He interprets EWA as being one defensive line which covers all approaches to the coastal plain from the South Downs. He also recorded "a detached E-W entrenchment in Oak Wood Park which may be an extension of EWB, reaching quite half a mile further west" (*ibid*, 67). EWB is on a similar alignment but lies approximately 870 m to the north-east of the eastern end of his "Oakwood Entrenchment" and as Williams-Freeman notes, had been described as the "inner line" in past descriptions (*ibid,* 66). He considers the entrenchments to be part of a "definite well-thought-out system" (*ibid*, 68) probably created in stages by an invading people advancing north from the sea protecting themselves against the inhabitants of the South Downs (*ibid*, 75). As to when this occurred Williams-Freeman concedes that there is no evidence to date the earthworks but suggests that the Iron Age is most likely due to the similarities to the Lexden dykes at Colchester (*ibid,* 76).

Figure 5.9 Survey of the Chichester Entrenchments by Williams-Freeman (1934).

Richard Bradley surveyed the Chichester Entrenchments in 1966-1967 as part of the investigations at Fishbourne (Bradley 1971, 17-36). He refined Williams-Freeman's notation, subdividing both EWA and EWD into two sections, identified new linear earthworks, and clarified the route of the majority of the entrenchments, an exception being EWD which he was unable to access on the ground (see Figure 5.10). He also incorporates excavated evidence from EWA including his own investigation in Goodwood Park (see above p181). The dykes are formed of linear banks with adjacent ditches predominantly oriented east-west or north-south. Bradley's measurements for the linear earthworks

Figure 5.10 Richard Bradley's survey of the Chichester Entrenchments (Bradley 1971, 20).

differ somewhat from Williams-Freeman; he found the banks to survive to a height of 3 m with an average width of between 6 m and 9 m, and the average width of the ditches to be 6 m (*ibid,* 17), the size and spread nature of the earthworks making them distinguishable from later features such as wood banks and field boundaries. The subdivision of EWA and EWD concurs with his view that the entrenchments were not necessarily continuous earthworks with levelled sections in the perceived gaps but were instead functioned separately. However, like Sabatier and Williams-Freeman, he hypothesises a connecting earthwork between EWD and the western end of EWB.

Bradley's survey concluded that the dykes had been constructed in three phases, based on the relationships between, and morphology of, the monuments. Bradley saw the central area of the entrenchments as being constructed from north to south, defining a large area of the coastal plain

initially followed by a gradual reduction in size, rather than the accumulation of territory implied by Williams-Freeman's suggested south to north movement. He describes the first phase as consisting of the northernmost of the east-west dykes, EWA (i) and (ii), which he saw as delineating the area of the Coastal Plain down to Selsey Bill, covering an area of approximately 155 square km from Bosham in the west to Bognor Regis in the east. He interpreted the second phase as being constructed to the south of the first, reducing the area defined by the dykes to approximately 40 square km between the Lavant and Bosham watercourses. He saw a third phase as reducing the area again, possibly to 32 square km between Chichester Harbour and the River Lavant, or, to the eight square km in the Fishbourne area which appears to be almost completely enclosed by dykes (1971, 32). Bradley describes the dykes in terms of defence; the banks are "ramparts" which "cut off" areas of land (*ibid*), but he also discusses possible entrances (eg in EWA-i and ii, EWB and EWF) which are open to more interpretations concerned with the movement of people and trade (although see Turner's excavations above (p183) which have proved that some gaps in the entrenchments are not original).

Figure 5.11 The Chichester Entrenchments incorporating excavated evidence (Magilton 2003, 157)

In his review of the above ground and excavated evidence (discussed above pp168-172) for the entrenchments, Magilton broadly followed Bradley's plan but disputed the interpretation of the Hook Dyke (EWC) as an Iron Age feature (see Figure 66). He suggests that the Hook Dyke is more likely to be Roman in date as it is on the correct alignment to lead to the Romano-British temple at

Ratham Mill (Magilton 2003, 158). The temple site is unexcavated, and the suggested date is based both on its morphology and on late 1st century and 2nd century AD pottery found through surface collection (King & Soffe 1983, 266). Bradley had argued that EWC could not be a Roman road on the basis that its route could not be seen to end at the Chichester walls, either from observations on the ground or from a resistivity survey (Bradley 1971, 24). Magilton also suggested a connection between EWA and the War Dyke located around 4 km to the east, with possible sections of similar earthworks identified from cropmarks situated in the areas in between (2003, 157, and shown as a dotted line on Figure 5.11).

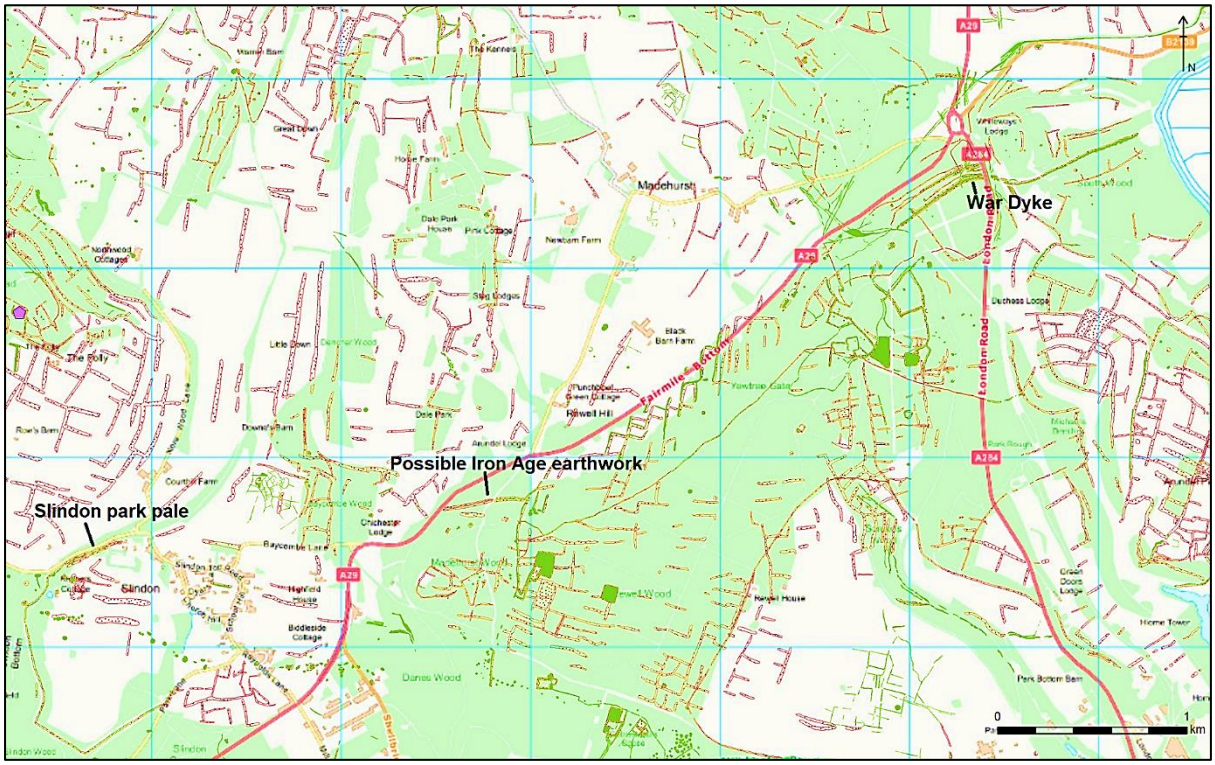


Figure 5.12 Possible earthworks associated with the EWA and the War Dyke. Mapping © Historic England. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

A survey of aerial photographs and lidar carried out across the South Downs National Park, the High Woods from Above project carried out by Historic England and Cornwall Archaeological Unit, mapped the northernmost sections of the Chichester Entrenchments, principally EWA, or the Devil's Ditch (Carpenter *et al* 2016, 31-32). The survey identified two earthworks which appear to extend the line of EWA to the north-east, which if extended would be on the same alignment as the War Dyke, which is located around 4 km to the east (see Figure 5.12). As also noted by Magilton, several features were identified in the survey in the area between the eastern end of EWA and the War Dyke which were interpreted as being the possible remains of a linear dyke connecting the two areas. The northern section of Slindon deer park pale, aligned south-west - north-east, was suggested as representing the reuse of the Devil's Ditch in the medieval period. McOmish and

Hayden have suggested that a further medieval reuse of Iron Age earthworks is seen in Arundel Little Park (2015, 22). Illustrating these earthworks against a terrain model (see Figure 5.5) demonstrates how they follow the contours and alignment of the War Dyke. The War Dyke itself was originally a larger earthwork probably extending to the River Arun in the east, although this section was destroyed by post medieval quarrying (Carpenter *et al* 2016, 30).

The availability of Environment Agency lidar, used alongside aerial photography, has made it possible to add further detail to the southern area of the Chichester Entrenchments through the author's own survey, although not all features mapped in previous surveys could be identified. Additional elements of the entrenchments were visible in the area of Oakwood Park (see Figure 5.13), but no features could be added to entrenchments NS2, EWG or EWI, the latter proposed by Curwen as the remains of a dyke which crossed the Selsey peninsula (Curwen 1954). The sections of the Entrenchments within Oakwood Park are of particular interest because this area could not be accessed by Richard Bradley during his otherwise comprehensive survey in the late 1960s.

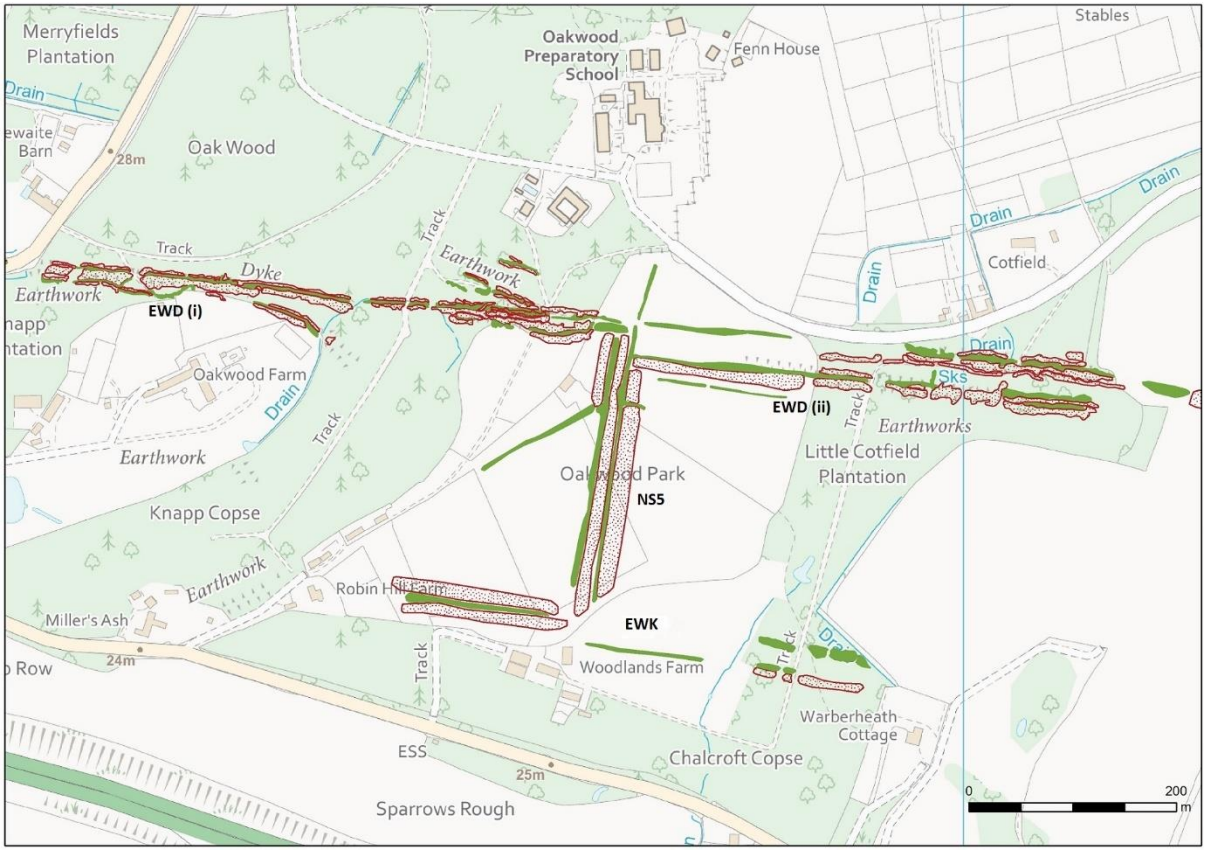


Figure 5.13 Newly identified sections of east-west dyke EWK mapped within woodland to the south of Oakwood Park, north-west of Chichester.KEY: Banks (red), Ditches (green). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

New details were recorded from lidar imagery for the sections of EWD (i) within woodland and for EWD (ii) where it passes from open grassland and into woodland to the east. An entry exists on the

Chichester and District HER for a short section of an east-west oriented linear ditch lying parallel to the south of E-WD (i) and given the notation EWK. The lidar survey proves that EWK continues to the east and west of this ditch and that its western section has the same form as NS5, a ditch flanked by banks (see Figure 67). However, it is uncertain whether a junction existed between the southern end of NS5 and EWK. EWK was less clear at its eastern end, but a narrow linear ditch and bank could be identified, all following the same alignment as the western end. The Oakwood entrenchments are located in the area covered by a former 19th century park and the 1st edition OS map shows that this area was criss-crossed by paths and rides. These later developments in the landscape have had the effect of obscuring the eastern end of the line of EWD (i) and analytical earthwork survey was carried out on this section in order to clarify both the route of earthwork and its relationships with NS5 and EWD (ii).[2] The survey revealed a level of complexity that was not apparent from the aerial photographs and lidar (see Figure 5.14).

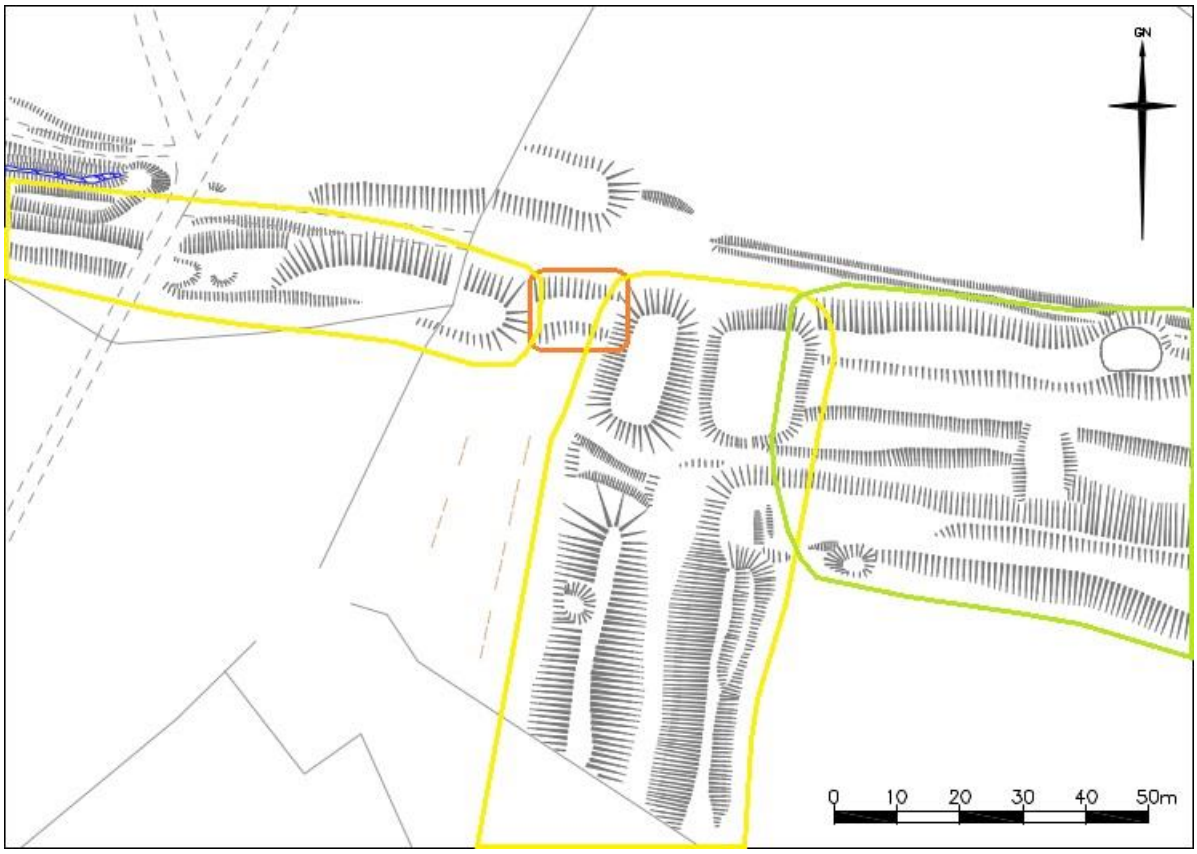


Figure 5.14 Phased plan of features identified during analytical earthwork survey: 1 – Red (earthwork predating EWD (i), 2 – Yellow (EWD (i) and NS5, 3 – Green (EWD (ii). Background map Mastermap © Crown copyright and database rights 2020 Ordnance Survey (100025252)

A sequence of construction was established which suggests that while EWD (i) and EWD (ii) have a similar alignment, they are not part of the same entrenchment. The survey clarified the route and

[2] See Appendix I for a full report of the analytical earthwork survey

extent of EWD (i) within the woodland and provided an explanation for the gaps in the earthwork evident on lidar imagery. The entrenchment varies between 7.6 m and 9.6 m in width within the woodland and runs along fairly level ground for a total distance of 165 m, after which it appears to come to a natural stop at a point where the land drops down steeply into an area of marshy ground. The entrenchment resumes on the other side of this marshy area, but the nature of the ground and the significant change in elevation suggest that the gap in the earthwork was part of the original construction. Observation of the relationships identified between the linear earthworks indicate at least three phases of construction:

1. An east-west oriented bank which straddles the woodland/pasture boundary.

2. EWD (i) is created overlying the western end of the phase 1 bank and extending to the west through Oak Wood and NS5, formed of two parallel banks, is laid out cutting through the eastern end of the phase 1 bank and extending to the south. While these two features appear to postdate the phase 1 bank it is not clear if they are contemporaneous.

3. EWD (ii) an east-west earthwork formed of two parallel banks which abuts the eastern side of the northern end of NS5 and extends to the east.

The point in time when the individual phases of earthworks were constructed and how long a period of time elapsed between their creation, and that of the earthworks that followed them, is uncertain, but there is a similarity in layout between several of the earthworks. NS5, EWD (ii) and EWK which lies to the south of these entrenchments are all formed of two parallel banks. The earthwork survey also identified a partial parallel bank located to the north of the eastern end of EWD (i). Although the majority of this earthwork as it continues to the west through Oak Wood consists of a single bank only, the individual sections of EWD (i) may not have been constructed at the same time and may not necessarily follow the same plan. It would appear that even a comparatively small area of the Chichester Entrenchments can exhibit a complex biography. Further investigations would be necessary to attempt to establish dates of construction for the Oakwood entrenchments, although, as previous excavations have shown, dating linear earthworks can be a difficult process.

Evidence for the nucleated centre of an *oppidum*

Two main locations have been suggested as being the possible nucleated site of an *oppidum* which was subsequently destroyed by later developments: the Chichester/Fishbourne area (see Figure 5.15 for a summary of the evidence), where earlier features have been substantially replaced by Roman structures (Frere 1972; Bedwin 1983) and a site at Selsey Bill, evidence of which has disappeared due to coastal erosion (Cunliffe 1971a; Down 1996 and see Figure 5.16 for a summary of the evidence).

The problem noted by excavators is that while a considerable amount of pre-Conquest imported material has been found below the palace at Fishbourne, on the route of the A27, and within Chichester, there are very few significant Late Iron Age features to associate it with (Manley & Rudkin 2005, 58). Pre-conquest material was frequently found in early Roman period contexts during the Fishbourne excavations and had been interpreted as being outdated items supplied to the military or to an unsuspecting local populace rather than evidence of earlier occupation (Cunliffe 1971a, 38) although this view has been disputed (Frere 1972; Down in Cunliffe *et al* 1996; Rigby in Cunliffe *et al* 1996). The phenomenon of pre-conquest imported goods found residually in later contexts, together with a scarcity of Late Iron Age features is also seen at Silchester (Fulford *et al* 2018) and Colchester (Hawkes and Hull 1947). Down suggests a trading route for imported goods using the Chichester Channel, with a logical trading post near to it at Chichester/Fishbourne, adjacent to "the local *oppidum* or tribal administrative centre" which is presumed to be at Selsey (Down 1996, 17). Cunliffe also suggests Selsey as being the lost centre for an *oppidum* due mainly to the coin evidence found on the shore line (1971a), while other writers have supported the candidature of the Chichester/Fishbourne area due to the location of the main concentration of linear dykes (Frere 1972; Bedwin 1983) and to the increasing number of imported goods found in this area, including amphorae, late Augustan Arretine pottery, early Gaulish Samian pottery and early Gallo-Belgic wares (Davenport 2003, 106).

The evidence for Chichester and Fishbourne

Excavations by Alec Down at Chichester initially found little evidence for pre-Roman settlement, only a small assemblage of Late Iron Age pottery and coins in Roman period deposits (Down 1978, 188; 330). However, excavations in the Cattlemarket site identified some structural and artefactual evidence of pre-conquest occupation. The remains of three round houses were also identified and tentatively dated to the Early Iron Age, but no stratified evidence survived. Residual pottery was found in Roman contexts, some of which was wheel-turned and some hand-made (Down 1989, 59; 151). Imported goods were also recovered including sherds from two Dressel 1B amphorae and three Republican coins. A field boundary ditch thought to be of Late Iron Age date, which may have continued to be used into the Roman period, was also excavated. Sherds of Iron Age and Roman pottery were recovered from the ditch fills (*ibid,* 60). A feature which could not be clearly dated was a large ditch located in the south-eastern area of the Cattlemarket site. The ditch measures 7 m in width and around 2.25 m in depth. One possible interpretation was that this was a continuation of one of the north-south oriented Chichester Entrenchments, possibly a continuation of NS1 or NS2 (see above Figure 5.6). Another suggestion was that it was a defensive ditch protecting a settlement

contemporary with Cogidubnus, ruler of the Regni in the post-conquest period. It might also have been constructed by the Roman 2nd (Augustan) Legion shortly following the conquest and appeared to have been filled in soon after AD 60 (*ibid:* 61; 65). The excavators acknowledged the difficulties of finding Iron Age levels within Chichester which were not contaminated by later Roman occupation (*ibid,* 151). Another ditched feature of uncertain date was excavated between The Hornet and the River Lavant in 1988-90 prior to redevelopment of the area. Two horse burials were uncovered, and Roman pottery was found in the upper fills. The ditch could have been constructed in the Late Iron Age, but it may also be associated with early Roman occupation (Browse 1990, 10).

Further evidence for Late Iron Age occupation within Chichester was uncovered during archaeological evaluations preceding development. Evidence of specialist metal-working was identified during excavations in 1987 to the south of St Peter's church, consisting of two crucible fragments which were recovered as residual finds in a pit (Magilton 1993, 48). Analysis of the composition of the metal residue adhering to the fragments and their shape, which suggested a shallow, triangular, form, led to an interpretation of a Late Iron Age date. The crucible shape is paralleled at Fison Way, Thetford and is dissimilar to Roman or later examples (Kenny 1993, 227). A ditch associated with an Iron Age enclosure was uncovered in 1998 at Graylingwell, thought to predate an Entrenchment ditch identified during the same excavation (Kenny 2001). A Late Iron Age or early Roman pit was excavated during an evaluation on Swanfield Drive (adjacent to the line of Entrenchment NS6), in 1999. Very few fragments of pottery and briquetage were recovered meaning that the pit could not be firmly dated to either period (Saunders 1999, 5-6).

Excavations at the Roman palace of Fishbourne were carried out in annual campaigns between 1961 and 1968, but no evidence of pre-Roman structural features was identified. 20 sherds of Iron Age pottery of types dated to the 2nd and 1st centuries BC and to the first half of the 1st century AD were recovered from Roman occupation layers of Period 1 (*c.* AD 43-75) and make-up layers of Period 2 (*c.* AD 75/80-100). This pottery was not interpreted as being evidence of previous settlement but as an "accidental accumulation of sherds dropped from time to time by people using the harbour" (Cunliffe 1971b, 159). 37 pieces of Arretine ware were also recovered from Period 1 contexts. It was noted that this type of material was associated with pre-conquest occupation at Camulodunum, but compared to the 250 vessels at that site, the relatively small quantities found at Fishbourne were interpreted as having been carried to the area with the Roman army (Dannell in Cunliffe 1971b, 262). Fourteen pieces of typologically contemporary South Gaulish imports were found in Period 1 contexts and residually in later contexts, also judged to have been associated with the early military occupation of the site (*ibid,* 265).

However, despite of the lack of discovery of pre-conquest features underlying the Roman palace, subsequent investigations which have taken place within and in the vicinity of Fishbourne have revealed pre-Roman activity. Rescue excavations on the route of the A27 road were carried out by Down in 1983 and 1985-6, which uncovered evidence of imported pre-Conquest goods, including a few sherds of Arretine and pre-Flavian finewares, associated with an east-west oriented ditch (Ditch 11). A north-south aligned ditch dated to the pre-Flavian period cut into this feature indicating that it was earlier in date (Down in Cunliffe *et al* 1996, 42).

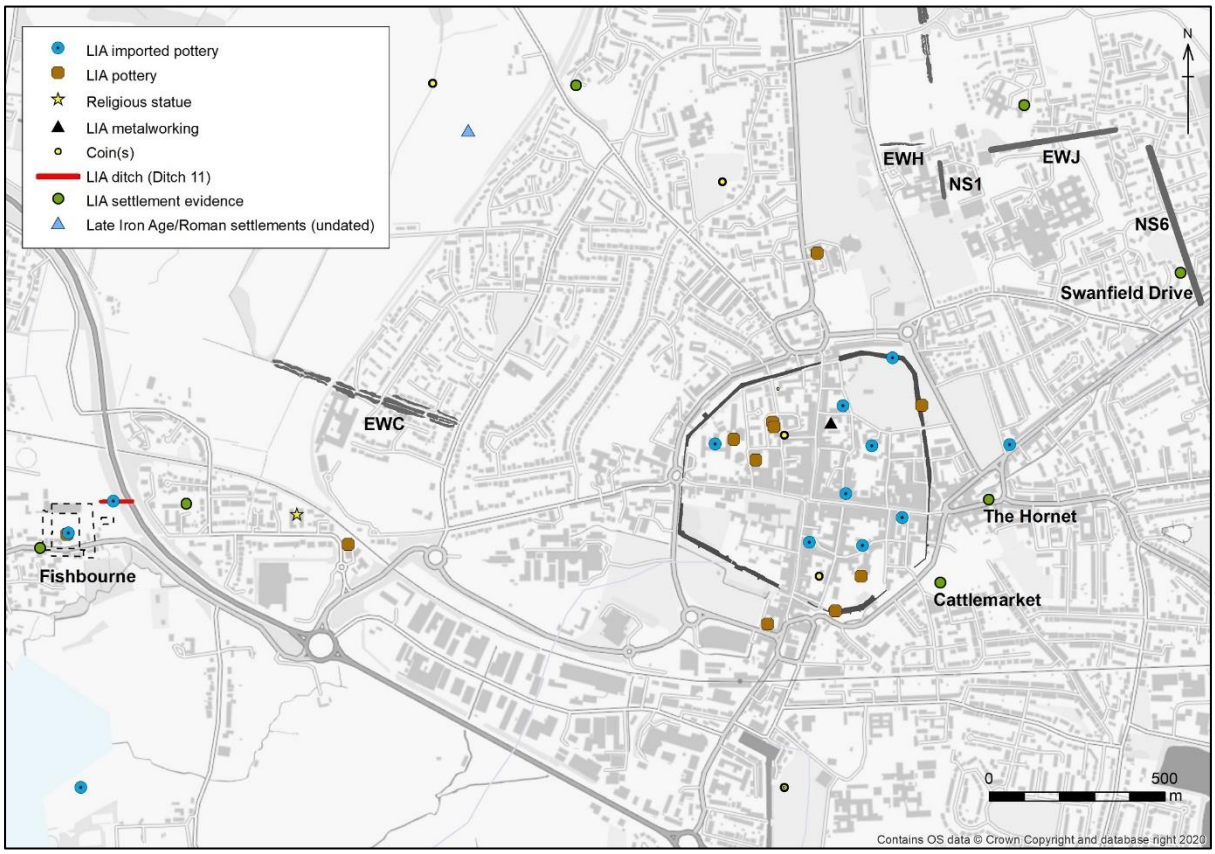


Figure 5.15 Evidence for Late Iron Age occupation in the Chichester and Fishbourne area. Sources: Chichester and District HER, PAS, CCI. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Further investigations of the early ditch were carried out in 1999 and 2002. The difficult conditions under which the first excavations had been conducted had meant that the ditch could not be bottomed, but the later investigations found it to be 4 m in width, between 1 and 1.5 m deep, and V- or U-shaped in profile. The ditch had for a total known length of just less than 100 m. Imported goods were recovered from a sealed pre-conquest context together with food waste and a Roman copper alloy scabbard fitting (Manley & Rudkin 2005, 55). The pottery assemblage included a high proportion of imported wares, 39% of the total number of sherds, or 46% measured by Estimated Vessel Equivalents (EVEs) among which were Arretine wares and Gallo-Belgic fine wares. While this

proportion of early imports is significant the overall assemblage size is far smaller than those found at sites such as Silchester or Skeleton Green (Lyne with Dannell in Manley & Rudkin 2005, 75). The ditch was dated by the pottery to the Late Iron Age, c.10 BC – AD 25. (Manley & Rudkin 2005, 67).

Some other evidence of Iron Age structures has been found in the Fishbourne area: a possible roundhouse was identified during excavations in 1995 at 36 Fishbourne Road East, although this site is yet to be fully published (Manley & Rudkin 2005, 58), and a pit with sherds of pottery which could not be dated precisely but were thought to be Late Iron Age to Roman, was identified through a watching brief in 2007 on Fishbourne Road, nearby to the Roman palace site (Hall & Perrin 2007). It has been suggested that earlier phases of settlement at Fishbourne Palace might have been pre-conquest in date (Creighton 2001, 9-10; Manley 2003, 138-9), rather than the previous interpretation that they were military (Cunliffe 1971a).

Down noted that putting together the finds of the A27 excavation with those from the preceding 35 years of excavation in the Chichester and Fishbourne area, a total of 286 pre-Conquest imports had been recovered, including, Arretine ware, Dressel 1B and Pascual 1/Dressel 1 amphorae and early Gallo-Belgic fine wares. The majority of these finds occurred at either Chichester (Chapel Street (1970-1974, 1978), County Hall (1978) and Cattlemarket (1978-1982)) or Fishbourne. However, finds of Dressel 1B amphorae were also made during excavations at Oving and Boxgrove (Down in Cunliffe *et al* 1996, 15 (Figure 2.4)). Rigby's assessment of the pottery from the A27 excavation concluded that a small quantity of the finewares, concentrated in the northern part of the excavated area, had been imported in the pre-conquest period. She also commented that late Augustan vessels were similar to those excavated from the palace at Fishbourne. Rigby concluded that if the pottery assemblage for the A27 and the Fishbourne material was considered together with the early imported fine wares from excavations within Chichester, then the range of items, if not the quantity, was comparable to Camulodunum and Braughing/Puckeridge (Rigby in Cunliffe *et al* 1996, 117).

The evidence for Selsey

The identification of Selsey as the location of the nucleated centre of an *oppidum* principally rests on the coin evidence (described below p185 and see Figure 70 for a summary of the evidence). The archaeological record for settlement on the peninsula during the Iron Age is problematic: it is not always clear from accounts of the discovery of sites which part of the period they should be assigned to, and datable finds are not always present in suspected Iron Age or Late Iron Age features. Several occupation floors were observed by Heron-Allen in the early 20th century eroding out of the cliffs at Selsey, but they are generally described by him as Iron Age in date only, with no further

qualification. One site on the East Shore is identified as Early Iron Age, associated with coarse pottery fragments, but it is unclear as to whether any of the other occupation floors could be defined as Late Iron Age. The pottery is not fully described, and the sites are now lost completely to coastal erosion (Heron-Allen 1911). A large ditch of Iron Age date was found during investigations on the former Pontin's Broadreeds Holiday Centre on the east side of Selsey Bill in 1988. The ditch had a maximum depth of 2.17 m and was interpreted as being defensive in character, possibly relating to an enclosed settlement (Kenny 1989, 10). However, dating of the ditch is by inference: prehistoric flintwork and pottery found in the ditch were thought to be residual and Roman sherds found in an early layer of silting suggested that it was open during this period, but no artefacts of Late Iron Age date were found (*ibid*). Late Iron Age pottery was identified by Hawkes in his commentary on the pottery found in a gravel pit in Golf Links Lane, Selsey Bill. Hawkes saw the wheel-made wares as paralleled at Silchester, Hengistbury Head and St Catherine's Hill (Hawkes in White 1934, 48).

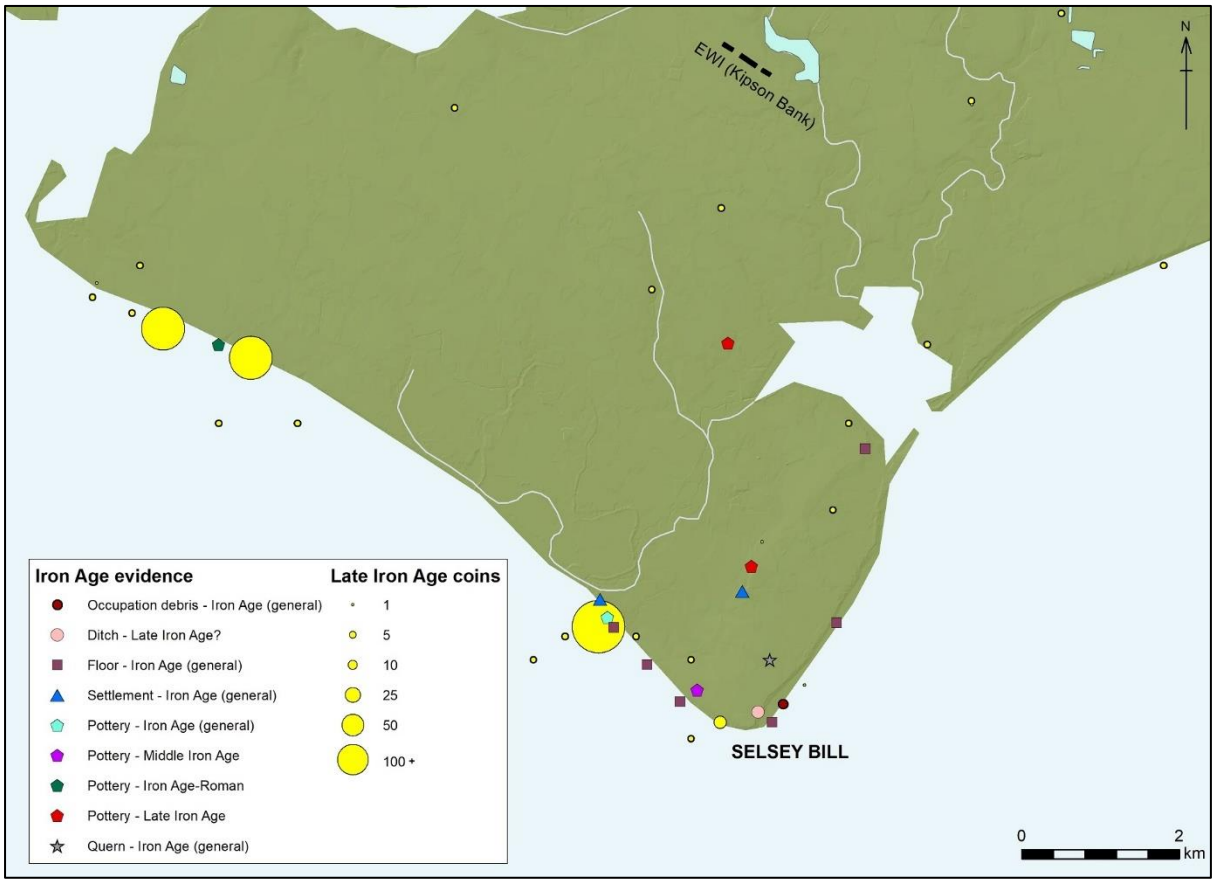


Figure 5.16 Summary of the Iron Age archaeological evidence for Selsey. Sources: Chichester and District HER, PAS, CCI. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Little could be identified on aerial photographs and lidar that might be later prehistoric in date on the Selsey peninsula, probably due to a combination of modern development and repeated phases

of land improvement works. Field boundaries associated with a settlement were excavated on a site at Chichester Road, dating to the Late Bronze Age/Early Iron Age transition, but unlike the area of the coastal plain to the north, no such boundaries could be identified from cropmarks or low earthwork remains.

