The Aggregate Landscape of Suffolk: The Archaeological Resource

Interim report for Aerial Survey component Areas One & Two: The Felixstowe Peninsula

Aggregates Levy Sustainability Fund
English Heritage Project Ref: 3987

Report Author: Cain Hegarty

Suffolk County Council
Environment & Transport

ENGLISH HERITAGE

SUMMARY

The Aggregate Landscape of Suffolk: The Archaeological Resource project is funded by the English Heritage administered Aggregates Levy Sustainability Fund (ALSF), a scheme established in 2002 to provide funds to tackle a wide range of problems in areas affected by the extraction of aggregates.

This interim report summarises the results for the first priority area to benefit from aerial survey, 77 square kilometres located on the Felixstowe Peninsula. Extending from Felixstowe in the south to Ipswich in the North, this area was examined using the methodology developed by English Heritage's National Mapping Programme's (NMP). The project area encompasses areas of sand and gravel extraction, extensive industrial development and busy communications infrastructure. Within this area 204 new records have been added to the county Sites and Monuments Record (SMR) and 154 existing records have been amended.

Due to the freely draining soils and intensive arable agriculture, cropmarks were the predominant form of evidence in this area; although some earthworks were visible on areas of heathland, survival was generally poor. Early prehistoric sites were rare, an important exception being a possible cursus of Neolithic date in Kirton parish. The distribution of late Neolithic or Bronze Age barrow cemeteries was significantly expanded throughout this area. Although not as dense as anticipated, later prehistoric sites and landscape features are well represented, most particularly by an extensive network of ditched road or trackways, their relationship with settlement sites presenting an important opportunity for future work. Prior to the twentieth century, archaeological sites from the historic periods were limited to possible medieval or post-medieval field boundaries, warren earthworks and park features; as established in previous aerial surveys in East Anglia, modern military remains are now expected to form a significant component of the survey, and in this instance Martlesham Heath Aerodrome covered a substantial area of the project area.

Although in aerial survey terms a 'blank' between two previously surveyed NMP areas, this area had been well documented by the county SMR and traditional development led archaeological investigations. That this survey has added significant detail to the Sites and monuments record, illustrates the value of aerial survey to areas potentially threatened by future aggregates extraction.

ACKNOWLEDGMENTS

The illustrations in this report should display the following licence agreement:
All maps are reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence no. 100023395 2006.

MAPPING CONVENTIONS

Convention	Layer	
	Ditch	Used for drawing all negative features seen as cropmarks and earthworks, e.g. ditches, hollow ways and pits
	Bank	Used when drawing upstanding earthworks or levelled features
	Structure	Used for structures e.g. a concrete pillbox or wooden posts
	Pits & Quarries	Used for extraction pits, bomb craters and other cut features

CONTENTS

LIST OF FIGURES

1. INTRODUCTION

The Aggregate Landscape of Suffolk: The Archaeological Resource is a project which intends to improve the quality of information available to Suffolk County Council for use in making decisions about archaeological mitigation in response to current and future aggregate industry applications. The project is funded by the Aggregates Levy Sustainability Fund (ALSF), administered by English Heritage. This is the first in a series of interim reports summarising the aerial survey results for selected priority areas. The conclusions and recommendations of the interim reports will be collated, analysed and scored at the end of the overall project.

The wider objectives of the project can be summarised as:

1: To provide a historic environment framework for examining minerals data.

2: To improve the detailed archaeological and historic environment information for the minerals resource areas.

3: To produce a detailed research and management framework for the historic environment in minerals resource areas.

4: To make project information available for planning, industry and public consultation.

A range of sources will be consulted by Suffolk County Council to meet these objectives. The baseline data will include:

Geological data
The Sites and Monuments Record (SMR)
The National Monuments Record (NMR)
Listed Buildings (LB)
Historic Landscape Characterisation

Under objective two, the aerial survey component is targeted towards three priority mineral resource zones. The first area, the Felixstowe peninsula, comprising project areas One & Two, is an area of sand and gravels encompassing several active mineral workings, areas of major development and communications infrastructure relevant to aggregate supply and demand.

1.1 Project Area

The project area comprises an area of seventy seven square kilometres on the Felixstowe peninsula. A one kilometre strip along the coast and estuaries to either side of the project area has previously been examined by the Suffolk Coastal National Mapping Programme (NMP) project (Hegarty and Newsome 2005). (See Figure 1)

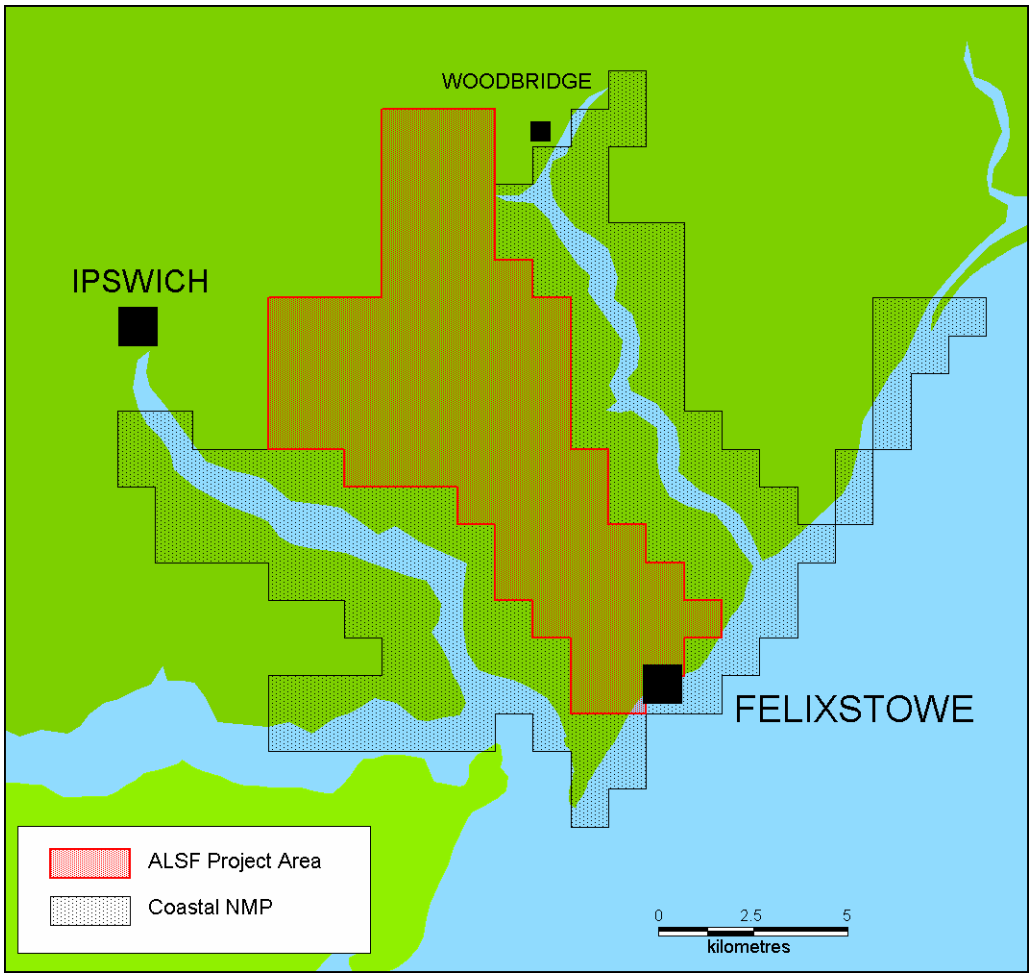


Figure 1: Location of survey area.

1.2 Methodology

The aerial survey began concurrently with a detailed search and enhancement of the SMR, based in Bury St Edmund. Therefore the survey summarised in this report commenced prior to the SMR enhancement.

The aerial survey was carried out to NMP standards. In brief, the survey systematically examined all easily available aerial photographs held by the National Monuments Record (NMR) and the Cambridge University Unit for Landscape Modelling, (formerly CUCAP). All archaeological features visible on aerial photographs, dating from the Neolithic period to the twentieth century were interpreted and recorded on the Suffolk County Council SMR and transcribed onto a linked digital map layer in a Geographical Information System, with an accuracy of two metres to the base map. The manner in which each feature is depicted is determined by the form it takes on the photograph, i.e. whether it is visible as a cropmark, structure or earthwork. More information on NMP methodology can be found in Appendix One and mapping conventions are summarised on page iii above.

A six figure National grid reference and where possible an SMR number have been provided for all sites mentioned in the text.

1.3 Photograph Coverage

During the course of the survey over three thousand vertical and one thousand specialist oblique aerial photographs were examined. A high proportion of the vertical coverage dated to the 1940s and 1950s, a bias which can almost certainly be explained by intensive wartime and post-war surveys concentrating on the environs of Felixstowe and Ipswich, plus the 1953 'Floodlight' surveys in the aftermath of the unusually severe flooding of that year. This coverage was generally of good quality and recorded most wartime military installations within the project area, including the site of Martlesham Heath Aerodrome, as well as earlier archaeological features on the surrounding areas of surviving heathland. However, away from the towns and coastal/estuarine zone, to the north of the survey area, military vertical coverage was less uniform, although Ordnance Survey coverage of the 1960s and 1970 was good.

Specialist oblique coverage was less consistent, mostly concentrated in a 'band' between Felixstowe and Martlesham Heath, roughly eight kilometres wide. The area to the south-east of this band is dominated by the town and port of Felixstowe and has consequently received little attention from specialist reconnaissance; in this area with the exception of limited concentration on one cropmark complex (FEX 096 and FEX 057, TM298366), oblique coverage is minimal. However, the existing photography for this area is generally of high quality with consistently good spread of control points. The area to the north of the cropmark rich band, including the area of heath common land, also had minimal oblique coverage, with the few cropmark sites noted being of relatively poor clarity and coherence. This area has also received little recent attention and the few sites which have been targeted are often visible on images less well provided with control.

Consequently the aerial survey results are concentrated towards the central band of the project area, with a noticeable focus on a small number of highly visible cropmark features (for example BUC 015, TM 240413; KIR 006, TM 265403; SNH 029, TM 258400).

2. GEOLOGY OF THE SURVEY AREA

Chalk is the principle bedrock of Suffolk. Towards the coast this is overlain by deposits of the Pleistocene and Holocene periods, London Clay and Crag, a marine and estuarine shelly sand deposit. Crag, glacial sand and gravels dominate the survey area.

The soils of the survey area are predominantly freely draining sands and loams, with pockets of chalky till clays occurring to the north, punctuated to the north-east by fingers of marine alluvium along the narrow valleys from the Deben estuary, and a small area of tertiary clay to the south west.

3. LANDSCAPE CHARACTER

The character of this area remains essentially coastal and estuarine, with narrow but well drained and reclaimed tributary valleys feeding into the River Deben, River Orwell and Levington Creek, incising the peninsula and survey area on a west-east alignment into a series of low headlands, only rarely approaching thirty metres O.D.

As seen towards the coast (Hegarty and Newsome 2005; Dymond 1999), from the medieval period until the twentieth century the agricultural economy of the survey area probably consisted of a mix of arable and pastoral, highly dependent on the heath and commons. From the mid-twentieth century increasing intensification of arable agriculture encroached onto areas of pasture and heath. However, again in common with the remainder of the coast, aerial photographs of the 1940s show that by this point, many fields on the higher areas of well drained soils had been under arable cultivation for some time. Plantations, probably instigated by the Forestry Commission in the 1920s and 1930s can also be seen covering relatively small areas (Rackham 1999; 1998).

The current settlement pattern is a mix of isolated farmsteads, country estates and small nucleated villages with historic, probably medieval cores. Ipswich to the North-west and Felixstowe to the south are the largest settlements in this area. Both towns have seen extensive modern growth, particularly post-Second World War, but Ipswich in particular has influenced the character of the survey area, with neighbouring villages expanding and new housing encroaching onto former heath commons.

The character of the peninsula was also affected by the conflicts of the twentieth century, although the survey area is far enough inland to have escaped the need for anti-invasion defences which dominated the coast during the Second World War (Hegarty and Newsome 2005). The greatest modern military influence in this area undoubtedly began with the establishment of a Royal Flying Corps experimental airfield on Martlesham Heath in early 1917. This airfield continued in use into the Second World War and accrued the various defences typical of such an establishment. Although not transcribed in detail, this site will be discussed in section 8.3.

3.1 Implications for the Survey

The modern agricultural regime has had a number of implications for the survey. The freely draining soils of the survey area have historically been viewed as poorly suited to arable agriculture, but modern farming techniques have greatly improved their productivity. As seen during the Coastal NMP project, the increased exploitation of these previously marginal soils has resulted in generally good archaeological cropmark visibility. This is most noticeable on the relatively level areas of higher ground in the central zone of the study area, between Martlesham Heath and Felixstowe. However, the intensification of agriculture may also have increased the down-slope movement of soil in the neighbouring river valleys, through colluvial action, potentially masking archaeological features from both aerial survey and field investigation.

Numerous prehistoric earthworks survived into the twentieth century on the previously extensive heathland around Martlesham. Although recorded on the SMR, many remain obscured from aerial view by heathland vegetation. Military use and post-war cultivation of some areas of heath has undoubtedly levelled many such earthworks whilst simultaneously revealing their locations to aerial survey as cropmarks or soilmarks. Unfortunately, the expansion of modern housing and development onto other areas of the former heath following the end of military use has probably now completely destroyed many archaeological sites.

Despite the increased visibility of some archaeological features on the heath edge, two further factors may have conspired to limit the effectiveness of aerial survey northwards of Martlesham Heath. The Military Aerodrome Traffic Zone (MATZ) restriction on civilian flight, resulting from the military airfields of Martlesham Heath, nearby Woodbridge and Bentwaters, has probably limited the opportunities for civilian flight. This, in combination with the relatively steep sided river valleys in this area has probably limited the attractiveness of the landscape to the north of the heath to modern archaeological aerial reconnaissance.