The case for Selsey as the location for a nucleated centre for a territorial *oppidum* has been put forward strongly by Cunliffe in, for example, successive editions of *Iron Age Communities in Britain* (1974; 1978; 1991; 2005). In the first volume covering the Fishbourne excavations he states that such a centre is "generally thought to lie somewhere in the vicinity of Selsey Bill" (1971a, 15). Writing in 2005 Cunliffe defines the greater Atrebatic region as having six socio-economic zones based on coin evidence, "in three of which urban settlements are known: Calleva, Venta and Selsey" (2005, 153). He qualifies this statement later by noting that "the nature of the Selsey centre is a matter for some speculation" (*ibid*, 368).

Frere criticised the choice of Selsey as an *oppidum* centre in his review of the Fishbourne excavation volumes, putting forward a number of arguments that have subsequently been reflected by later writers. He suggested instead a location in the Fishbourne/Bosham peninsula, in the vicinity of the greatest concentration of linear dykes. He supported this view by referencing Richard Bradley's survey of the entrenchments in the first volume, in which he states his theory that three successive phases of the earthworks protect increasingly smaller territories, ending with the Chichester/Fishbourne area. He questioned the Selsey coin evidence which had led to the speculation that this was the site of a mint and a nucleated settlement, arguing that they might have come from "a single large, scattered hoard". Frere also suggested that the quantities of Arretine ware found at Fishbourne might be associated with pre-Roman occupation, rather than a military phase (Frere 1972, 77). Bedwin concurred with Frere in his review of the evidence for an *oppidum* centre at either Selsey or Chichester/Fishbourne, stating that there was little conclusive evidence for large-scale settlement on Selsey in the Late Iron Age, given the lack of known datable artefacts (Bedwin 1983, 40). He also points to the geographic separation between the Selsey peninsula and the entrenchments, stating plainly: "In what sense can dykes 12 km away be said to 'defend' Selsey?" (*ibid*, 41). Aldsworth is less forthright, suggesting that a case might still be made for an *oppidum* defended by the sea on three sides, but favours the Chichester area over Selsey due to the increasing number of finds coming from the former area (Aldsworth 1987, 49).

Evidence for an *oppidum*: Coinage

The quantity of coins suggests that there was an important regional centre in this area in the Late Iron Age, but the evidence for local coin production is limited to a few fragments of coin pellet moulds found during the excavation of a Late Iron Age to Roman settlement at Ounces Barn (Bedwin 1984, 87; Davenport 2003, 103). However, the overall number and distribution of different types of coins have suggested to numismatists that there was a mint in this area (eg Bean 1994, 147). Leins also points to the role of important settlements as foci for coin use, bringing together numerous types that were "apparently produced and circulated by disparate communities", describing Chichester as one of a group of "proto-urban" settlements together with Silchester and Braughing (Leins 2012, 202), although no nucleated centre has yet been identified here.

1182 coins are catalogued for the region between the South Downs and the Selsey Peninsula in the Celtic Coin Index (CCI) (accessed 2019). Their distribution (see Figure 5.17) shows a concentration of large groups of coins in the Selsey area, but this may be due to the presence of several hoards and might not be evidence of intensive occupation (Frere 1972, 77; Bedwin 1983, 41). Individual coins are found across the central area of the coastal plain, with particular concentrations at the eastern end of the entrenchments around Ounces Barn, Selhurstpark Farm and Copse Farm, Oving (data from Celtic Coin Index, see Table 3 below). The largest proportions of coins with a named ruler (239 excluding those with no data) belong to Tincomarus (118 coins or 49%) and Verica (83 coins or 35%), as also noted by Leins (2012, 137). Tincomarus, (*c.* 20 BC – *c.* AD 10) and Verica, (*c.* AD 10 – *c.* AD 40) were both leaders of the Atrebates and claimed to be sons of Commius, whose coins cease in this area *c.* 20 BC (Cunliffe 2005, 145).

The distribution of early imported coins and later British issues is fairly consistent, with main concentrations seen across the central area of the coastal plain and along the coast at Selsey (see Figures 5.18 and 5.19). The geographic areas represented by the British issues (781 excluding those with no data) indicate connections with other regions: the majority are identified as Southern British (464 coins or 59%), but there are also coins from the South East, East and East Anglia, and the South West. Continental imports account for 150 coins or 19% of the total. Considering the data for the 231 coins from the Selsey region (see Table 4 below), coins of Tincomarus are the most heavily represented with a larger margin between his issues and those of Verica than seen at either Hayling Island (see Table 3 below) or across the *oppidum* region as a whole. Issues of Tincomarus account for 62 of 102 coins, or 61% (excluding those with no data) and coins of Verica amount to 29 of 102 coins or 28%. The coins are also predominantly British in origin, with continental imports accounting for only 20 of 228 coins or 9% (excluding those with no data). They are also mainly Southern British in origin, 188 of 228 coins or 82% (excluding those with no data).

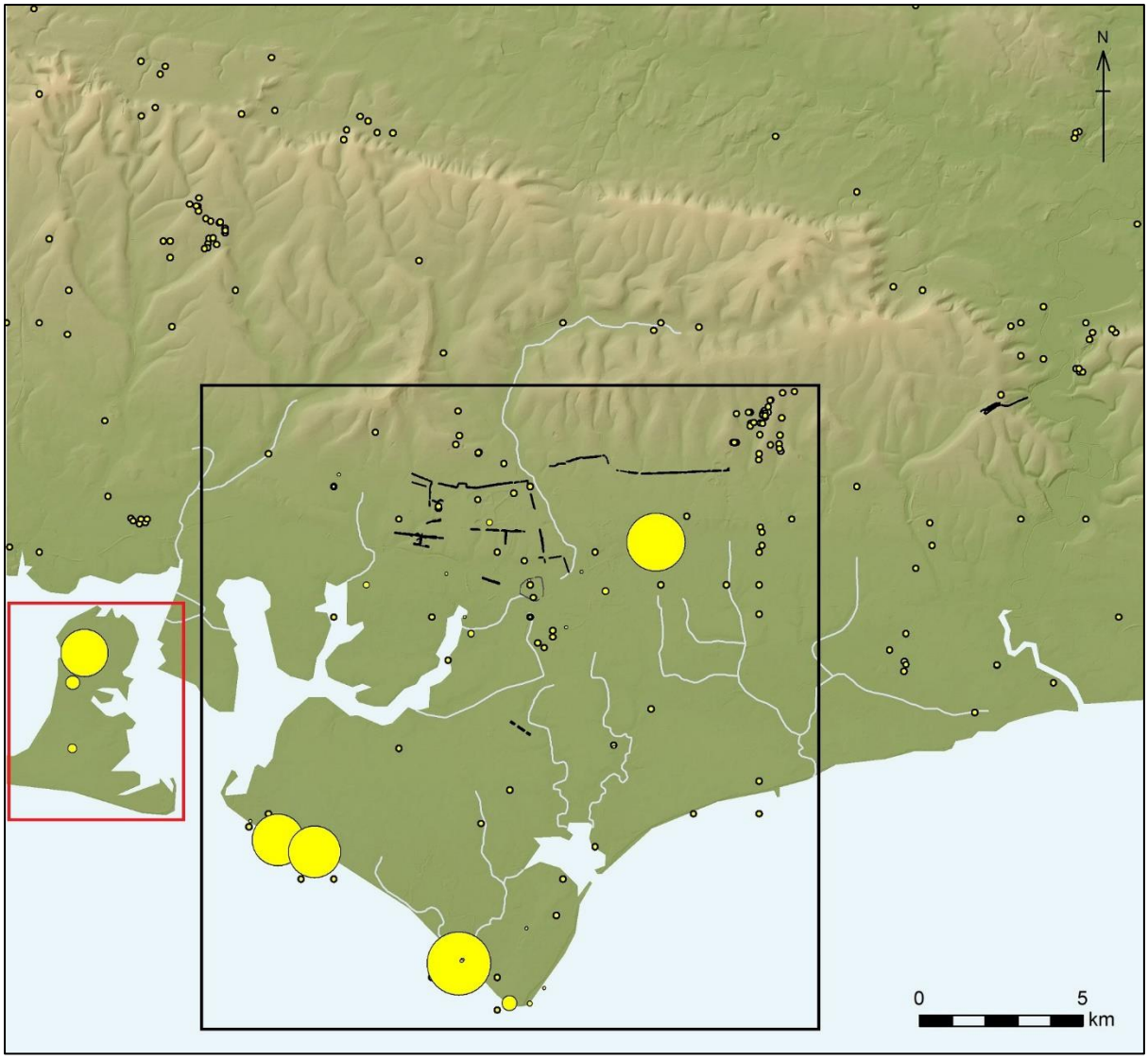
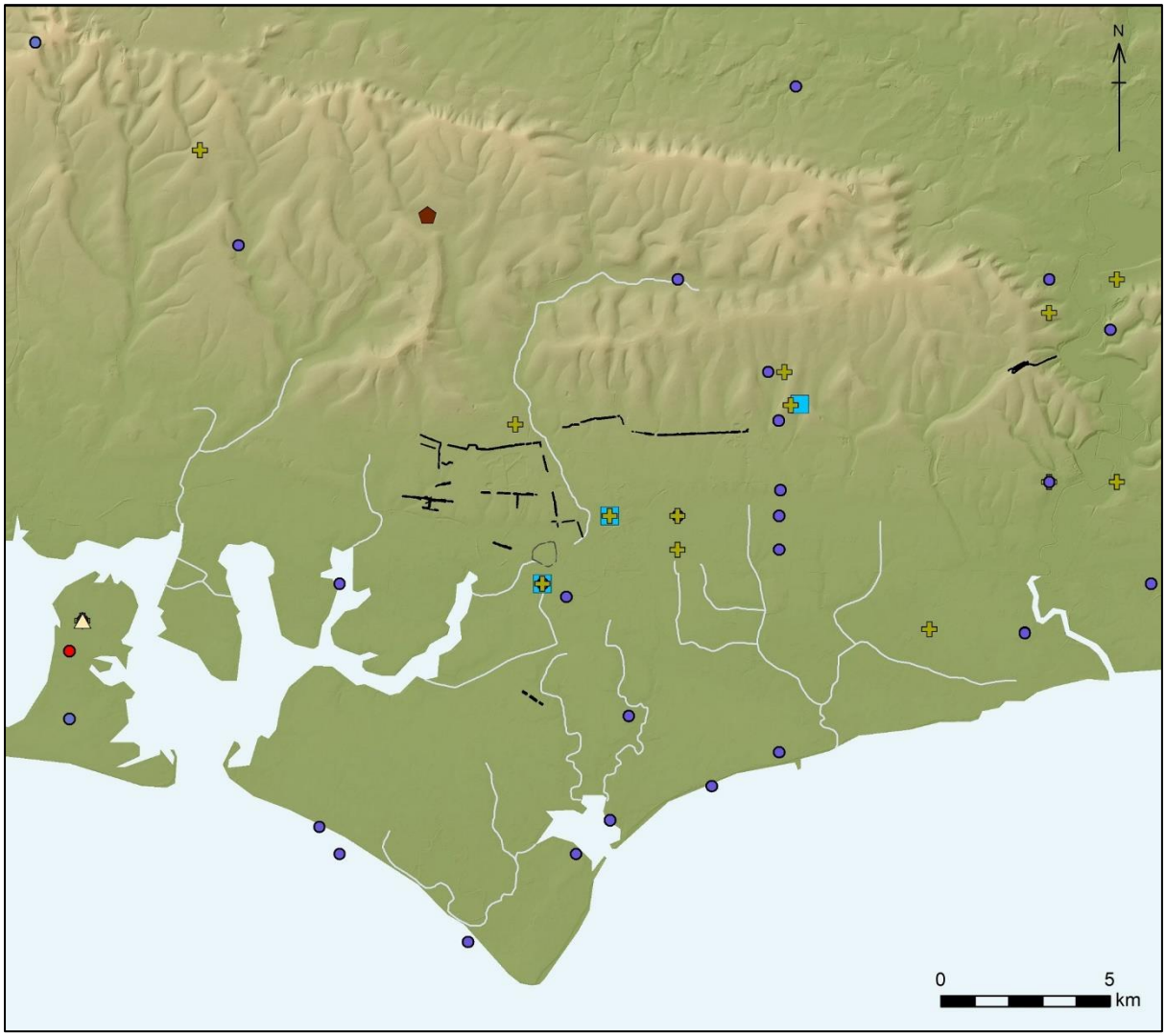


Figure 5.17 Distribution of Iron Age coins in possible oppidum zone (in black box) on the West Sussex Coastal Plain and South Downs shown by size of group. The largest circles indicate group of 100 or more coins and the smallest indicate a single coin. Large hoards of coins are located at Selsey and along the coast to the north-west, Hayling Island (in red box) and Oving in the northern part of the coastal plain. Sources: Celtic Coin Index and Chichester & District HER. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

The data for the coins deposited at the Hayling Island shrine, to the west of the Chichester channel, have a similar breakdown to those seen across the *oppidum* region (data from Celtic Coin Index, see Table 5). Again, of coins with named rulers (34 of 186 coins) Tincomarus (13 coins or 38%) and Verica (14 coins or 41%) occur most frequently. The most common region is again Southern British (49 of 155 coins or 32%, excluding those with no data), but the British issues also include examples from the North East (2 coins or 1%), a region not represented elsewhere within the study area. Continental coins form 37% of the total (58 coins).



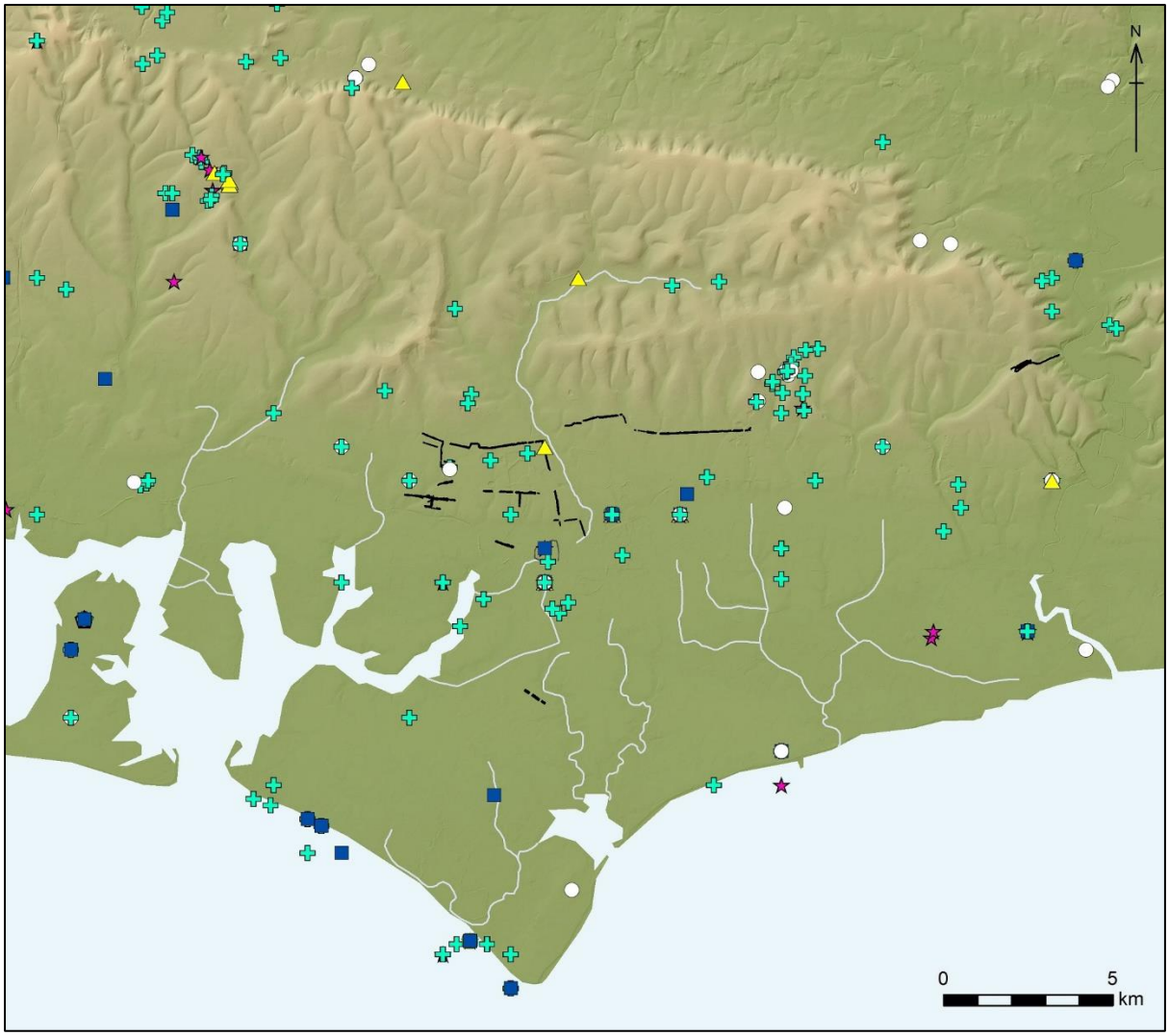
Categories (West Sussex and Hampshire)

- Belgic Continental (50)
- Gallo-Belgic Continental (78)
- Gaulish (Southern) Continental (4)
- Gaulish Continental (1)

Categories (Hampshire)

- Belgic Continental (14)
- Danubian Continental (11)
- Gallo-Belgic Continental (16)
- Gaulish (East Central) Continental (7)
- Gaulish (West Central) Continental (8)

Figure 5.18 Distribution of Continental Iron Age coins shown by geographic area. The overall count for each type is also given in brackets. Source: Celtic Coin Index. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).



Categories (West Sussex and Hampshire)

- Not defined (early uninscribed) British (82)
- Southern British (520)
- South Eastern British (26)
- Eastern British (46)
- East Anglia British (3)
- South Western British (56)

Categories (Hampshire)

- Not defined (early uninscribed) British (15)
- Southern British (91)
- Eastern British (6)
- South Western British (32)
- North Eastern British (2)

Figure 5.19 Distribution of British Iron Age coins shown by geographic area. The overall count for each type is also given in brackets. Source: Celtic Coin Index. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Geographic area	Count	Ruler name	Count
Armorican Continental	7	ANTED (Iceni)	1
Belgic Continental	44	BODVOC	1
Danubian Continental	1	CARA[TACUS]	3
East Anglia British	3	Commios	3
Eastern British	20	Cunobelin	5
Gallo-Belgic Continental	64	Dubnovellaunos	1
Gaulish (East Central) Continental	17	ECEN/ECE	1
Gaulish (Southern) Continental	4	Epaticcus	20
Gaulish (West Central) Continental	13	Eppillus	2
Not defined (early uninscribed) British	71	Gallo-Belgic	1
South Eastern British	19	Tincomarus	118
South Western British	51	Uncertain	1
Southern British	464	Uninscribed	15
Unknown	41	Unknown	567
Western British	3	Verica	83
Grand total	**822**		**822**

Table 3 Breakdown of coins in the region between the Chichester Entrenchments and Selsey by ruler name and geographic region. Source: Celtic Coin Index, University of Oxford.

Geographic area	Count	Ruler name	Count
Armorican Continental	1	ANTED (Iceni)	1
East Anglia British	1	CARA[TACUS]	2
Eastern British	2	Commios	1
Gallo-Belgic Continental	19	Cunobelin	1
Not defined (early uninscribed) British	1	Epaticcus	4
South Western British	14	Eppillus	2
Southern British	188	Tincomarus	62
Unknown	3	Unknown	129
Western British	2	Verica	29
Grand total	**231**		**231**

Table 4 Breakdown of data for the Selsey area by geographic area and ruler name. Source: Celtic Coin Index, University of Oxford.

Geographic area	Count	Ruler name	Count
Armorican Continental	8	BODVOC	1
Belgic Continental	14	CRAB	1
Danubian Continental	11	Epaticcus	2
East Anglia British	1	INAM	1
Eastern British	3	RVES	1
Gallo-Belgic Continental	10	Tincomarus	13
Gaulish (East Central) Continental	7	Unknown	152
Gaulish (West Central) Continental	8	VEP CORF	1
North Eastern British	2	Verica	14
Not defined (early uninscribed) British	14		
South Eastern British	5		
South Western British	28		
Southern British	49		
Unknown	17		
Western British	9		
Grand total	**186**		**186**

Table 5 Breakdown of coin data for Hayling Island by geographic area and ruler name. Source: Celtic Coin Index, University of Oxford.

Evidence for an oppidum: religious/ritual sites

The significance of the West Sussex Coastal Plain as the possible location for an important political capital might be supported by the presence of religious sites, including a shrine at Hayling Island and an extensive cemetery at Westhampnett (see Figure 5.20). Religious or ritual behaviour is also evidenced by the presence of hoards of coins particularly at Hayling Island and along the Selsey coastline and possibly also by a Celtic head of Bath Stone found at Bosham (Chichester & District HER 2131), and the stone figure of a mother/fertility goddess found at Fishbourne, 600 m to the east of the Roman palace. The statue has been considered as being in a Roman context but may relate to

pre-conquest practices (Henig & Rudkin 2009, 213-214). It might also be associated with Late Iron Age occupation in the area to the east of the palace (see above p194).

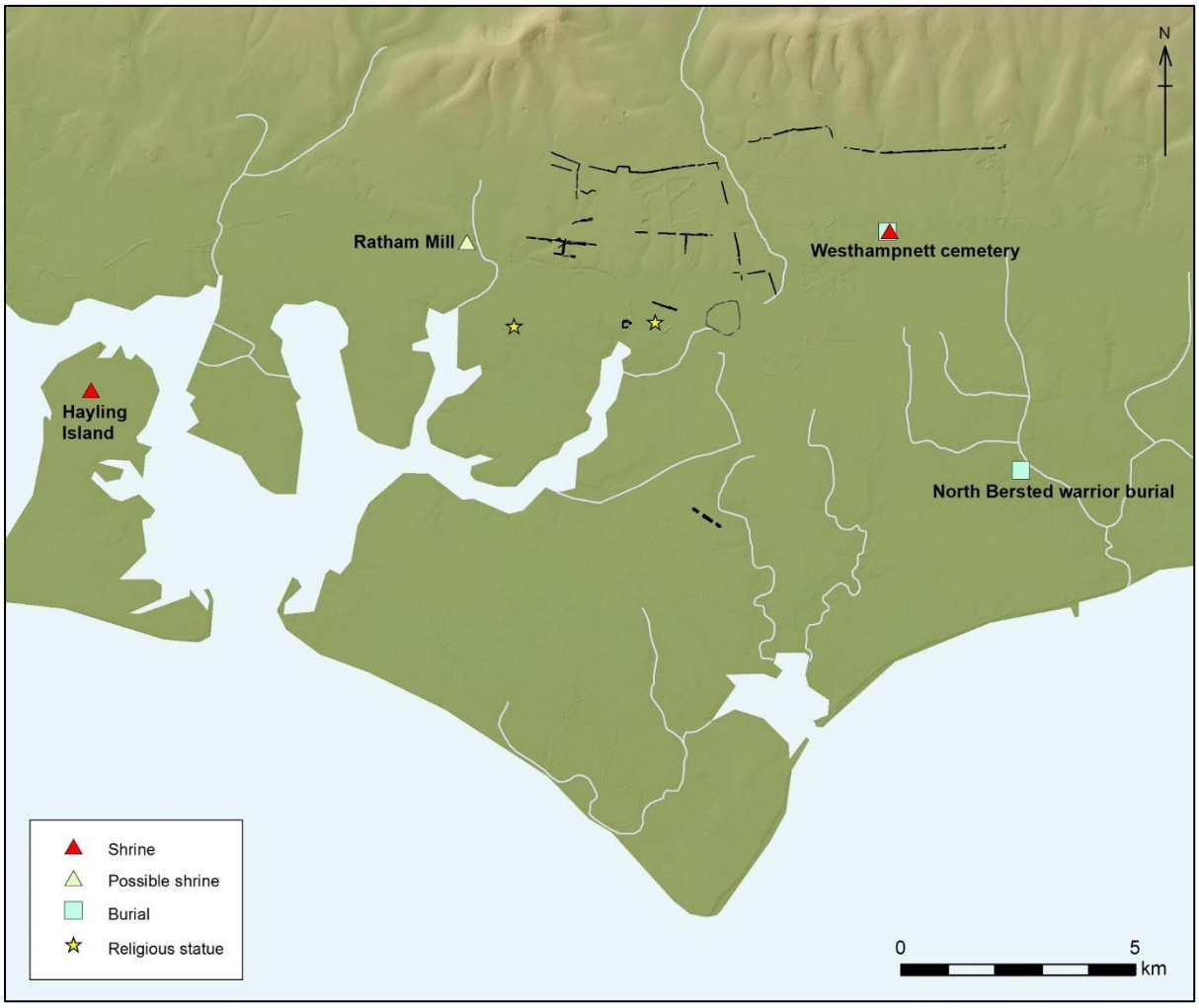


Figure 5.20 Locations of religious sites and finds in the Chichester area. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

A shrine which was in use in the Late Iron Age and continued to be developed as a religious site in the Roman period is located at Hayling Island to the west of the Chichester Channel. The Hayling Island site may have been a significant religious focus to the *oppidum* landscape, within which the Chichester Channel was also an important feature. The first shrine was constructed from wood in the early to mid-1st century BC and comprised two concentric rectangular enclosures, both with entrances on the eastern side. Dating was based on stratified coins which were all early-mid 1st century BC in date. However, finds of saucepan pottery, local traditions of which are associated with the Middle Iron Age in Sussex, and a radiocarbon date from a posthole of 410-110 BC, suggest earlier activity on the site (King and Soffe 2013, 5-6).

The rectangular inner enclosure was replaced by a circular structure, recognised from a ring gully, constructed around a central pit in the Late Iron Age. The central pit was used for votive offerings which were also placed in the courtyard around the building. The central pit returned radiocarbon dates of AD 20 – 330 which is consistent with the continuing use of the temple into the Roman period (King and Soffe 2013, 7). A significant quantity of coins was deposited at the Hayling Island shrine (discussed above, p 28), the make-up of which largely reflects the variety of coins observed across the *oppidum* zone and points to a link between the two sites. Issues of Late Iron Age Atrebatic leaders Tincomarus and Verica are well-represented among them, as they are across the area of land around between the linear dykes and the Selsey peninsula. The fact that coins were considered to be suitable for deposition as part of a religious ritual indicates that they were not just transactional items, but possessed symbolic importance (Sharples 2010, 157). The majority of the coin hoards in the Chichester area are located in marine or estuarine contexts, liminal locations of probable significance in the Iron Age (Bradley 2002; Tilley 1994). The deposition of coins during the Late Iron Age in coastal areas is a phenomenon that has been observed elsewhere in Britain (Willis 2007, 122-3; Haselgrove 1987, 119) and it is possible that both Hayling Island and the Selsey peninsula were regarded as important ritual areas for people living on the coastal plain.

A Roman period temple has been identified at Ratham Mill, north-west of Chichester, but it has been suggested that the site may also have its origins in the Late Iron Age. A sub-circular ditched enclosure lies approximately 45 m to the east of the Romano-Celtic temple adjacent to a stream which flows south into Chichester Harbour. The temple has been dated through surface collection of pottery to the late 1st century and 2nd century AD (King and Soffe 1983, 266). The enclosure is undated and, while it is described as an Iron Age shrine in the Scheduling entry for the temple (NHLE 1018354), there is currently no evidence to support this interpretation.

Excavations preceding the construction of the A27 Westhampnett bypass uncovered an extensive Late Iron Age cemetery, consisting of 161 cremation burials, two rectangular shrines, 11 pyre sites and other pyre-related features. The cemetery is one of the earliest of its type in southern Britain (Fitzpatrick *et al* 1997, 13-14). Dating for the site was initially based on a combination of evidence but particularly from the assemblage of brooches, the Nauheim and Feugère's type 2, both introduced *c.* 2nd century BC, and the Almgren 65, which ceases to appear by *c.* 30-20 BC. Combining the occurrence of brooch types with coins and pottery led to a preferred date range of *c.* 90-50 BC (*ibid*, 203-204). The dating for the cemetery was reviewed with a programme of radiocarbon dating. Samples were taken from 44 graves and 50 dates obtained. The data models, using the radiocarbon dates together with material typologies, suggested a start date of mid-late 2nd century BC and the possibility that the cemetery was used for a longer period than the forty years initially thought

(Haselgrove, Fitzpatrick & Hamilton 2018, 377). Queries run against the data models did not find significant distinctions in date between graves as compared to their position in the cemetery but did suggest that burials with brooches were likely to be earlier than those without them and that graves containing Middle Iron Age pottery types, including the local saucepan pot tradition and biconical-shaped pots, were the earliest in date (*ibid*, 373-374).

The cemetery is characterised by Aylesford-type cremation burials, typically un-urned cremations in small graves, frequently accompanied by grave goods, which have a distribution across central and east England (Fitzpatrick *et al* 1997*,* 208). The cremation burial rite is assumed to have been introduced to England from continental Europe and pottery types identified at Westhampnett were found to be analogous to Normandy. Numismatic evidence also demonstrates links between Picardy and south-east England (*ibid,* 209). Aylesford-type burials are frequently found in small groups and there is only one comparable example in Britain to the size of the Westhampnett cemetery, King Harry Lane at St Albans (*ibid*, 228). The presence of pyre sites and graves allowed the analysis of objects associated with different stages of the mortuary rituals. Pots were solely placed as grave goods, while metal objects and animal bone could only be identified as pyre goods (*ibid*, 220).

The main group of burials is arranged to the south-east of a sub-circular space pointing to a formality in the creation of the cemetery. The composition of individuals found in the cemetery includes children (0-12 years), youths (13-8 years), adults (19-45 years) and elders (45 plus years) (*ibid*, 214). While there are no clear distinctions in the placing of the majority of the age groups, burials of elders were preferentially placed around the circular space. Several graves, all with three or more artefact types, appeared to be set apart from the others to varying degrees. They seemed to be the focus of smaller graves which were set out in rough arcs around them (*ibid*, 219). This type of grouping has been observed at Aylesford, (Evans 1890, 320-1) and King Harry Lane (Stead & Rigby 1989, 80-81) and both had been interpreted as representing family groups. Only around half of the focal graves belong to the Iron Age phase of the King Harry Lane cemetery and the broad assumption of kinship for all of them has been questioned (Millett 1993), but those early graves may still represent inter-connected groups of some kind, defined by their separation with the larger cemetery (Haselgrove & Millett 1997, 292; Sharples 2010, 287). The Westhampnett cemetery has been seen in the context of settlements that have been dated to the Mid-Late Iron Age, including Copse Farm, Oving and Carne's Seat, associated with a suggested expansion in settlement on the coastal plain (Bedwin 1983, 35-8). However, it postdates the starting date of these sites and possibly predates the development of an *oppidum* in this area (Fitzpatrick *et al* 1997, 9).

Four square and rectangular enclosures, three situated in a line oriented north-west to south-east and one to the north-east of the others, are located to the east of the burials. Pyre sites are found around the north-westerly enclosures, but very few burials are located to the east of them. They have been interpreted as shrines on the basis of their parallels with similar structures, small in size and oriented south-east, identified at other sites, such as Danebury (Hants) and Heathrow (Middx) (Fitzpatrick *et al* 1997, 229). Around 20 examples of Late Iron Age shrines, or Roman period temples with a Late Iron Age origin, have been identified in southern Britain, nearby examples being Chanctonbury Ring and Money Mound, Hammerpond Road (both West Sussex), and Lancing Down (East Sussex) (Allen *et al* 2015). Iron Age shrines at Danebury and Cadbury Castle are located in prominent positions and the Westhampnett shrines are located on slightly higher ground, overlooking the majority of the pyre sites and graves (Fitzpatrick *et al* 1997, 231).

The circular space at the northern end of the burials has been interpreted as possibly being a symbolic roundhouse, linking the cosmological beliefs that appear to have governed the construction of living house with the area set aside for the dead. The dominant orientation of round house entrances is to the south-east and this is possibly reflected in the layout of the cemetery. (*ibid*, 238-239; Sharples 2010, 235, 286). The four shrines are also laid out on a north-west, south-east alignment, and the overall orientation of the cemetery contrasts with the predominant north-east, south-west alignments of the extensive coaxial field systems to the north on the South Downs, and to the south on the coastal plain (see below p217). Many of these features are undated but it is probable that at least a proportion of these field systems were in use at the same time as the cemetery and nearby settlements. Fitzpatrick has suggested that the topographic setting of the cemetery on a low, but prominent, hill, visible above the known contemporary settlements on the coastal plain, made a clear displacement between the dead and the living (Fitzpatrick 1997, 228). It is possible that the reversal in alignments between the living agricultural landscapes and the developing cemetery was a deliberate choice by its creators to reinforce that separation.

Another discovery which may indicate that this was an important regional centre is a `warrior' burial found to the south-east of Chichester during excavations in 2007-2010 at North Bersted, Bognor Regis. The adult male was buried in around 50 BC within a paddock thought to be of Late Iron Age date, but in an area where no evidence of settlement was found. The burial and the paddock around it are aligned north-west, south-east (Taylor *et al* 2014, 59). The burial was accompanied with a rich array of grave goods including a deliberately bent, Late La Tène sword, a shield boss and an elaborate, crested, helmet. Three complete pots were placed at the head of the grave which, together with the helmet, are thought to have originated in northern France (*ibid*, 62). The helmet was a Coolus type, as were probably used by Roman auxiliary cavalry, but it had been adapted in

order to incorporate an openwork crest of a complex Celtic design of geometric shapes (*ibid*, 64). Broken pots, of locally made Late Iron Age `Belgic' ware, were placed at his feet. The individual was buried within a timber chamber reinforced by a series of four iron bars, accompanied by a number of the grave goods, but with the complete pots and a spearhead placed adjacent to the chamber. Initial isotope studies suggested that he had his origins in a country with a warmer climate than southern Britain, suggested by the excavators as possibly being southern Gaul (*ibid*, 62), but a more recent reanalysis indicates a destination further north. Regions with comparable values include much of eastern England, but further north than the south-east coast (Fitzpatrick 2020, 21). The burial has the same alignment as the Westhampnett cemetery, which may indicate a similarity in beliefs, if not mortuary practices.

The presence of the Westhampnett cemetery and the temple at Hayling Island, two religious or ritual foci, together with the possible shrine site at Ratham Mill and the rich burial at North Bersted might underline the significance of the Chichester/Fishbourne region. These significant sites may have contributed to, or been associated with, the development of a centre of political power on the West Sussex Coastal Plain.

The wider landscape: Late Iron Age settlements

Settlements dated to the Late Iron Age through excavation are found across the central band of the West Sussex Coastal Plain and also to the north of the Chichester Entrenchments on the South Downs and there appears to be a focus in the central part of the coastal plain adjacent to the Chichester Entrenchments. However, the distribution of dated sites is probably influenced by the locations targeted for development around Chichester, Bognor Regis and along the route of the A27. An example of how this distribution might be skewed is shown by the excavation of a Late Iron Age settlement at North Bersted in 1975-76, which only occurred after it had been discovered by chance on a building site (Bedwin & Holgate 1985, 215). As Figure 5.21 shows, a large number of undated sites have been identified from evidence on lidar imagery and aerial photographs which may also belong to this period or may span the Late Iron Age to Roman periods, both on the South Downs (Carpenter *et al* 2016) and across the coastal plain (identified through the author's research). The distribution of dated sites would seem to bear out the suggestion that there was an expansion in settlement onto the coastal plain from the Middle Iron Age to Late Iron Age (Bedwin 1983, 38), but the settlements at Lordington, Rewell Wood and Gobblestubb's Copse East demonstrate that the South Downs were still being occupied. If the undated sites are considered, this distribution might be as extensive as is suggested for the possible later prehistoric and Middle Iron Age sites (see Figure 5.2 above and below Figure 5.29).

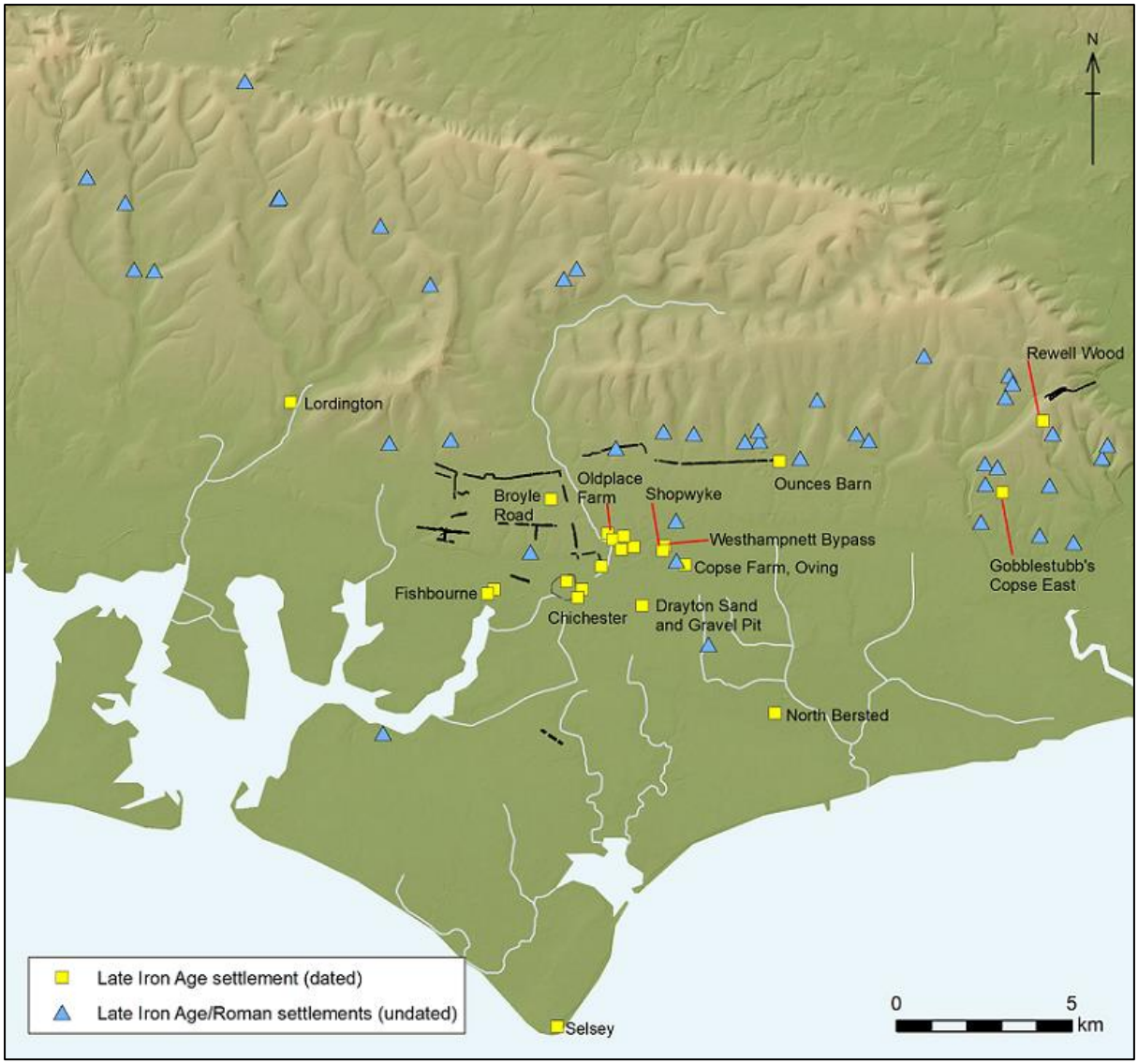


Figure 5.21 Late Iron Age sites dated through excavation (yellow and labelled) and suspected Late Iron Age/Roman sites identified from aerial photographs and lidar (blue). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

One of the areas where there is a concentration of excavated settlements is to the east of Chichester around Oving and Westhampnett and Late Iron Age sites have been investigated at Copse Farm, Oving, Oldplace Farm, along the route of the A27 Westhampnett Bypass and in extraction sites at Shopwyke and Drayton. Continuity of settlement from the Middle Iron Age to the Late Iron Age is suggested at Copse Farm and Oldplace Farm, due to the presence of saucepan pottery, thought to have been in use from the 4th to the 1st centuries BC, alongside Late Iron Age pottery types (Hamilton 2003, 77).

Figure 5.22 Late Iron Age (A) and Roman (B) farmsteads at Copse Farm, Oving. A possible third Late Iron Age/Roman site (C) is located to the north-west of the Late Iron Age site. (Transcription – Truscoe). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Two enclosure complexes with possibly linking trackways had been identified from cropmarks on aerial photographs, at Copse Farm, Oving (transcribed by F G Aldsworth). The site was excavated and found to be multi-period, but without continuity of settlement in either of the two areas. The southern complex was found have been established in the 2nd to 1st centuries BC and abandoned at the beginning of the 1st century AD, probably close to the time of the Roman invasion. The northern complex was established in the Roman period, in the 1st and 2nd centuries AD. Pottery evidence suggested that the trackway that leads from it to the west also dated to the latter period (Bedwin 1983, 36; Bedwin & Holgate 1985, 217). Recent aerial photography has revealed additional features in this area. A number of short linear boundaries appearing to define sub-rectangular enclosures or fields are located to the north of the northern farmstead (B on Figure 5.22). The curving trackway leading to the north from the earlier farmstead (A on Figure 5.22) extends further than previously

transcribed, almost meeting an east-west trackway probably associated with the northern farmstead. The trackway leading to the north appears to link the two settlement areas, but it may be that an existing line of communication was preserved into the Roman period, as noted in the Upper Thames region (Hingley and Miles 1984, 62). A third farmstead, of possible Late Iron Age/Roman date, formed of three linked enclosures is located to the northwest of the Late Iron Age site (C on Figure 5.22). Further trackways and enclosures were recorded to the north of the A27, although whether they have an association with the settlements to the south of the modern road is unclear.

Excavations at the Tarmac quarry at Shopwyke in 1991 and 1992 found evidence of Middle Iron Age settlement, but occupation into the Late Iron Age and Roman periods was also indicated. Ditches containing Iron Age and Roman pottery were identified, including a possible enclosure ditch measuring 2 m in depth. The excavators speculated that there may have been a continuation between the ditches identified in the south-east corner of the site and the remains of a field system identified during excavations at Copse Farm to the east of the site (Kenny 1991, 35).

Excavation at the Drayton Sand and Gravel quarry, to the south of Copse Farm, in 2001 identified a group of pits dated to the Late Iron Age. A large number of undated features consisting of ditches, pits and postholes were also uncovered in this area, which might have been associated with Late Iron Age settlement but could also have been connected with a Bronze Age cremation cemetery found in this area (Stevens 2003).

Multi-period settlement, but with a similar lack of continuity in location to that seen at Copse Farm, is also found at Oldplace Farm, Westhampnett, adjacent to the River Lavant (see Figure 5.23). The site comprises a group of enclosures and trackways around a central, broad-ditched, rectangular enclosure which has an entrance on its western side. Two sub-square enclosures lie to the south of this area along the route of the river. Excavation has shown that the southernmost enclosure dates to the Late Iron Age, 2nd and 1st centuries BC. The central enclosure was not excavated but Roman period pottery was collected from the plough soil (Bedwin 1983, 36). This site was originally identified from cropmarks on aerial photographs, but a review of recent aerial photography reveals a number of new features. Trackways can be identified extending to the east in the area of the modern farm and overlapping trackways run along the southern side of the central enclosure. A group of an enclosures and a trackway are also visible to the east of Oldplace Farm and, based on their morphology and a comparison with similar excavated examples, may be Late Iron Age to Roman in date.

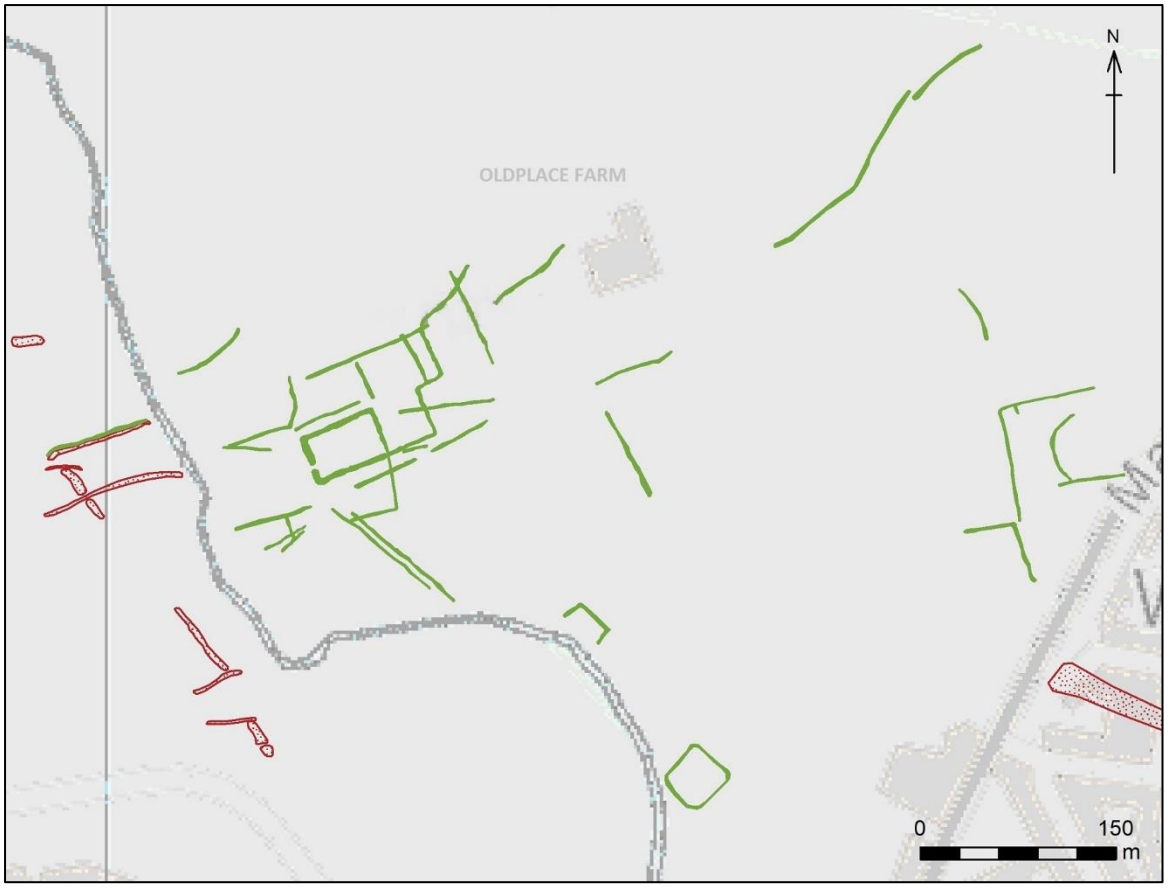


Figure 5.23 Settlement enclosures and field boundaries around Oldplace Farm. (Transcription - Truscoe). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Field systems associated with settlement were excavated, in 1975-76 (Bedwin & Pitts 1978) and two enclosure complexes were investigated from 2007 to 2010, both at North Bersted, Bognor Regis (Taylor *et al* 2014). In both cases, the occupation was found to start in the Middle Iron Age (see above p172) but the sites continued to be used and modified into the Late Iron Age (Bedwin & Pitts 1978, 310; Taylor *et al* 2014, 39). Based on dating from pottery, the 1975-76 site appeared to have been abandoned in the late 1st century BC (Bedwin & Pitts 1978, 311). Dating on the 2007-2010 site was by pottery in association with stratigraphy and radiocarbon dates. Analysis of the Late Iron Age pottery assemblage found associated with later adaptations to the field system combined with radiocarbon dates, indicates that one area of enclosures (Area B) went out of use at an early stage in the Late Iron Age, while another area (Area H) continued to be developed (Taylor *et al* 2014, 40; 42; 155). The site was notable for the rare find of the well-furnished Late Iron Age inhumation burial in a third area (Area E) (see above pp208-9).

Two ditched enclosures were identified from parchmarks on aerial photographs in 1976 to the north of Lordington, north-west of the western end of the Chichester Entrenchments at the foot of the

South Downs. Subsequent excavations in 1978 and 1984 recovered Late Iron Age and Roman pottery suggesting continuity of settlement (Aldsworth 1979; Holgate 1986b).

Work on the cutting of the branch railway line under the Broyle Road, Lavant, in 1910 revealed a settlement consisting of hut circles and a large quantity of pottery of "both British, Romano-British and Roman manufacture" (Heron-Allen, 1911), suggesting that it was Late Iron Age in origin but continued to be used into the post-conquest period. The site is located adjacent to a possible junction between EWA (ii) and NS1, in the central area of the Chichester Entrenchments but any association between the settlement and the dykes is unknown.

Investigations of a Late Iron Age settlement enclosure were carried out at Ounces Barn, Boxgrove, at the eastern end of the Devil's Ditch, Entrenchment EWA (iii). Excavation on the ditch terminal was also undertaken (see above p181). The Late Iron Age enclosure is located in an area of Roman period activity, again showing continuity in the use of a location. Moulds for coin blanks were recovered from the enclosure ditch, suggesting that coin production was taking place somewhere in the area. Imported goods including amphorae sherds were also identified here. Pottery recovered from the rest of the site demonstrated that activity continued here throughout the Roman period (Bedwin & Place 1995).

The excavations of two enclosure complexes in Rewell Wood adjacent to the War Dyke took place in 1972, Gobblestubbs Copse West, and 2006, Gobblestubbs Copse East (see Figure 5.24). The excavations in both cases were dated by pottery: locally handmade pottery judged to be similar to Late Iron Age/Early Roman pottery recorded at the Ford airfield site (Lyne 2004 in McOmish & Hayden 2015, 19) was found at Gobblestubbs Copse East, while all the pottery recovered from Gobblestubbs Copse West was dated to the Roman period, with a range of *c.* AD 60 – AD 220.

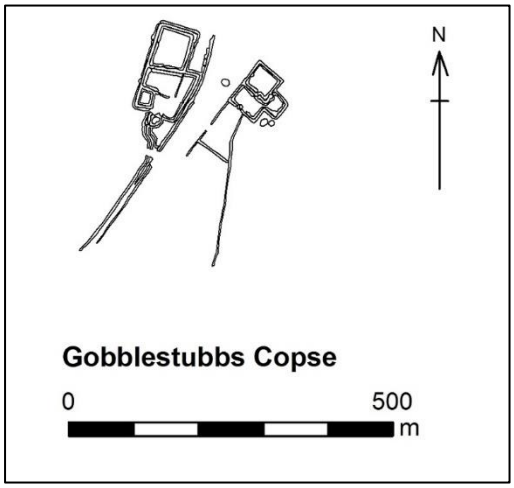


Figure 5.24 The earthworks from Gobblestubbs Copse as transcribed from lidar imagery. © Historic England

However, the western site appears to have been rebuilt and expanded in *c.* AD 60-70 and the investigations suggested that earlier enclosed features were present at both sites (McOmish & Hayden 2015, 21).

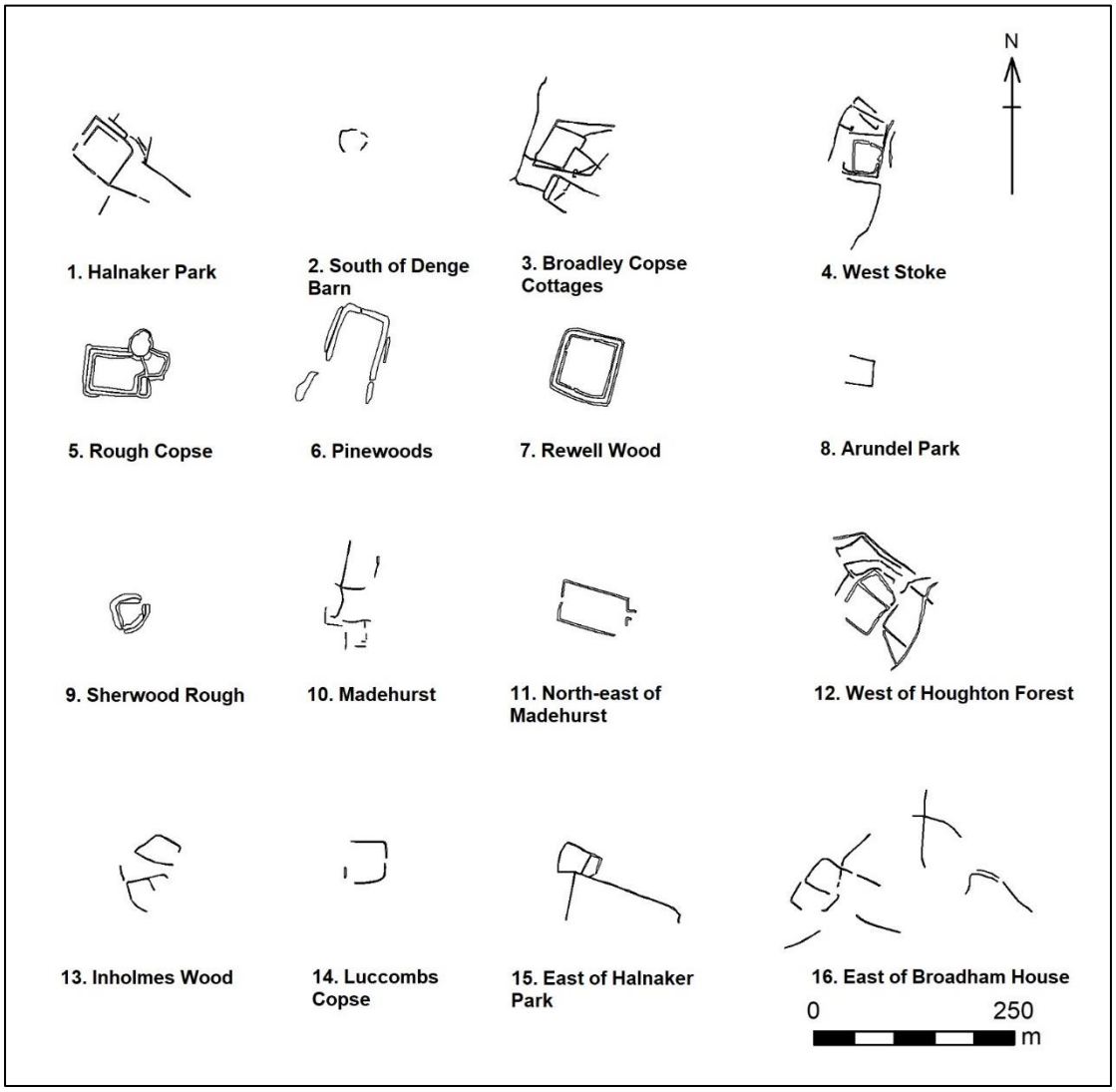


Figure 5.25 Examples of undated, possible Late Iron Age to Roman sites identified from aerial photographs and lidar imagery on the South Downs, Mapping: Historic England/Cornwall Council. © Historic England

In addition to the excavated settlements which have been dated to, or have phases of occupation in, the Late Iron Age, numerous undated, but possibly later prehistoric, settlements have been identified from aerial photographs and lidar on the South Downs (Carpenter *et al* 2016 and see Figure 5.25) and West Sussex Coastal Plain through a review of aerial photographs and lidar by the author. The possible settlements on the South Downs are generally rectilinear in form and, by reference to similar excavated sites referred to above, may be Late Iron Age to Roman in date. The sites range between small, sub-rectangular or sub-square enclosures, and complexes of adjoining or overlapping enclosures and boundaries.

Fewer possible settlements were identified on the clay soils of the coastal plain which may be due to the poorly draining clay soils which are less conducive to the formation of cropmarks. Four sites were located: to the north and west of the Iron Age and Roman period farmsteads at Oldplace Farm; at Whitehouse Farm, north-west of Chichester; and at Grove's Farm, east of Merston (see Figure 5.26). The possible settlements are similar in form to the examples shown in Figure 5.25 for the South Downs, ranging from a single, rectilinear, enclosure, to complexes of enclosures and boundaries.

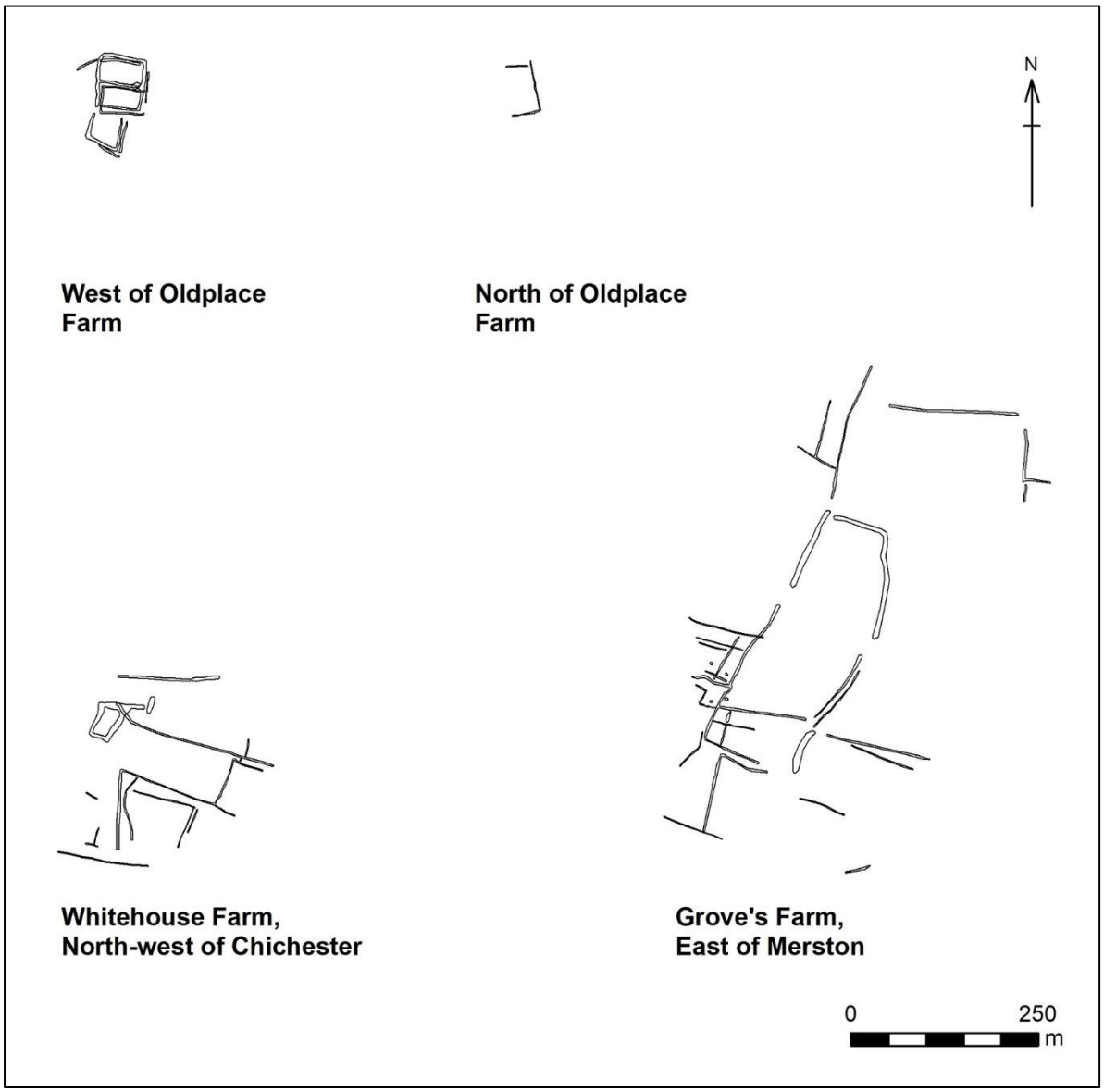


Figure 5.26 Undated, possibly Late Iron Age to Roman settlements on the West Sussex Coastal Plain identified from aerial photographs and lidar imagery. Mapping by the author

The wider landscape: field systems

Extensive later prehistoric field systems have been recorded from lidar imagery and aerial photographs across the South Downs (Carpenter *et al* 2016) and fragments have also been recorded in the western part of the Selsey peninsula (Dickson *et al* 2012). Fewer surveys have been undertaken in the central area of the West Sussex Coastal Plain, but fields defined by ditches have been excavated at North Bersted (Bedwin & Pitts 1978; Taylor *et al* 2014) and observations made by Ordnance Survey Field Investigators on evidence from aerial photographs indicate the presence of later prehistoric field systems (held in the National Record for the Historic Environment).

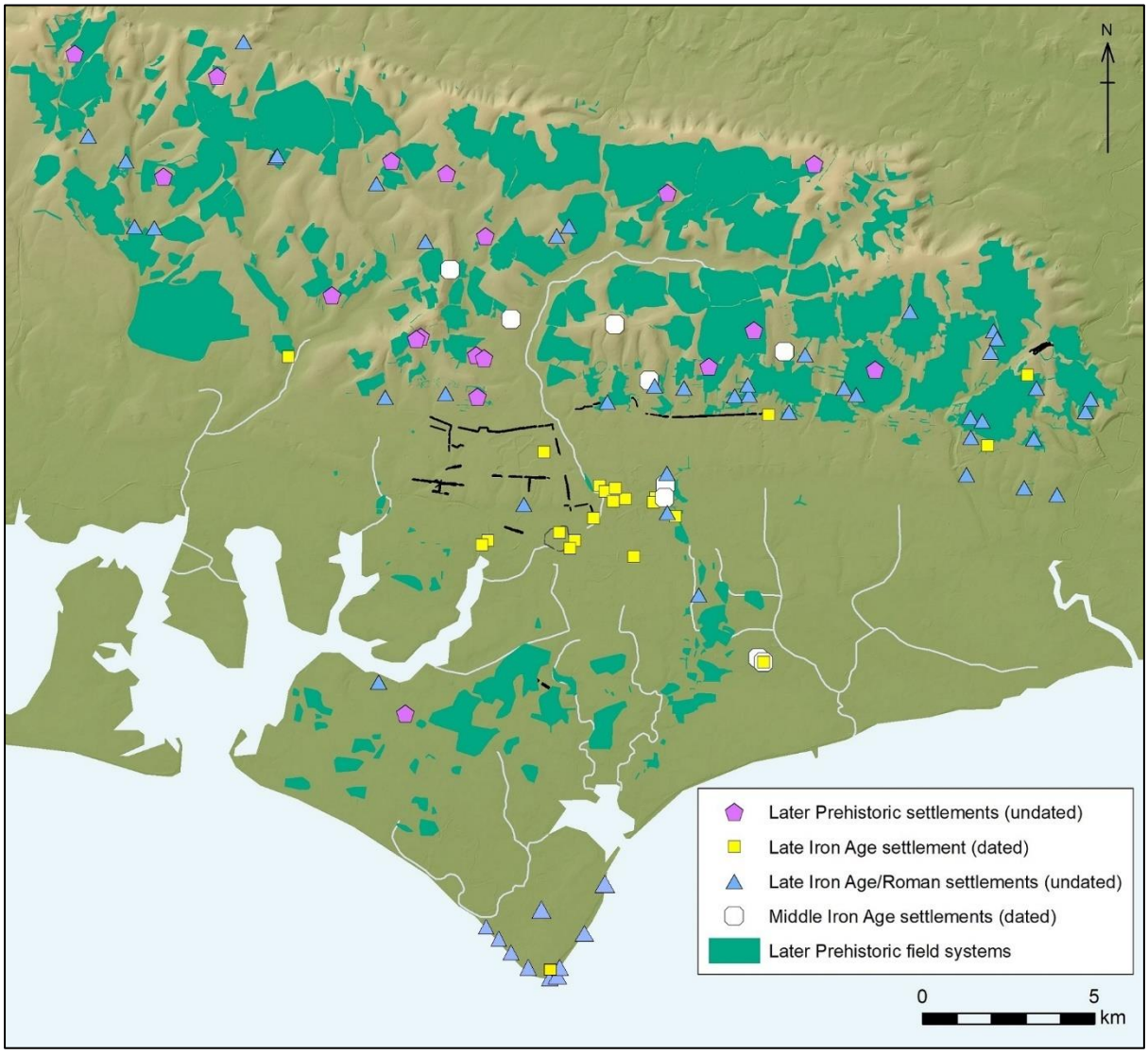


Figure 5.27 Later prehistoric field systems and settlement patterns. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

A systematic review of aerial photographs and lidar by the author confirms that an extensive area of field boundaries exists on the Brickearth of the coastal plain (see Figure 81). While less contiguous, the form and layout of these fields is comparable with the well-preserved areas on the South Downs

and also with the excavated ditched field systems at North Bersted. These excavated systems were shown to have been initially laid out in the Middle Iron Age but used and modified into the Late Iron Age (Taylor *et al* 2014, 39). Extensive coverage of coaxial field systems is found across the high ground of the South Downs, where, although the field systems are not all laid out on the same axis, there are large areas, particularly along the north-eastern edge of the Downs, which have a strong north-east/south-west coaxial alignment (Carpenter *et al* 2016, 38). The field systems of the South Downs have elements which date to as early as the Bronze Age, on the southern slopes of Halnaker Hill (Yates 2007). Late Iron Age pottery was recovered from the fills of a number of field boundaries excavated on the South Downs to the south of the Trundle during the evaluation of a pipeline trench in the Lavant area suggesting use in this period (Turner 1997, 23). A period of agricultural intensification has been suggested for the Late Iron Age utilising fields which had been in existence for some considerable time and expanding areas of cultivation (Millett 1990, 11). The dates which they fell out of use are unclear, although the route of Stane Street, the Roman road between Chichester and London probably constructed early in the post-Conquest period (Russell 2006, 154), cuts through all previous field alignments in the area of Eartham Woods, north-east of Chichester (Carpenter *et al* 2016, 40). The line of the Chichester to Silchester road also cuts through field systems on the South Downs.

The coastal plain has been subject to various phases of drainage and the results can be recognised in systems of ditches and water meadows. These developments and other land improvement works, such as ridge and furrow and flood defences, have the effect of masking or destroying earlier archaeological features, meaning that much information which would have made the pattern of field systems on the coastal plain more coherent has been lost. However, continued use of certain Later Prehistoric and Roman boundaries has been demonstrated in the South Downs, for example at The Gumber (Slindon) and Lamb Lea (East Dean (Carpenter *et al* 2016, 53) and it is possible that, for example, drainage systems which might be interpreted as relatively recent in date are based on elements of earlier ditched fields. During this survey, all field boundaries which are visible as cropmarks on aerial photographs, or low, spread, earthworks on lidar, have been recorded, particularly if they do not appear on the 1st edition Ordnance Survey map (1:10560, 1880). Some features appeared as crisp, well-defined, cropmarks while those surviving as earthworks were generally broad and spread in nature. There are concentrations of field boundaries in particular areas, but the features recorded do not always form clear patterns, such as the coaxial field systems found on the South Downs, to the north of the project area. Some boundaries are contiguous, but many others are isolated from other features.

A detail of the types of field system recorded from aerial photographs and lidar is shown in Figure 82 in the area around Birdham, where a clearer pattern can be discerned. The features consist of complexes of sub-square and sub-rectangular fields defined by ditches and double-ditched trackways or droveways which run alongside the field boundaries. While not every element may be later prehistoric in origin, the Birdham field boundaries appear to be part of a wider field system that extends between Earnley on the Selsey Peninsula up to the Chichester Channel with a general north-east, south-west alignment. A large number of field boundaries were also recorded to the north-east of this area, between Hunston in the south-west and Oving in the north-east. Further investigation would be needed to establish the date of these field systems, but their form, either as cropmarks or earthworks, suggests that they are earlier in date than the medieval and post medieval agricultural evidence which can also be observed in this area on aerial photographs and lidar.

Figure 5.28 Comparison of field system forms in areas of the South Downs and the West Sussex Coastal Plain. Mapping – Coastal Plain by the author, South Downs © Historic England

However, there is still considerable evidence of agriculture on the West Sussex Coastal Plain which may postdate the use of the fields on the South Downs. The fragments of field systems that can be

identified suggest that an extensive area of the landscape between Chichester and Selsey would have been used for agriculture. The double-ditched trackways, or possibly droveways, located adjacent to some of the areas of field boundaries, such as those to the south of Birdham, are similar to those recorded on the South Downs running between areas of coaxial fields. These trackways are formed of hollow ways flanked by banks (Carpenter *et al* 2016, 61). Curwen suggested that this form indicated that the land on each side of the trackway was under the plough and, therefore, that they ran through field systems and between settlement enclosures (Curwen 1954, 13).

Discussion

The development of an important regional centre in the Late Iron Age in the Chichester area has been a subject of much discussion by archaeologists. The presence of the Chichester Entrenchments and the large number of Late Iron Age coins discovered on the coast at Selsey are the principal features driving the hypothesis that this was the site of a territorial *oppidum*. Whether there was a nucleated, urban, centre to the assumed *oppidum* is unclear, although the Selsey peninsula and the Chichester/Fishbourne area have been put forward as candidates, the latter due to its proximity to the largest concentration of the entrenchments and the accumulating evidence of pre-conquest imported pottery and coins. Interpretations of the Chichester Entrenchments are generally based on surveys of what survives above ground, but, as Magilton suggests, chance finds through developer-funded excavation of `new' linear ditches, suggest that the surviving elements that can be identified above ground may only be a small part of the overall complex (Magilton 2003, 16). The identification of further 'new' elements to entrenchment EWK by the author and the fact that only 2% of the linear earthworks have been excavated overall (Garland 2020, 117) supports this view.

It has been suggested that there was a period of population dispersal late in the Middle Iron Age onto the Coastal Plain and development of new foci away from the hillforts and that these new sites influenced the pattern of settlement in the Late Iron Age (Bedwin 1983, 38; Hamilton 2007, 87). However, while there are new foundations on the coastal plain in the Middle Iron Age, this argument is based on the evidence of a small number of settlements only. There are a number of undated sites across the South Downs, which may be later prehistoric and possibly in use into the Middle Iron Age period, and without further investigation it is difficult to speculate on whether this represents a continued dispersed pattern of settlement in the region into the Middle Iron Age.

Any distribution map of archaeological sites will be affected by the pattern of modern development. These biases in evidence are probably also reflected in the distribution of known settlements, and, as Figure 5.29 shows, areas where Middle Iron Age sites and Late Iron Age sites are located close

together are restricted to two locations on the coastal plain, North Bersted and Oving. Continuity of settlement into the Late Iron Age is shown in some of these areas, but a number of Late Iron Age sites are placed in new locations. The placement of these Late Iron Age sites then appears to influence the siting of Roman period settlements, for example, Oldplace Farm and Copse Farm, although a different location in the vicinity of the original site is chosen. The majority of dated Late Iron Age sites are located in the north/central area of the coastal plain, in the area around, and to the south of, the Chichester Entrenchments. However, as pointed out, this distribution may be skewed by the extent of development and quarrying which has taken place in this area. Taking the large number of undated sites which might be associated with the Late Iron Age to Roman period into consideration extends the zone of settlement around the Chichester Entrenchments considerably, particularly onto the South Downs where they might have been associated with continued use of the extensive coaxial field systems present there.