4. INTRODUCTION TO THE PREHISTORIC EVIDENCE

The majority of features interpreted as prehistoric in date in this report are plough-levelled, identified as cropmarks or soilmarks. The interpretation and dating of sites visible only as cropmarks is problematical as the cropmark landscape potentially contains elements from the Neolithic to the post-medieval period, with a bias in identification towards activities and features which result in signatures identifiable from the air, such as ditched tracks, enclosures or enclosed settlements. As few cropmark sites in Suffolk have been assessed by archaeological excavation, unless recorded in association with better understood monuments their interpretation is often based on morphological characteristics.

On this basis, potentially the most significant features to be identified during this survey are two monuments of funerary or ritual function, which might date from the Neolithic period or early Bronze Age. The first, a possible cursus monument, would be the fifth possible cursus to be identified in Suffolk and would extend the distribution of this site type a considerable distance eastwards in the county. This would also bring the number known in Suffolk to a similar level to that known in Norfolk, this particular example also sharing some striking topographical and morphological similarities with a recent discovery in that county (Albone, Massey and Tremlett, 2004).

The second feature discussed is the eleventh to be interpreted as a possible Neolithic mortuary site in Suffolk. Again, also the most eastern site to be identified in the county, its location close to the River Deben may also reinforce an apparent association of this site type with river valley locations (Jones 1998).

The cropmark evidence for the Iron Age and Roman period follows the pattern of extensive field systems previously noted during the Suffolk Coastal NMP project (Hegarty and Newsome, 2005), and continuing to be revealed in Norfolk (Massey pers.comms.), with initial indications that some boundaries may originate in the Bronze Age. The evidence here does not support the suggestion of widespread later prehistoric planned field systems, raised for other parts of East Anglia (Williamson 1998), but may indicate much more limited areas of landscape organisation and settlement, structured around the constraints of local topography and inter-connected by extensive and complex road networks. It may be more reminiscent of the ‘spurgy’ settlement pattern Hill (1999: 189-192) has identified for East Anglian landscapes than the ‘classic’ Wessex settlement pattern, wherein settlement is composed of enclosed units intermixed with unenclosed, ‘open’ settlements. That many settlements appear to be aligned upon the newly identified extensive trackways could be significant; the roads could form boundaries or indicate the reliance of the local economy on transport, for example, for transhumance (Hill, 1999).

However, it must be appreciated that less substantial archaeological features often associated with prehistoric sites, such as artefact scatters or small pits, which may be most diagnostic in identifying cultural activity, are rarely visible from the air. A great deal of further work is required to identify the date and function of most sites described here.

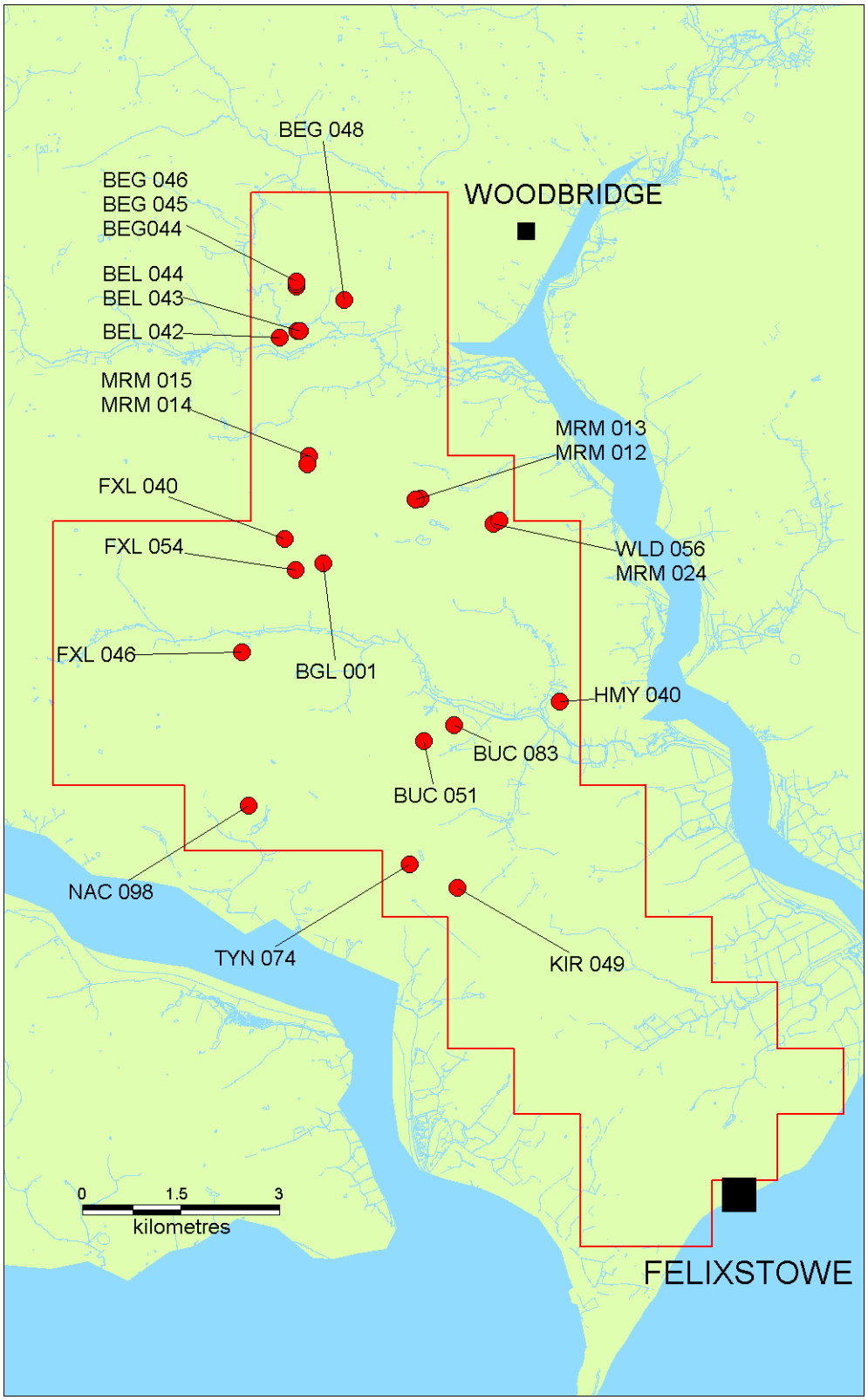


Figure 2: Neolithic and Bronze Age sites mentioned in the text.

5. THE NEOLITHIC AND BRONZE AGE

It is difficult to identify a clear transition between the monumental traditions of the Neolithic and Bronze Age (Ashwin, 1996:47). The thematic grouping together of these periods into one chapter reflects this unclear progression, whilst allowing for the discussion to categorise monuments traditionally ascribed to one or the other period.

5.1 Ritual and Mortuary Sites

Cropmarks

A rectangular ditched enclosure has been tentatively interpreted as the terminal of a Neolithic cursus monument. The possible cursus (KIR 049, TM261394; see Figure 3) is visible as cropmarks of narrow ditches (on average less than two metres wide), of a ditch or cut-feature defining a rectilinear enclosure approximately three hundred and fifty metres long and between circa sixty five and eighty metres wide. Similar in orientation to a cursus recently identified in Norfolk (Brennand, et al, 2002), it is on a south-west to north-east alignment. It is not clear whether the feature continues into the adjacent field to the north-east. Cursus monuments are often found in association with a suite of monuments, such as mortuary enclosures, causewayed enclosures and round barrows. Although several round barrows are known in the general area of the possible cursus, including an unusual triple concentric ditched example circa 600 metres to the north (KIR 045 TM 259401), the cursus does not appear to have a direct relationship with any other 'ritual' monument. However, it may be abutted by a later field boundary on its north-western side and followed for a short distance by a length of ditched trackway on the eastern side, possibly indicating it survived as a substantial earthwork boundary for some time.

It is similar in proportion to the cursus terminals known at the southern end of the Fornham All Saints cursus complex in west Suffolk, although significantly wider, particularly at the south-western end where it measures eighty metres in width (Oswald et al 2001, 135; Dyer 1996). This may mitigate against an interpretation as a cursus, but wider examples are known from elsewhere in England, such as the Greater Stonehenge cursus in Wiltshire which is over one hundred and twenty metres wide (Harding and Barclay 1999). It also shares some characteristics with a recently identified example at Hanworth, Norfolk, including a north-east to south-west alignment (Brennand, et al, 2002; Albone, Massey and Tremlett, 2004). More significant perhaps, is the fact that cursuses are often found on flat well drained gravel terraces close to major rivers, possibly symbolising a link with sacred or spiritual journeys (Harding and Barclay 1999, 5). The Kirton cursus is located roughly equidistant between two

major rivers, no further than 750 metres from tributaries to the Deben and Orwell, therefore potentially displaying a key characteristic ritual association.

An oval enclosure in Bucklesham parish, previously noted on the SMR (BUC 051, TM256416), and interpreted as a possible mortuary enclosure of Neolithic date has also been accurately transcribed for the first time (Figure 4). Neolithic mortuary sites in Suffolk are divided into two groups; long and narrow forms possibly the remains of long barrows, and ovate forms often described as mortuary enclosures (Jones 1998, 87). The Bucklesham example falls into the latter group and is similar to sites recently identified in Norfolk (Brennand, Clare and Massey 2002) and Lincolnshire, although at the smaller end of the known range (Jones 1998, 87-8, Fig. 2). As seen for cursuses, the distribution of Neolithic mortuary sites in Suffolk again appears to have a strong bias towards river valleys, a pattern again noted on the Lincolnshire Wolds (Jones 1998, 91). Nine of the eleven previously known examples in Suffolk form a fifty kilometre long chain inland along the course of the River Stour to the south of the county, matched by the distribution over the county boundary in Essex (Buckley, Major and Milton 1988, 87; Fig.9). Two further examples, one known prior to NMP, one identified during the coastal project, are located near the River Orwell. The Bucklesham example is located on a false crest formed at the twenty five metre contour, only seven hundred metres from a tributary to the River Deben. It is possible these sites mark the start of further river valley groups.

The evidence for the Bronze Age comes principally from the remains of features interpreted as funerary monuments. The majority of newly recorded possible barrows are visible as cropmarks; fifty ring-ditches were identified during the survey and approximately half were interpreted as the probable remains of ploughed-out Bronze Age burial mounds. The problems of interpreting ring-ditches have been thoroughly discussed elsewhere (Hegarty and Newsome 2005; Wilson 2000) and will not be covered here. However, it must be repeated that despite the consideration of location and context in the interpretation of features (for example topography, proximity to other known or probable barrows, etc) certain dating and identification of function is not possible without excavation.

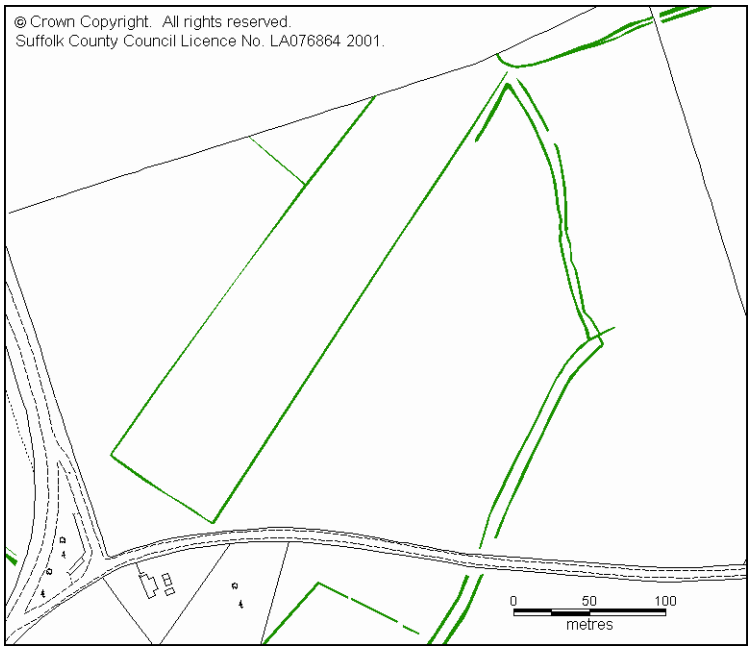


Figure 3: A possible cursus identified in Kirton parish.

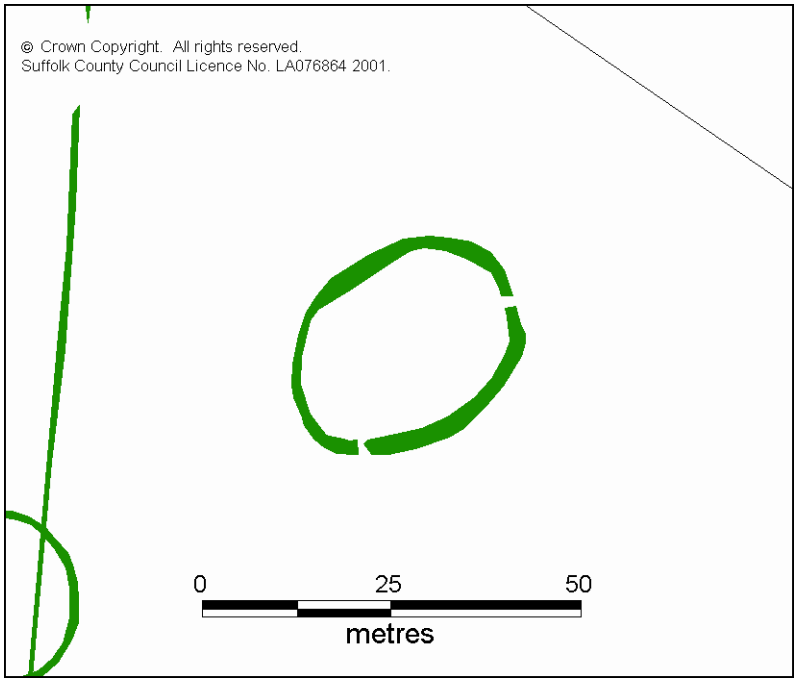


Figure 4: A possible Neolithic mortuary enclosure in Bucklesham parish.