Agriculture was a crucial economic factor in pre-industrial societies, a fact that is particularly demonstrated by the extent of the field systems on the South Downs field systems, but also by excavated examples of fields in the north and south of the coastal plain (Garland 2020, 114), and through the extensive field systems identified by the author in the central area. Excavations at Oving, in the northern part of the coastal plain, and at North Bersted, on the southern coast, have shown that ditched field systems were laid out in the Middle Iron Age and continued in use into the Late Iron Age (Taylor *et al* 2014, 39). Bedwin has suggested that the large-scale settlement and farming was only made possible on the coastal plain due to the construction of ditched drainage systems which should be interpreted as a communal activity (Bedwin 1983, 38). If the extensive undated field systems in the central area were of a similar date to those at North Bersted, this represents an enormous exercise in land improvement, which might point to a centralised, organising power. The elements of the field systems within the central coastal plain were recognised from cropmarks, but only a small number of possible settlements could be identified, such as at Grove's Farm at the eastern edge of the fields. It may be that later developments have obscured earlier settlement sites in the centre of this area, or that this central coastal plain was primarily used as part of an agricultural hinterland for a possible *oppidum,* managed by farming settlements around it.

The similarities in layout of the field systems on the South Downs and the coastal plain may show that the territory associated with the possible administrative centre of power extended both to the north and south of the linear dykes. This might address the territorial part of the term `territorial *oppidum*', but what of the nucleated centre that the Latin word for town implies? Evidence of settlement development on the coastal plain in the Middle to Late Iron Age has been demonstrated

through excavation, followed by abandonment in the late 1st century BC in a number of locations (eg, Copse Farm, Oving and Oldplace Farm), or partial abandonment (North Bersted). These incidences of abandonment may be indicative of nucleation of settlement occurring at another location. The evidence for a possible centre has been considered in this chapter for the Selsey peninsula and the Chichester/Fishbourne area, and, on balance, appears more convincing for the latter. The concentration of imported ceramics distinguishes the Chichester/Fishbourne area from the settlements around it and, if considered together with the evidence of coins, possible coin production, and its proximity to the linear dykes, suggests that it was an important location. Structural evidence is scarce however, consisting of a large ditch to the east of Fishbourne Palace (Manley & Rudkin 2005, 58), and a ditch and three structures in the Cattlemarket area of Chichester ((Down 1989, 59-60, 151). A settlement in this area would have access to the Chichester Channel as

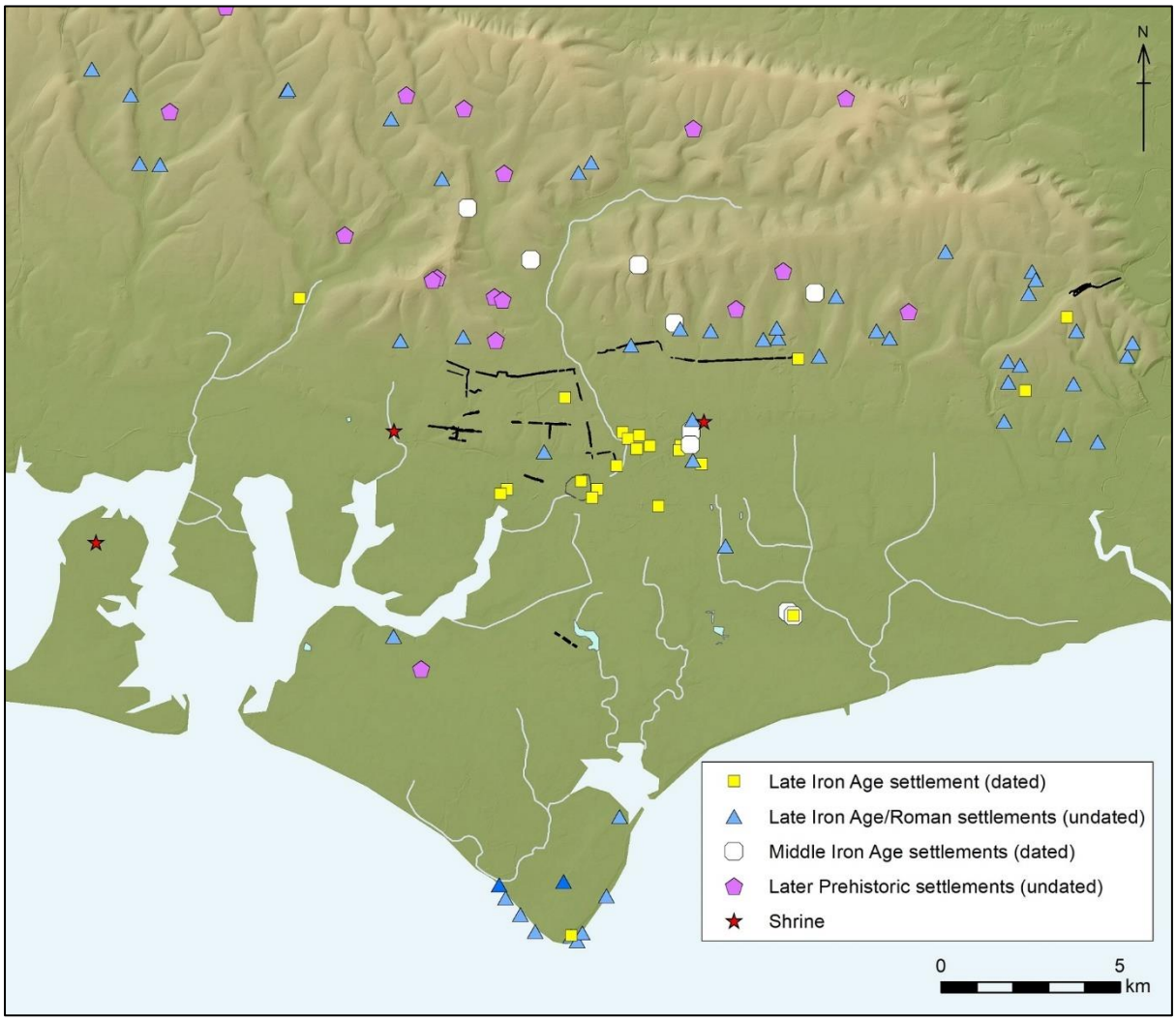


Figure 5.29 Location of dated Middle Iron Age and Late Iron Age settlement and undated settlement in the area around the Chichester Entrenchments. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

a trading route and be located in the centre of a diverse agricultural hinterland which included coastal and upland resources.

The Chichester Entrenchments were probably created in several phases, over a long period of time, and may not all be associated with developments in the Late Iron Age. The linear dykes are often referred to as a unified whole, but it is possible that they did not function together in any form of a `system'. The differences in character between earthworks and the overlap in features observed at Oakwood suggest that they were created for a variety of purposes. The eastern sections of EWA, which are more curvilinear in nature than the western sections, are located between settlements of Middle Iron Age origin and it is possible that the presence of one influenced the development of the other, although in what order is unclear. Sabatier interpreted the entrenchments to the north of Chichester as describing a box which he thought to represent a Roman period defended area (Sabatier 1798, published in Steer 1963). It is possible that the linear dykes forming that `box' partly define an area of Late Iron Age settlement; the north-south oriented dykes have ditches on their eastern side in the east of this area (NS1, NS2) and to the west on their western side (northern section of NS5) which may support this interpretation. The differences in ditch orientation may illustrate the fluidity of the concept of what was considered to be `inside' or `outside' space in each period of use. This would accord with Bradley's phasing of the entrenchments which ends with the delimitation of the Chichester/Fishbourne area (1971, 34). However, a further phase representing developments in the Roman period might be added. The character of the east-west earthworks is similar as they continue to the west to Oakwood, but once you reach this area, elements of the linear dykes are markedly different, The neatly laid out double banks that form the possible southern section of NS5 (Bradley 1971, but it may be a separate earthwork) and EWK have the appearance of being planned in one operation. The date of these earthworks is unknown, and it is possible that they relate to post-conquest land management around the palace at Fishbourne, rather than to Late Iron Age occupation.

While it is debatable whether the entrenchments can be regarded as a unified `system', these monumental earthworks, and the extensive ditched field systems on the coastal plain and banked systems on the South Downs which are similarly aligned, represent an enormous communal endeavour which might show the influence of a centralised power. There may also have been a common belief system shared by the inhabitants of the area, which, while it appears to have involved different mortuary rituals, is suggested by the north-west, south-east alignment observed at both the cemetery at Westhampnett and the warrior burial at North Bersted, similar to the orientation of the majority of round houses. The fact that this is the reverse of the coaxial field

systems may also be significant, possibly pointing to a belief that one reflected the living world and the other, the dead.

There is pottery and coin evidence in this area that points to a community with cross-Channel links, particularly around Chichester and Fishbourne, but also reflected in the religious sites at Westhampnett and Hayling Island. It has been suggested that the absence of evidence for a nucleated centre should lead to an interpretation that the possible territorial *oppidum* on the West Sussex Coastal Plain was polyfocal in nature, with a number of social and religious centres (McOmish 2015, 25; Hamilton 2007, 89). This is a view put forward for other British *oppida* including Bagendon (Moore 2012, 392) and Verlamion (Haselgrove & Millet 1997, 286). It is possible the process of construction, modification and maintenance of the linear dykes was a method of unifying dispersed communities, strengthening ties to both the landscape and each other, such as has been suggested for hillfort boundary construction (Sharples 2010, 120, 122). However, it is not clear from artefactual evidence from excavated Late Iron Age sites where these foci might have been located, and the incidences of abandonment for both settlements and religious sites during the Late Iron Age suggests that the focus or foci of this landscape changed. The communal effort indicated by the maintenance of field systems and the linear dykes may have continued but have been directed from a different, centralised, location, which the accumulating evidence suggests is most likely to have been in the Chichester/Fishbourne area.

This chapter has summarised the evidence for a possible nucleus or nuclei for a territorial *oppidum* in the Chichester area, examining the candidatures of Chichester/Fishbourne and the Selsey Peninsula. The author's data collected from a survey of aerial photographs and lidar on the West Sussex Coastal Plain has been combined with an assessment of the excavated sites, and the distribution of Iron Age coins and other finds. The conclusion is that the Chichester/Fishbourne area appears more likely as a location, due to the accumulated evidence of Iron Age material, its strategic position at the head of the Chichester Channel, and the concentration of linear earthworks that occur here. A recognition of similarities between field systems recorded on the South Downs and on the coastal plain, combined with an analysis of possible settlement patterns in the Middle and Late Iron Age suggests that there was greater connectivity within this landscape than has previously been assumed. It seems likely that, although new sites are created on the coastal plain in the Middle Iron Age, that settlement and agriculture continued into the Late Iron Age on the South Downs, rather than there being a widespread relocation.

6 The Landscape Settings of `Territorial *Oppida'* Compared

Introduction

The aim of this thesis as stated in Chapter 1 has been to establish whether similarities can be observed within the landscapes of three sites which have been classified as territorial *oppida*, both prior to and during the process of their creation. To this end new data have been collected from aerial photographs and lidar and combined with information from other sources for the three case study areas of Colchester, Silchester and Chichester, in order to establish as consistent a baseline of archaeological knowledge as is possible. The three landscapes have then been analysed with the objective of answering the question of whether they form part of a common monument category, with similar features and patterns of settlement. This chapter summarises and compares the analyses of the case studies in order to establish whether commonalities are evident and, if so, whether it is correct to place all three under the banner term of territorial *oppida*.

The British archaeological category of territorial *oppida* has long been acknowledged as problematic and encompasses sites with considerable variations. The issues surrounding terminology have been discussed above (see Chapter 1), but to summarise, the term was created by Cunliffe in order to describe the particularly southern and south-eastern phenomenon of the large settlements established in the latter part of the Late Iron Age, which were associated with series of large linear earthworks (Cunliffe 1976, 135-6). *Oppida* were seen by Cunliffe as the final stage in a trajectory of political centralisation within regions associated with the development of states or kingdoms, assigned to particular peoples identified in classical texts (Moore 2020, 547). Such settlements have been defined by their cross-Channel contacts, associated in Cunliffe's model with Romanisation, and are associated with distinctive cultural assemblages including large quantities of imported pottery, innovations such as coin production, and religious or ritual associations. The basis of their development has been linked to the growing influence of Rome and economic factors, particularly the assumed demand for prestige imported goods (Sharples 2010, 169).

Many aspects of Cunliffe's model have been criticised or reinterpreted by subsequent writers. The association between Romanisation and the development of *oppida* has been linked to arrangements made following Julius Caesar's incursions of 55 and 54 BC for tribute payments and the placement of *obsides* (often translated as 'hostages') from peoples brought under the influence of Rome. This is a theme revisited by Creighton, who suggested a greater degree of co-operation rather than coercion might have taken place and that the individuals returning from Rome, or wherever they were placed, might have gained some advantage by the process (Creighton 2001, 4-5). Fitzpatrick questioned the

assumption that the presence of Roman goods indicated either direct trade with Rome, or a desire to be Romanised in the Late Iron Age, pointing to the fact that trading links associated with Roman commodities can be recognised from a considerably earlier date, possibly seeing the first *amphorae* appearing in Britain from *c.* 150 BC (Fitzpatrick 2001, 85-6). The role of these settlements as onward trading centres has also been questioned; there is little onward distribution of pottery and other imported goods, suggesting that the inhabitants of the *oppida* were the primary consumers (Haselgrove 2016, 432; Niblett 2001, 35; Millett 1990, 30). The control of these prestige items has been seen as an impetus towards urbanisation (Haselgrove 1976, 25) and as a contributary factor to social stratification and political centralisation in the regions of Britain (analysis of Cunliffe's model in Sharples 2010, 169), but Hill has reinterpreted the presence of imported goods on particular sites as being a symptom of changes already occurring in Late Iron Age societies, rather than being the cause of those transformations (Hill 2007, 27), taking up Fitzpatrick's view that implicating them in this process of change may be ascribing too much importance to relatively small quantities of pottery and wine (Fitzpatrick 2001, 94). The establishment of these sites does of itself point to a change in social structures, whether that involved the seasonal or permanent settlement of Gallic communities (Fulford in Fulford *et al* 2018, 381), the influence of Rome via the *obsides* process (Creighton 2001, 4-5) or, if it was an internal development. Sharples has emphasised the importance of the agency of Late Iron Age peoples in Britain, suggesting that the transformations in society were necessary because of the success of those societies, rather than because of an external influence (Sharples 2010, 170).

However, if *oppida* sites are interpreted as "social centres" (Moore 2020, 547), or "centres of ceremonial power" (Sharples 2010, 173), the lack of onward distribution of imported pottery might be explained by it having been an important part of the meetings and processes carried out at these sites; these fine wares may have been integral to the site and the community in that locational context. Moore has suggested that particular sites within *oppida* landscapes may have acted as élite enclosures where activities such as feasting and exchange took place, comparing Duntisbourne Grove and The Ditches at Bagendon, the trapezoidal enclosure at Gosbecks (Colchester) and Gorhambury (St Albans) among others (Moore 2020, 555). However, the limited excavation of the boundary ditches of the Gosbecks enclosure, and the small number of datable artefacts recovered, means that its function and precise date of use are uncertain. It may not have been a significant focal settlement during the lifetime of the Sheepen site. Silchester stands out among the case studies and *oppida* in southern Britain as having a singular focus, but the compounds identified within the enclosed settlement may have fulfilled a similar purpose to the enclosures highlighted by Moore. The overall exclusivity of coin types identified in individual compounds suggests an

association between each space and people with a particular social identity, possibly indicating that Calleva was a space where negotiations between traders and representatives of different peoples were carried out (Fulford in Fulford *et al* 2018, 381). Whether these settlements were permanently occupied is not certain. A small, year-round, population, which increased on a seasonal basis (*ibid*, 376), has been suggested for Calleva based on the quantities of locally sourced wheat identified here (Lodwick in Fulford *et al* 2018, 308). These sites may have partly functioned as transitory spaces where people from the communities around them met on particular occasions or times of the year, connected through client relations and gift exchange (Moore 2020, 557; Sharples 2010, 173).

Figure 6.1 Comparative plans of oppida mentioned in the text (after Haselgrove 2001, 60)

Definitions

A territorial *oppidum* has been defined as consisting of a large area of land defined by linear earthworks or dykes, with a focus or foci (Pitts 2010, 35). Despite the definition of *oppidum* as the Latin word for town, this word has been applied to a variety of sites and it does not necessarily imply that territorial *oppida* can be considered to be urban centres but may have comprised a number of important sites, or areas of activity, within a controlled landscape area. It has been noted that there can be a considerable variation in *oppida* (Woolf 1993, 223; Millett 1990, 23 and see Figure 84) and the term "Late Iron Age Centres" (Sharples 2010; Moore 2020) may be more appropriate as it is not

associated with the problems of interpretation and Caesarean baggage. Cunliffe interpreted the development of *oppida* as part of a linear transition towards centralisation in south and east Britain (1976, 153-4), but Haselgrove has described the nature of these settlements as being part of a general process in the Late Iron Age in which a number of activities "which had been focused around the domestic settlement were now dispersed over the wider landscape" (2001, 59). Cunliffe referred to territorial *oppida* as having a single, central, settlement, but Haselgrove's definition would appear to regard these sites as being polyfocal in nature. Both definitions make a case for the zoning of activities in the manner of a nucleated town, but in Haselgrove's view, specialised activities such as metalworking, or weaving would be taking place in specific sites within a complex, such as has been suggested for Verlamion (Niblett 2001). The Sheepen site at Colchester has been interpreted both as being a central settlement with areas of particular activities, such as coin production (Hawkes & Hull 1947) and a specialist industrial site within a landscape which contained another focus of settlement at Gosbecks (Crummy 1997).

There has been some consideration of the landscape settings of territorial *oppida* in previous analyses, for example, Silchester (Barnett & Fulford in prep), Bagendon (Moore 2020), and Chichester and Colchester (Garland 2016), but in the main, outside of examination of the general topographic setting, the features in the surrounding area are relatively unstudied. For a site like Chichester, which Sharples has described as "the most ill defined of all the British *oppida*" (2010, 162), where no central focus or foci have been definitively located, an understanding of the settlement pattern and land use may be crucial to understanding what the territory supposedly marked by the linear dykes might be, and how it functioned. The two concepts encompassed in the term `territorial *oppida'* imply that the consistent common factors between these sites should be some type of centralised settlement and a defined territory, usually perceived to delineated by the dyke `systems'. In the case of Chichester, the linear dykes alone have been seen as being the evidence for the territorial *oppidum.* This is also the case with another linear earthwork complex, North Oxfordshire Grim's Ditch where no evidence of intensive occupation has been identified in the latter period of the Late Iron Age (Cunliffe 1976, 151), implying that these earthworks may not have consistently been associated with the creation of such a settlement. However, while no central settlement has been identified, there is increasing evidence for pre-conquest imported pottery and Iron Age coins in the Chichester/Fishbourne area.

An assumption that has been made about territorial *oppida* (although based on available knowledge for each area) is that they are created either in empty areas, or those which have been occupied in a previous period but are devoid of immediate earlier settlement (Hill 2007, 23). This may be true in some cases, for example there is scarce evidence for Middle Iron Age activity at Verlamion

(Haselgrove & Millett 1997, 283), although the pollen record indicates that pasture or cereal crops were dominant in the landscape during this period, suggesting that there may have been contemporary settlement (Niblett 2001, 35). However, each of the case studies are sited within landscapes where there are pre-existing patterns of Middle Iron Age and earlier Late Iron Age settlement. It has also been suggested that *oppida* are located at junctions of different landscape types (Moore 2020, 559; Haselgrove 1976, 40), or in peripheral areas at the edge of previously established territories, as suggested for Silchester (Cunliffe 2012, 19). Haselgrove has associated this location choice with the possible role of *oppida* as markets (1976, 40), but it may also have made them a neutral meeting space (Haselgrove & Millett 1997, 283). *Oppida* may also be established in land with nutrient-poor soils not thought suitable for arable agriculture, although this may have been possible in small areas (Sharples 2010, 163), such as can be identified at Silchester (see above Chapter 4). Sharples suggests that Chichester might be an exception and this thesis, which has revealed extensive later prehistoric field systems on the West Sussex Coastal Plain, appears to bear this out (see above Chapter 5).

Comparison of the three case studies: Colchester, Silchester and Chichester

The prior baseline archaeological knowledge for the Colchester, Silchester and Chichester varied greatly, and one aim of this research has been to address this disparity through the collection of new information from aerial photographs and lidar. While undated, the newly identified features have been associated with particular time periods based on their morphological similarity to excavated sites and this data acquisition has considerably enhanced the archaeological picture of these landscapes. However, the level of information available using remote sensing techniques is affected by soils and geology, and by later land use. A large proportion of the area within the linear dykes at Colchester has been developed, covered by the Roman and later town and by successive modern military sites. The largest area which has not been developed, Gosbecks, conversely, has the smallest degree of intrusive archaeological investigation. The Silchester area is well-known for its low level of modern development, but many of the clay areas around the gravel promontory have been subject of land improvement works, such as medieval ridge and furrow, post medieval water meadows and modern tree planting ridges for plantations (Truscoe 2018). These types of activities can mask or destroy earlier archaeological sites. The Chichester coastal plain has also been subject to land improvement works, particularly repeated programmes of drainage, which may have started in the Middle Iron Age judging from the evidence of the North Bersted field systems which are defined by drainage ditches (Taylor *et al* 2014, 39). Later land use and natural processes have particularly

affected the Chichester area; the suggested locations for a central focus of an oppidum have either been developed (Chichester/Fishbourne) or destroyed by coastal erosion (Selsey peninsula).

The level and quality of the evidence for an *oppidum* in each of the case study areas also varies considerably. Focussing on the main areas where excavation has taken place within each territorial *oppidum* area, the central area at Silchester (approximately 38 ha within the Inner Earthwork) forms 1.78 % of the overall area covered by the linear dykes, around 2178 ha. Of this central area, 1.2 % has been excavated to modern standards (Fulford in Fulford *et al* 2018, 4). Sheepen is the most extensively excavated area of the territorial *oppidum* at Colchester, covering approximately 16 ha, but the settlement forms 0.7 % of the overall area (approximately 2294 ha). This can be compared to the largely unexcavated Gosbecks site which covers around 32 ha or 1.4 % of the total area. There have been extensive excavations within Chichester and on the site of the Roman palace at Fishbourne, but evidence of Late Iron Age activity has been scarce.

The defining feature of each area that has led to all three sites being described as `territorial *oppida*' is the presence of a complex of linear dykes, but they differ in character, form and, when known, date of construction. Linear earthworks can be difficult features to date, but, as is common with all territorial *oppida*, only a small proportion of the dykes in each of the case studies has been investigated and very few have returned evidence from which scientific dates could be established. It is mainly for the Silchester area that such dates are available, and they have demonstrated that construction of linear earthworks in this area occurs in both the Middle and Late Iron Age, although continuity of use cannot be assumed. Several sections of the Chichester Entrenchments have been identified through developer-funded excavation, but investigations of the extant earthworks have predominantly been limited to the northernmost east-west dyke, EWA.

Other main features which the case study areas have in common are similarities in the make-up of their material cultural assemblages, including coins and imported pottery and amphorae and evidence of artisanal activity. There is also an association with rich burials, such as the mirror burials at both Colchester (Lexden cemetery) and Silchester (Latchmere Green). Silchester and Colchester would appear to be more similar in form, in terms of general location, the presence of a single, nucleated, settlement, and in their date of origin in the latter part of the Late Iron Age. In the example of Chichester, the location of a central settlement, or a network of contemporaneous foci, is not definitively known, although various factors (outlined below) may point to its presence.

The landscapes of the case study areas have also been investigated to differing extents. Geophysical survey and lidar interpretation were carried out within Calleva and in its immediate environs (Creighton with Fry 2016) and the area was later the focus of the Silchester Iron Age Environs Project

(Barnett & Fulford in prep). Aerial photograph and lidar interpretation were carried out over a larger contextual area as part of this project by the author (Truscoe 2018) and a considerable number of later prehistoric features were identified, including settlements, field systems and trackways. A number of these settlements were excavated and found to have been newly constructed in the Middle Iron Age in some locations, while in others, occupation through the Late Iron Age was shown. There have been a number of excavations on rural settlements in the Chichester area which have demonstrated that areas of the coastal plain were newly occupied from the Middle Iron Age. The sites which have been investigated are predominantly located in the northern part of the coastal plain, an area where free-draining soils associated with marine gravel deposits where cropmarks have frequently formed. One site located on the heavier clay of the southern area of the coastal plain was found through excavation ahead of a housing development at North Bersted. This thesis has demonstrated that, through systematic examination of historic aerial photographs, a considerable number of later prehistoric features can be identified from cropmarks on the heavier soils of southern area, including field systems and settlements. A new element of the Chichester Entrenchments was also recognised on lidar imagery. The Colchester *oppidum* area has been the subject of two aerial photograph interpretation projects, the first focussing on the Gosbecks area and the second covering the entire landscape in and around the linear dykes, part of the county-wide Essex NMP project. However, as this thesis has shown, a reinterpretation of aerial photographs and the examination of lidar, have both identified new features, including a section of Kidman's Dyke, and improvements in computer software have allowed a more accurate spatial depiction of known sites.

Location and geology

The topographic locations of these sites have been interpreted in terms of their strategic importance and, while they are relatively low-lying, their positions are locally prominent in the landscape. Viewshed analysis has demonstrated that from Calleva it is possible to see land to the south and east for a distance of 20 km (Fulford in press). Analysis carried out by Garland on the linear earthworks at Chichester found that they were visible over much of the coastal plain (Garland 2013, 191), although his examination of the visibility of the Colchester dykes found that this was restricted to the immediate area around them (*ibid*, 131). Camulodunum and Chichester are located adjacent to important riverine communications routes which provide access to routes across the Channel and southern area of the North Sea. Camulodunum is situated between the River Colne and Roman River which provide a link to the North Sea, particularly the Sheepen settlement which is sited adjacent to the highest navigable point of the Colne. A possible central focus in the Chichester/Fishbourne area

would be positioned at the head of the Chichester Channel providing easy access between the nearby coast, linking with coastal and cross-Channel trading routes, and the putative settlement. Silchester is located between the Rivers Kennet and Loddon which flow into the River Thames, although it is some distance from either. Routes of communication between southern and eastern Britain and the adjacent area of continental Europe appear to have been in use over a long period of time and cultural similarities have been identified between the two regions in the 6th to 4th centuries BC (Cunliffe 2012, 16). The social and economic changes which occur in southern and eastern Britain from the beginning of the 1st century BC may have been associated with an increase in cross-Channel trade during this period (*ibid*, 19), and certainly, the presence of large quantities of imported goods at Colchester and Silchester and the range of material found in the Chichester/Fishbourne area suggests that access to these trading routes was an important factor in the positioning of these sites.

As mentioned above, *oppida* frequently occur at natural junctions or in peripheral locations. It has been noted that Camulodunum, Verlamion and the Chichester Entrenchments are all sited at the junctions between loam-terrains and heavier soils (Woolridge & Linton 1933 in Haselgrove 1976, 40). Silchester is sited on a gravel plateau which provides free-draining, but acidic, soils, and heavier clay soils are found immediately around the location of the central settlement. Colchester is also located on a gravel plateau overlying London Clay, on a peninsula of land defined by the courses of the River Colne and the Roman River. The Chichester Entrenchments sit between the chalk of the South Downs and the clay of the West Sussex Coastal Plain, in an area where large spreads of marine gravels are located. The marine gravels present in the northern part of the West Sussex Coastal Plain, in the area of the Chichester Entrenchments, may have been a factor in the location of Middle and Late Iron Age settlement. A number of settlements have been recognised from cropmarks in this area, but it must be stressed that soils associated with gravels are many times more conducive to cropmark formation than the heavier clay soils, so it cannot be assumed that all possible settlements have been identified.

The western group of the Colchester dykes close off an area of land that is otherwise surrounded by water and Silchester is sited on a promontory with the majority of the dykes on its western side. Similarities in location are evident between these two *oppida* sites, but the Chichester earthworks are notably different in their setting. The earliest phase of the Chichester Entrenchments, as suggested by Bradley, has been seen as providing a dividing line between the South Downs and the West Sussex Coastal Plain. The later dykes appear to be focused on the Chichester/Fishbourne area. Sections of the dykes are located on blocks that sit between the courses of north-south oriented rivers which run through the South Downs. They are not associated with a discrete parcel of land and it is hard to see that they provide defences for the entirety of the coastal plain as had been

suggested in the past (*cf* Bradley 1971 and Bedwin 1983), or as protecting new settlements occupied by incomers arriving from the coast from the predations of "Down Man" (Williams-Freeman 1934, 75).

The pre-*oppidum* landscape: Middle Iron Age to earlier Late Iron Age (*c.* 1st century BC)

Middle Iron Age settlement patterns

Excavated evidence has shown that the wider landscapes of Colchester, Silchester and Chichester were all occupied to some extent in the Middle Iron Age and the earlier part of the Late Iron Age. However, as this thesis has shown, the distribution of settlements for both periods might be expanded further if undated, suspected later prehistoric sites, found through lidar and aerial photographic interpretation are considered. A similarity between the three landscapes is the discontinuities that can be observed in the use of particular locations. Many locations occupied during the Middle Iron Age do not continue into the Late Iron Age in all three landscapes. New foundations in the Late Iron Age do not always continue into the latter part of the period, the point at which *oppida* see the height of their activity, at both Chichester and Silchester. These locations occasionally become the site of Roman period settlements, for example at Copse Farm, Oving (Chichester), but the later settlement is located adjacent to the abandoned Late Iron Age site.

The majority of dated Middle Iron Age settlements and undated later prehistoric sites in both the Chichester and Colchester landscapes are located outside the area later delineated by the complexes of dykes. It is difficult to define the precise area that should be attributed to the possible Chichester *oppidum*, but here it is taken to be within the extent of the linear dykes (although they may be of differing dates), from EWA (Devil's Ditch) in the north to EWI (Kipson Bank) in the south. Only the Colchester Garrison farmstead, occupied from *c.* 250-100 BC, and the Musket Club enclosure lie within the landscape area later defined by the Camulodunum dykes, but several settlements lie immediately outside this area: at Westhouse Farm (*c.* 8th century BC to *c.* 50 BC), the Stanway farmstead, which is later adapted into a funerary enclosure, and two enclosures at Fiveways Fruit Farm, where occupation extends from the 4th to the 1st centuries BC. Further evidence of settlement is also found to the west of Stanway at Bellhouse Pit. If the suggested phasing for the Colchester dykes is followed (see Chapter 3) the Westhouse Farm site would lie some distance to the north of the earliest of the linear earthworks, Heath Farm Dyke. The distribution of undated sites recognised from cropmarks is to the west of the landscape area defined by the dykes, although they may not be as easily identifiable in the central area due to later developments. They are generally formed of

curvilinear enclosures interpreted by their morphology as being later prehistoric in date, and possibly in use into the Middle Iron Age.

Settlement within the Chichester Entrenchments is confined to the area around Westhampnett (Westhampnett bypass, Shopwyke quarry and Copse Farm, Oving). However, a number of settlements which lie `outside' the Entrenchments are located in fairly close proximity to the northernmost dyke, EWA. These sites include Carne's Seat and Selhurstpark Farm, both of which are based around banjo enclosures and situated at the interface between the South Downs and the coastal plain. This site type has been associated elsewhere with linear earthworks (Corney 1989) and the proximity of a location between contrasting landscape types or at the head of valleys has been noted at Bagendon (Gloucs), Casterley Camp (Wilts) and Gussage (Dorset) (Moore 2012, 405). Undated settlements recognised from aerial photographs and lidar are distributed across the South Downs and in the south-western area of the coastal plain. While they lie outside the area of landscape where the Entrenchments are centred, these settlements probably had an association with the extensive field systems found in both areas. The fragmentary remains of later prehistoric field systems can be seen over an extensive area of the southern central coastal plain, but the only settlements that can be identified from cropmarks are located on the coast or around the edges of this region, possibly due to local variations in geology, but it is possible that further settlements might have been located within the field systems. A pattern of later prehistoric field systems which appear to have been developed around settlements has been recorded on the Hampshire Downland (Royall 2013, 46) and on the South Downs (Carpenter *et al* 2016, 43) and it is possible that a similar situation existed on the coastal plain. The field systems on both the South Downs and the coastal plain were probably in use through much of the later prehistoric period and were possibly being extended in the Middle Iron Age, a point when a phase of expansion in cultivation appears to have occurred (Bradley *et al* 1994, 147). While it cannot be conclusively proved, it is possible that at least elements of dyke EWA, which is located adjacent to the locations of the Middle Iron Age settlement, were constructed during this period as part of a re-organisation of the landscape. There is little evidence of the continuation of the coaxial field systems into the area where EWA is located, although the underlying geology in this area is the interface between Chalk and Marine Gravels, both favourable to cropmark formation.

The picture is somewhat different at Silchester where Middle to Late Iron Age sites lie within the overall extent of the dykes at Simm's Copse and The Frith. Two enclosures at Sim's Copse to the north of Silchester were found to have one phase of construction from the Middle to Late Iron Age, and settlement is thought to have ended before the 1st century BC (Wheeler, Pankhurst and Barnett 2017, 13). The large hillslope enclosure at Pond Farm, The Frith, was also found to have a Middle to

Late Iron Age date of origin but does not appear to have been occupied to any great degree (Fulford *et al* 2015, 5-6). Dating has proved inconclusive for the possible former enclosure of Rampier Copse which appears to have been incorporated into the Outer Earthwork, but it has been considered to be of a similar appearance to The Frith and, therefore possibly a similar date (Bayer 2018). Cropmarks of ring ditches, possible round houses, some of which are located within small enclosures, can also be identified immediately to the north of the location of the later central settlement, adjacent to a possibly contemporary field system and a trackway (Truscoe 2018, 43-4). These features are only known from cropmarks and further investigation would be required in order to determine whether they are associated with a pre-*oppidum* phase of occupation on the gravel plateau.

Middle Iron Age dates of construction have been obtained for elements of the Bridle's Copse and Brocas Lands dykes, which lie to the south-west and north-east of the Late Iron Age enclosure. It is possible that the other sections of these dykes were of the same date; the Brocas Lands dyke may have continued on a route which crossed the central plateau and extended to the north beyond the stream which defines it. Grim's Bank follows a route which lies parallel to the Brocas Lands dyke at a remove of 3.7-3.9 km and it is possible that it was also constructed in the pre-*oppidum* period. Both dykes may relate to earlier territorial divisions and have had an association with the contemporary settlements located between them. They might have subsequently been incorporated into the outlying earthworks of the *oppidum* or, alternatively, became relict features in the landscape during the latter part of the Late Iron Age. A number of undated, probable later prehistoric, sites are also located `inside' the linear dykes. Three curvilinear enclosures found to have a Middle Iron Age date of construction, are located in Pamber Forest to the south-west of the Little London group of linear dykes, so therefore, technically `outside' the *oppidum* landscape. One of the enclosures was still occupied into the Late Iron Age but appears to have gone out of use late in this period, prior to the main period of activity in the central settlement (Fulford *et al* 2017, 2-4).

Hillforts which predate the *oppida* landscapes are located within the wider landscapes of the case studies: at Chichester, The Trundle, a Middle Iron Age hillfort located 2 km to the north of EWA, and at Colchester, Pitchbury Ramparts, which is sited 2.15 km to the north of Moat Farm Dyke and was possibly constructed in the 1st century BC (Crummy 1997, 19). Bullsdown is an undated hillfort in the Silchester landscape which may also have been abandoned in the Middle to Late Iron Age, located 4.5 km to the south-east of the central settlement. The hillslope enclosure The Frith is located around 1 km to the north-west of the Silchester Inner Earthwork. The Ditches enclosure which overlooks the Bagendon complex from a distance of around 2 km, possibly has a Middle Iron Age origin, but is likely to have been occupied by the 1st century BC or 1st century AD. Moore has interpreted this site, together with the two enclosures of Duntisbourne Grove and Middle

Duntisbourne, as potentially similar to the Gorhambury compound at Veramion. Evidence of similar high-status material, such as imported pottery and brooches, was recovered from The Ditches to the assemblage recovered from the valley bottom settlement at Bagendon (Moore 2020, 555).