Earthworks

A number of barrows are noted on the SMR as upstanding earthworks, for example on Martlesham Heath (BGL 006-007, BGL 009, MRM 012-015) and at the Seven Hills barrow group in Nacton parish (FXL 011, NAC 004-013, BUC 006-007), but many of these were obscured by woodland or bracken, were not visible to the survey and therefore not transcribed.

Several possible barrows new to the SMR were also identified as earthworks. Of these, two in Bucklesham (BUC 083, TM260419; Figure 5A) and a third in Little Bealings parish (BEL 042, TM234477; Figure 5B) do not show any cropmark evidence for a ring ditch. It is possible they are a type of bowl barrow constructed without an enclosing ditch and berm, but further targeted reconnaissance may show more detail.

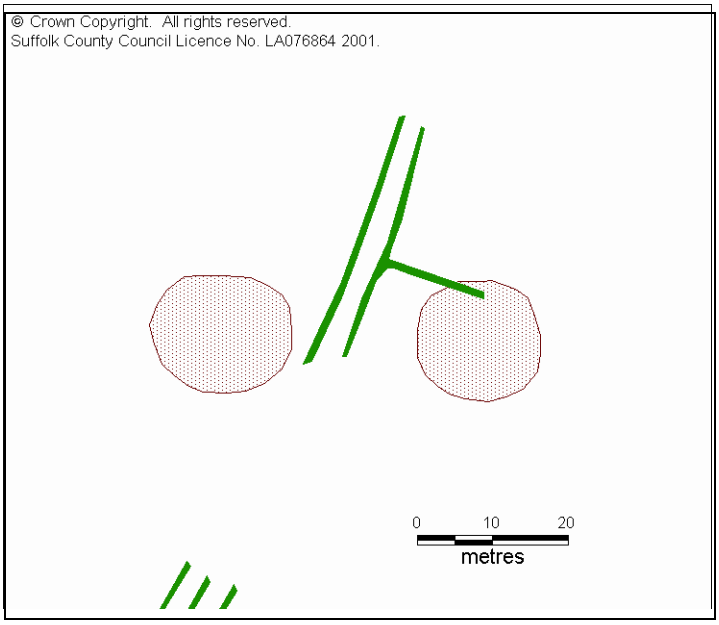


Figure 5A: A pair of possible barrows in Bucklesham parish, visible as low earthworks.

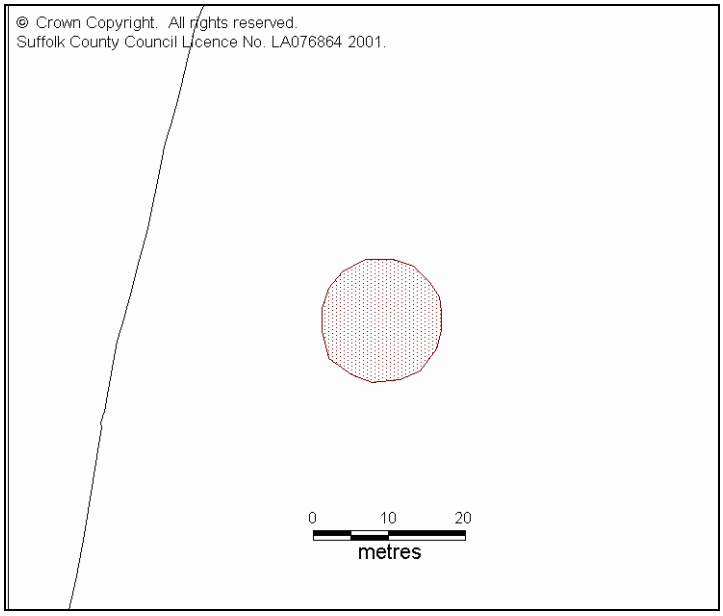


Figure 5B: A possible barrow in Little Bealings parish, visible as a low earthwork.

Others show both earthwork and cropmark evidence. An example in Waldringfield, (WLD 056, TM266449), circa seventy metres to the south west of a concentric ring ditch (see section 5.1, Figure 6), was visible as a low earthwork and parchmark on aerial photographs of the 1940s but is now obscured by farmyard development and car park.

Figure 6: A double ditched, irregularly shaped barrow in Martlesham.

Several possible barrows in the area of Martlesham Heath, possibly originally part of the cemetery group mentioned above, might have been converted to military use during the second world war (for example, FXL 040, TM235447; FXL 054, TM236442). These features are not marked on the available historic Ordnance Survey maps as tumuli and without earlier photographs it is not possible to be sure of their interpretation as barrows, and they could simply be modern military constructions. They are discussed in more detail in section 8.3.1 (see Figure 26).

Two previously unrecorded small earthwork mounds were identified in Great Bealings Parish

(BEG 048, TM244483). Although at approximately 6 metres in diameter they are relatively small, they may be similar to a type of small barrow known from Norfolk and noted by the Norfolk NMP project on Salthouse Heath. Excavated examples contained Late Bronze Age cremations, though they could also be observed clustering around Middle Bronze Age barrows, a pattern not observed here (Massey, pers. comm.).

Soilmarks

However, it is possible the Great Bealings monuments may have been located to form a visual relationship with two groups of possible barrows, newly recorded across the Lark valley. Five possible barrows were identified as soilmarks, two of which may form a group with BEL 042, described above (BEL 043, BEL 044, TM237478). Three more (BEG 044 - BEG 046, centred on TM236486) form a linear group towards the head of a valley. Both groups appear to be located on false crests, possibly to be seen from the valley floor.

The destruction of a number of barrows by agricultural activity has been noted, resulting in the sites being visible on photographs as both earthworks and cropmarks. The locally well known disc barrow called as the Devils Rings on Brightwell Heath is possibly the most spectacular example (BGL 001, TM241443).

5.2 Settlement and Agriculture

Evidence for Bronze Age settlement is difficult to identify from aerial photographs, as it is often unenclosed or difficult to differentiate from later enclosures within the cropmark palimpsest. Although no settlements or land division features were identified that can be ascribed a Bronze Age date with any certainty, a tentative interpretation can be made. Two linear ditches identified as cropmarks in Stratton Hall parish (TYN 074, TM254397) may correspond with those identified in the SMR at the same area, from which Bronze Age pottery was excavated. Further investigation of the excavation archive is required to resolve this issue. If the transcribed ditches are determined to be of Bronze Age date, similar consideration must be given to the surrounding field systems which are on a similar axis, and potentially to the network of ditched roads or trackways with which these may connect (see section 6.1 below for more detail).

5.3 Summary and Discussion of the Bronze Age Evidence

The ring ditches enclose areas with diameters that range seven to forty eight metres, the majority in the fifteen to twenty five metre range. This is a similar pattern to that seen on the coast, although with slightly higher number of the very large ring ditches. Ditch width also follows the previously seen pattern, varying from less than one metre to approximately four metres wide. As discussed in Hegarty and Newsome (2004; 28), the width and diameter of the ditch may have some bearing on the original form of the barrow, for instance the size of any central mound. However, it is likely that in high-prestige or complex examples the width and diameter of the ditch may not be related to the size of above ground earthworks. For example, both the cropmark and excavation evidence for the disc barrow called The Devils Rings (BGL 001, TM241443) suggest a relatively narrow outer ditch, which presumably would not have provided sufficient material to construct what appears to have been sizeable outer bank and central mound; an additional source may have been required.

The tradition of concentric ring ditches identified during the coastal NMP project (Hegarty and Newsome, 2005) also continued, with three new examples being mapped and recorded (NAC 098, 229406; HMY 040, TN276422; FXL 046, TM228430); one feature previously recorded as a possible ring ditch was identified as concentric in nature (MRM 024, TM267450). Arguably MRM 024 is the most interesting of these (see Figure 6). Concentric ring ditches can be interpreted either as evidence of the expansion of a monument for secondary interment or as elements of barrow's original construction (Wilson 2000 101; 113). As there is visible evidence that both ring ditches at MRM 024 lay between the central mound and outer bank, it is likely both were visible in the original monument. Another unusual aspect of this barrow is its shape; although partly obscured by modern boundaries it is slightly ovate in shape, echoed in both ditches and the plan of the outer bank.

The examination of a wider area than that seen during the coastal NMP project allows a broader assessment of the pattern of ring-ditch distribution. This report is not the place for a detailed regional analysis, but the previously identified pattern of isolated or paired barrows remains strong (Hegarty and Newsome 2005). However, a greater proportion of small cemetery groups was recorded, although the number of ring-ditches within them remains low, rarely more than ten (Figure 7: A.TM 277434; B.TM 259431; C.TM 270390; D. TM 237418). This includes a group in Trimley St Martin (Figure 4C.) where three or four small ring ditches cluster around a larger barrow. This is an uncommon type, though one seen elsewhere in East Anglia (Wilson 2000, 110). Nonetheless, the relatively poor visibility of the previously known larger groups discussed below, suggests that more reconnaissance is required.

No discernible associations with the possible Neolithic monuments described above, has been identified. Similarly the extent of the Bronze Age agricultural landscape is currently insufficiently defined to reveal any relationships with the mortuary monuments. However, if the cropmark features discussed below (see section 6.4), currently interpreted as later prehistoric field systems do prove to contain Bronze Age elements or precursors, the noted examples of correspondence between barrows and field boundaries may reflect a continuation of the Bronze Age monument's significance.

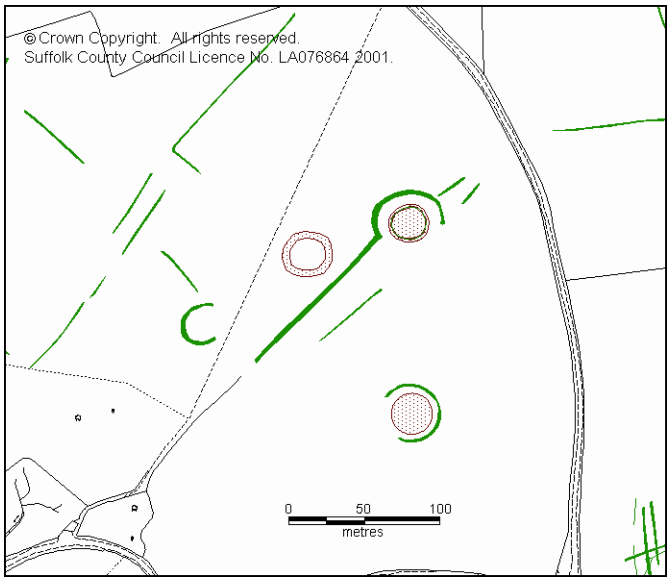


Figure 7A: A possible barrow cemetery in Newbourne parish.

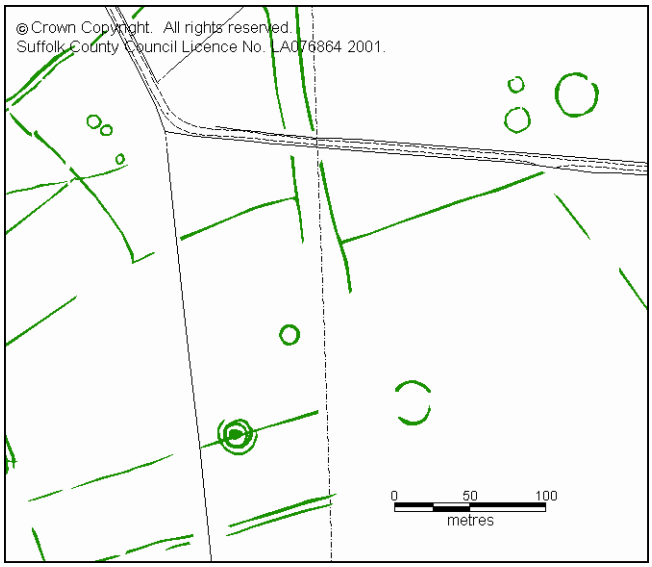


Figure 7B: A possible barrow cemetery in Newbourne parish.

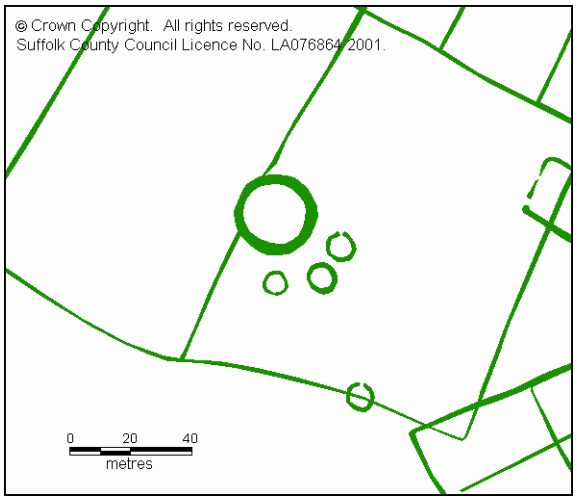


Figure 7C: A possible barrow cemetery in Trimley St Martin parish.

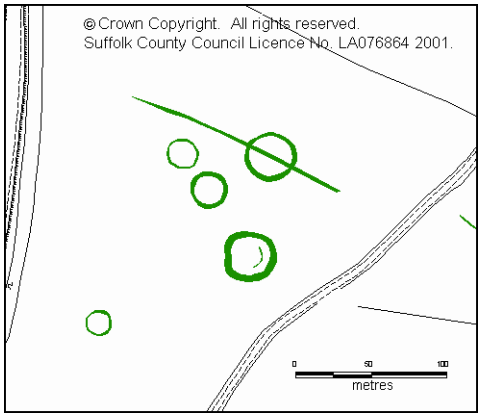


Figure 7D: A possible barrow cemetery in Bucklesham parish.

6. THE IRON AGE AND ROMAN PERIOD

It is difficult to identify a clear transition between landscape features from the Iron Age and Romano-British periods on morphological grounds alone (Hegarty and Newsome 2005; 33). Therefore, monuments interpreted as originating in these periods are discussed together in this chapter.

As discussed above, it is possible that some sites ascribed a later prehistoric date on morphological grounds originated in the Bronze Age. Many features currently recorded as 'undated' (a quarter of all new records, see Table 1, Appendix 1), may also upon excavation be revealed to be of prehistoric date.

It must also be re-stated that a general bias exists towards the identification from aerial photographs of enclosed settlements and ditch-defined features such as ring ditches and field boundaries. The dense distribution of ditch defined enclosures and possible co-axial field systems identified for this period on the higher ground above the estuaries during the coastal NMP project (Hegarty and Newsome 2005; 33) raised the expectation that such features would continue to be the dominant landscape features across the Felixstowe peninsula. Conversely, it was anticipated that unenclosed settlements and smaller features would be masked by background geological 'noise' and that smaller tributary valleys would be less productive.

Many of these patterns held true, although there were unexpected differences. Over forty new sites or features of probable Iron Age or Romano-British date were recorded, (almost twenty percent of all new sites, see Table 1, Appendix 1) and additional detail was added to a number of previously known sites. Unexpectedly, the previously recorded density of features did not continue into the interior of the peninsula. Perhaps the most notable variance from the previous survey was the recognition of both enclosed and unenclosed settlement elements, in association with extensive ditched roads or trackways. The range of site types recorded is described below.

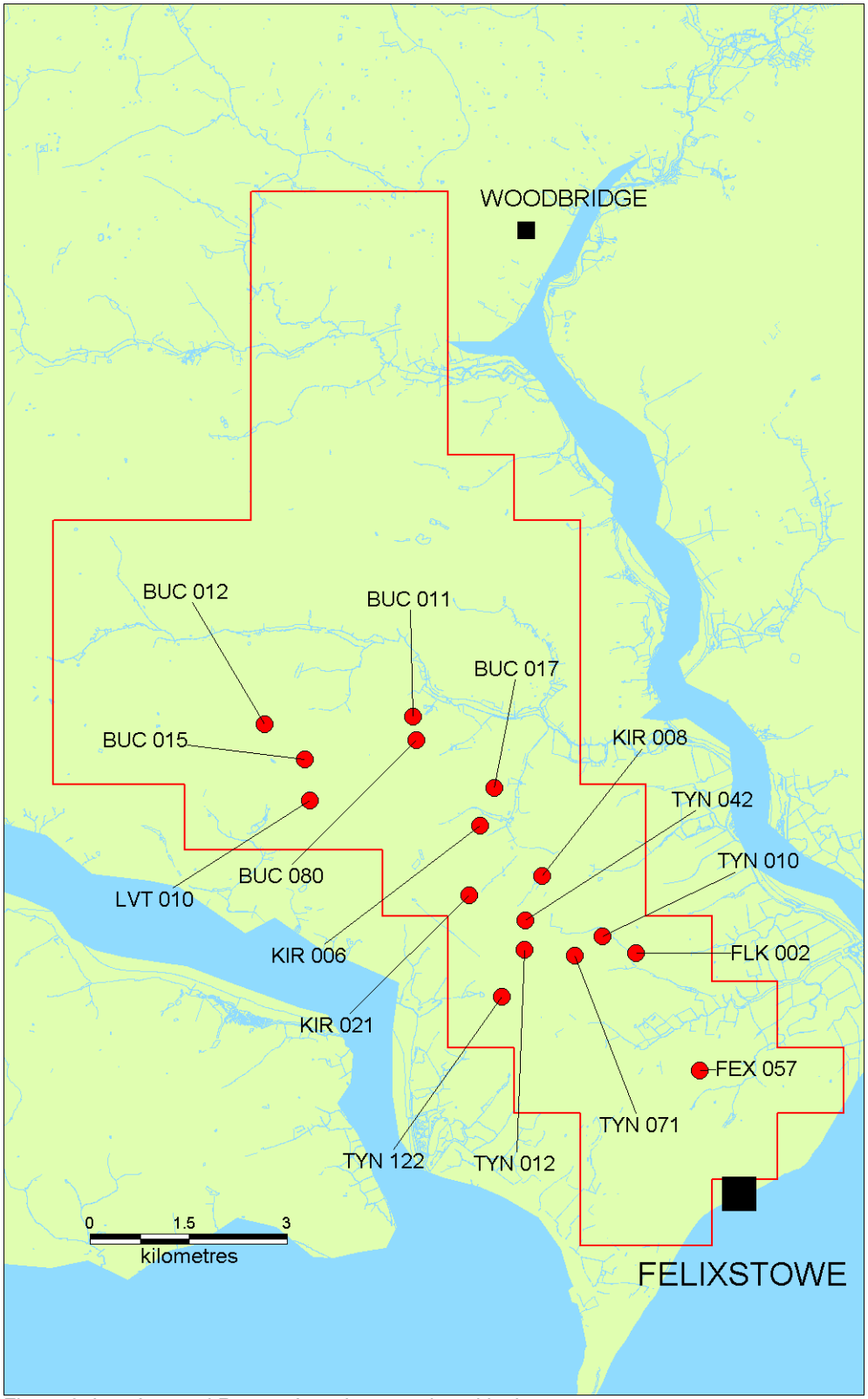


Figure 8: Iron Age and Roman Age sites mentioned in the text.

6.1 Communication

The predominant theme to emerge from this area is one of a landscape defined by and inter-connected with ditched roads or trackways. A number of very extensive tracks were identified and new relationships were established between previously known isolated fragments. Although still relatively fragmentary, it is probable from the increased extent that the settlements and field systems described in more detail below, benefited from a complex and wide-ranging communications infrastructure. Although definite connections or junctions between the 'major' stretches of track have not been identified, very few are completely isolated. An initial assessment of track direction, the location of known settlements or fields and the possible influence of local topography supports an early interpretation of a wider, possibly partly planned road network, connecting landscapes of partly planned settlement and agriculture (discussed below). Figure 9 tentatively illustrates areas where the routes may intersect, but this model cannot account for multiple phases of settlement and the inter-relationship of the tracks with settlement is an area which should receive further study. The clearest sections of track are illustrated in Figure 10 and discussed below in the context of the settlement evidence, enclosures and field systems.

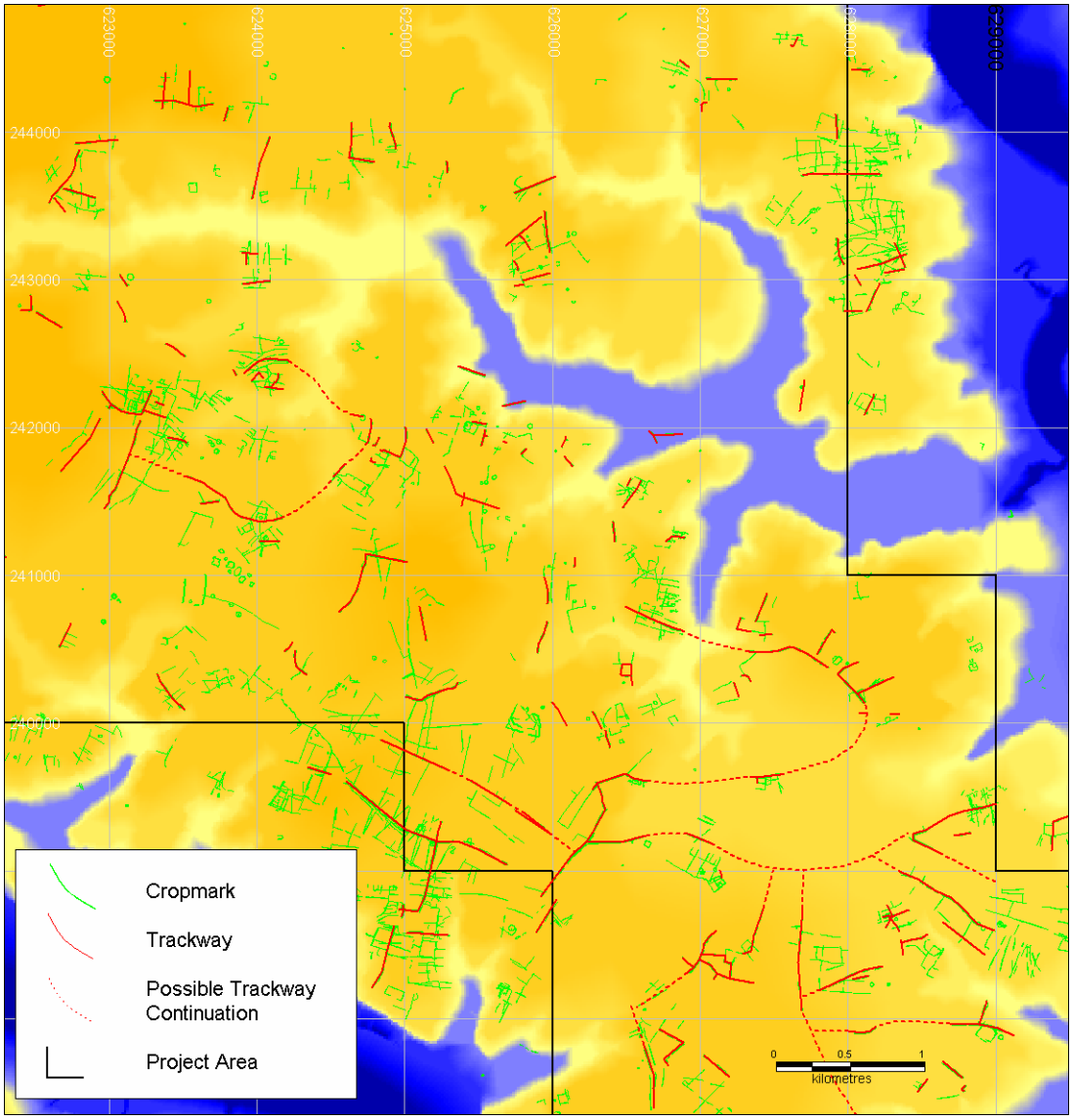


Figure 9: An overview of the extent of ditch defined trackways or roads visible as cropmarks in the project area.

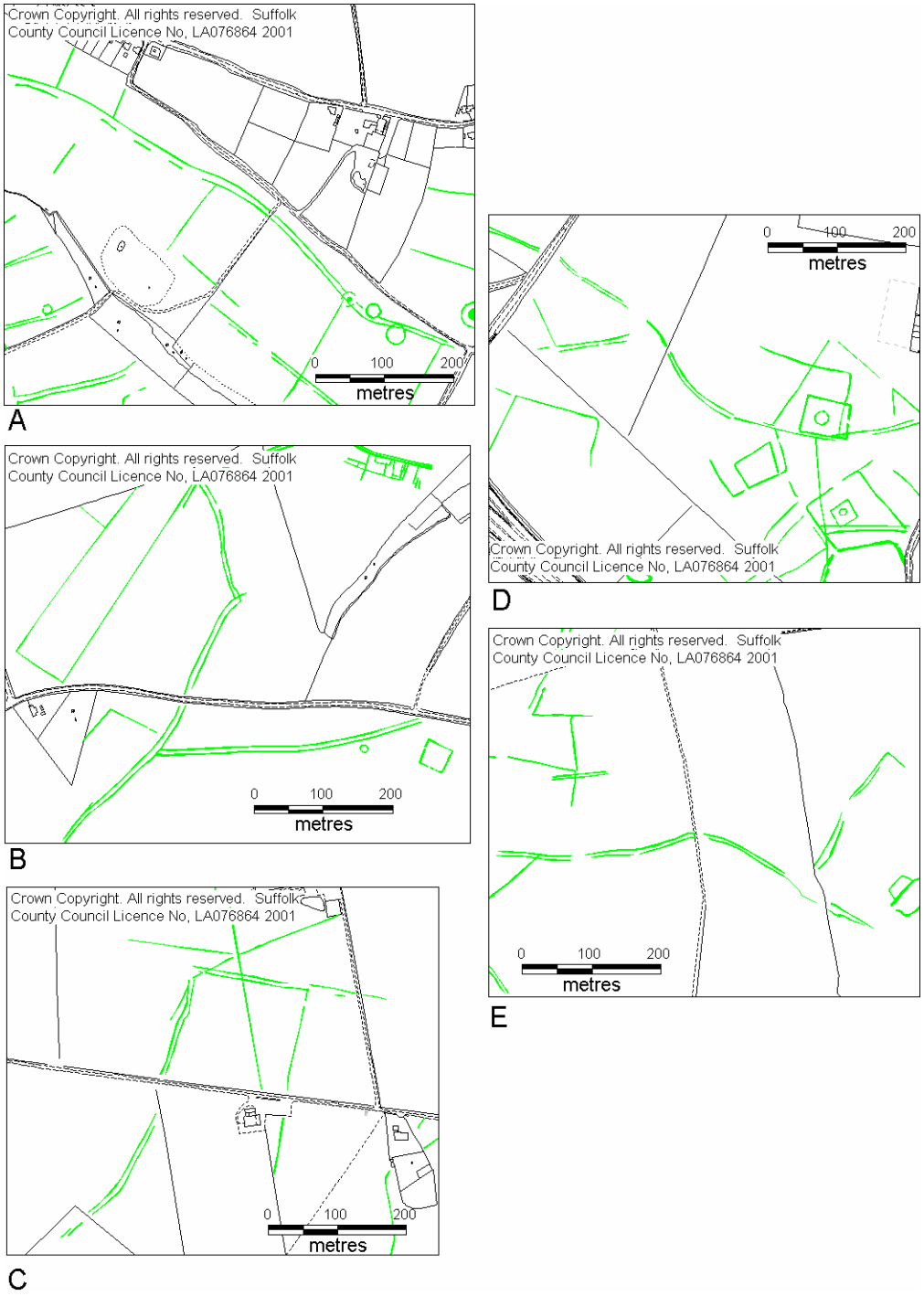


Figure 10: Details of some the extensive ditched trackways to emerge as a major theme from the survey. (A. FLK 002, TM 287387; B. KIR 021, TM 262392; C. BUC 013, TM 247411; D. BUC 015, TM 238414; E. KIR 002, TM 276405.