Excavations at Pitchbury Ramparts and The Frith have uncovered little evidence of settlement and it is uncertain what type of role they might have played in the wider *oppida* landscapes. The proximity of The Frith to the central settlement at Silchester suggests that it might have a connection with the *oppidum*, but the lack of occupation found either through geophysical survey or excavation may point to use on a seasonal basis or a role in stock management. The lack of investigation at Bullsdown means that any connection that it might have had with the Silchester landscape is unclear, but its comparatively distant location makes a direct link less likely. The Trundle hillfort was constructed in the Middle Iron Age over the site of a Neolithic causewayed enclosure and has been interpreted as a focal point for the community around it (Hamilton 2003, 80), initially as a living space and for grain storage. The storage pits appear to have been used subsequently for ritual purposes, involving the deposition of a range of objects including disarticulated human remains, iron weapons, loom weights and a rotary quern (Garland 2020, 111-12; Hamilton 1998, 37–8). The Trundle is sited in an enduring location and it may have continued to be important to the communities in this area after it appears to have fallen out of use. Hillforts sometimes appear to have retained a religious significance (Cunliffe 2012, 18) and it is possible that the sites within the case study area continued to be used beyond their perceived lifetime in a manner that has left little or no trace.

The decline of these hillforts in the vicinity of sites where *oppida* are later developed might accord with Sharples' suggested reconfiguration of the power relationships between hillfort populations and peripheral settlements in Hampshire and Sussex. He suggests a connection between the rise in significance of the use of coinage and increase in wealth and importance of peripheral communities during the period of the Gallic Wars. These communities consisted of artisans and traders producing materials which were exchanged with hillfort groups. Gradually the power relationships are reversed, and the chalk downland communities become the suppliers of agricultural produce to the newly important settlements and find themselves on the periphery (Sharples 2010, 173).

Fulford has pointed out that the evidence for metal-working at Calleva, which included the production of coinage, as inferred by the widespread presence of pellet moulds, appeared to have been carried out on a level consistent with seasonal activity (2018, 380). It is possible that Bullsdown hillfort represents an earlier community which formerly had a trading or gift exchange relationship with settlers on the Silchester gravel promontory, which declined as the importance of the

development of a trading centre in a location at the edge of political territories was realised. This could also be true of the Chichester area; around the time when the Trundle hillfort goes out of use in the Middle Iron Age and a phase of social re-organisation appears to have occurred in the region. Pitchbury Ramparts hillfort near to Colchester similarly goes out of use during the Middle Iron Age and it is possible that Sharples' model of changing power relationships could also be applied here. However, there is not necessarily a linear relationship between hillforts and *oppida,* and one might not have supplanted the other and, as Moore suggests for The Ditches near to Bagendon, they may have become an integral part of the whole complex (Moore 2020, 548, 554-5).

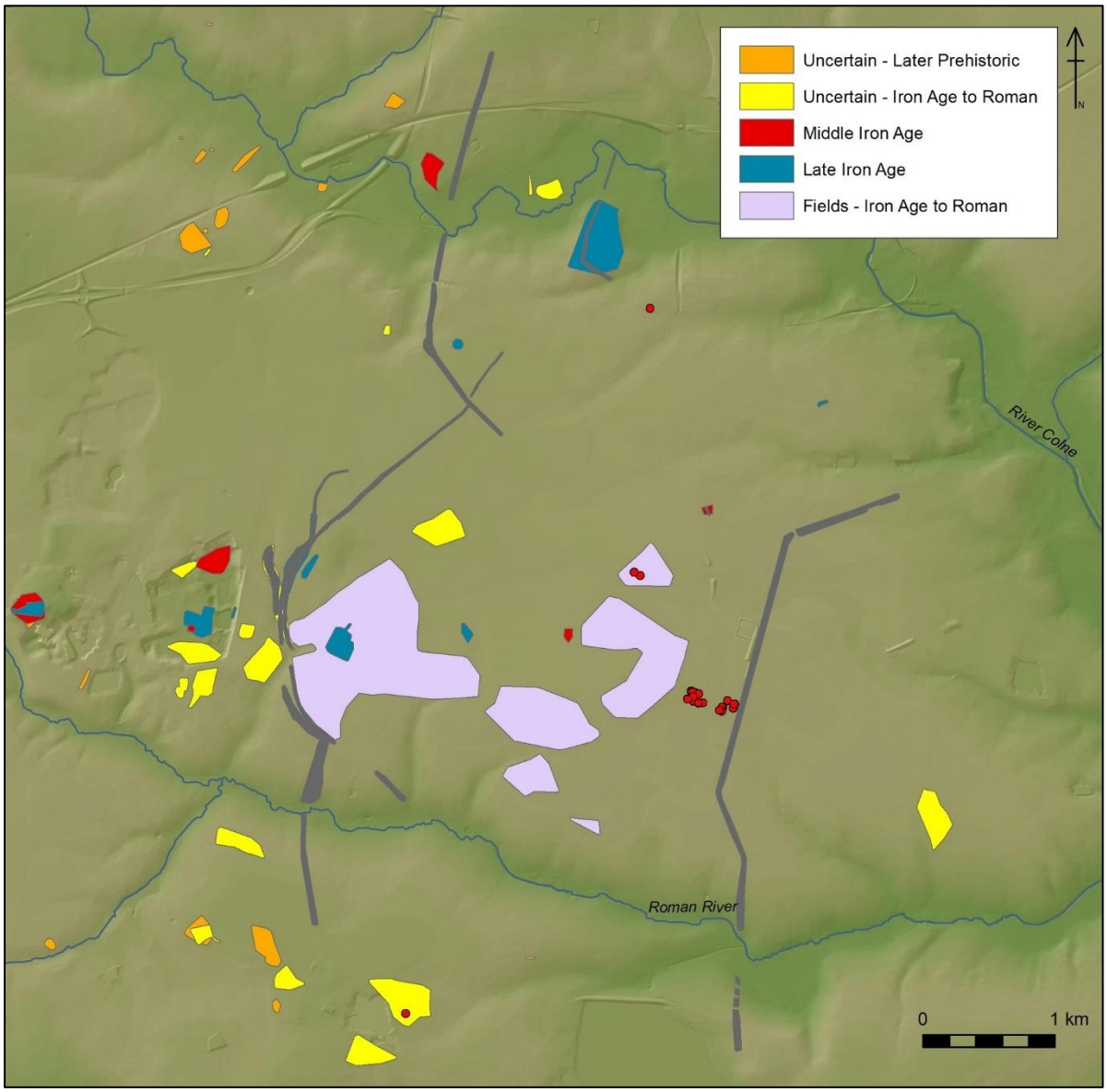


Figure 6.2 Patterns of settlement at Colchester from the Middle Iron Age to the Late Iron Age. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

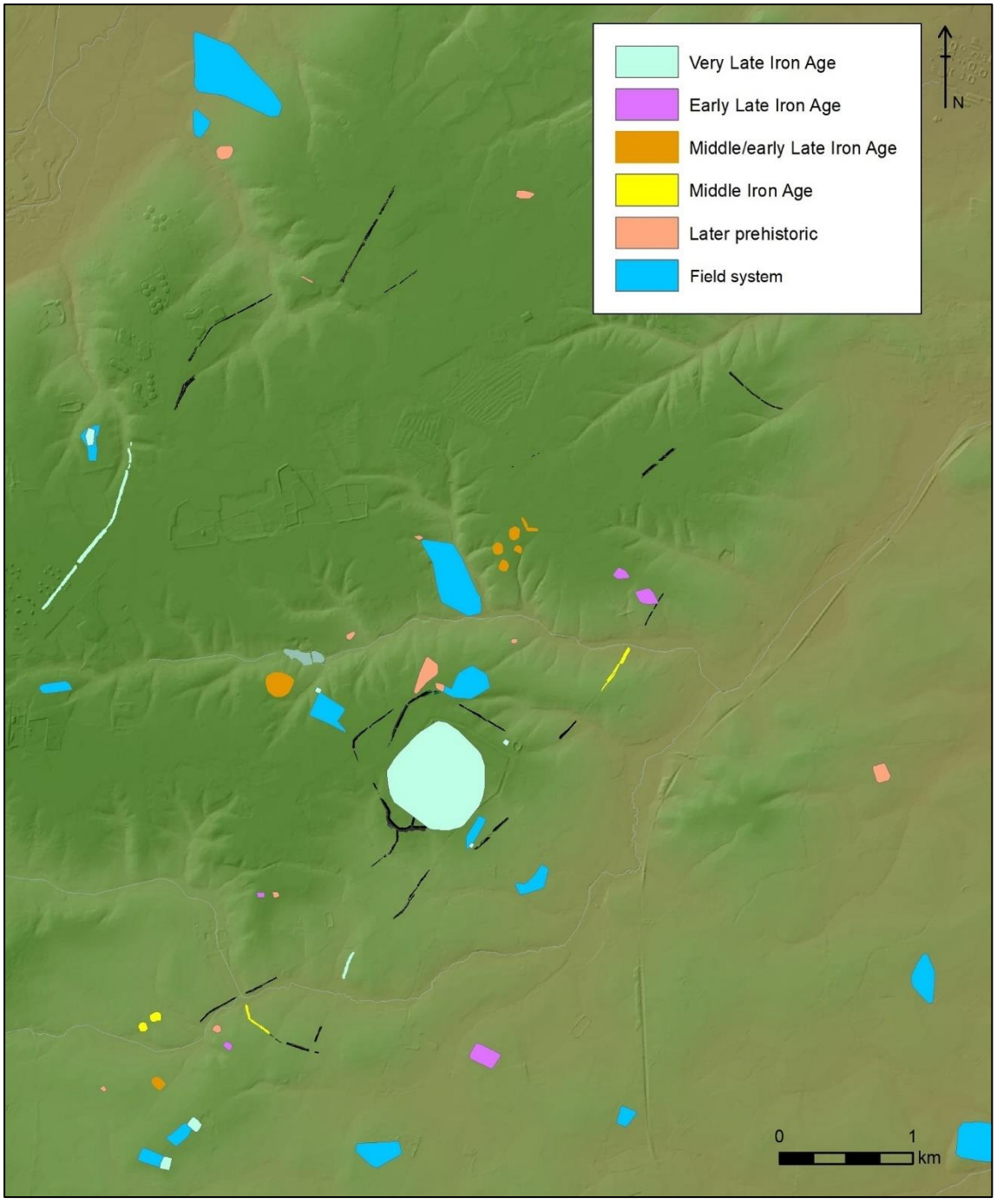


Figure 6.3 Settlement patterns at Silchester from the Middle Iron Age to the latter part of the Late Iron Age. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

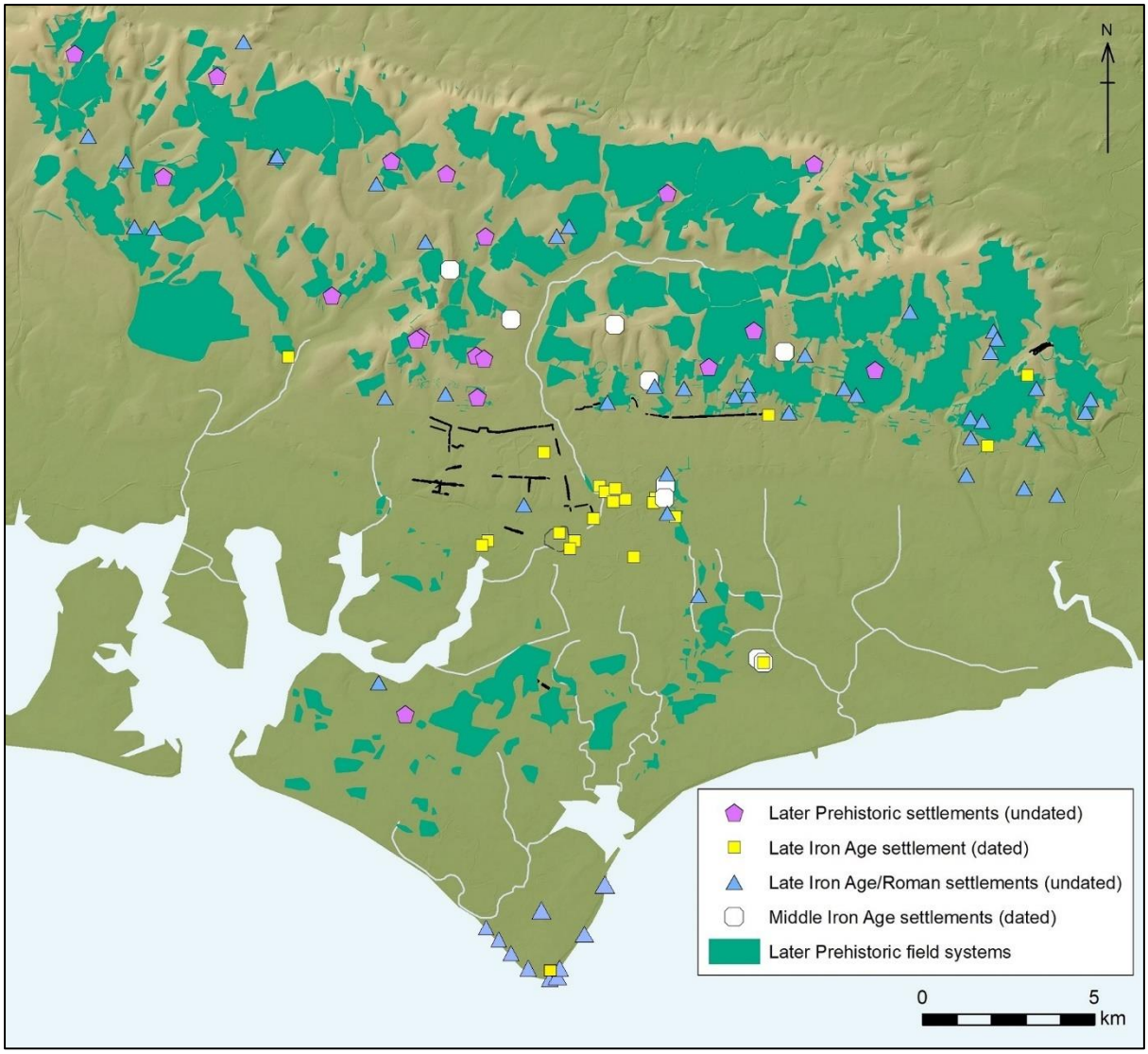


Figure 6.4 Settlement patterns on the West Sussex Coastal Plain and South Downs around Chichester from the Middle Iron Age to the Late Iron Age. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252).

Late Iron Age settlement patterns

Discontinuities are evident in the use of settlement locations from the Middle Iron Age to the earlier part of the Late Iron Age in all three of the case study areas, and there are a number of new foundations during this period (see Figures 85-87 for distribution of settlements). An enclosed farmstead is constructed at Windabout Copse to the north of the central settlement at Silchester, adjacent to the Brocas Lands dyke, on a site which had previously seen activity in the Early Iron Age but had no evidence of use during the Middle Iron Age. Occupation continues here into the early 1st century AD, appearing to cease during the same period that activity is increasing in the central settlement. The possible ritual deposition of a broken Sarsen saddle-quern, placed in a pit within the eastern side of the funnelled entrance of the inner enclosure, might be associated with the

abandonment of the site. Elsewhere in the Silchester landscape, occupation continues in the two northernmost enclosures at Simm's Copse, and in the southernmost enclosure in Pamber Forest, outside the linear dykes. Some continuity in use on sites newly created during the Late Iron Age into the Roman period can be observed in the Silchester landscape. Outside of the central settlement at Silchester, which continues to be occupied and adapted, activity continues at The Frith and in one of the outlying farms in the area, Raghill Farm. Raghill Farm is a ladder-type settlement located adjacent to Grim's Bank but is `outside' the *oppidum* area. A second site of this type, undated but similar in morphology, is located to the south of the Little London group of earthworks. It is possible that the proximity of this new type of site which spans the Late Iron Age and Roman periods in the *oppidum* landscape indicates a connection to management of farmland in the environs. A number of undated rectilinear enclosures are located within the *oppidum* landscape and may have served a similar function.

A number of sites are newly created in the Late Iron Age in the northern part of the coastal plain in the Chichester/Fishbourne area, clustered within and to the south of the Entrenchments, including the settlement at Ounces Barn at the eastern end of the presumed earliest linear earthwork, EWA. Occupation continues into this period on a group of sites located to the east of Chichester; Oldplace Farm, Copse Farm, Oving, and Shopwyke. Continuous use of the field systems associated with settlement has also been demonstrated at North Bersted. Roman phases of occupation are noted for Oldplace Farm and Copse Farm, but in both cases, settlements are created on new sites adjacent to the old ones. The Late Iron Age phase of Oldplace Farm and part of the settlement at North Bersted were abandoned during the late 1st century BC and the earlier settlement at Copse Farm went out of use in the early 1st century AD. The distribution of Late Iron Age sites, in common with the Colchester area, is influenced by the pattern of modern development, mineral extraction and road building. However, the lack of Middle Iron Age sites discovered in the Chichester/Fishbourne area, the apparent focus of Late Iron Age sites, and the abandonment of settlements around Westhampnett, may be significant when considering the possibility that a focal settlement for an *oppidum* might have been created in this location in the latter part of the Late Iron Age. Numerous undated rectilinear enclosures, which are morphologically similar to dated Late Iron Age to Roman settlements, are located across the South Downs, and may have been association with the management of the extensive field systems in that area. Settlements which may also date to the Late Iron Age to Roman period were identified by the author on the coastal plain: two additional groups of enclosures at Oldplace Farm, and two larger settlements, Whitehouse Farm to the west of Chichester and Grove's Farm to the south-east.

Continuity in use of a location, but a change in character to the activity, is demonstrated at Colchester; the first phase of activity at Stanway is a Middle Iron Age farmstead, which is converted to a funerary enclosure and developed into a larger complex in the Late Iron Age/Roman period. Within the Colchester Garrison site to the east of Gosbecks, a Middle Iron Age farmstead is abandoned and by the Late Iron Age a trackway crosses the area of the former enclosure. The landscape of the garrison area was interpreted by its excavators as demonstrating two phases of landform, the first associated with the Middle Iron Age and the latter initially with the creation of the *oppidum* in the very Late Iron Age but continuing in use into the post-conquest period (Brooks and Masefield 2005, 88-89). A change of orientation to the boundaries suggests a break in occupation and the adaptation of this area to one focussed on field systems and trackways during the latter period of the Late Iron Age, an area to move through rather than live in. Several settlements which demonstrate continuity of use of the location, if not of specific settlement enclosures, are located in the vicinity of Stanway, `outside', but adjacent to, the *oppidum*. This is an area where extensive quarrying has taken place which might cause a distribution bias creating the impression that the Middle Iron Age settlement is a focus for later activity (Moore 2020, 550). However, the presence of various enclosures recognised from cropmarks to the south of Stanway, undated, but which be Late Iron Age in date, might reinforce that interpretation, and numerous undated rectilinear enclosures, probable farmsteads, are also located in this area (but see comments below).

Pre-oppidum landscape comments

The distributions of Middle and Late Iron Age settlements observed in all three case study areas will be affected by a number of factors, principally, later developments in the landscape and underlying geology, such as heavier, poorly drained soils which tend not to be conducive to cropmark formation. The Silchester area has seen the least development, but the heavy clay soils that surround the plateau, and medieval and later farming techniques have the effect of masking earlier archaeological sites. The expansion of the modern town of Colchester and the creation of extensive military sites from the 18th to 20th centuries have meant that much of the landscape within the dykes cannot been investigated. Redevelopment of the Colchester Garrison site has enabled archaeological excavations which have uncovered Middle Iron Age and Late Iron Age settlements and field systems and revealed a section of the Barnhall dyke. However, other settlements may have existed in areas not targeted for development or quarrying, or in the protected landscape of Gosbecks. The recognition of numerous undated settlements located outside, but adjacent to, the *oppidum* area, may also illustrate this bias. The apparent clustering of these sites to the south-west of the Gosbecks, Heath Farm and Kidman's dykes may be misleading, and it is possible that the sub-surface

remains of others may exist within the developed areas within the dykes or masked by the later Iron Age and Roman developments at Gosbecks. The expansion of Chichester and repeated episodes of drainage may have destroyed or covered earlier features on the coastal plain.

The evidence outlined above demonstrates that there was some degree of occupation within all three of the case study areas in the Middle Iron Age and the early part of the Late Iron Age, but it is not consistently continuous. Settlements are created in new areas in the Middle Iron Age, for example, at North Bersted and on the West Sussex coastal plain to the north and east of Chichester, and occupation continues in these areas into the Late Iron Age. This conforms to the model for societal change put forward by for the Chichester area, which suggests a dispersal of people from the South Downs to the coastal plain, resulting in the founding of new settlements such as Carne's Seat, Goodwood (Bedwin 1983, 38). It has also been suggested that the Late Iron Age occupation sites on the coastal plain developed and expanded from the pattern established in the Middle Iron Age (Hamilton 2007, 86). However, in as much as there are sites created in new locations in the Middle Iron Age, the same appears to be true for the Late Iron Age, particularly in the Chichester/Fishbourne area. If the numerous undated sites recorded across the South Downs are considered for both periods, it would appear that this area was not de-populated and farming activities associated with the extensive field systems probably continued during these periods.

The *oppidum* landscape: very late Iron Age (*c.* AD 1 – *c.* AD 43)

Nucleated settlements are evident at Sheepen (Colchester) and Silchester, the latter of which presents possibly the only evidence, of a single nucleated centre with a planned layout. Another example within Britain with a singular focus is Stanwick, where activity is focused on The Tofts enclosure (Haselgrove 2016), but it does not exhibit a similar intensity of settlement. Moore has compared the Late Iron Age system of tracks and compounds at Silchester with the occupation at Bagendon, where a trackway, later a stone road, runs along the valley with a series of enclosures associated with it (Moore 2020, 551). While there is, as yet no clear evidence of a nucleated settlement at Chichester, there are similarities in patterns of settlement change with Silchester before the very late Iron Age. Both areas see the abandonment of settlements in the latter part of the Late Iron Age which, as suggested above (see p 16) may be associated with the foundation of a nucleated site.

The construction of elements of the linear dykes at Silchester have been shown to have begun in the Middle Iron Age and it is possible that the development of such earthworks was part of a phase of territorial change here. While there is no definitive dating evidence, something similar may have

occurred at Chichester with the creation of the east-west contour dyke, EWA. Another similarity between the two areas is the cessation of activity, shown by excavated evidence, on a number of Late Iron Age settlements in the earlier part of the Late Iron Age. In the Silchester area this occurs prior to the very Late Iron Age period during which the nucleated centre of the *oppidum* was developed. This may suggest a movement in population associated with changes to the power structures in the area, either into the new settlement, or away from the area altogether. Haselgrove and Millett hypothesised that nobles might have been encouraged to associate themselves with the new settlement area at Verlamion while they maintained holdings elsewhere (1997, 287). Fulford has suggested that the enclosures excavated underlying Insula IX at Silchester might have been élite compounds, possibly temporary residences for nobles representing the interests of particular peoples (Fulford *et al* 2018, 381). The fact that a cessation in occupation of sites occurs at a similar point late in the Late Iron Age in the Chichester area may support the case for the existence of a nucleated centre within this landscape. The concentration of linear dykes at the head of the Chichester Channel, the change in focus of the dykes thought to be later in date (Davenport 2003, 106), may also support the hypothesis that this was the site of a central settlement for the *oppidum*.

Settlement in the central area of the gravel plateau at Silchester gradually expanded outwards and developed into a more planned settlement within the complete circuit of the Inner Earthwork. Dating evidence for the Outer Earthwork is scarce and inconclusive; it may have been constructed after the foundation of the settlement, or, alternately, it may pre-date the *oppidum*. This earthwork incorporates the probable former enclosure at Rampier Copse, but there is no convincing evidence that it was ever a complete circuit. Sharples has suggested that the nature of the Outer Earthwork can be related to that of the settlement itself, and the part that it played in the lives of the community that used it. Rather than seeing it as the symbolic location that bound people together, he sees the community as interlinked by networks of personal allegiance, using the *oppidum* as a meeting place to cement these relationships. There was no need for this earthwork to be complete because the *oppidum* centre did not represent the community as a whole (2010, 173). The settlement at Sheepen, which is partly defined by an L-shaped dyke which runs along its western and southern sides, may have been regarded in the same way.

The different dates of origin obtained for some of the linear dykes, and the inconclusive dates provided for others, make it uncertain whether all the features had an association with the *oppidum*. It is not clear whether all the dykes would have been `in use' contemporaneously, or whether some became relict features in the landscape towards the latter part of the Late Iron Age. New settlement types appear in the *oppidum* environs in this period although their relationships with both the central settlement and the linear dykes is unclear. An example is the ladder-type settlement at

Raghill Farm, Aldermaston, occupied between the Late Iron and Roman periods, which is located to the west of Grim's Bank, or what might be thought of as being `outside' the oppidum area. A site which is similar in appearance, known from cropmarks only, is located to the west of Little London, south of Silchester (Truscoe 2018, 84), located to the south of the Little London group of linear earthworks, also `outside'. A number of undated rectilinear enclosures, which represent Late Iron Age to Roman settlements, can be identified in the vicinity of the central site, or `inside' the oppidum. As noted above (see p241), these possible farming settlements, together with the outlying sites at Raghill Farm and Little London, may have had an association with the central settlement, managing resources in the landscape around it. The territory associated with Calleva may not have been limited by the linear dykes but may have covered a more extensive area of landscape, providing the agricultural base which underpinned the economy.

The changes to settlement patterns in the landscape at Colchester may have been similar to Chichester and Silchester, but the abandonment of settlements prior to the development of the nucleated centre at Sheepen is not apparent. There are few precise dates for the linear dykes, but the relationships that have been observed between them indicate that the Heath Farm Dyke is probably earliest, and the route it takes curving around the higher ground on which the Gosbecks enclosure and field system sits suggests a relationship between the two. Limited dating evidence from Appleby's excavations places at least one phase of the trapezoidal enclosure in the Late Iron Age[3]. However, the overlapping nature of the cropmarks means that it is unclear whether another phase was earlier or later. It does not have the appearance of a planned double-ditched enclosure and instead resembles a feature that was re-defined, but not to exactly the same plan. The route of a trackway that appears to lead to the enclosure's south-west corner crosses the line of the outer ditch, suggesting a different temporal relationship. This suggests that there may be more than one phase of the features identified as being Late Iron Age in date. The longevity of field systems has been demonstrated on the South Downs and at North Bersted in the Chichester area, and it is possible that the Gosbecks field system was in existence before the Late Iron Age, which may have implications for the Heath Farm Dyke. However, this could only be proved by intrusive archaeological investigation. The relationships observed between the linear dykes, and dating evidence where available, indicate a possible sequence of development, but, as with the other case studies, it is unclear whether all of the earthworks thought to date to the latter part of the Late Iron Age in date would have functioned together.

[3] Appleby sampled the north side of the inner ditch of the trapezoidal enclosure (Hull 1958, 270-1), and see above Chapter 3)

Linear earthworks

The common feature for territorial *oppida* is the presence of massive linear dykes and in most cases, they are seen to define the site. While *oppidum* has the literal definition of `town', a nucleated settlement is not evident at most sites and, frequently, the most visible constituent of territorial *oppida* is the extant elements of these earthworks. The linear dykes may have had multiple functions and definitions, as boundary markers, possibly as defences, but maybe also a means of expressing or enhancing the prestige of a settlement. They are often referred to as `systems', suggesting a unified purpose in their construction, but, where dating evidence is available, their period of origin has been shown to vary. They may not have all been in use at the same time or have necessarily all been associated with an *oppidum*. For example, dating evidence for Gryme's Dyke (Colchester) indicates a post-conquest date of construction and the Sheepen dyke is known to have been levelled during this period (Hawkes & Crummy 1995), but whether the other linear earthworks judged to be earlier in date continued to fulfil a function in the landscape is unclear. A number of scientific dates are available for the linear dykes in the landscape around Silchester and their construction, at least for the sections of those earthworks that were investigated, has been shown to have begun in the Middle Iron Age (Barnett & Fulford forthcoming). Dyke `e' in the Bagendon complex has also been dated to the Middle Iron Age and an association made with enclosures of that period and the organisation of the landscape (Moore 2020, 545) and it possible that an earlier origin for these `systems' is more widespread. I have speculated that it is possible that sections of the Chichester earthworks may also have their origins in this period, but conclusive dating evidence is scarce (see above Chapter 5).

Bradley posited a three-phase sequence of construction for the Chichester Entrenchments and suggested that, with each subsequent development, the function of the linear dykes might have changed (1971). The latest of the linear dykes in Bradley's sequence group around the head of Chichester Harbour, an important communications route, which may indicate an increase in significance of that area in the Late Iron Age (Davenport 2003, 106) and the location of a possible *oppidum* central focus. However, the phasing of these earthworks may be more complicated. As this thesis has shown, detailed survey of a section of the entrenchments at Oak Wood demonstrates a number of phases within one small area of the earthworks (see Chapter 5 and Appendix I). The identification of sections of linear earthworks from sub-surface remains in the Chichester area (Magilton 2003, 158) also highlights the potential lack of knowledge concerning these complexes of earthworks and may further complicate interpretations of their phasing. Gryme's Dyke at Colchester has been shown to be a post-conquest construction (Hawkes & Crummy 1995, 115) and it may be that linear earthworks at other sites were also created during the Roman period. A possible example

is the two elements of the Chichester Entrenchments which are of similar double-banked construction at Oakwood, north of Fishbourne (NS5 and EWK). These two earthworks greatly contrast with the appearance of the other entrenchments and might have been associated with developments around the Roman palace.

The function of the linear dykes and the extent to which they are associated with particular developments in the landscape is a matter of debate. They have been interpreted as territorial markers, which may have had symbolic as well as practical importance, defensive lines, and as having a role in corralling livestock. Agriculture was important to the economy of Late Iron Age settlements and much of the interior of these landscapes may have been given over to animal husbandry and possibly arable cultivation. The faunal assemblages at *oppida* sites demonstrate the consumption of pigs, cattle, and sheep (Moore 2020; Fulford *et al* 2018) and it is possible that the dykes had a function in the management of livestock. This function has been suggested as an interpretation of the positioning of the Dugard and Kidman's Dykes at Colchester (Hawkes & Crummy 1995, 104). The importance of horses in the Late Iron Age world has been stressed by Creighton, who suggested that the linear dykes may also have been connected with their management (Creighton 2000, 18). Moore has referred to the apparently empty areas of the Bagendon complex and stressed the importance of understanding the agricultural context of these sites (Moore 2020, 559). Lodwick's analysis of plant remains at Calleva identified cultivation in the local area, with last-stage processing carried out within the settlement (Lodwick in Fulford *et al* 2018, 308) and, as mentioned in Chapter 4, traces of later prehistoric fields were identified by the author in the vicinity of Calleva.

Early interpretations saw the linear dykes as defensive features despite, or because of, their discontinuous nature. Attempts have been made to complete their routes by the incorporation of inaccessible areas such as boggy ground or dense woodland in a manner similar to the descriptions of early- to mid-20th century linear defences. For example, the ditches have been described as "anti-chariot" measures (Hawkes & Crummy 1995, 162) in the same way that the Second World War stop lines possessed anti-tank ditches (eg, Dobinson 1996). Geophysical survey at Bagendon failed to identify other elements to the north and west of the dykes; either there were no natural barriers, such as hedge lines, in the gaps, or they were too ephemeral in nature to leave a trace that could be identified by remote sensing (Moore 2020, 562). The connecting of the Heath Farm Dyke with the Lexden Dyke at Camulodunum extended the line of the Colchester dykes so that it crossed the entirety of the plateau between the River Colne and Roman River and extended to north and south of the two watercourses, but whether it constituted a show of strength or provided serious defensive capabilities is uncertain. The relationship between the Lexden and Heath Farm dykes was

demonstrated through excavation with the latter identified from sub-surface remains, raising the question of whether there was in fact a continuous earthwork line at this point, or if the Heath Farm dyke in fact became obsolete at this point. The Lexden dyke echoes the route of the Sheepen dyke on a larger scale and gives the impression that this was a separate development. Rather than seeing the creation of these earthworks as cumulative, it is possible that the northern portion of the Heath Farm dyke was seen as unimportant during the lifetime of the Sheepen settlement.

Other scholars have stressed the possible functions of ostentatious display and their role in unifying communities through their construction and maintenance, conferring a social meaning on these earthworks (Sharples 2010, 120, 122). These monumental earthworks would have acted as boundary markers which enhanced the status of the settlement associated with them (Moore 2020, 562). It has also been suggested that the creation of such earthworks was a manifestation of a phenomenon that had a long tradition in Britain and distinguishes Iron Age Britain from many other parts of Europe (Haselgrove 2001, 59; Haselgrove & Millett 1997, 286). Haselgrove identifies two major periods of linear boundary construction: the Late Bronze Age, and the Middle to Late Iron Age. Extensive linear earthworks dating to the Late Bronze Age have been recognised in chalkland areas of Wessex, the Chilterns, the Yorkshire Wolds and North Yorkshire. However, they are generally defined as territorial markers (*ibid*), associated with the corralling of livestock rather than being defensive (Bradley *et al* 1994, 8). The Late Bronze Age linear earthworks identified in Wessex define large tracts of upland and the interpretation that they were associated with the enclosure of livestock, led to the use of the term `ranch boundary' to describe them (Bradley *et al* 1994, 8-9). These earthworks, otherwise described as `linear ditches' (Bowen 1978, 115; Bradley *et al* 1994, 4), can vary in form, sometimes comprising associated banks and ditches. Within one area ditches can vary in width between 2-6 m and banks do not always occur on the same side (Bowen 1978, 120). A comparison of ditch profiles also demonstrates variation; both V-shaped and flat-bottomed ditches have been identified through excavation (*ibid*). The phenomenon of cross ridge dykes is also associated with this earlier period of linear boundary construction (Bedwin 1979, 13) and numerous examples of this monument type are located on the Ridgeway which runs along the northern edge of the South Downs. There is a concentration of cross-ridge dykes to the west of the River Arun and overall, at least 80 examples are known in East and West Sussex (Hamilton 2003, 77).

Corney has suggested that "multiple ditch complexes" such as Gussage Hill-Cow Down (Dorset) should be regarded as comparable to *oppida* sites. He points to their association with finds of coinage and metalwork, imported Roman goods and sometimes rich burials and the fact that their peak of activity occurred in the Late Iron Age (Corney 1989, 112). Moore makes a comparison with these types of site in his investigations of the Bagendon (Gloucestershire) landscape, seeing a

parallel between it and the types of sites examined by Corney; each characterised by the presence of several large, enclosed areas, banjo enclosures and multiple ditch systems (*ibid*; Moore 2012: 401). Moore also notes the presence of banjo enclosures associated with dyke systems in areas of the country where they are relatively rare, such as Carne's Seat (West Sussex), located to the north of the Devil's Ditch as it runs through Goodwood Park (Moore 2020, 402 and see Figure 5.3). Moore suggests that Bagendon could be seen as "a distinct type of extended, polyfocal site", with the function of the dykes seen as that of managing and structuring movement through the landscape (*ibid*).

The linear dykes that have been associated with *oppida* have been interpreted both as tools for delineating areas of land, creating and protecting an exclusive territory, and as routeways or signposts, directing movement in a particular way. The permeable nature of these earthworks, with their discontinuous nature and entrances, such as those observed at Chichester and Colchester, does indeed suggest that they are something other than defences. The distribution of domestic and mortuary sites at Colchester demonstrates that they are found both in what has been thought of as the interior, and the exterior of the site. The function of the linear dykes may therefore be one of directing movement around a wider landscape rather than cutting off a particular area. They are complex monuments and, though often referred to as 'systems', research has shown that they were created in many phases, and it is uncertain whether earlier monuments would have remained in use alongside later earthworks. The detailed field survey carried out by the author on the Oakwood entrenchments at Chichester suggests that each dyke has its own individual, rich, biography. The function of each earthwork may have been conceived differently initially and then changed over time, if the earthwork remained in use, but their form suggests that, rather than being simple dividing lines, they probably had symbolic importance within the landscape to their creators.

Communications

The three case study areas have evidence of movement within and without them to differing extents. Colchester provides the clearest evidence of intra-*oppidum* movement in the form of a number of excavated trackways in the Colchester Garrison area and across the Sheepen site, all originating in the Late Iron Age and continuing into the Roman period. The route of one broad trackway defined by two parallel ditches runs through the agricultural Colchester Garrison area and continues south to Maypole Green where it turns to the west towards Gosbecks, appearing to connect different areas of the *oppidum* zone. Fragments of undated trackways are also found in other areas of the *oppidum* zone and beyond the dykes, in the area between the Stanway funerary site and a Middle and Late Iron Age settlement at Abbotstone, and within the field system adjacent

to the trapezoidal enclosure at the Gosbecks site. These trackways have been interpreted as being Late Iron Age in origin and as having a direct association with the trapezoidal enclosure. However, the cropmarks demonstrate that the site has multiple phases, including of the enclosure itself, and it is unclear which features are contemporaneous. The entrance ways through the dykes identified through excavation and the possibly contemporary farms outside them show connectivity within a wider landscape or territory than is indicated by the dykes alone.