6.2 Settlements and Enclosures

Evidence for settlement varies in both size and form, with evidence for both ditch-defined enclosed and unenclosed settlement visible on the aerial photographs. Although it is impossible to identify a domestic function from aerial photographs with certainty, for instance ring-ditches equally may be the remains of roundhouses, industrial workshops or religious sites, a number of isolated enclosures can be seen within the project area that have been tentatively identified as possible isolated settlements (cf Hill, 1999). For examples see Figure 11.

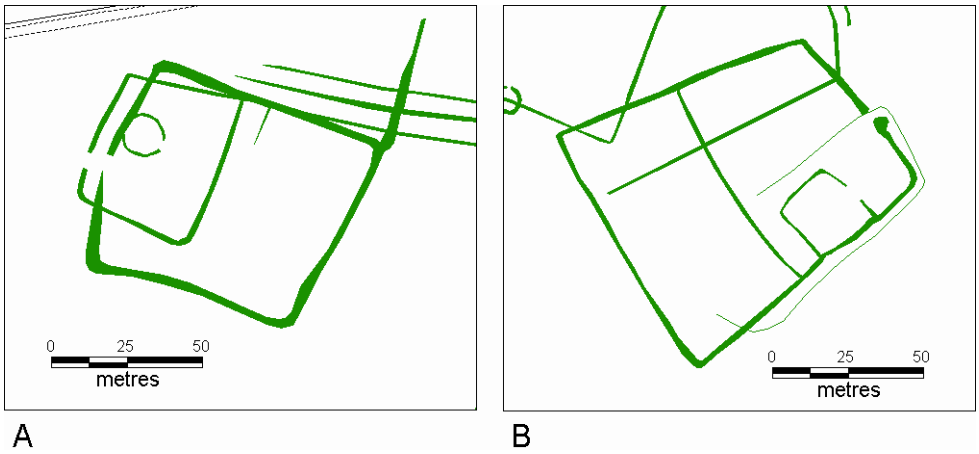


Figure 11: Two possible Iron Age enclosed settlements; A: BUC 011, TM254420; B: TYN 042, TM271389

More common are complex multiphase settlements, apparently aligned upon the ditched roads or tracks. The three examples in Figure 12 illustrate the variety of smaller-scale sites recorded. Figure 12A, (FEX 057, TM298366) consists of a number of phases. The large D-shaped ditched enclosure upon which the road was potentially aligned is possibly of middle or early Iron Age date (c.f. Winton 1998,49), although Winton also cites an example from Leicestershire where a large D-shaped enclosure was the final element at a settlement (Winton 1998, 51); the rectilinear enclosures or fields abutting the road are possibly later Iron Age or Roman (c.f. Winton 1998, 54-5); finally, the unenclosed ring ditches, are possibly the remains of later Iron Age or Roman unenclosed dwellings. J.D. Hill suggests that 'distinct units' which occur as part of larger settlements, such as the 'heavily enclosed D-shaped enclosure, may have had specific, non-domestic functions, citing excavated examples from Northamptonshire and Cambridgeshire (Hill 1999; 191-2). Purely on morphological grounds, the settlement illustrated in Figure 10B (KIR 008, TM274396) is probably late Iron Age or Roman in date. The enclosures are rectilinear in form but the agglomerate nature of the site

is suggestive of organic growth over time, rather than a planned settlement (c.f. Winton 1989, Fig.4 & Fig 5a). Figure 10C (KIR 021, TM265396) illustrates a newly identified small roadside settlement in Kirton parish, to the northern end of an extensive one and a half kilometre long trackway, fragments of which were previously known. Although smaller than the other examples illustrated, it is more regular in form and has been interpreted as probably later Iron Age or Roman in date.

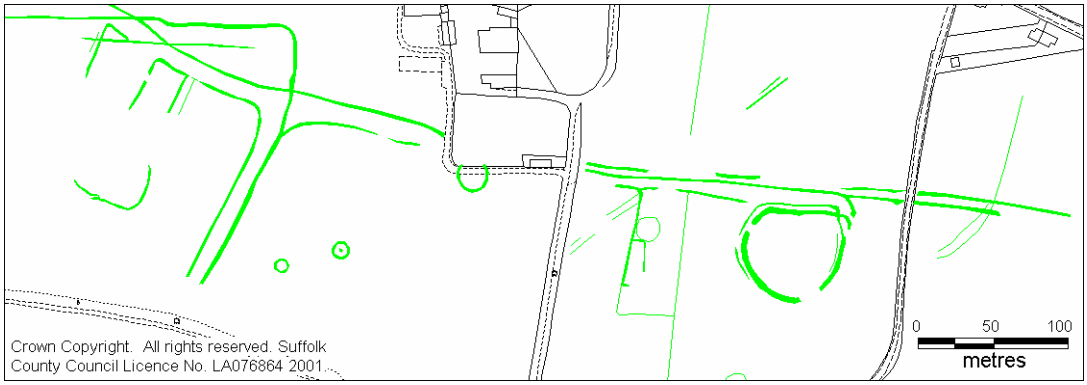


Figure 12A: Roadside settlement FEX 057, TM298366

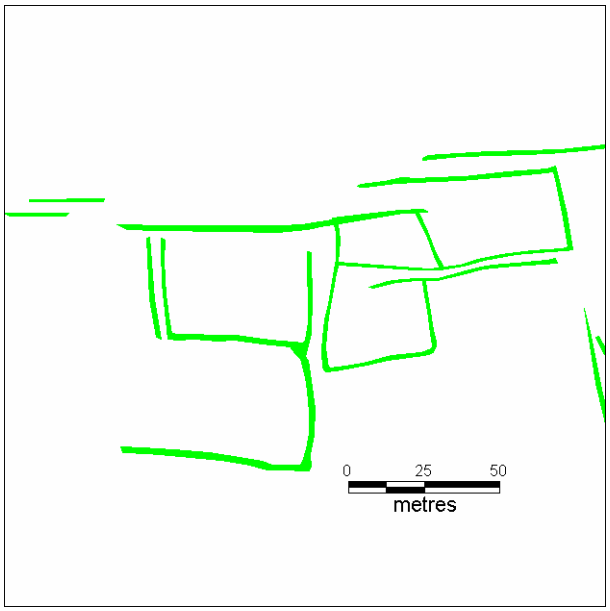


Figure 12B: Roadside settlement KIR 008, TM274396

Figure 12C: Roadside settlement KIR 021, TM265396

More extensive roadside settlements were recorded to the south and west of Bucklesham village. To the west of the village, located in a corner defined by the junction of two ditched trackways, the plan of a possible rectangular structure can be seen within a complex of rectilinear field boundaries (see Figure 13A: BUC 012, TM 232419). The date and function of this site is unclear; the rectilinear form of the enclosures could support an interpretation of a later Iron Age or Roman date and function as a small farm or villa, but datable small finds are absent in this area and small rural sites of this date are poorly understood (Hegarty and Newsome 2005, 51;Martin 1999). The orientation of the cropmarks visible across this area on an almost north-south axis closely resembles the surrounding modern field pattern, and some appear to cross the trackway, and therefore have been interpreted as post-medieval in date.

Just over one kilometre to the south-east a site can be seen which may demonstrate occupation from the Iron Age into the Roman period (Figure 13B: BUC 015, TM 240412). The curvilinear ditched enclosure to the south-east of the modern field has been interpreted as being of late Bronze Age or Iron Age date. The rectilinear enclosures containing ring ditches have been interpreted as later in date, possibly late Iron Age or Roman in origin, not only as they appear to abut the curvilinear enclosure, possibly also causing a realignment of the sinuous trackway, but also due to their regular form, often seen as diagnostic of a Roman date. Although ring-ditches are often identified with the remains of later prehistoric round houses, their presence does not necessarily imply a domestic function. The rectilinear enclosures in this instance could support an alternative interpretation of function as a temple complex of Roman date (cf. Hegarty and Newsome 2005, 55: Downe, King & Soffe 1978; Crummy 1980) or Iron Age ritual sites intentionally established at a distance from domestic settlements, deliberately employing rectilinear form to enhance their ‘otherness’ (Hill 1999, 196-7).

Although the cropmark trackways between BUC 012 and BUC 015 do not visibly connect, the complexes are in close proximity and on similar alignments and may be of similar date, although the track may have defined a boundary which have remained influential for some time (see Section 7.3 & Figure 16 for a broader view).

6.3 Agriculture and Subsistence

Despite the wide area of this survey in comparison to previous aerial surveys in Suffolk (Hegarty and Newsome, 2005), the cropmark evidence for Iron Age and Roman field systems was not as extensive as might have been expected. However, it was similar in character, if not extent. For instance, small scale rectilinear field patterns, possibly constrained in direction and extent by the prevalent topography, have been recorded (For example TYN 071, TM 279383; TYN 122, TM 268377; BUC 017, TM 266409; FLK 002, TM 286387). This may support the suggestion that such field systems were planned, at least on a very local scale.

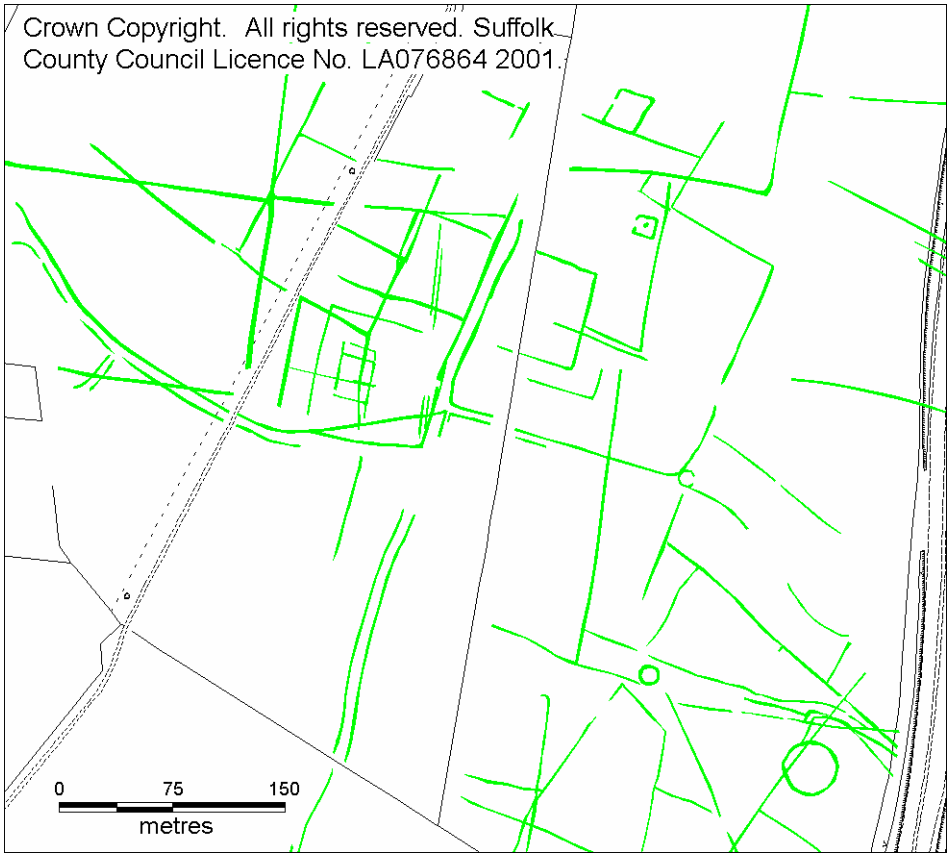
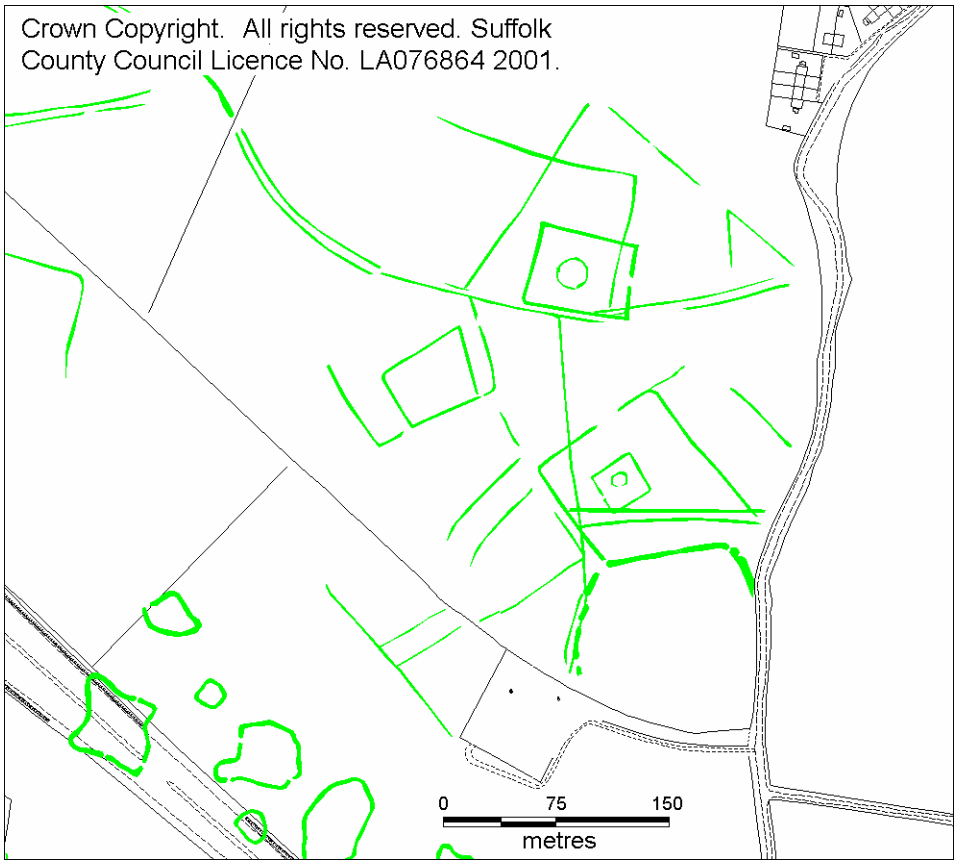


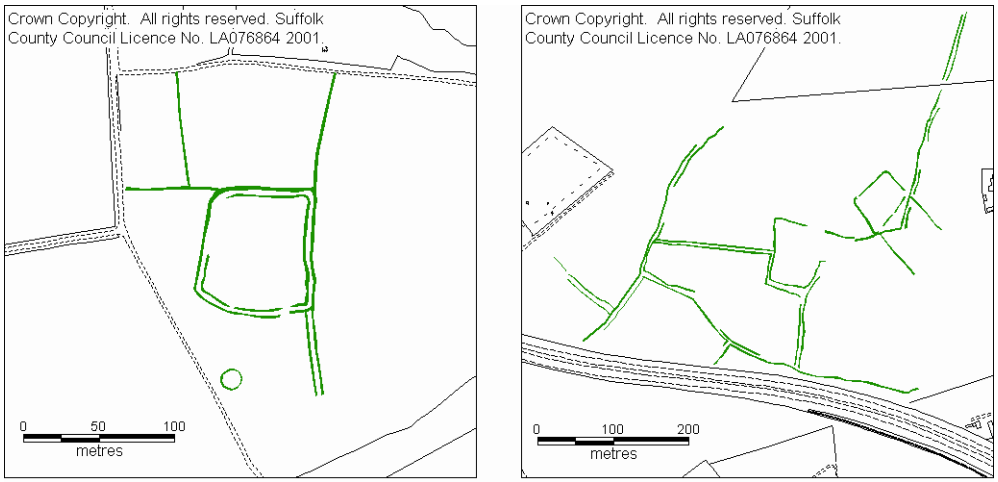
Figure 13A: Complex later prehistoric roadside settlements to the west of Bucklesham.



B

Figure 13B: Complex later prehistoric settlements to the south of Bucklesham (the irregularly shaped enclosures to the south-west of the image mark the outline of twentieth century bombing decoys).

It is also likely that some ditched roads or trackways acted as boundaries as well as routes. For instance, Figure 14A and B (KIR 006, TM264403; TYN 012, 271384) illustrate two sites, previously known only as fragmentary cropmarks, upon which the survey has shed new light. Both sites consist of large fields or enclosures that appear to be solely demarcated by trackways.



A B

Figure 14: Track defined enclosures and field systems in Kirton (A) and Trimley St Martin parish (B).

6.4 Relationship with Earlier Features

A recurring theme to emerge from the survey is the relationship between the field systems and tracks of later prehistory or the Roman period and monuments of late Neolithic and Bronze Age date. It is clear from the examples illustrated in Figure 15 that some later routes and land boundaries were intentionally aligned upon the earlier monuments. Some, as in Figure 13A and B (FLK 002, TM 288386; LVT 010, TM 238408), may simply have formalised a role of the earlier monuments as markers between neighbouring territories. Others however, as in Figure 13C (TYN 010, TM 283386), appear to either make slight detours or to be organised to enclose them within their bounds, suggesting the monuments still hold an inherent value or significance, or as in Figure 13D (BUC 080, TM 255411) are making some kind of statement by highlighting an individual monument.

Figure 15: A relationship between later prehistoric boundaries and earlier features can be observed in a number of locations (A. Falkenham; B. Levington; C. Trimley St Martin; D. Bucklesham)

7. MEDIEVAL AND POST MEDIEVAL

7.1 Settlement

The medieval settlement pattern in Suffolk is discussed elsewhere in detail and will not be covered here, other than to say that the modern settlement pattern, connecting roads and some field boundaries almost certainly fossilise the medieval, and possibly the later Anglo-Saxon pattern (Hegarty and Newsome 2005, 74-5). It is probably for this reason that very little evidence for medieval or post-medieval settlement was identified in this survey.

A minor exception to this pattern can be seen in Great Bealings parish, where the former location of Bealings Hall, already noted on the SMR, has now been recorded as an area of terracing (BEG 002, TM231488).

7.2 Parks and Gardens

Three possible park or garden landscape features were identified. The first, at Bealings House, is visible as possible terracing or landscaping to the south of the house (BEG 049, TM242487). The earthworks appear to enhance the natural topography to gently slope the garden between the twenty five and thirty metre contours.

The function of the second feature, to the south of Beacon Hill House, is less clear (MRM 114, TM246471: Figure 17). Visible only on two vertical images taken a few months apart, it appears dramatically different on both. On the first it can be seen as a narrow ditch, possibly a path, continuing from a similar path in an adjoining field to the west. On the second it appears as a ditch up to ten metres wide. There is a suggestion of a return towards the house on the eastern side, possibly leading to a break in the ditch. Although it resembles the pale ditch of a medieval deer park, the house is early nineteenth century in date and nothing is marked in this area on Hodskinson's map of 1783 to suggest the existence of an earlier house or hunting lodge. Whatever its function, possibly a relict ha-ha, it is undoubtedly integral to the garden and has thus been recorded.

The third possible landscape feature takes the form of curvilinear earthworks to the west of Brightwell Hall (BGL 039, TM244433: Figure 18A). These probably incorporate hedge banks of post-medieval date, but may also define a track or path, one possibly marked on the Second Edition Ordnance Survey map of circa 1904. Possibly connecting with the eastern end of the curvilinear earthworks, more regular earthworks can be seen in the grounds of the

current Brightwell Hall. It is likely that these belong to the Restoration period formal gardens of Brightwell Hall, demolished circa 1760, marking the location of a tree lined avenue, visible to the top of Figure 18B (taken from Williamson 2000, 31).

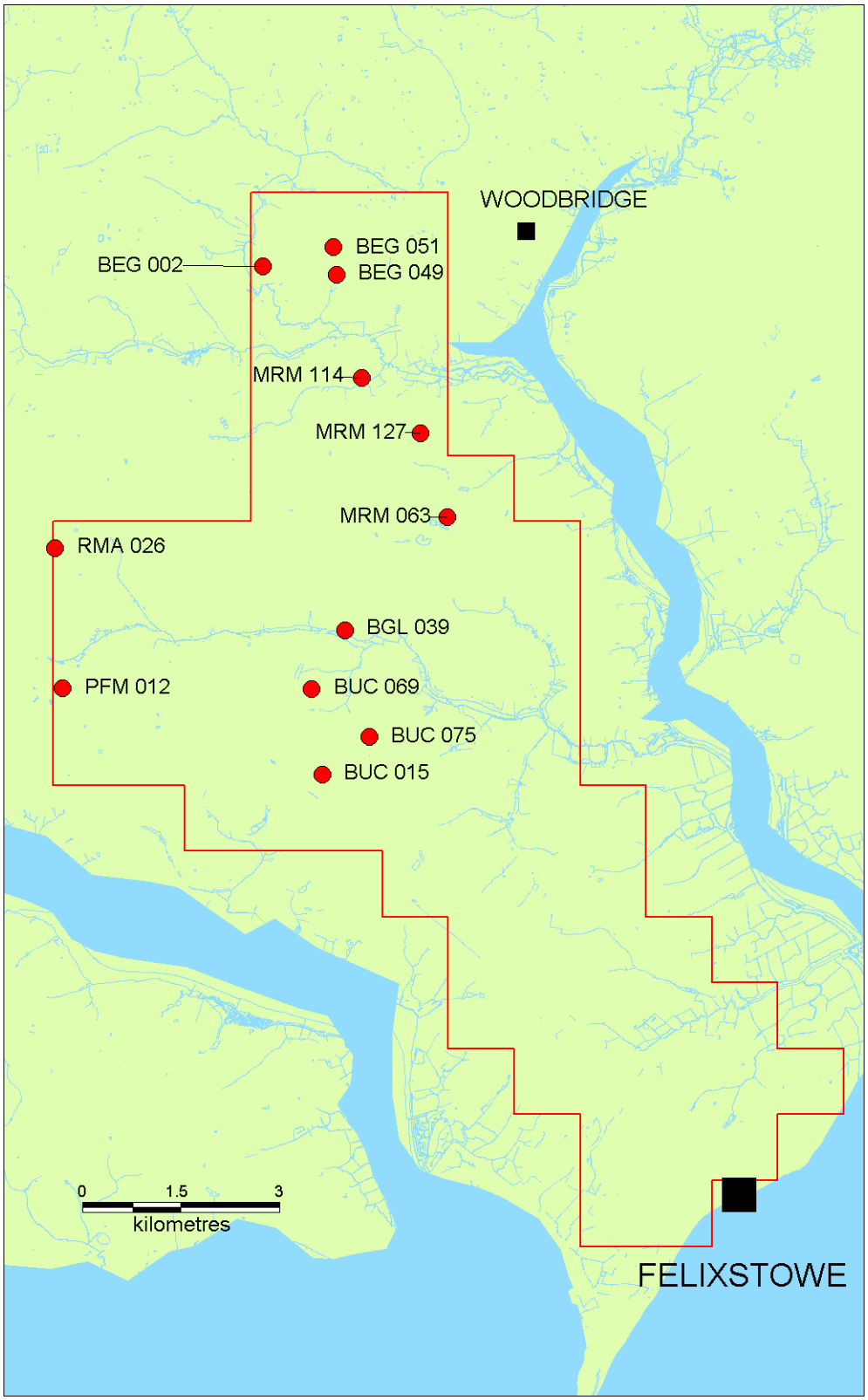
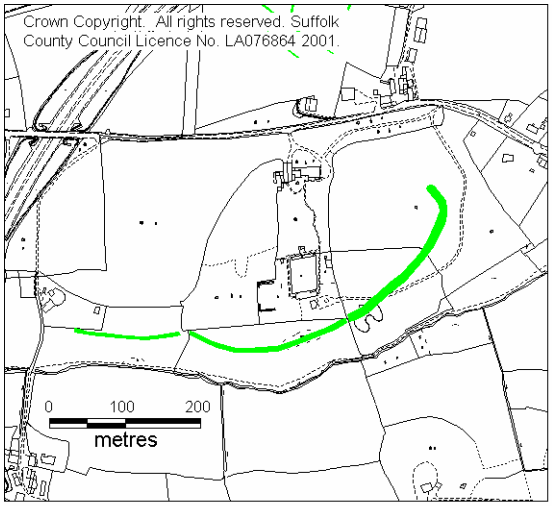


Figure 16: Medieval and post-medieval sites mentioned in the text.



A

B

C

Figure 17: Beacon Hill House A: Interpretive transcription of possible garden feature. B: RAF 106G/UK/1365 5008-9 03-APR-1946. © English Heritage. C: RAF 106G/UK/1635 2329-30 19-JUL-1946. © English Heritage.

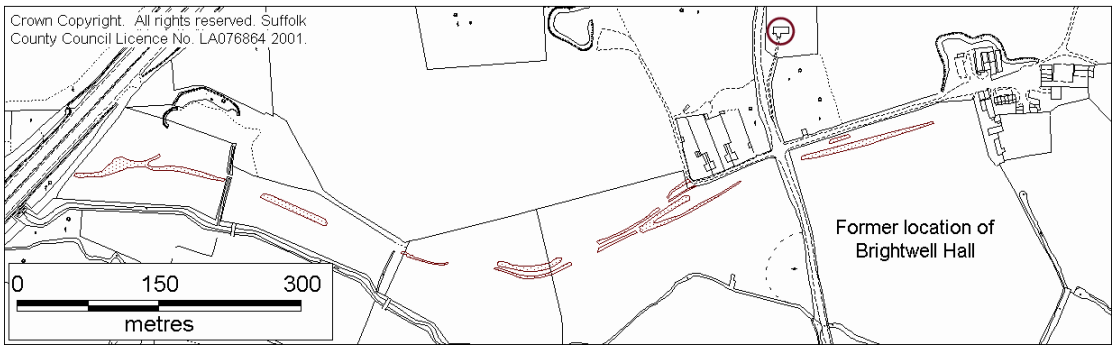


Figure 18A: Earthworks to the west of the modern Brightwell Hall.