The location of Sheepen on a hill adjacent to the River Colne and the extensions to the dykes to the north of that waterway and to the south of the Roman River demonstrate further communications links between the *oppidum* and the outside world. The River Colne was probably an important trading route; Hawkes has pointed out that Sheepen is located at the highest coastal reach of the river, providing access to trading vessels from the east coast (Hawkes & Crummy 1995, 76). The extensions to the dykes beyond the river have been interpreted as protections for fords across the two rivers (*ibid*, 174). These crossing points demonstrate outward communication as much as the dykes might show a desire to limit inward movement. The undated cropmarks of a possible settlement on the northern bank of the River Colne, phases of which may be later prehistoric, and possibly Late Iron Age, in date, may represent a staging post before crossing to Sheepen.

Evidence of a road system underlying the Roman street layout has been uncovered through excavations on the forum-basilica and Insula IX sites at Silchester, and there are numerous undated trackways in the landscape around the nucleated settlement of similar appearance to those excavated at Colchester. Whether these tracks relate to movement between areas in either the Late Iron Age or in the Roman period cannot be determined without further investigation. The heavy clay soils around the gravel plateau are not conducive to cropmark formation so information on possible routes of communication may be missing. The Roman road network at Silchester is well attested and it is possible that some of these routes overlie earlier trackways, as seen on a smaller scale at Sheepen. Farmstead-type enclosures, similar to Late Iron Age to Roman excavated examples, are found in the landscape around the central settlement at Silchester and connecting trackways may have existed between areas for which the evidence is either not visible or does not survive.

The evidence is less clear on the West Sussex Coastal Plain due to later development and land improvement works. The trackways or droveways associated with the field systems offer the clearest signs of routes of communication but the evidence is scarce. The marine gravels in the northern part of the coastal plain are associated with free draining soils on which cropmarks are more likely to form. Trackways associated with the settlement areas can be discerned but clear routes across the landscape zone around the Chichester Entrenchments are less easy to identify, due

in part to later development and differing soil conditions. Trackways are clearer within the well-preserved field systems of the South Downs and links with the landscape to the south are suggested by Bradley's interpretation of a possible entrance at the corner of a projecting sub-square section of EWA (ii) to the north of Oakwood (Bradley 1971). This feature is similar to a projecting area of the South Oxfordshire Grim's Ditch also interpreted as an entranceway by Bradley (1969a, 5).

Zoning and material culture

Attempts to identify areas or zones devoted to particular activities have been suggested for these sites in order to meet the definition of *oppida* as urban, or proto-urban, in character (eg Hawkes & Hull 1947; Crummy 1997, 15). Specialist metalworking, particularly coins, but also such items as horse gear, also appears to be an important feature of these sites. Late Iron Age coins have been found across the Chichester landscape, but again, in far smaller quantities than at Colchester or Silchester. Pellet moulds for producing coin blanks and materials associated with metalworking were excavated at Ounces Barn, at the eastern end of dyke EWA (Bedwin 1984, 87), and crucible fragments of a Late Iron Age type were found to the south of St Peter's church, Chichester (Magilton 1993, 48). However, this contrasts starkly with the ubiquity of pellet moulds and metalworking equipment at both Sheepen (Hawkes & Hull 1947; Hawkes & Crummy 1995) and Silchester (Allen in Fulford *et al* 2018, 256). Numerous pellet moulds have been found in the valley bottom area to the north and west of the central enclosure at Verlamion, although, as at both Sheepen and Silchester, pellet moulds also have been found at other locations across the site (Bryant & Niblett 2001, 101). It has been suggested that manufacturing of coin blanks might have been akin to a cottage industry because of the dispersal of pellet moulds, with the final stages of the process taking place at a central location under official oversight (Allen in Fulford *el al* 2018). Coin production and metalworking evidence has been found primarily in the valley bottom settlement area at Bagendon, but Moore has cautioned against identifying this as a specialised industrial area. Artefacts associated with metalworking were also found in The Ditches enclosure and both areas also possessed assemblages of imported finewares, blurring the distinction between industrial and domestic sites (Moore 2020, 557), similar to the situation at Sheepen and Silchester, which have also yielded large quantities of imported pottery. The evidence suggests that a number of different roles may have been shared by a single area within an *oppidum*. Sheepen (Colchester) has been defined as an industrial site (Hawkes & Crummy 1995; Crummy 1997) but the site is associated with a rich cultural assemblage which includes imported pottery, *amphorae,* and a variety of brooch types (Hawkes & Hull 1947). Smaller quantities of pre-conquest imported pottery have been found at sites excavated in the Chichester/Fishbourne area, but an assessment by Rigby concluded that in range, if not in

quantity, the assemblage was comparable to Camulodunum and Braughing/Puckeridge (Rigby in Cunliffe *et al* 1996, 117). This compares with the situation at Verlamion where relatively low amounts of imported pottery have been found, the majority coming from funerary contexts. This may reflect the nature of the sites that have been excavated, or, as Niblett has suggested, that the population of the Prae Wood and the valley bottom may not have been particularly wealthy (2001, 52). However, a greater quantity of imports was found at Gorhambury which either indicates the particular importance of that enclosure or its inhabitants, or that there may be more evidence which has been undiscovered so far (*ibid*).

Religious or ritual centres?

One of the functions that has been ascribed to territorial *oppida* is that of a focus for religious or ritual practices due to their location in watery or marshy areas (Rogers 2008, 45; Willis 2007, 121; Haselgrove & Millett 1997, 284). However, Moore has pointed out that, even though watery locations may have been ritually significant, the practical considerations of such a site were also important, for example, to provide access to water for metalworking or for livestock (Moore 2020, 561). If livestock management is assumed to be one of the functions of the linear earthworks, then this is a logical association. A connection has been suggested between religious and secular practices and spaces in the Iron Age, for example, the association between ironworking and cycles of regeneration and agricultural production (Hingley 1997, 15). Therefore, as has also been suggested for sites classified as industrial in nature, the distinctions between the characters of particular areas of *oppida* sites may be blurred. The nature of the activities carried out within these sites possibly included meetings between representatives of different groups (Fulford in Fulford *et al* 2018, 381) and acts of gift exchange, which possibly combined ritual and secular practices (Moore 2020, 562). A reflection of the connection between the practical and the ritual in the Iron Age can also be seen in the laying out of structures and living spaces (*ibid*). An association has been made between the north-west, south-east alignment of the Westhampnett cemetery and the cosmology of the Iron Age round house (Fitzpatrick *et al* 1997,238-239; Sharples 2010, 235, 286) and I have suggested a possible connection between the site and the wider landscape of coaxial field systems which are predominantly laid out on the opposite axis, making a clear distinction between these areas and their functions. Further evidence of the ritual treatment of the dead is evidenced by the rich burials identified in the case study areas. Examples are the Lexden mirror grave (Hawkes & Hull 1947) and the Late Iron Age phase of the Stanway funerary complex (Colchester) (Crummy *et al* 2007), the Latchmere Green mirror burial (Fulford & Creighton 1998) and the Stanway-type burial at

Windabout Copse (Wheeler and Pankhurst in Fulford *et al* 2016) (both Silchester), and the North Bersted warrior burial (Chichester) (Taylor *et al* 2014).

While there is no convincing evidence for specific ritual or religious spaces in the Silchester, Chichester and Colchester during the very Late Iron Age period, religious beliefs may have permeated the practical aspects of life. The shrine at Hayling Island, which shares a similar assemblage of coins as that found across the coastal plain, may have been a place of pilgrimage for the people living within the possible *oppida* landscape, maybe an experience outside daily life. The type of ritual behaviour identified at Stanwick, where numerous occurrences of the deposition of querns to mark the cessation in use of a particular phase of an enclosure boundary were discovered (Haselgrove 2016, 437), may have been a more common type of behaviour. An example of a similar deposition was found during excavation of the farmstead at Windabout Copse, north of the central settlement at Silchester; a broken saddle quern was placed in the boundary of the eastern side of the in-turned funnel entrance of the interior enclosure (Fulford *et al* 2016, 18-19). Structured deposits were also identified at Bagendon, such as currency bars placed within a ditch at The Ditches enclosure and disarticulated human remains within occupation features in the valley bottom (Moore 2020, 562). Coin hoards found on the Selsey peninsula and in the Colchester landscape may also be examples of ritual deposits.

Agricultural environs

The evidence for arable agriculture associated with the *oppidum* at Silchester is not widespread, but fragments of later prehistoric-type field systems can be identified on historic aerial photographs in several areas around the central settlement. While undated, these fields may indicate the origin of some of the cereal crops shown to originate in the vicinity of the settlement (Lodwick in Fulford *et al* 2018, 308). It is possible that there was an emphasis on livestock rather than arable farming, or a focus on the management of woodland, but as the remains of numerous removed post medieval field boundaries attest (Truscoe 2018, 143), the landscape has been subject to numerous episodes of change and evidence of further field systems may have been destroyed. Field boundaries and track- or drove ways can be found in several locations within the area of land defined by the Colchester dykes. A coherent, field system can be recognised at Gosbecks to the east of the Colchester dykes, but the evidence is less clear elsewhere, either on the peninsula or around it. However, zones of agricultural activity are indicated by a cluster of farmsteads in and around Stanway, to the west of the dykes, and by field boundaries and a network of trackways in the Colchester Garrison area and to the east of Gosbecks. Hawkes has suggested that elements of the dykes might have been used for the management of livestock (Hawkes & Crummy 1995, 104).

It is at Chichester where the most convincing evidence for large-scale agriculture is present; field systems cover extensive areas of the coastal plain and South Downs and while they were probably constructed in many phases it is likely that their creation was a communal endeavour, possibly under the influence of a controlling power. Coaxial field systems are effectively barriers to movement, meaning that an area of land is no longer accessible because it has been given over to a specific purpose (Field 2001, 57), and people living here probably had a clear idea of how the landscape worked and how to move across it. A network of droveways running between blocks of fields is clear in the upland area and a similar arrangement seems likely on the coastal plain from the more fragmentary evidence. The similarities that can be observed in the layouts of field systems to the north and south of Chichester, on the South Downs and the West Sussex Coastal Plain, suggest connectivity in this landscape. Some elements of the field systems on the South Downs predate the Iron Age, but excavated evidence indicates that they remained in use into the latter part of that period at least. The extensive field systems in Wessex have an earliest date of the end of the Early Bronze Age and beginning of the Middle Bronze Age, although all areas may not have been contemporary (Field 2001, 60). They are not necessarily associated with the linear earthworks known as `ranch boundaries', but, as the Wessex Linear Ditches Project found, frequently slighted them (Bradley *et al* 1994, 150). The project also found evidence of intensification of agriculture in the Middle Iron Age; field systems were laid out on a more extensive scale than previously, a development which necessitated the creation of reserved pasture areas for keeping livestock (*ibid*, 147). The continuing use and development of field systems in the Chichester area were probably also associated with a period of agricultural intensification, and to the changes to the settlement pattern that occur in this area from the Middle Iron Age on in the northern part of the coastal plain, adjacent to the possible earliest dyke EWA.

It has been suggested that a mixed farming regime was common to Late Iron Age societies, although with regional variations in how it was practised (Millett 1990, 10), and it is probable that this was taking place at varying scales in the three case study area. Specialisation may have occurred in some areas of the *oppida* landscapes, possibly part of a functioning whole. The gravels and loams of the central plateau at Colchester may have been more heavily utilised for arable agriculture, while outlying farms, some of which have the form of possible paddocks attached to a settlement enclosure, may have specialised in raising livestock, for example, Donyland Wood (see above Chapter 3). Outlying farms in the Silchester area may also have served that function, including Windabout Copse, and the ladder-type settlements at Raghill Farm and Little London (Truscoe 2018, 84).

This chapter has outlined the patterns of activity in the landscapes of Colchester, Silchester and Chichester, before and after the creation of the sites designated as territorial *oppidum*, focussing particularly on the area delineated by the linear dykes in each case. Some continuity of settlement can be observed between the Middle Iron Age and the earlier part of the Late Iron Age, but there is also evidence of abandonment. Sites which exhibit continuity of occupation from the Middle Iron Age, and some newly created Late Iron Age settlements, fall out of use in the later part of the Late Iron Age at Silchester and Chichester. It is at this point that central settlement of the *oppidum* at Silchester is established and the desertions may be associated with a change in focus. The abandonment of Middle Iron Age sites in the earlier part of the Late Iron Age is apparent at Colchester, but there is no clear evidence for sites falling into disuse in the latter part of that period. However, it is possible that the pattern of desertions seen at Silchester and Chichester may be a common factor in landscapes where territorial *oppida* occur.

7 Concluding Discussion

The category of territorial *oppida* encompasses a wide range of landscapes of differing dates and forms. Multiple settlement areas are present at some sites, such as Verlamion and Bagendon, while others have a singular focus, such as Silchester and Stanwick. An association with watery areas is common, but the specific locations of the *oppida* in relation to rivers or marshy areas varies; Silchester and Colchester are both positioned on gravel plateau areas with water courses adjacent to them, but almost the entirety of the area covered by Sheepen, Gosbecks and the linear dykes at the latter is located within this area, while only the central settlement is completely sited on the gravel promontory at the former. Bagendon and St Albans have occupation areas both within valley bottoms and on higher ground around them. The single linking factor between sites described as territorial *oppida* is the presence of monumental earthworks which may either indicate their significance or cause them to overshadow other sites which might have been of equal importance (Haselgrove & Millett 1997, 286). The sequence of construction and placement of linear earthworks differs at each of the sites, and in the cases of Silchester and Bagendon, appear to have been linked to developments in the landscape from the Middle Iron Age on, although they may not have retained their significance.

The presence of these extensive complexes of linear earthworks has been seen as the defining trait of a territorial *oppidum* as a sub-category of *oppida,* and, in the case of Chichester, forms the main evidence for such a site. However, the features of which these complexes are comprised do not necessarily constitute unified systems. Haselgrove has suggested that they might be "the product of piecemeal accretion" (Haselgrove 2016, 453), but I would suggest that earlier elements may not have retained their functional importance in the landscape rather than being used together with the successive additions. The dates obtained for sections of the dykes at Silchester indicate that some elements originated in the Middle Iron Age, a considerable period of time before the creation of the *oppidum*. Hypothetically, the Brocas Lands dyke and Grim's Bank (for which the dating is insecure) may represent earlier phases of division of the landscape and not have any association with the *oppidum* (see Figure 88 for hypothetical model of the Sillchester landscape). Therefore, Haselgrove's suggestion that Silchester could be described as an enclosed *oppidum* (*ibid*) might have some merit. The creation of the various phases of the Chichester Entrenchments probably also occurred over an extended period of time and it is possible that these features should not all be seen as having an association with a potential *oppidum*. It is possible that some phases relate to territorial divisions that predate any form of a central settlement and, equally, that others might be associated with developments in the post-conquest period around Fishbourne (see Figure 88 for hypothetical model of the Chichester landscape).

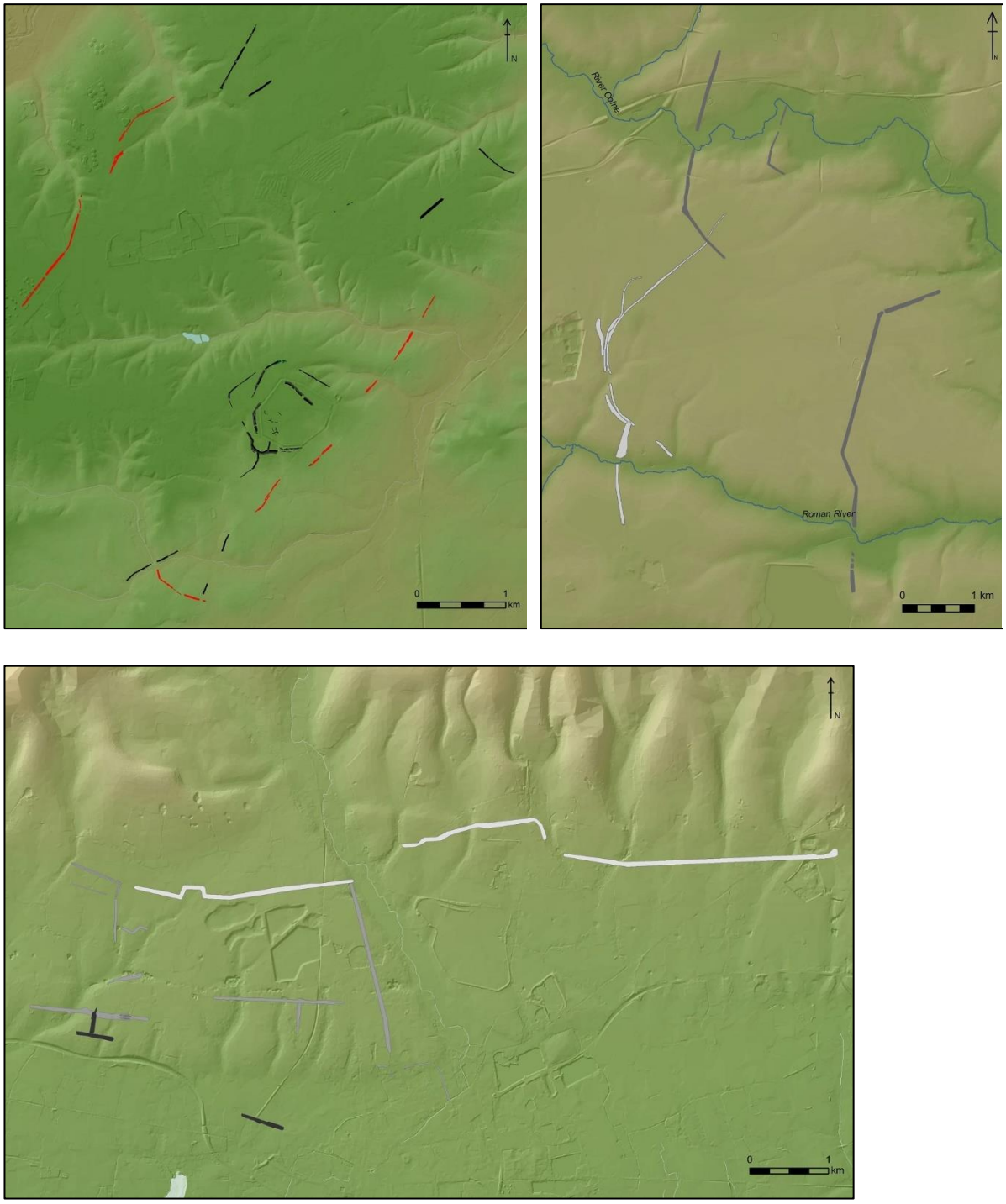


Figure 7.1 Hypothetical phasing for the linear earthworks of the three case studies. KEY: Silchester (top left) – earliest (Middle/Late Iron Age features (red), very Late Iron Age features (black); Colchester (top right) – earliest (Middle/Late Iron Age) features (light grey), features associated with very Late Iron Age settlement at Sheepen (dark grey); Chichester (bottom) – earliest (Middle/Late Iron Age) features (light grey), very Late Iron Age features (dark grey), Roman features (black).

The differing form of the Chichester earthworks suggest that they were created in different periods, but the phasing based on morphological characteristics put forward by Bradley (1971), curvilinear,

contour dykes followed by more angular earthworks, may also be too much of a generalisation. Individual linear earthworks have been shown to have multiple phases and different methods of construction, seen in dyke EWD in the study area of Chichester and dyke `e' at Bagendon. This is also illustrated in the Colchester case study area, where excavated evidence indicated that the extension to the Barnhall Dyke was Late Iron Age in date when it had been assumed to be post-conquest due to its angular form. However, this date may only refer to one particular section of the dyke and may not hold true for the entire earthwork. The Lexden and Sheepen dykes are also quite angular in form and might have been developed at around the same time. The Colchester dykes were interpreted by Hawkes as two distinct earthwork groups based on the River Colne and the Roman River but seen as an accreted development by Crummy (Hawkes & Crummy 1995). The interpretations depend on seeing the landscape as either a series of separate developments, or a process of continuous development. The scarcity of dating evidence for the Gosbecks enclosure means that it is uncertain whether it was in use at the same time as the Sheepen settlement and it is possible that it was an important site in the landscape prior to the establishment of the Sheepen site and subsequently declined. The presence of other boundaries that cut across the enclosure ditches suggest that the original structure had fallen out of use. New developments on the same site do suggest that the location remained significant, but it is uncertain whether these changes occurred in the latter part of the Late Iron Age or in the post-conquest period. Hypothetically, the development of the *oppidum* may have been focussed on the Sheepen area, defined by the echoing alignments of the Lexden and Sheepen dykes. The Berechurch/Barnhall dyke may also have been added to the landscape during this period, possibly relating to control of movement from the east adjacent to the confluence of the River Colne and Roman River, while the dykes defining the Gosbecks area retained less relevance (see Figure 7.1 for hypothetical model of the Colchester landscape).

The construction of the earlier linear earthworks may point to the significance of their locations; the choice of locations that had previous ritual significance and existing earthworks appears to have been a factor in hillfort construction (Bowden & McOmish 1987, 82) and this may also have been the case prior to the creation of such monumental earthworks. The idea of a tradition of linear earthwork construction has been discussed above, and earlier monuments, such as the cross-ridge dykes on the Ridgeway in West Sussex, could be seen as part of the memory of these landscapes, with the creation of the dykes in a later period continuing a practice, albeit after a significant period of time. Fernández-Götz has suggested that *oppida* were created on the sites which already had significance as locations for ritual gatherings (2014, 391), and the existence of earlier earthworks may have been part of the reason that they were perceived in this way. The positioning of these sites at a natural interface between landscape types, or perceived junction between territories,

probably came about due to a number of practical considerations related to communications links and possibly the neutrality of the setting, but the specific areas where linear earthworks and other features were constructed may have had other meanings for people who chose them. It has been suggested that *oppida* may have been associated with ritual sites and although specific evidence of religious areas may not be present, natural features of the landscape may still have held significance. Watery or marshy places in particular appear to have been important in the Iron Age and they may not have required modification in order to make them special places. However, religious or ritual practices may have occurred in any location, sacred or secular, and, as Moore has pointed out, there are also practical reasons for a settlement to be sited near to water, either as a resource or as a communication medium (2020, 561).

The definition of these sites as being associated with a particular `territory' is due to the presence of the linear dykes, but as the hypothetical models suggest, the concept of what is `inside' and `outside' the *oppidum* territory probably fluctuated over time and may be an artificial distinction. The positioning of farmsteads in the areas immediately adjacent to linear dykes suggests an association with the territorial *oppidum*, but technically they are `outside' what has been defined as its `territory'. Examples can be seen in all three study areas: the ladder-type settlement of Raghill Farm sited immediately to the west of Grim's Bank (Silchester), the Ounces Barn Late Iron Age site located at the eastern end of dyke EWA (Chichester), and the cluster of farmstead enclosures positioned immediately to the west of the main group of linear dykes at Colchester. Funerary areas are also found within and without the dykes at Colchester suggesting further connections between what has been defined as the territorial *oppidum* and the landscape around it. Coin distributions suggest that the influence of these sites was far-reaching, and the concept of territory limited by the bounds of the linear dykes is hard to sustain. However, differences in character between `internal' and `external' space can be perceived to a certain extent at these sites. There is an intensity to the form of the field system at Gosbecks (Colchester) that is not seen to the west of the main group of dykes, where the main concentration of farmsteads is located. This does not appear to be due to differential conditions for cropmark formation since both areas are on similar geology. It is possible that the dykes acted as a division between particular farming areas, if all these features are contemporary. Dating evidence is scarce and the extent to which these features relate to post-conquest occupation is unclear.

The form of a possible territorial *oppidum* at Chichester is the least well-defined of the three case studies, but it is notable that the main concentration of linear dykes around Chichester and Fishbourne are situated in an area largely empty of the coaxial field systems that cover the South Downs to the north and large areas of the coastal plain to the south. However, although the soil

conditions in the area where the entrenchments are predominantly located have proved favourable to cropmark formation, the process of their construction may have masked or destroyed earlier features, and it is possible that a continuation of the coaxial field systems has been lost. Distinctions in landscape character are less clear at Silchester. Possible farmstead enclosures and fragmentary areas of field boundaries are dispersed around the central settlement both within and around the area defined by the linear dykes, but ladder-type farms appear to preferentially be found outside. This may be due to the differences in soil conditions that affect the formation of cropmarks and the masking effects of later land improvement works, but the only other two examples of this type of site in the Silchester area are found further to the north beyond the extent of the linear earthworks (Truscoe 2018).

`Territorial *oppida'* have been associated with the Late Pre-Roman Iron Age and undoubtedly aspects of their development are, but elements of the earthworks that have been associated with them may be linked to a longer history of the landscapes in which they sit. Rather than being developed in `empty' places they may merely represent the latest development in a landscape which reflects social change within their locale. Bryant's study of the *oppida* of Hertfordshire concluded that their origins and functions of the settlements differed too greatly for them to usefully be described by the same term (2007, 78). Pitts has pointed to a degree of conformity in terms of their material culture which appears to transcend local traditions and assumed `tribal' boundaries (2010, 56), but in terms of the analyses of their landscapes, the three case studies would not appear to be a coherent monument group. The parallels in their material culture do point to a similarity of the status and significance of these sites, but the sub-category of territorial *oppida* may not be appropriate way to describe all three locales. It may be more appropriate to use the broader term of Late Iron Age centres (Sharples 2010; Moore 2020) for Colchester and Silchester rather than trying to fit them into a single, narrow monument category, but the Chichester area is more problematic. The growing assemblage of material culture that shows similarities with Colchester and Silchester has to be balanced against the lack of definition of the site overall. However, the concept of a territory delineated by earthworks is hard to sustain in all three cases. The dykes differ in placement and construction and may not have experienced a contemporaneous period of use, and both the settlement patterns and of locations of funerary sites suggest that the concept of territory was more fluid than might be suggested by the positioning of these earthworks.

Difficulties have been experienced in assigning a period of construction to linear earthworks through excavated evidence, and, with the exception of Silchester, scientific dates are in short supply. Programmes of radiocarbon dating would be necessary to gain a further understanding of these landscapes, in order to elucidate their differing patterns of development. However, future research

should not focus solely on the central settlements or linear earthworks that have been associated with these sites, to think of them as landscapes which comprised numerous settlements and activity areas, rather than isolated monuments. In common with the Bagendon project, this thesis has demonstrated that a systematic study of the landscapes around them can yield new information which aids understanding of the patterns of settlement and land use, even in the well-studied sites of Colchester and Silchester. Large-scale remote sensing projects should be focussed on the landscapes of other *oppida* in order to better understand the context in which they developed and the contemporary landscapes around them. These techniques could also be applied to less well understood sites such as North Oxfordshire Grim's Ditch, and the Wessex multiple ditch complexes suggested by Corney as being of similar status to *oppida* (Corney 1989, 112).

To conclude, the differences between the three case studies of Colchester, Silchester and Chichester appear to outweigh the similarities, and their inclusion in the same narrow monument category appears inappropriate. The concept of a specific territory bounded by linear earthworks places an artificial distinction between these sites and the apparent links with the landscapes around them, and the dykes that have been associated with them are not necessarily coherent systems. However, the distinctive nature of these linear earthworks and the fact of their creation suggests that these locations were significant. In each case study area, there also appears to be a degree of nucleation of activity, represented by the central settlement at Silchester, the Sheepen settlement at Colchester and the concentration of the entrenchments in the Chichester/Fishbourne area. While the use of the morphological descriptor `territorial *oppidum*' to describe all these sites appears inappropriate, the alternate term, Late Iron Age social centres, may be more suitable.

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Appendix I – Survey of the Chichester Entrenchments, Oakwood

University of Reading

South, West & Wales Doctoral Training Partnership

UKRI Arts and Humanities Research Council

Analytical Earthwork Survey of the Chichester Entrenchments, Oakwood Park, West Sussex (UK)

Krystyna Truscoe, Elaine Jamieson and Katy Whitaker

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NGR: SU 82679 06483

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Front cover image: Survey in progress of entrenchment EWD (i) in Oak Wood

Summary

This fieldwork was carried out as part of a doctoral research project undertaken at the University of Reading, funded by the Arts and Humanities Research Council through the South, West and Wales Doctoral Training Partnership. The purpose of the research was to make a detailed record of a section of the Chichester Entrenchments to the north of Fishbourne in Oak Wood, formerly part of the estate associated with Oakwood House, an early 19th century house which is now a private school. The entrenchments are thought to be Late Iron Age in date and possibly associated with the site of an *oppidum.* They had formerly been surveyed by the author using aerial photographs and lidar imagery and the Oak Wood section was chosen as a target for field investigation on the basis of this work. Numerous paths associated with the 19th century estate meant that the line of the Entrenchment EWD (i) was unclear within the woodland. The aim of the fieldwork was to establish this line and to examine the relationships between sections of the entrenchments within this area. The analytical earthwork survey clarified the route and extent of EWD (i) within the wood and established the relationships between this feature and the east-west and north-south entrenchments within the pasture field to the east. The relationships identified indicate at least three phases of construction of the linear earthworks: first, an east-west earthwork which straddles the woodland/pasture boundary; second, an east-west earthwork to the west of the first within the woodland (EWD (i)) and the north-south earthwork (NS5) within the pasture; third, an east-west earthwork formed of two parallel banks along part of its length (EWD (ii)) which abuts NS5 and extends to the east.

CONTRIBUTORS

Archaeological survey was undertaken by Krystyna Truscoe, Elaine Jamieson and Katy Whitaker. Professor Michael Fulford (University of Reading) and Professor Niall Sharples (University of Cardiff) made useful comments on the survey plan and the report. The report was written by Krystyna Truscoe.

ACKNOWLEDGEMENTS

Permission to carry out the survey in Oak Wood was kindly granted by Bambi Gardiner of Oakwood Farm and continuation of the survey into adjacent farmland was generously provided by Alistair Tyler of Robin Hill Farm. All images are © author unless stated otherwise.

ARCHIVE LOCATION

Krystyna Truscoe, Department of Archaeology, University of Reading, Whiteknights, Reading, RG6 6AB. Additionally, this report has been provided to Chichester and District Historic Environment Record.

DATE OF RESEARCH

Archaeological survey and investigation were carried out in January 2020.

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Contents

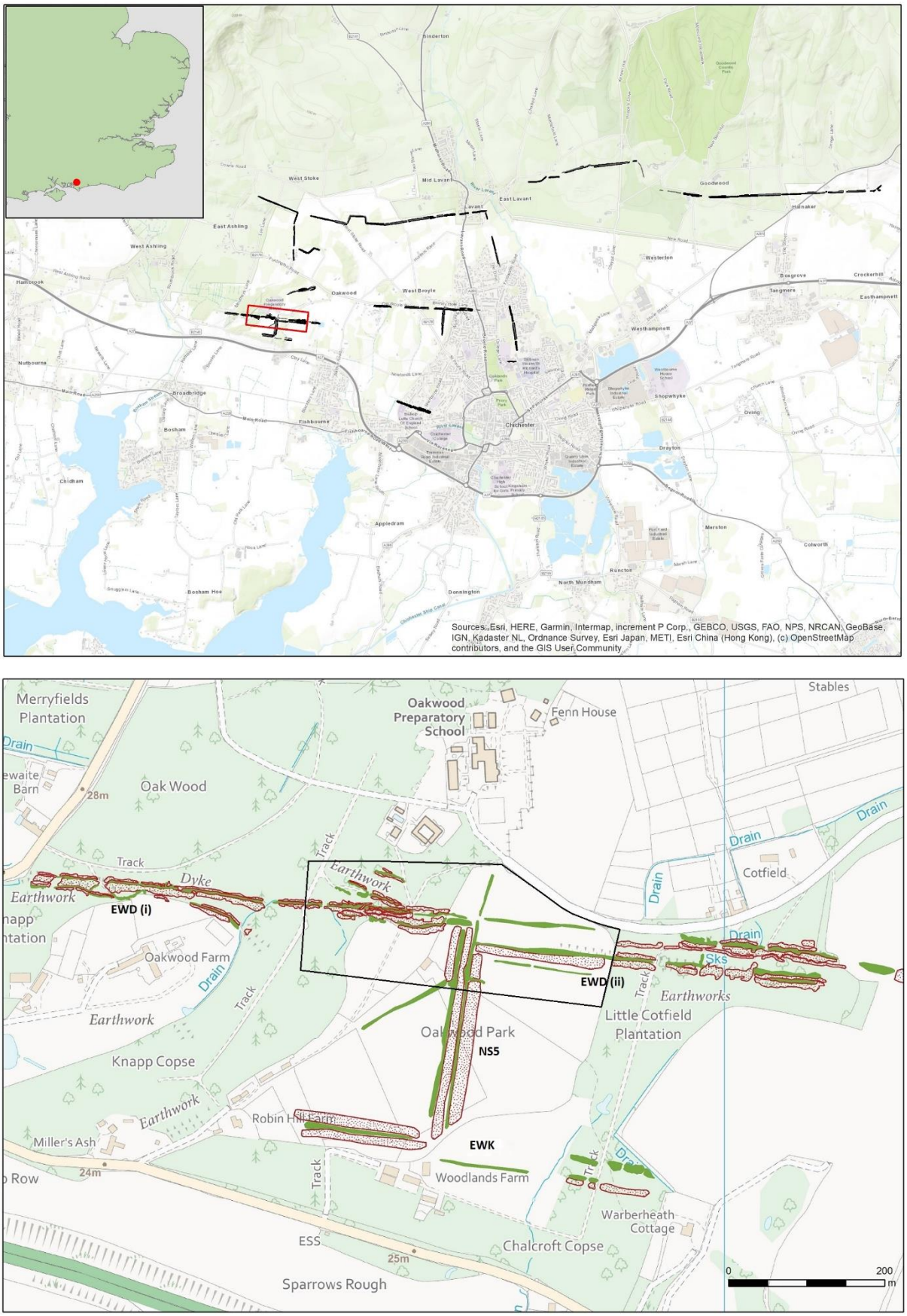

Figure 1 General location of survey area in relation to the Chichester Entrenchments (above) and detailed location with the notation of the individual earthworks and transcription from aerial photographs and lidar. Base map © Crown copyright and database rights 2020 Ordnance Survey (100025252), transcription by the author.

Introduction

This fieldwork was carried out as part of a doctoral research project undertaken at the University of Reading, funded by the Arts and Humanities Research Council through the South, West and Wales Doctoral Training Partnership. The purpose of the research was to make a detailed record of a section of the Chichester Entrenchments to the north of Fishbourne in Oak Wood, formerly part of the estate associated with Oakwood House, an early 19th century house which is now a private school. The entrenchments are thought to be Late Iron Age in date and possibly associated with the site of an *oppidum.* The entrenchments had formerly been surveyed by the author as part of wider PhD case study area using aerial photographs and lidar imagery. The Oak Wood section was chosen as a target for field investigation on the basis of this work. Numerous paths associated with the 19th century estate meant that the line of the Entrenchment EWD (i) was unclear within the woodland. The aim of the fieldwork was to establish this line and to examine the relationships between the entrenchments in this area: EW D (i), EW D (ii) and NS5. The sections of the dykes which survive as earthworks are protected by Scheduling, but all work carried out was non-intrusive.

The Chichester Entrenchments and the possible site of an oppidum

A Late Iron Age *oppidum* is thought to have been located on the West Sussex Coastal Plain, in the Chichester/Fishbourne area between the South Downs and the Selsey Peninsula (eg Williams-Freeman 1934; Cunliffe 1971). Its presence is suggested by the series of linear earthworks known as the Chichester Entrenchments, or Chichester Dykes, located at the foot of the South Downs and in the Chichester/Fishbourne area. No central focus of settlement has been identified, although possible candidates have been put forward: in the Fishbourne/Chichester area, covered by later Roman developments; or on the Selsey Peninsula, an area where rapid coastal erosion has taken place (Cunliffe 197, 15). Excavations carried out at both locations have identified evidence of Iron Age occupation (Kenny 1989: 10; Down 1978; Cunliffe *et al* 1996). The classification of the site as an *oppidum* is supported by the material culture found across the area, including imported pottery and amphorae and a large number of coins found both individually and in hoards across the area, dating mainly to the Late Iron Age, and many coming from continental Europe. A coin pellet mould found at Ounces Barn suggests local production, a feature which has also been associated with the presence of an *oppidum* (Davenport 2003: 103). Ritual and funerary sites of some significance are also found in this area: the shrines of Hayling Island (King & Soffe 1998) and Ratham Mill (King & Soffe 1983) and an extensive cremation cemetery at Westhampnett (Fitzpatrick 1997).

The entrenchments are formed of linear banks either oriented east-west or north-south. The east-west dykes predominantly have ditches on their northern sides, but the north-south sections have ditches either on their eastern or western sides. The entrenchments have been the subject of study since their illustration by John Aubrey in *c* 1670, but their first full survey and description was carried out by William Sabatier in 1797, who referred to them as “Roman military works” (Sabatier 1798, published in Steer 1963).

Location and geology

The Chichester Entrenchments are located on the gravels to the east and west of the town of Chichester, at the foot of the chalk of the South Downs. The project area is located to the south of Oakwood House (now a preparatory school), partly within Oak Wood and partly in open farmland. Several of the entrenchments are located within this area: EWD, NS5 and EWK.

Oakwood Park is part of an early 19th century estate which was created between 1810 and the 1830s around the principal house, Oakwood (www.parksandgardens.org). Architect James Elmes was

commissioned to design the house for William Dearling, although it was sold soon after completion to settle the owner's debts. The house is now a preparatory school. The former use of the area was as enclosed fields and woodland to the south of Ryefields Farm and the former Salt Box Common. These earlier features are shown on the 18th century map of Sussex by Yeakell and Gardner (see Fig 2). The map also shows the wooded, western, half of the survey area as a parcel of land known as Ryefields. The 1st edition Ordnance Survey map (1853-94) shows the Chichester Entrenchments in this area, but also details of the garden layout associated with Oakwood House including numerous paths and rides (see Fig 4).

Figure 2 The location of the fieldwork marked as Ryefields on Yeakell & Gardner's map of Sussex. 1778-1783, 2inch to 1 mile. http://www.envf.port.ac.uk/geo/research/historical/webmap/sussexmap/sussex.html Accessed 11-06-2020

Previous work

Excavations and dating of the Entrenchments

The period during which the entrenchments were constructed is a matter of debate and, while some datable artefacts have been recovered from excavations, the evidence is limited and contradictory in some cases. Scientific dating has also failed to narrow down the period during which they were laid out. Sabatier, surveying the entrenchments in 1797 assumed that they were "Roman military works" associated with the Roman town of Chichester (*Noviomagus Reginorum*) (Steer 1963). Subsequent surveyors and investigators have made the association between the earthworks and pre-Roman occupation, in particular suggesting that they define the extent of an *oppidum* which controlled a large area of the West Sussex Coastal Plain. Williams-Freeman (1934) and Bradley (1971) have suggested that they were laid out in phases rather than in one operation, based on observations in the field. Bradley's survey concluded that the dykes had been constructed in three phases, based on the relationships between, and morphology of, the monuments. He describes the first phase as consisting of the northernmost of the east-west dykes, EWA, which he saw as delineating the area of the Coastal Plain down to Selsey Bill, covering an area of approximately 155 square km from Bosham in the west to Bognor Regis in the east. He interpreted the second phase as being constructed to the south of the first, reducing the area defined by the dykes to approximately 40 square km between the Lavant and Bosham watercourses. He saw a third phase as reducing the area again, possibly to 32 square km between Chichester Harbour and the River Lavant, or, to the eight square km in the

Fishbourne area which appears to be almost completely enclosed by dykes (1971: 32). The east-west entrenchments are formed of linear banks and ditches, with the ditch on the northern side of the bank. The majority of the north-south oriented entrenchments have their ditches on the western side of the banks, but the two easternmost dykes, NS1 and NS2, have ditches on the eastern side. However, what the specific time periods, and durations of these phases, are is unclear. It is also uncertain whether the assumed older earthworks would have been in use concurrently with those constructed later, or if they would have been obsolete features in the landscape.

The majority of the excavations carried out on the Chichester Entrenchments have been on EWA, the most northerly of the east-west dykes located at the foot of the South Downs. EWA consists of three sections but was defined by Williams-Freeman as a single earthwork, presumably because of the similar orientation of the perceived constituent parts. Bradley divided the earthwork into two parts, denoting the western section (from West Stoke to East Lavant) as EWA (ii) and the eastern section (from Goodwood Park/the Valdoe to Halnaker) as EWA (i). Magilton further subdivided the eastern section into two parts, with the central section (Goodwood Park/the Valdoe) as EWA (i) and the remaining earthwork to the east as EWA (iii).

Murray carried out an excavation on EWA at a point immediately to the south of West Lavant House (Bradley's EWA (ii)) in 1954-5 (Murray 1956, 140). Modern pottery was found in the top layers, but pre-Roman pottery was recovered from the clay underlaying the bank. A rim sherd from a saucepan pot was found in a ditchfill approximately six feet (1.83 m) below the ground surface. A small fragment of pottery in the basal deposit could not be identified. The saucepan sherd was identified by Hawkes and described as being typical of that used by societies in the mid-1st century BC. Murray, therefore, dated this section of EWA to the Late Pre-Roman Iron Age based on the presence of the saucepan pot and the V-shaped profile of the ditch (*ibid*, 143). Murray's interpretation, assuming a Late Iron Age date for the earthwork, was that EWA had been constructed by the invading Belgae "as a defence against the people living on the Downs", although she does point out the that lack of excavations on the entrenchments means that there is no evidence to indicate that any of the other earthworks belong to the same period (Murray 1956, 143). However, Hamilton interprets the saucepan style of pottery as being characteristic of the Middle Iron Age, possibly in use between the 4th century BC and 1st century BC based on the Wessex radiocarbon chronology (Cunliffe 1984 in Hamilton 2003, 77). The dating evidence for the excavation is extremely limited, but could, therefore, suggest an earlier date of construction for at least this section of the earthwork.

John Holmes carried out an excavation on the eastern terminal of the Devil's Ditch north of Halnaker, Boxgrove (Bradley's E-W A (i)) in 1965 where it was thought to intersect with the side ditches of the Roman road Stane Street. Holmes uncovered medieval material in the ditch fills and suggested that the entrenchment cut obliquely across the Roman ditch. The entrenchment is depicted on Holmes' plan as having a broad, flat, bottom. He therefore put forward the hypothesis that this dyke was post-Roman in date and that many of the other linear earthworks were also related to medieval park and estate boundaries (Holmes 1968, 65-67). Bradley criticised the fact that Holmes disregarded the results of Murray's excavation and did not include all the entrenchments in his argument (Bradley 1969, 140). Also, Holmes does not mention any possible re-use of the earthwork during the medieval period, or that the dating material obtained may be appropriate to that part of the earthwork only.

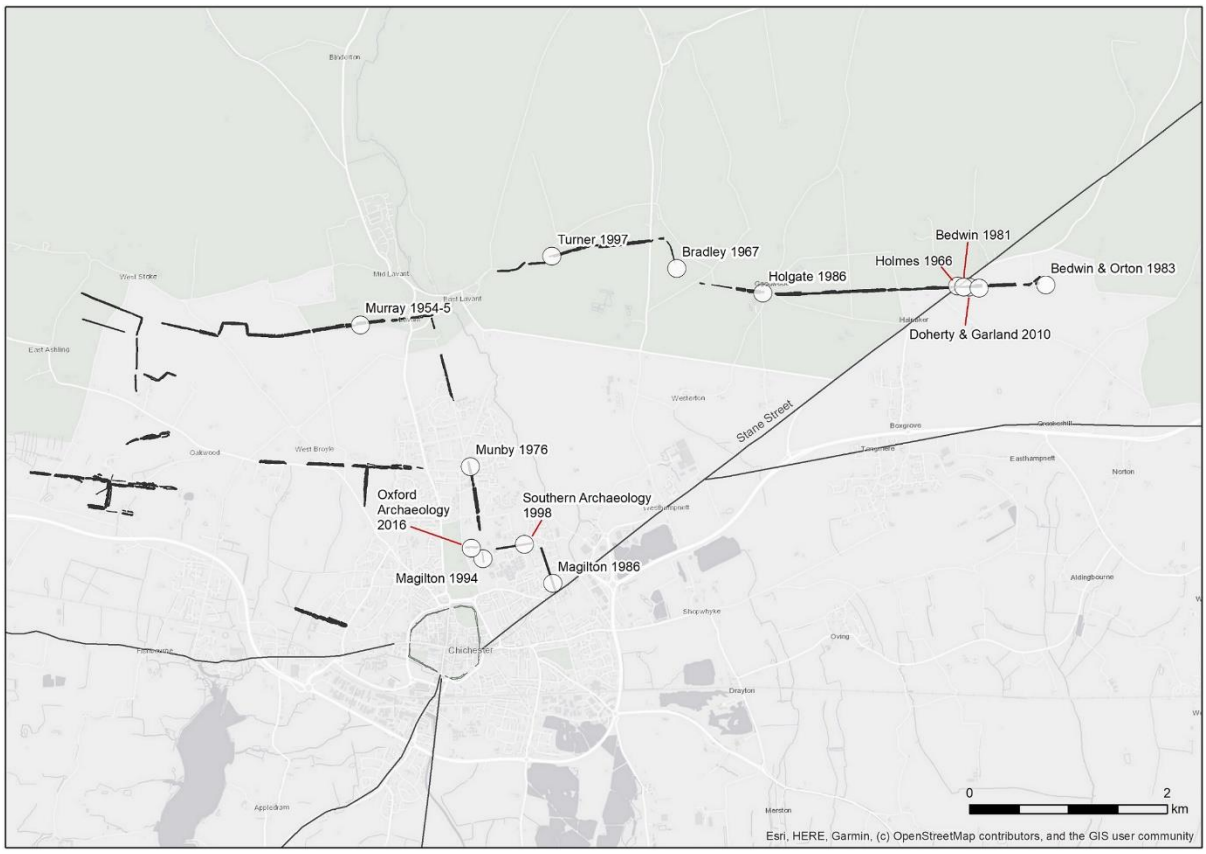

Figure 3 Locations of excavations of the Chichester Entrenchments

Bradley carried out his own excavation on the tail of the rampart of the Devil's Ditch, or EWA (i), in Goodwood Park in 1967. A pot sherd identified as being Late Iron Age, early 1st century AD, date was found from the fill of a shallow scoop at the rear of the bank and a sherd of 1st century BC date was recovered from the ground surface sealed beneath the bank (Bradley 1971, 35). Bradley surmised that the date of construction fell between the two dates of the stratified pottery (*ibid*, 36).

Further excavations have taken place towards the eastern terminal of the Devil's Ditch (EWA (i)) at Boxgrove in the vicinity of Holmes' investigation, in 1981, 1983 and 2010. The 1981 excavation was located in a similar position to that carried out by Holmes and produced similar results. The ditch was found to have a similar profile, with gently sloping sides and a wide, flat, bottom. Medieval pottery was recovered from fills throughout the ditch, although not within 20 cm of its base (Bedwin 1982, 41). Bedwin speculated that the ditch profile might have been the result of a recut during the medieval period or that the difference in style might be explained by variations in construction during the Late Iron Age, possibly indicating several phases of construction. He also stressed the need to avoid extrapolating from one excavation, suggesting that the results should instead be considered to have "a restricted, local validity" (*ibid*).

An excavation was carried out on the eastern terminal of EWA (i) to the east of Stane Street and the site of the previous investigation, west of a Roman period settlement at Ounces Barn (Bedwin and Orton 1984, 63). The ditch was similar in profile to that uncovered by Murray at West Lavant House but differed from the sections recorded during the two excavations at Halnaker. The bottom two fills were sterile, but a good sequence of pottery was recorded from this point on. The pottery dates suggested that infilling of the ditch occurred from around AD 50-60, although it was not possible to

determine the date of construction. The excavators suggested that it was likely that the ditch was Late Iron Age in date and that it became obsolete in the early post-conquest period (*ibid*, 65).

The most recent excavation was carried out in 2010 on a section of Devil's Ditch in Windmill Park, Halnaker, in the area of Bedwin's 1981 investigation. The ditch was found to have a broadly V-shaped profile and the excavators suggested that the flatter profiles recorded by Holmes and Bedwin might be a consequence of a failure to excavate fully into the Iron Age deposits. Post-Roman material was found in the uppers fills from a level around 1.5 m from the base and the mid fills contained very small quantities of Roman pottery of probable 1st or 2nd century AD date. However, the sequence was hard to interpret and redistribution of material may have been caused by a recut of the ditch in the medieval period. The primary fills were devoid of finds but five deposits were examined through a programme of Optical Stimulated Luminescence (OSL) dating. Three of the samples gave a date of 500-400 BC (± 410-530 years, University of Oxford), but, given the broad range of dates provided by this method, an earlier date of construction could not be ruled out (Doherty & Garland 2015: 43). The construction of the entrenchment may have been associated with a process of enclosure and settlement on the West Sussex coastal plain during the Middle Iron Age (*ibid*, 45).

EWA (ii) was uncovered during pipe-laying by Portsmouth Water to the west of Goodwood Park. There appeared to be a gap in the ditch at this point (SU 8134 0810). The ditch was found to have a V-shaped profile and measured at this point 7 m in width and 2 m in depth. No finds were recovered to provide any dating evidence for the infilling of the ditch (Turner 1997).

Two sections of entrenchments have been newly identified through developer-funded excavation to the north-east of Chichester at Swanfield Drive in 1986-7 (NS6) and south of Graylingwell Hospital in 1998 and 2016 (EWJ) (Magilton 2003, 158). EWJ was identified at a point to the south of Graylingwell Hospital and west of the River Lavant. The 1998 excavations uncovered the entrenchment ditch and found that it had an approximately V-shaped profile and measured 7.5 m in width and 3.3 m in depth at that point. A mixed assemblage of fragmentary and abraded pottery was recovered from the entrenchment ditch, dating to between the end of the 1st century AD and beginning of the 3rd century AD. The western side of a sub-rectangular enclosure was uncovered around 2 m to the south of the entrenchment line and dated by pottery to the very late Iron Age (15 BC – AD 50) (Allen *et al* 2018, 15, 17). The 2016 excavations identified the westward projection of the entrenchment ditch, which measured 7.52 m in width and 2.6 m in depth (*ibid*, 18). A sample was taken from one of the primary silts near the base of the ditch and a radiocarbon date was obtained using Accelerator Mass Spectrometry of AD 80-220 1866 ± 17 (SUERC-70667 (GU42531)) (*ibid*, 20).

NS6 was identified through excavation beneath the cemetery of St James' medieval leper hospital which was located to the north-east of the city. The entrenchment is on a similar north-west, south-east alignment to NS1 and if its line is extended, may have had a junction with EWJ (Magilton 2003, 158).

The line of the southern section of NS1 was identified through two excavations, in 1976 and 1994, but no finds were recovered in either case. The 1976 excavation was carried out on the line of Winterbourne Road to the north of Graylingwell and the ditch and bank of NS1 were recorded (Down 1989, 61–5). The ditch was sectioned during the 1994 excavation which was located to the south-west of the previous site, at the northern end of Bishop Otter College (Magilton 1994, 20). However, neither of these investigations produced any finds.

While dating evidence for the Chichester Entrenchments is limited, it would appear that sections of EWA at least were initially created in the Middle Iron Age. It seems likely that a number of phases of construction followed, probably motivated by different reasons, spanning at least the Middle to very Late Iron Age periods, and possibly into the Roman period. Whether the earliest earthworks had become relict features in the landscape during the period of use of the latest entrenchments, or whether they were used concurrently, is uncertain.

Surveys of the Oakwood Entrenchments

William Sabatier (1797)

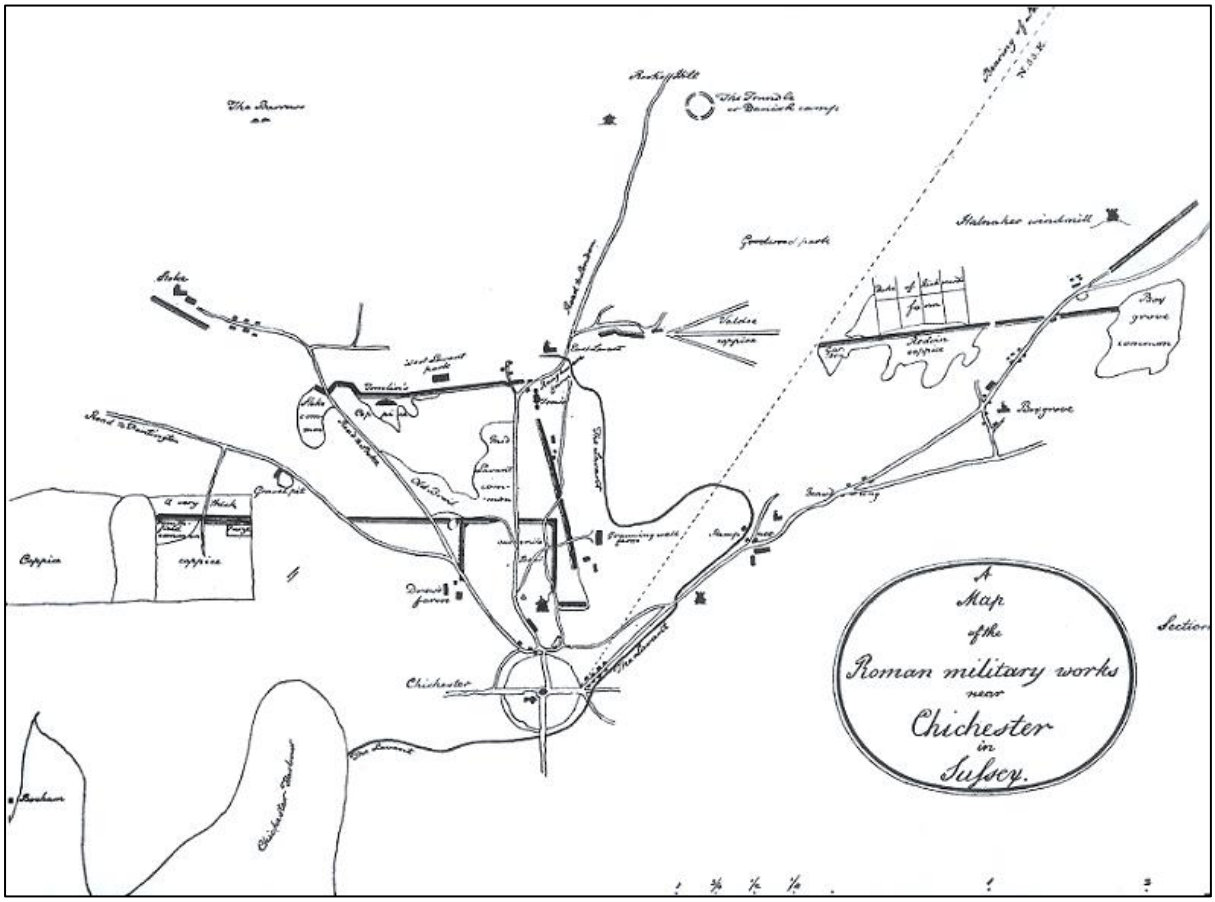

Figure 4 Detail of William Sabatier's plan of the Chichester Entrenchments showing the Oakwood earthworks on the left hand side of the image within "a very thick coppice" ((1798) (in Steer 1963)

William Sabatier's survey of "Roman military works near Chichester" was carried out in 1797 (Sabatier 1798, published in Steer 1963). He saw the Oakwood earthworks as being a continuation of the east-west linear earthwork which crosses the Broyle to the north-west of Chichester, although stating that it lies to the south-west of this line. The earthworks are described as being "in an excessive thick coppice", and forming the boundary line between two estates, running continuously for a distance of "about thousand yards". Sabatier notes a section about halfway along the route of the earthwork where it has a second bank running parallel to it. He could not identify a ditch associated with it but noted that it was "raised as high as the principal work" (1963, 4).

Ordnance Survey 1st edition 1:2500 (1853 – 1904)

Figure 5 Excerpt from the 1st edition Ordnance Survey map (1:2500) © Crown Copyright and Landmark Information Group Limited 2020. All rights reserved. [1853-1904].

The 1st edition Ordnance Survey map depicts elements of the east-west entrenchment Oak Wood Park, which was associated with Oakwood House. An extensive network of trackways, or carriage drives, is depicted within and around areas of woodland, connecting Oakwood House to various areas of the park. Several small areas of decorative planting and individual trees are shown in the area of open ground to the south of the house. The east-west entrenchment is mapped as a low bank, of around 57 m in length, crossing open ground to the south of the house and cut through by several north-east, south-west oriented trackways. Its course is projected to the west, although no further earthwork sections are depicted, and to the east for a distance of around 350 m. From this point on the entrenchment is shown as a partial bank with a ditch its northern side. A second linear earthwork formed of a bank with a ditch on its northern side measuring around 138 m in length is shown around 16 m to the south of the first and on a similar alignment. This was clearly thought to be a separate feature by the surveyors by the use of the plural 'Intrenchments' in this area as opposed to the singular 'Intrenchment' to the west. No earthworks are mapped within the central open area of parkland to the south of the house.

J P Williams-Freeman (c 1934)

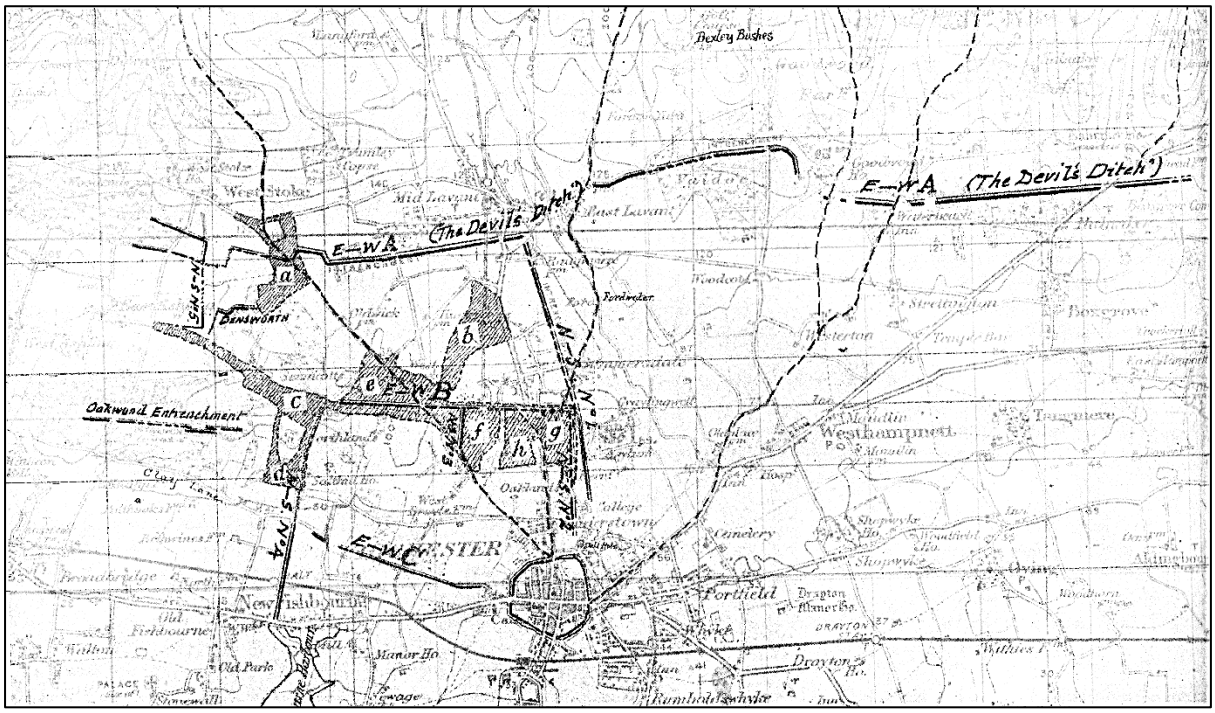

Figure 6 Survey of the Chichester Entrenchments by Williams-Freeman. The Oakwood Entrenchment is shown as a continuous feature with two parallel banks along part of its length (1934)

The next survey of the entrenchments was carried out by Williams-Freeman, who developed the notation still used for the individual earthworks: east-west sections were appended with a letter, for example, the Devil's Ditch was identified as EWA, and north-south were appended with a number, for example, NS1 (Williams-Freeman 1934: 65). This notation system has continued to be used by later surveyors and is still being added to. Williams-Freeman described them as similar in layout and alignment to the Lexden Entrenchments at Colchester. He suggested that the dykes were all part of one system defending the Chichester and Fishbourne area, although not necessarily constructed at the same time (*ibid*: 70).

Williams-Freeman recorded "a detached E-W entrenchment in Oak Wood Park which may be an extension of EWB, reaching quite half a mile further west". He depicts the Oak Wood Park entrenchment as a single bank with a ditch on its northern side changing to two parallel banks at its eastern end, with the projected course of the earthwork shown as a dotted line between the two sections (*ibid*, 67 and see Figure 5). His description suggests that he considered the earthworks to be part of a single feature, in addition to the possibility that they were an extension of EWB, an earthwork on a similar alignment, but lying approximately 870 m to the north-east of the eastern end of his "Oakwood Entrenchment".

Richard Bradley (c 1969)

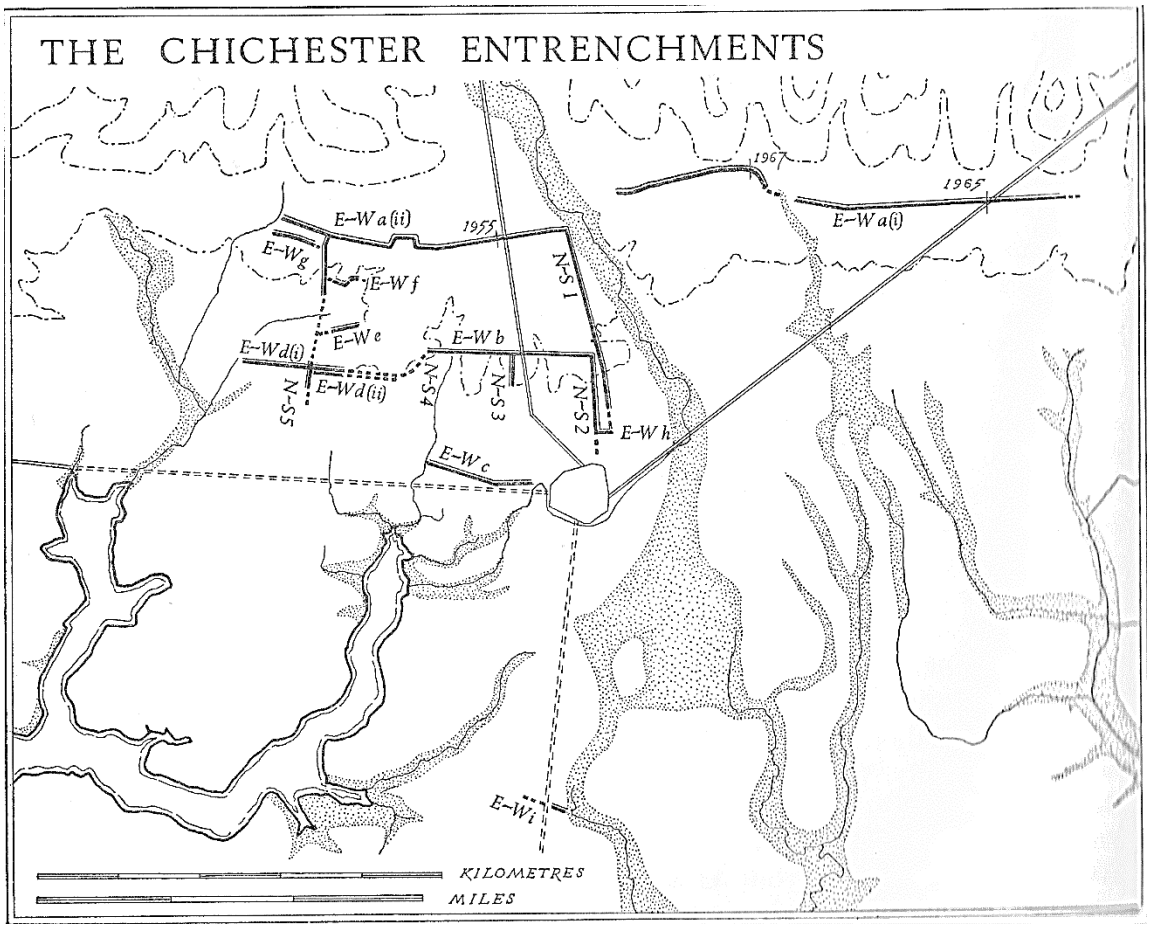

Figure 7 Richard Bradley's survey of the Chichester Entrenchments. The Oakwood Entrenchments are marked as E-W d(i) and E-W d(ii), crossed by N-S 5 (Bradley 1971, 20)

Richard Bradley carried out a survey of the Chichester Entrenchments to accompany the excavations carried out at Fishbourne in the late 1960s. He refined Williams-Freeman's notation and identified additional earthworks. His survey was based on aerial photography and observation of the earthworks on the ground (Bradley 1971, 17).

Bradley was unable to examine the Oakwood earthworks on the ground but did add information from cropmarks observed on aerial photographs. Bradley gave Williams-Freeman's "Oakwood Entrenchment" the notation EWD and divided it into two parts: EWD (i) (the westernmost section formed of a single bank and ditch) and EWD (ii) (the easternmost section formed of two parallel banks and ditches, also identified by Sabatier). He is the first surveyor to have identified a north-south entrenchment (NS5) running from EWA (ii) to a point to the south of EWD, dividing the entrenchment into two parts (EWD (i) and EWD (ii)). Like Williams-Freeman, he suggests a connection between the eastern end of EWD and EWB (Bradley 1971, 23).

John Magilton (2003)

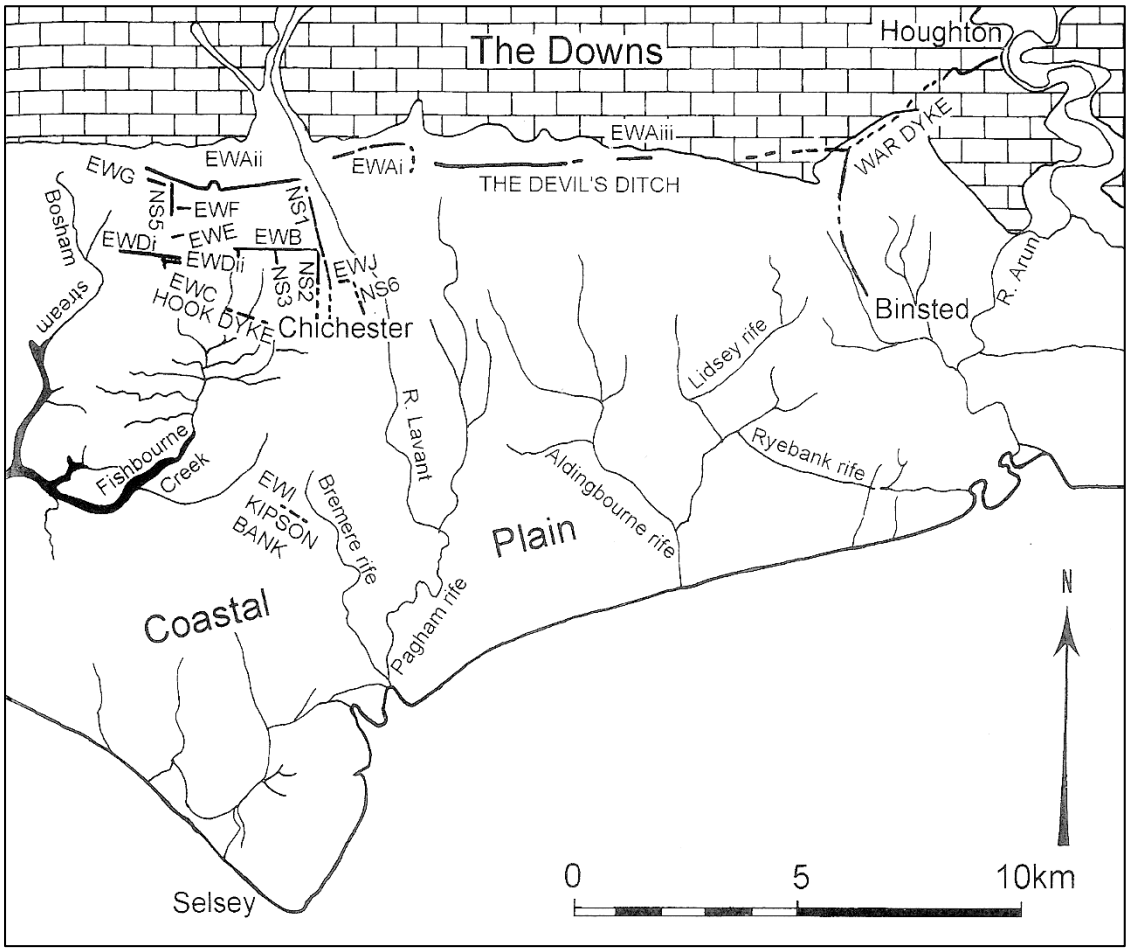

Figure 8 Known extent of the Chichester Entrenchments in 2003 as summarised by Magilton (2003, 157)

Magilton synthesised the known extent of the Chichester Entrenchments at the time of writing (2003) adding elements identified to the north and east of Chichester through developer-funded excavations to those surveyed by Bradley. Apart from the inclusion of these newly identified elements and a further subdivision of entrenchment E-W A, Magilton's plan largely follows Bradley's survey, including in its depiction of the Oakwood earthworks (Magilton 2003, 157).

Krystyna Truscoe (2018)

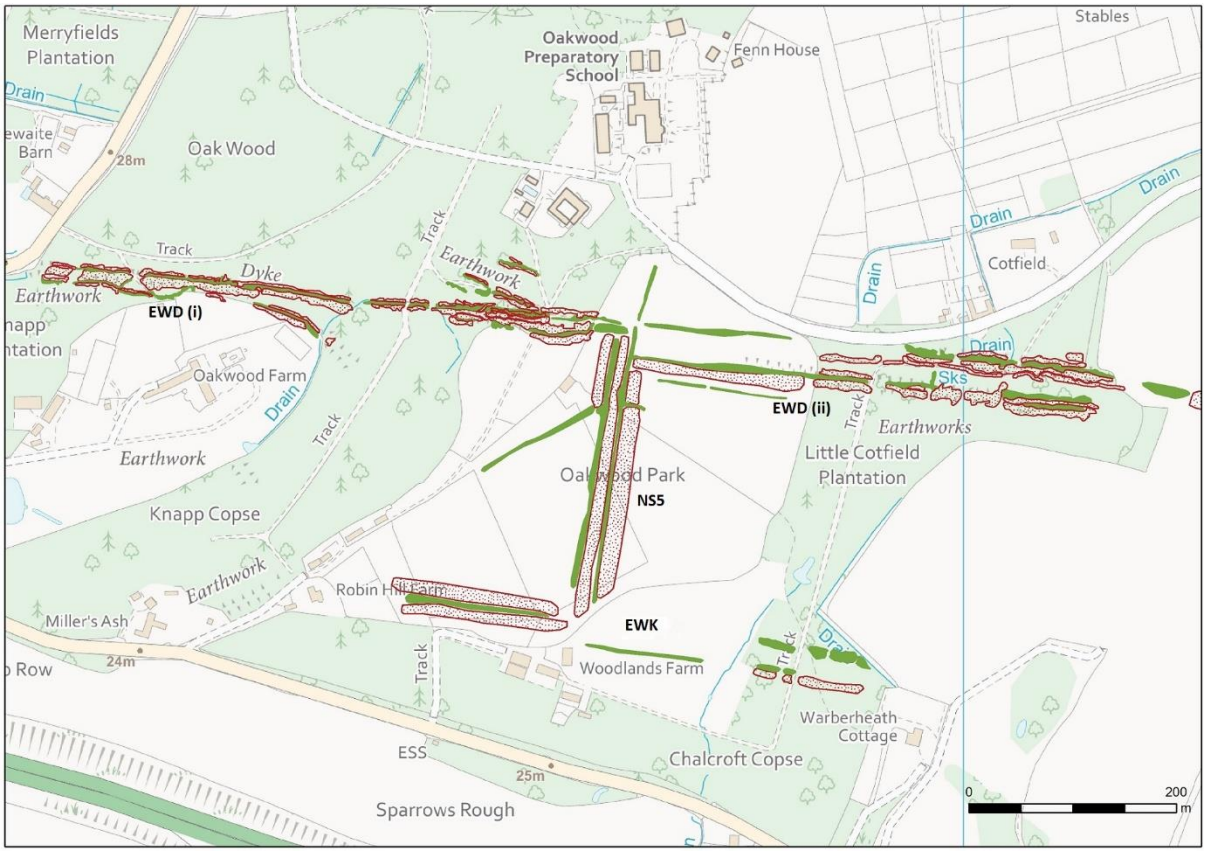

Figure 9 Features identified from aerial photographs and lidar. Key: banks – red, ditches – green. Transcription - Truscoe 2018. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

The Oakwood entrenchments were transcribed from aerial photographs and lidar imagery during doctoral research by the author as part of a wider doctoral research analysing the landscapes of Late Iron Age territorial *oppida*. The ground cover is a mix of open grassland within the park itself and woodland to the east and west meaning that a combination of lidar and aerial imagery were required to record the earthworks. The sections of the Entrenchments within Oakwood Park were recorded from visualisations of the Environment Agency lidar and the features in open ground were recorded using both methods.