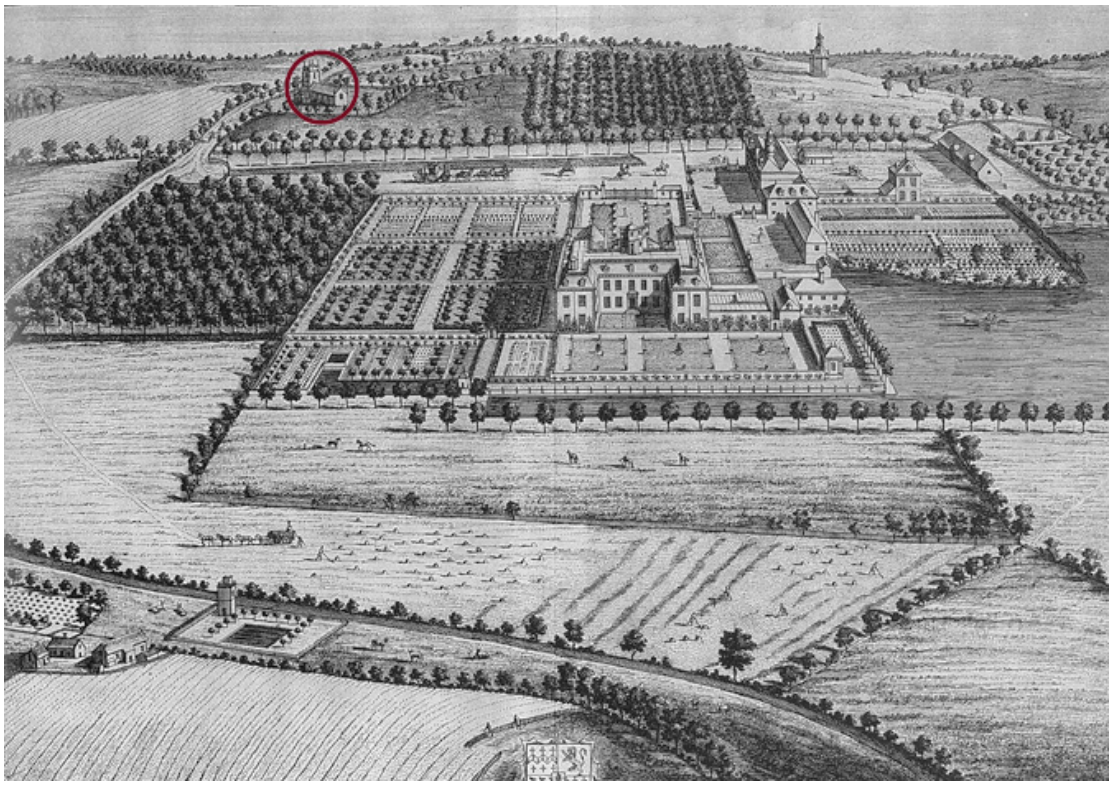


Figure 18B: Kip and Knyff's image of Brightwell Hall in Britannia Illustrata, 1707, taken from Williamson 2000. (The location of St John the Baptist's Church is marked in both images with a red circle).

7.3 Agriculture and Subsistence

Cropmarks

The survey identified a number of possible medieval and post-medieval field boundaries, visible as cropmarks forming over the remains of ditches or grubbed up hedgerows. Later post-medieval field boundaries can often be identified from their regularity and relationship with extant field boundaries, and are often marked on the First Edition Ordnance Survey map. Unless they could be confused with earlier features, such late and easily identifiable boundaries were not transcribed or recorded. However, it is often difficult to differentiate medieval and early post-medieval boundaries from the much earlier boundaries discussed in Sections 6.2 and 6.3 above, and it is probable some have been mis-recorded within the cropmark palimpsest. The area of Bucklesham village illustrates some such difficulties and is discussed in section 7.6.

Earthworks

Curvilinear earthworks in Martlesham parish (MRM 127, TM256463), obscured from view by modern plantations until the 1990s, are possibly the remains of open fields of medieval date (see Figure 19). The banks are located to the northern edge of Martlesham Heath and may be evidence for medieval encroachment onto the common. The orientation of the earthworks also bears a resemblance to that of cropmarks of probable prehistoric date to the east and may be evidence for a relationship between the two groups of features. Survival of prehistoric earthworks on former commons is known from elsewhere, for example the Vale of York (Horne, pers. comms), but as the First and Second Edition Ordnance Survey maps show this area in agricultural use prior to plantation, this may be unlikely.

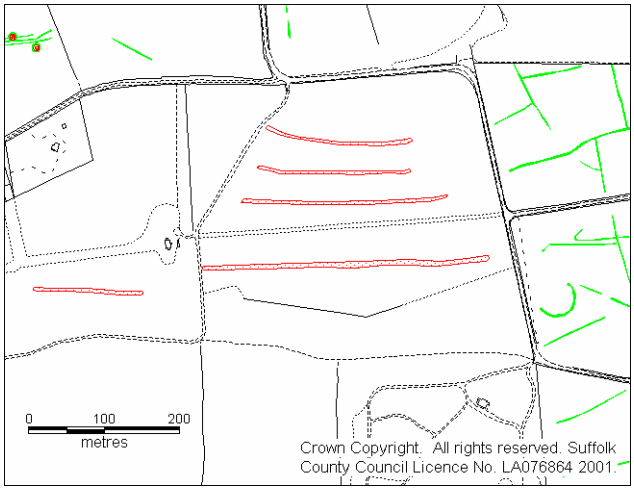


Figure 19: Possible open field earthworks in Martlesham parish.

A significant proportion of the medieval and post-medieval diet and subsistence economy relied upon what Williamson has termed intermediate exploitation; the exploitation of semi-domesticated or semi managed natural resources, such as waterfowl or rabbits (Williamson 1997). In the case of the latter, from the medieval period until the nineteenth century managed rabbit warrens were developed to cultivate this valuable resource, often on common land. Structures or areas of land with names such as Warren House, Warren Heath, or simply 'The Warren' often survive on the modern map. Such an example has been noted in Purdis Farm parish, where the probable remains of warren earthworks can be seen on aerial photographs of the 1940s (PFM 012, TM200425; see Figure 20). Much of this site is now covered by a modern housing estate.

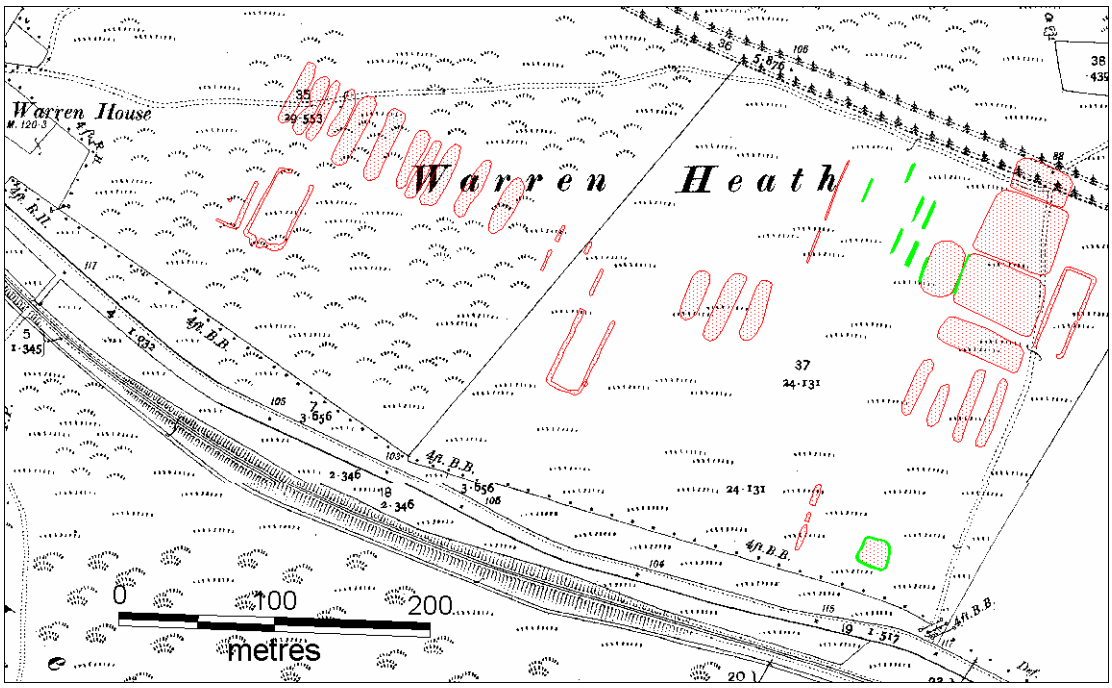


Figure 20: Possible medieval or post-medieval warren earthworks in Purdis Farm parish

7.4 Communications

As stated above, little evidence for medieval or post-medieval routes or roads has been noted during this survey. However, a number of ditched paths or tracks possibly from this period have been noted in Martlesham parish (MRM 063, TM 258451); cropmarks forming over levelled earthwork or compressed earth may reveal a regular system of paths or boundaries across Martlesham Heath (Figure 21A). There is no evidence for these features continuing in use into the modern period, but when viewed over the First Edition Ordnance Survey map they appear to relate to the paths marked on the historic map (Figure 21B).

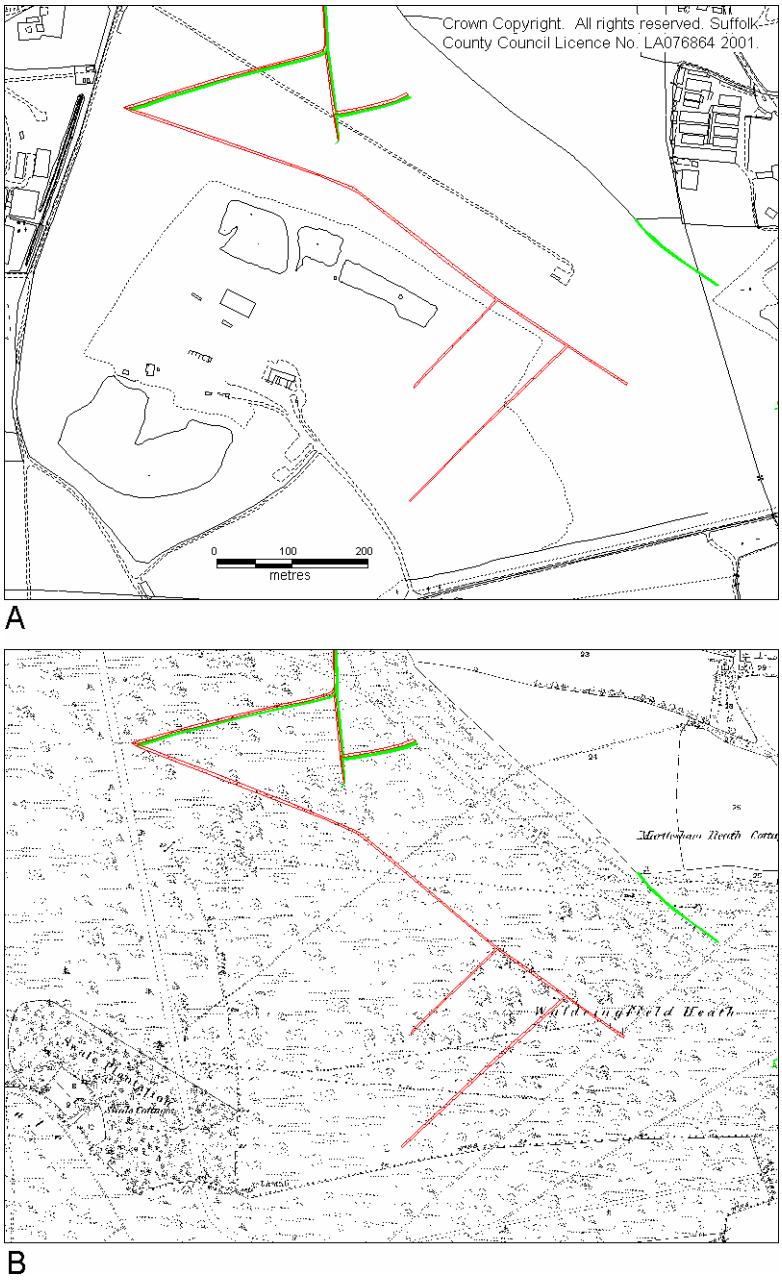


Figure 21: Possible footpaths, tracks or boundaries on Martlesham Heath.

7.5 Military Sites

Two possible post medieval military sites have been recorded. The first (BEG 051,TM ; see Figure 22A) is visible as a cropmark forming over the remains of two ditches or trenches (or possibly one bisected by Queech Wood), up to four metres wide and abutted by regularly spaced projecting circular or irregularly shaped trenches. It does not appear to be in an obviously strategically significant location, but the form of the ditch, although irregular is reminiscent of the acutely angled breastworks and bastions of Seventeenth century

fortifications and fieldworks, such as those visible at the nearby Landguard Fort. An alternative interpretation as garden features, associated with the late Eighteenth century Bealings house just over two hundred metres to the south has been considered, but the size of the ditches and lack of historic map evidence argues against this. These features warrant further investigation.

The second possible military site of this period (RMA 026, TM 200445) may be more recent in date. Also visible as cropmarks, the morphology of the features, visible in Figure 22B, resembles that of the paths discussed in Figure 20A. They may in part, contain elements of a similar network of paths over Rushmere Heath, but the extremely straight sections are located in an area of the heath marked as a 'Drill Ground' on the First Edition Ordnance Survey map (see Figure 22C). These features may therefore have been formed in part by military training drills repeated over and again along the same routes.

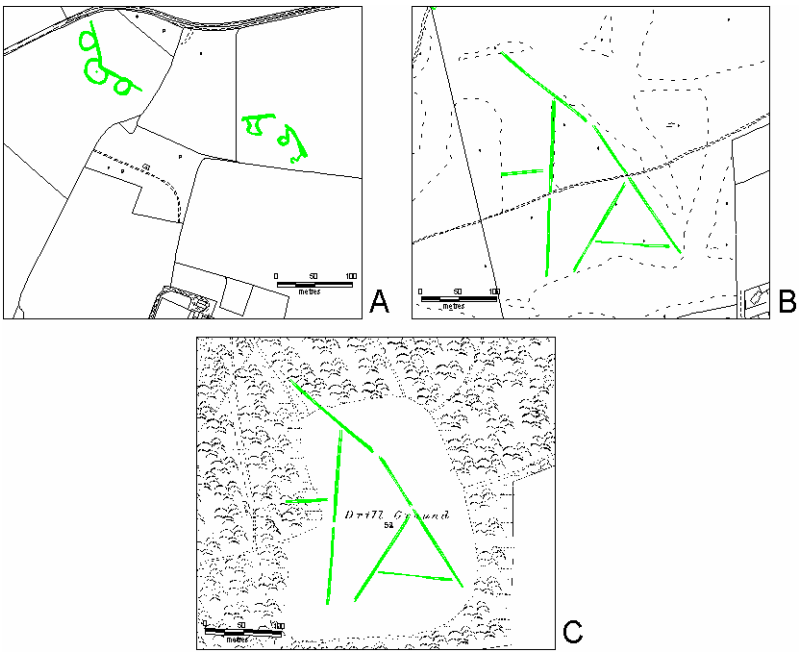


Figure 22: Possible post-medieval military features. A. Cropmarks of possible fieldworks of unknown date; B. Cropmarks of nineteenth century drill ground as plotted from the aerial photographs; C. the possible drill ground features overlain onto the First Edition Ordnance Survey map.