In addition to the features recorded by Bradley (EWD (i) and (ii), NS5), additional details of an east-west oriented linear earthwork to the south, but running parallel with, EWD (i) and (ii) were newly recorded by the author during the survey from lidar imagery. The central section of this possible entrenchment, formed of a single ditch, has been identified from aerial photographs where it passes through open ground to the east of Robin Hill Farm and given the notation EWK (Chichester HER). A ditch flanked by banks was recorded from lidar to the west of the single ditch and a bank and ditch were identified to the east. The feature may have had a junction with the southern end of NS5.

Methodology and aims of the survey

A detailed analytical earthwork survey of the area at 1:1000 was carried out using differential GNSS equipment, Total Station Theodolite, and traditional tape and offset survey methods where appropriate. In the field, a detailed survey plan of the archaeological features was produced on polyester film using the electronically derived control plot and tape-and-offset techniques. The survey work was undertaken in January 2020 when ground conditions were at their most favourable with minimal vegetation cover so that details of the Chichester Entrenchments in this area could be recorded with a greater degree of accuracy.

The aims of the fieldwork are:

- To create a detailed record of the earthworks in this area; Bradley was unable to access the Oakwood entrenchments on the ground, so this survey fills in a gap in his survey.
- To establish the course of Entrenchment EWD (i) where it is obscured by 19th century garden features and could not be clearly understood on lidar imagery.
- To determining whether the breaks in EWD (i) are actual gaps in the earthwork as constructed or caused by later disturbances.
- To examine the relationships between Entrenchments EWD (i), EWD (ii) and NS5.

Figure 10 The Chichester Entrenchments within the survey area shown on a Local Relief Model produced from 1 m resolution lidar DTM. ©Environment Agency

Description of the earthworks

The area of the Chichester Entrenchments covered by the earthwork survey consists of sections of EWD (i) and EWD (ii) and NS5. EWD (i) lies mainly within Oak Wood and consists of several sections with breaks in between them. Determining whether these breaks are actual gaps in the earthwork as constructed or caused by the creation of later park features or other disturbances, is one of the aims of the survey. Information from Environment Agency lidar (see Fig 10) and previous surveys suggests that EWD (i) was formed of a single bank, possibly with a ditch on its northern side. The lidar shows numerous incised trackways within the woodland which render the route of the entrenchment bank

unclear at this point. Bradley's survey (see Fig 7) shows EWD (i) as a single bank extending into the pasture to the east of Oak Wood to a point just to the west of the route of NS5.

Survey results

The survey area was located in two areas with different landscape use and surface cover. The western half fell within Oak Wood, a heavily wooded area in the grounds of Oakwood Farm and the eastern half lay within pasture fields, the northernmost part of the farmland associated with Robin Hill Farm. The pasture fields were largely level within the survey area, with adjacent fields below them sloping to the south. In the pasture the banks of the entrenchments are lower and more spread in appearance than within Oak Wood, but the woodland earthworks had suffered more disturbance from the construction of paths and rides associated with the 19th century park around Oakwood House. Animal burrowing has also damaged the earthworks, both in the woodland and in the open ground. Tree removal pits have also disrupted the line of the earthworks within the open ground.

Within Oak Wood, entrenchment EWD (i) lies within a network of paths, all 19th century garden earthworks, and adjacent to a stream. The nature and extent of the disturbance by the later garden features was clearly understood through the earthwork survey. The entrenchment appeared to be formed of a bank with a ditch on its northern side on the lidar imagery, but the earthwork survey demonstrated that the `ditch' was in fact a stream. The central section of the stream is open, and it disappears into culverts at its eastern and western ends. A pathway runs parallel to the entrenchment on the northern side of the stream then turns to the south to cross it by means of a curving, stone-built, bridge. This pathway then continues along the southern side of the entrenchment. A second path cuts across the entrenchment to the east of the first at the point when the streams runs into a culvert. This path has had the effect of levelling this section of the entrenchment bank.

The route of the entrenchment varies between 7.6 m and 9.6 m in width within the woodland and runs along fairly level ground for a total distance of 165 m, after which it appears to come to a natural stop at a point where the land drops down steeply into an area of marshy ground. The entrenchment resumes on the other side of this marshy area, but this part of the earthwork lay outside the scope of the survey. The reason for the gap in the entrenchment was unclear on lidar and aerial photographs but the significant change in elevation seen once the earthworks were examined on the ground would appear to explain it.

A section of what appears to be a parallel bank lies to the north of EWD (i) measuring 11.6 m in width and extending from the woodland into the adjacent pasture for a distance of 52 m, from a point to the east of the second path to a location immediately to the north-west of the line of NS5. The bank was visible as a low earthwork in the pasture, with its northern and southern sides defined, ending in a curving eastern terminal. Within Oak Wood, the bank had been levelled on its northern side, probably by the creation of a 19th century path. The southernmost bank of EWD (i) also continues into the pasture field to the field terminating at a point to the west of NS5 where it overlies the western end an earlier east-west bank. The westernmost of the two parallel banks which form NS5 appears to have cut through the eastern side of this same bank.

NS5 is formed of two low, spread, parallel banks, the westernmost measuring up to 18 m in width and the easternmost 14 m. The western bank has been cut through by a later trackway at its northern end. A further cause of disturbance to the earthworks in this area is indicated by the

presence of relict ridge and furrow adjacent to NS5 and on the same alignment. Damage caused by animal burrowing and tree removal is also apparent in this area.

Entrenchment EWD (ii), which is also formed of two low, spread, parallel banks, the western end of which appear to abut the eastern side of NS5. The northern bank is narrow, measuring up to 12 m in width, and the southern bank measures up to 21 m in width. A low, sub-rectangular, mound of uncertain origin overlies the ditch between the two parallel banks of EWD near its western end. The southernmost of the two parallel banks has a narrow linear bank running along the top, probably caused by later disturbance to the earthwork. A post medieval boundary crosses the field from west to east immediately to the north of EWD (ii).

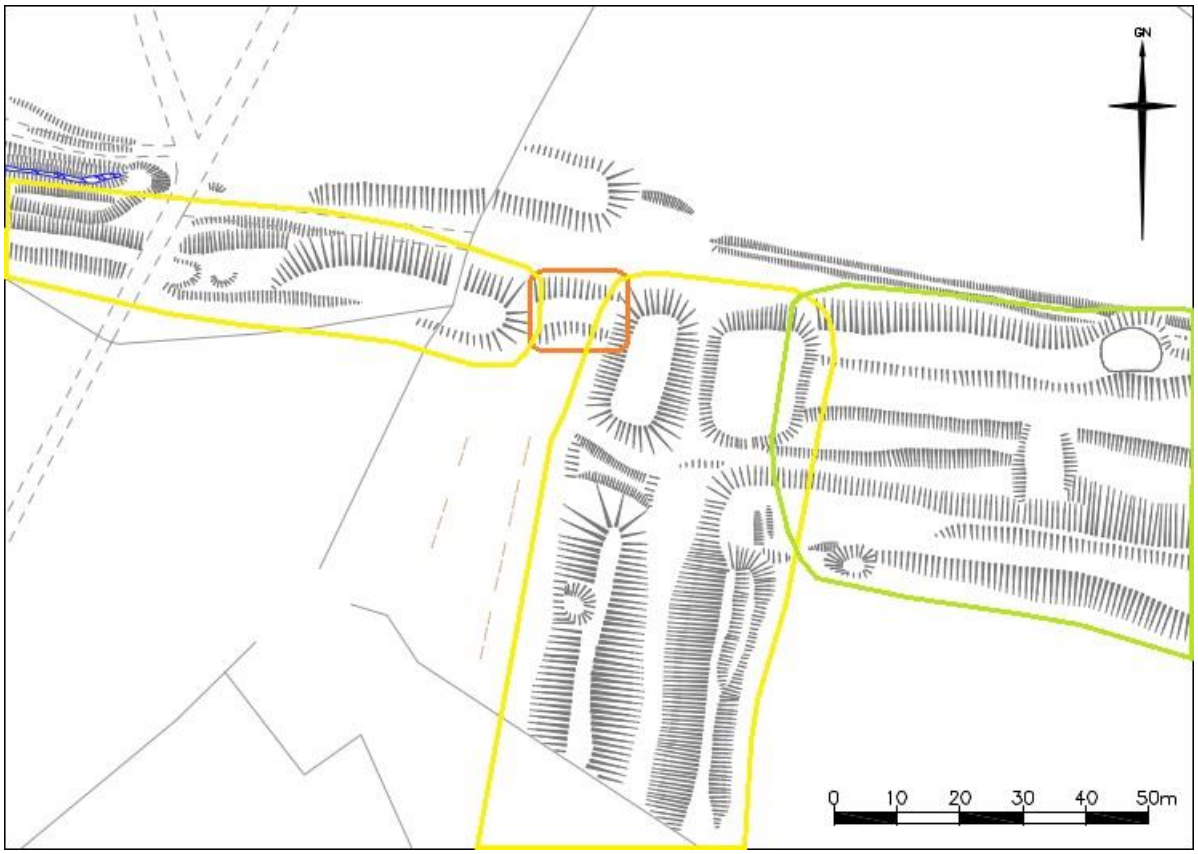

Figure 11 Detail of survey plan showing the phasing of the earthworks: 1 – red (the earlier earthwork), 2 - yellow (EWD (i) and NS5), and 3 – green (EWD (ii). Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Conclusions

Analytical earthwork survey of this small area of the Chichester Entrenchments has revealed a level of complexity that was not apparent from the aerial photographs and lidar. A sequence of construction was established which suggests that while EWD (i) and EWD (ii) have a similar alignment, but they are not part of the same entrenchment. The survey clarified the route and extent of EWD (i) within the wood and established the relationships between this feature and the east-west and north-south Entrenchments within the pasture field to the east. Observation of the relationships identified between the linear earthworks indicate at least three phases of construction (see Fig 11):

4. An east-west oriented bank which straddles the woodland/pasture boundary.

5. EWD (i) is created overlying the western end of the phase 1 bank and extending to the west through Oak Wood and the NS5, formed of two parallel banks, cutting through the eastern end of the phase 1 bank and extending to the south. While these two features appear to postdate the phase 1 bank it is not clear if they are contemporaneous.
6. EWD (ii) an east-west earthwork formed of two parallel banks which abuts the eastern side of the northern end of NS5 and extends to the east.

The fieldwork demonstrates that the features classified as entrenchment EWD consists of three separate linear earthworks which represent three phases of earthwork construction. The point in time when the individual sections were constructed and how long a period of time elapsed between their creation, and that of the earthworks that followed them, is unknown. However, there is a similarity in layout between several of the earthworks: NS5, EWD (ii) and EWK which lies to the south of these entrenchments are all formed of two parallel banks. The survey has also identified a partial parallel bank located to the north of the eastern end of EWD (i). Although the majority of this earthwork as it continues to the west through Oak Wood consists of a single bank only, the individual sections of EWD (i) may not have been constructed at the same time and may not necessarily follow the same plan.

It would appear that even a comparatively small area of the Chichester Entrenchments can exhibit a complex biography. Further investigations would be necessary to attempt to establish dates of construction for the Oakwood entrenchments, although, as previous excavations have shown, dating linear earthworks can be a difficult process.

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www.parksandgardens.org/places/oakwood-park-east-ashling

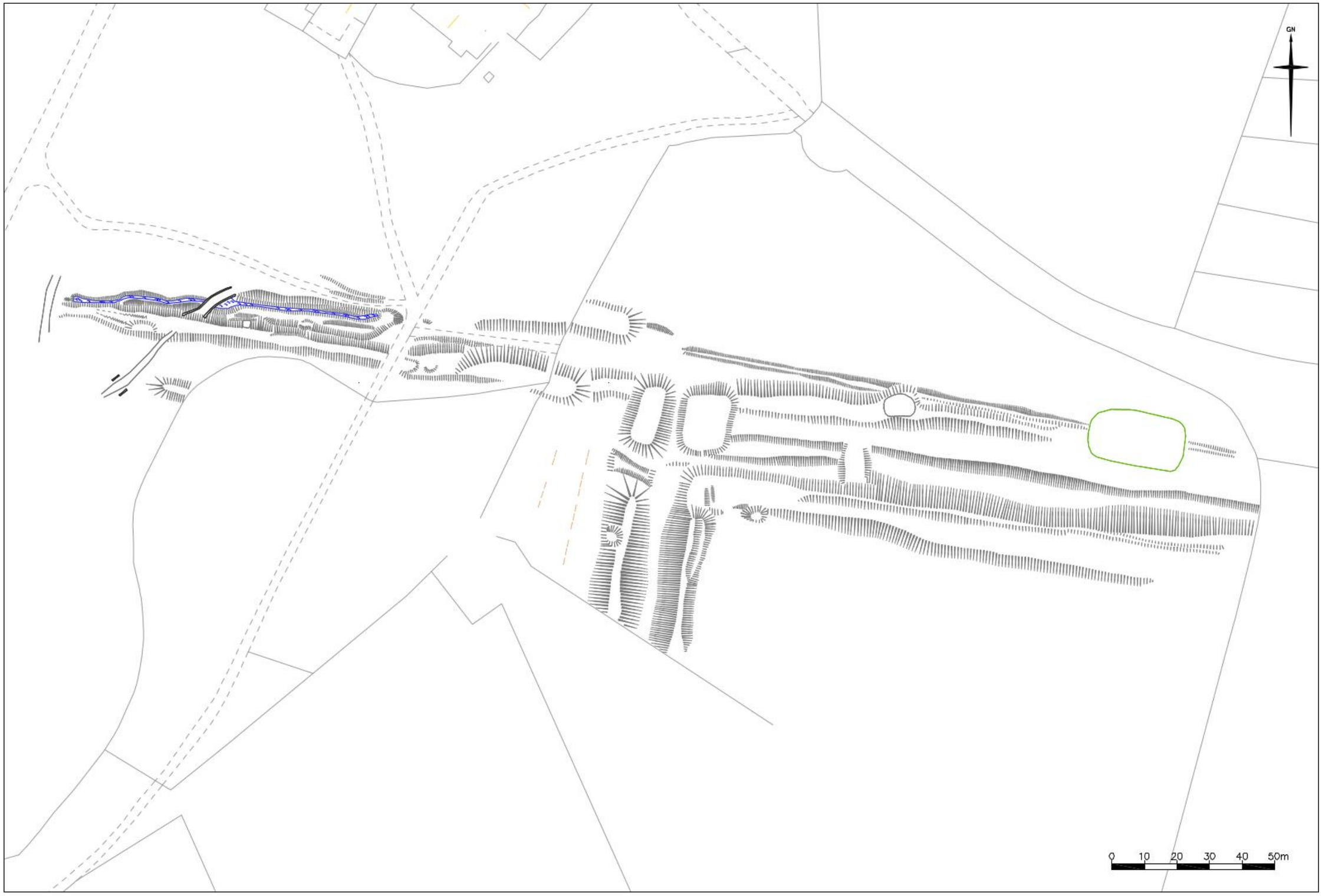


Figure 12 Survey plan of the Oakwood Entrenchments at scale 1:1000. Earthworks – dark grey hachures; Modern path – grey dashed line; Ridge and furrow – brown dashed line; Tree copse – green line; Structure – solid black line; Animal damage – grey solid line. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

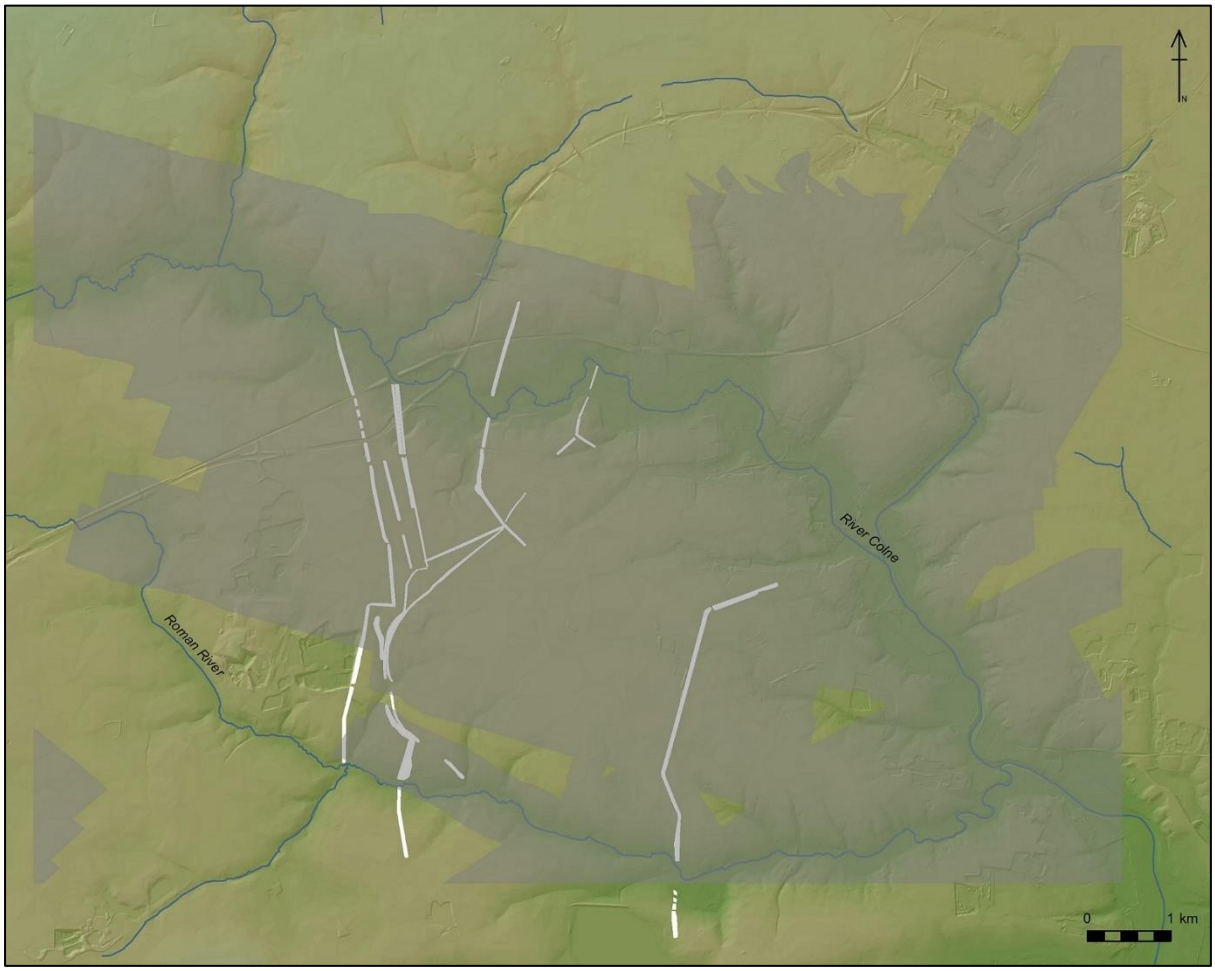
Figure 13 Oakwood earthworks with: Post medieval features – purple; Tree removal pits and tree copse – green. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

Figure 14 Oakwood earthworks phases: Phase 1 – Orange; Phase 2 – Yellow; Phase 3 - Aqua; Tree removal pits and tree copse – green. Background map © Crown copyright and database rights 2020 Ordnance Survey (100025252)

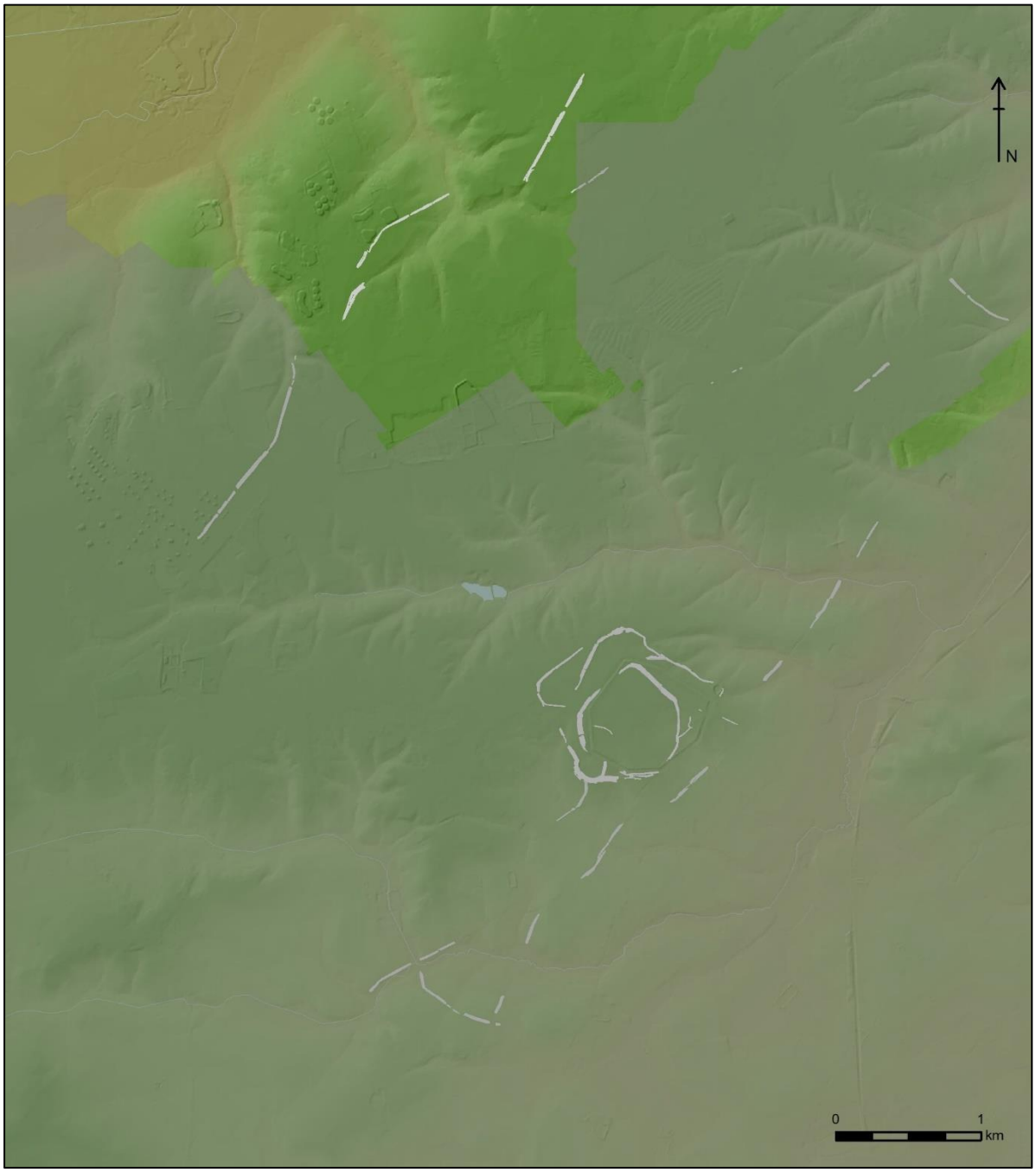
Appendix II – Lidar coverage

Chichester – Environment Agency 1m resolution lidar coverage

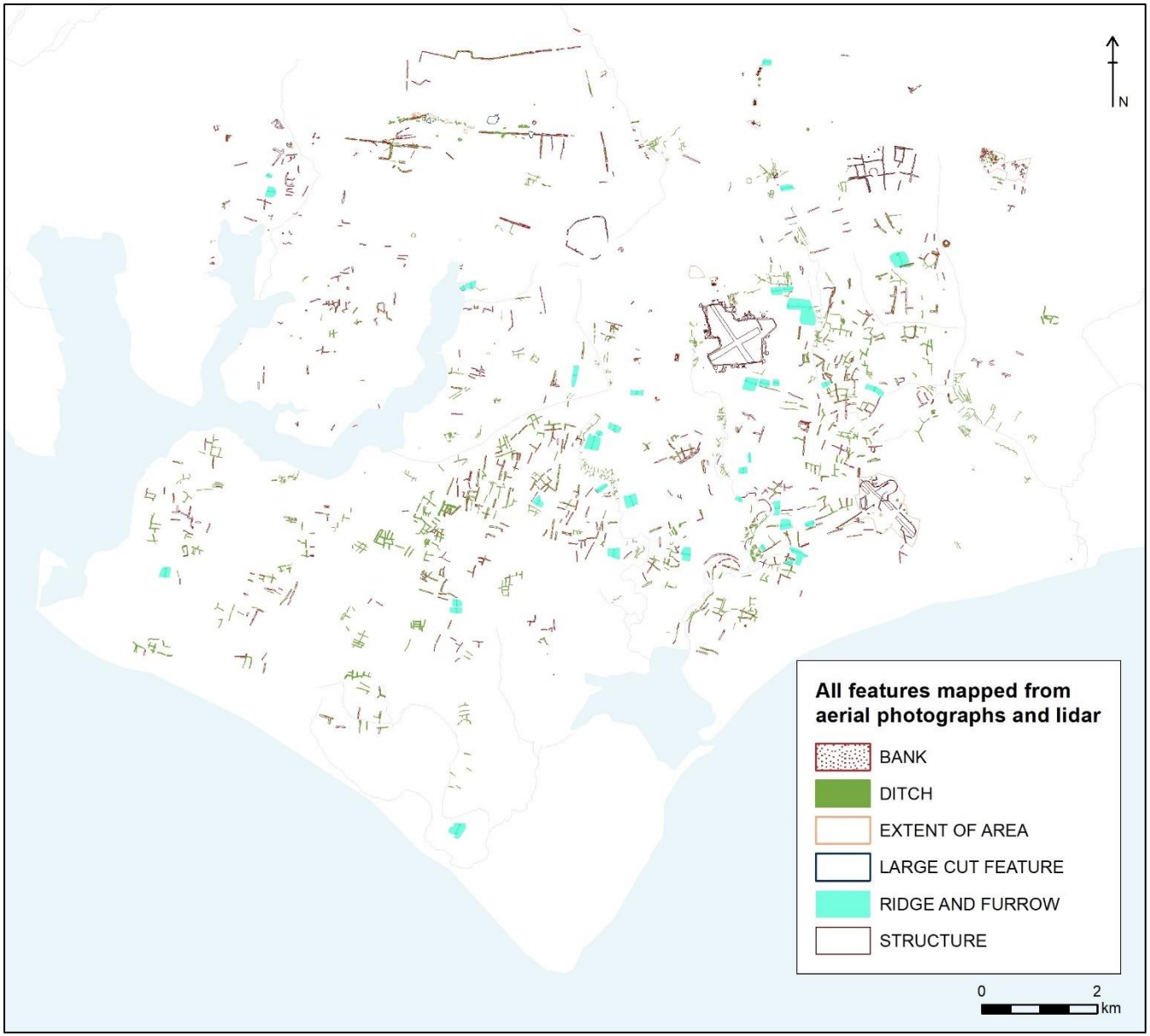
Colchester – Environment Agency 1m resolution lidar coverage



Silchester – Environment Agency 1m resolution lidar coverage



Appendix III – Complete mapping from aerial photographs and lidar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All features mapped from aerial photographs and lidar
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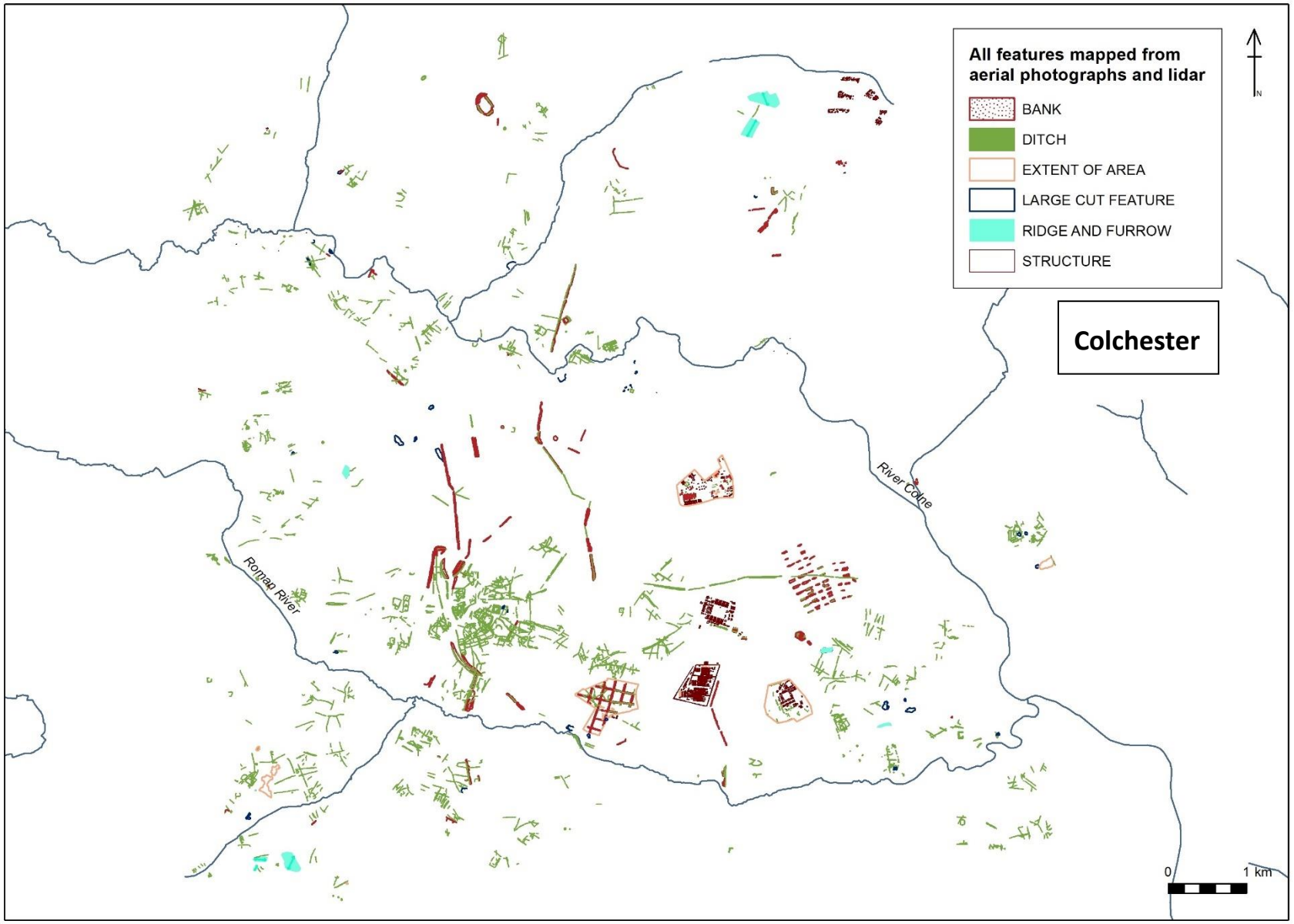
Chichester


All features mapped from aerial photographs and lidar
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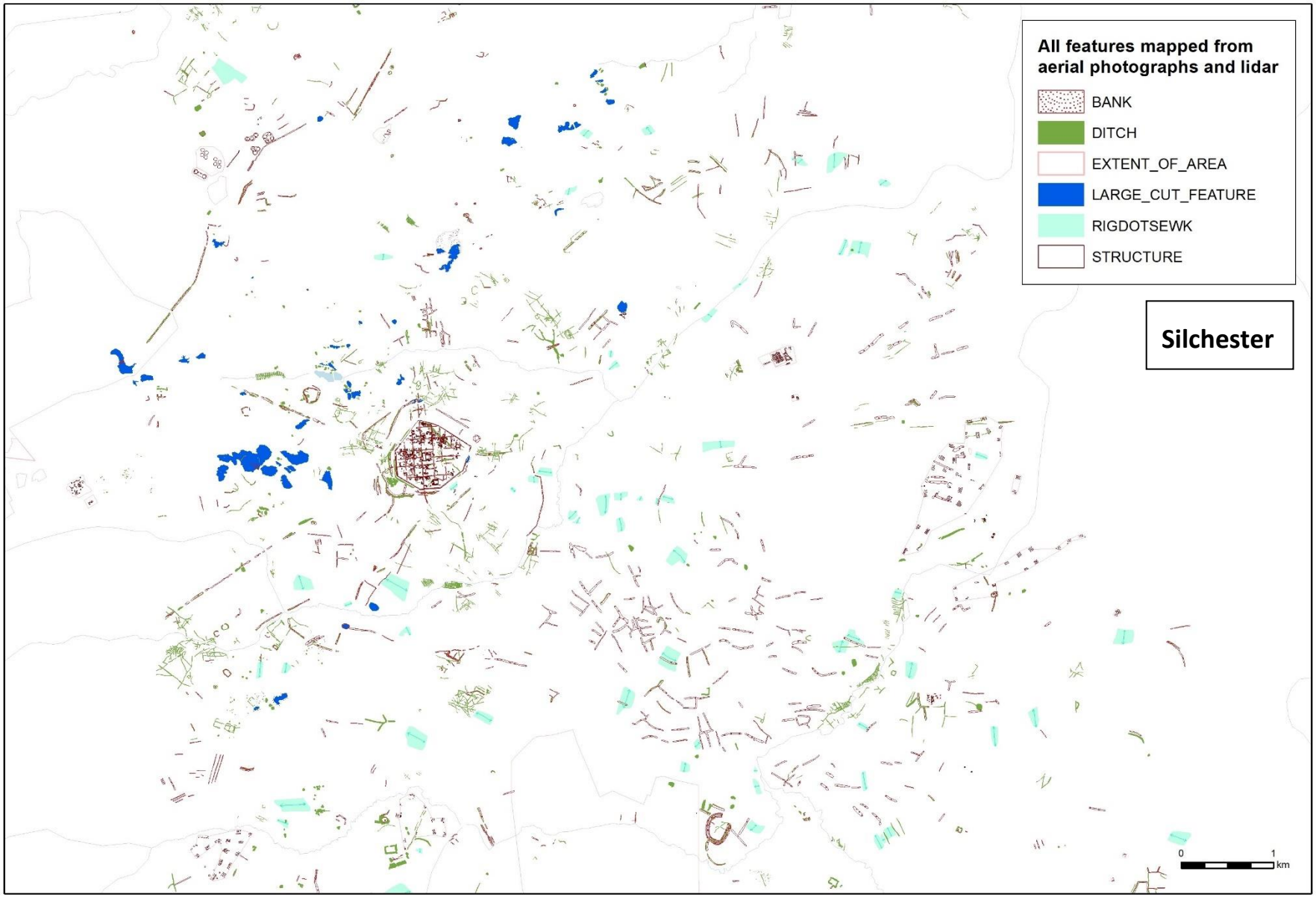
All features mapped from aerial photographs and lidar
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