7.6 The medieval in a Multi-period Cropmark Landscapes

The environs of Bucklesham contain multi-period cropmarks that graphically illustrate the difficulties of disentangling complex cropmark palimpsests. The village itself is mentioned in the Domesday Book and possesses an Eleventh century church, which by itself would suggest the village was a thriving settlement by the time of the Norman conquest.

However, the artefactual evidence alone demonstrates evidence for some level of settlement continuity from later prehistory to the present day (Figure 23). In and amongst the surviving, probably originally medieval field system and the obvious cropmark reminders of more recent boundary losses, the cropmark landscape around the village clearly incorporates elements of probable prehistoric or Roman date (c.f. Chapter 6 above). Some of these, such as the ring-ditches and rectilinear enclosures (discussed above) have clearly had little impact on the development of the modern landscape. Others such as the curvilinear boundaries and trackways to the north and east of the village (BUC 069, TM 240424; BUC 075, TM 250417), and the curvilinear enclosure abutted by the rectilinear enclosures (BUC 015, TM 240411), have equally clearly directly influenced the form of the surrounding roads and hedgerows. However, it is when the interpreter begins to consider the remaining cropmark evidence that less obvious relationships must be considered. For example, although suggestive in its form, it is unclear whether the probably prehistoric curvilinear trackway (also recorded as BUC 015) is part of the same system of land organisation which appears to have influenced the line of a number of curvilinear field boundaries to the east (BUC 075). In this instance a programme of future work incorporating geophysical survey and intensive fieldwalking may shed light on a number of these questions.

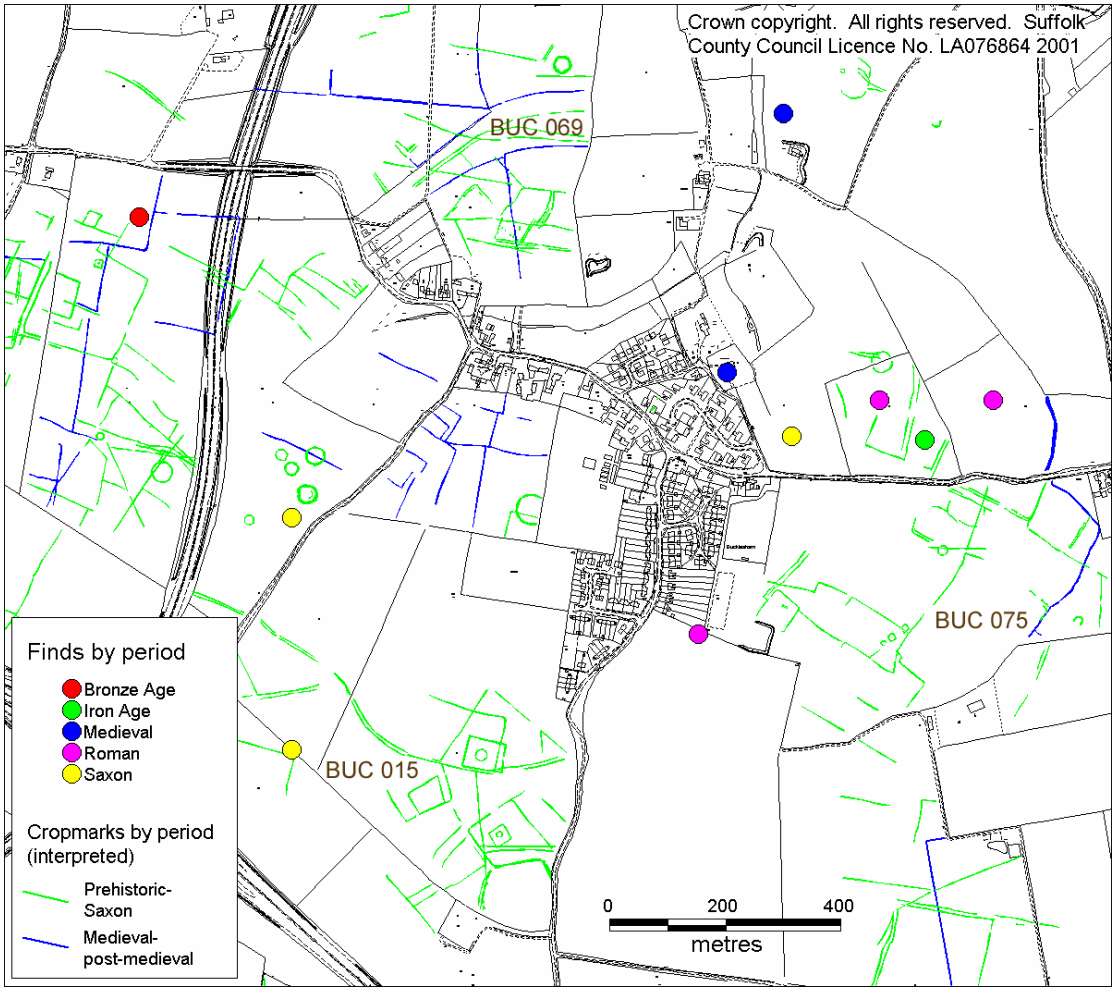


Figure 23: Multi-period cropmarks in the environs of Bucklesham.

8. THE TWENTIETH CENTURY

8.1 Introduction to the modern evidence

The archaeology of the modern period in this area is dominated by Second World War activity, centred on the Airfield of RAF Martlesham. However, First World War earthworks are also in evidence. Figure 25 illustrates the distribution of sites discussed in this chapter.

8.2 The First World War

Practise trenches of typical First World War crenellated or zig-zag plan are visible as both earthworks and cropmarks on Martlesham Heath. Figure 24 illustrates the newly identified sites (A: WLD 055, TM 264447; B: RMA 024, TM 203432; C: PFM 015, TM 211430). It is probable that they were created during military training on the heath, land not suited to agriculture, rather than intended as actual defences.

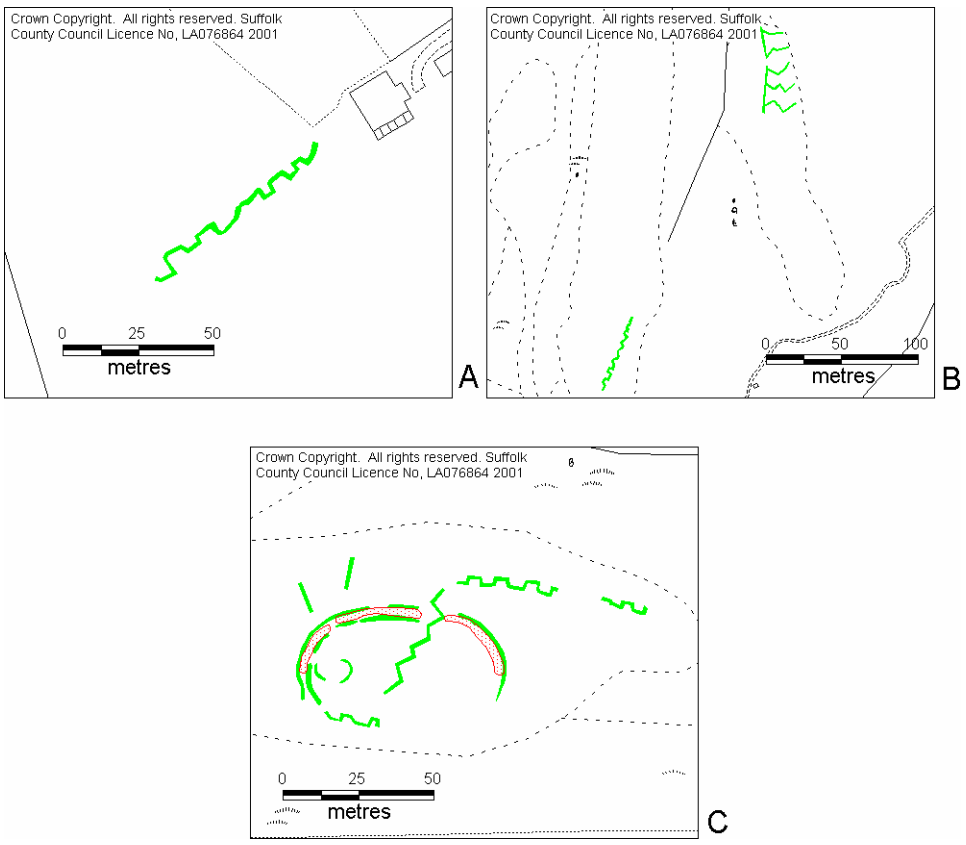


Figure 24: Practice trenches of probable First World War date.

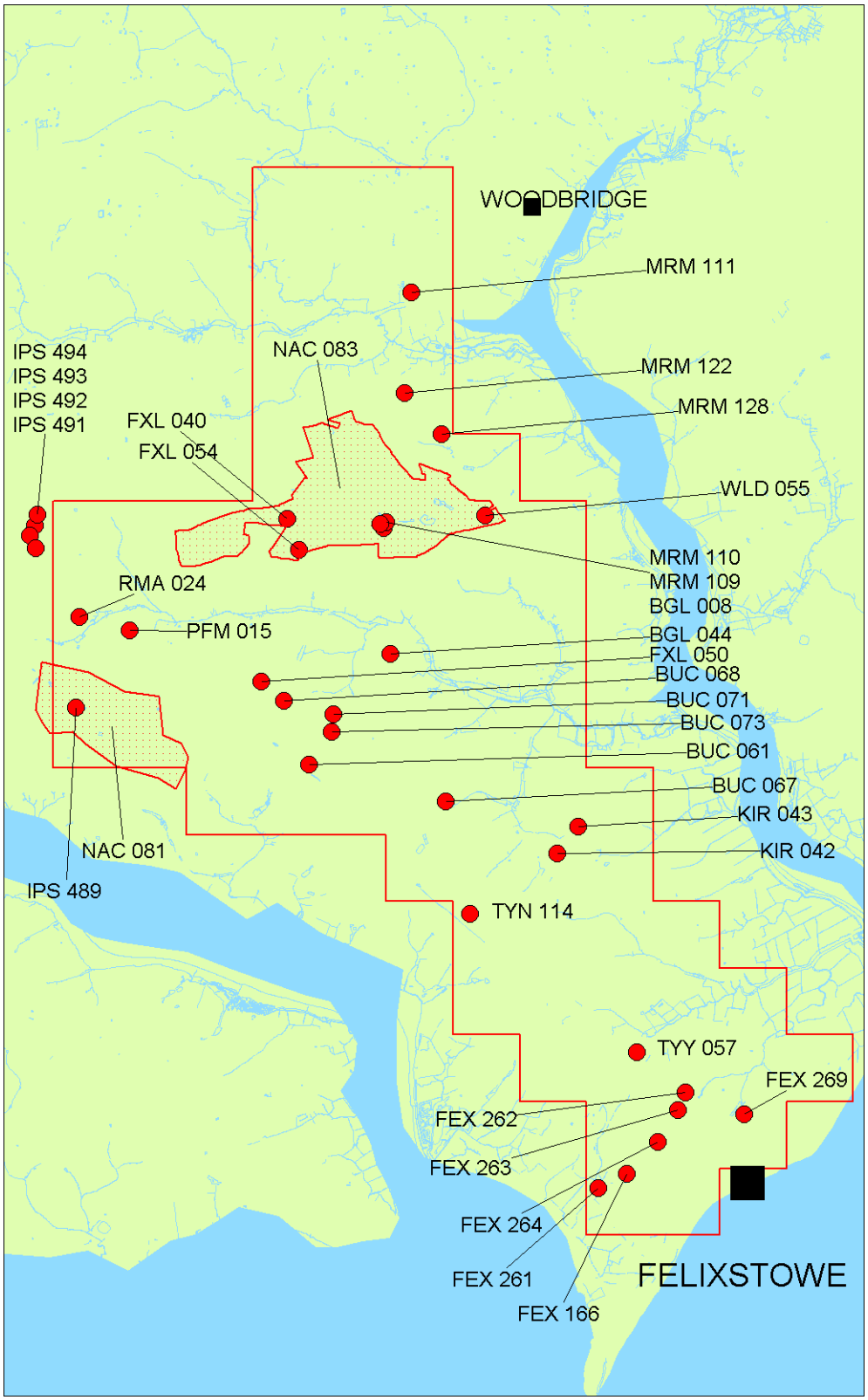


Figure 25: Twentieth century sites discussed in the text.

The Royal Flying Corps (RFC) first established an experimental airbase at Martlesham in January 1917, and it is possible that the trench illustrated in Figure 24A (WLD 055) was created at this time. The function of the oval ditches and earthworks across which the First

World War practise trenches in Figure 24C appear to cut, is unclear. They do not appear to be features of great age and the coincidence of two unrelated and probably recent ditched features in the same location is unlikely; they may therefore both be military fieldworks, but further investigation is recommended.

The RFC airbase became RAF Martlesham, an Aeroplane and Armament Experimental Establishment (A & AEE), following the air forces' change of name in April 1917, and alongside the other A & AEE bases in Suffolk (RAF Orfordness, Bawdsey and Felixstowe; see Hegarty and Newsome 2005; 2006), the base expanded and developed experimental aircraft during the slide towards the Second World War. As at Orfordness, the experimental staff relocated to Boscombe Down, Hampshire, in 1939.

8.3 The Second World War

8.3.1 RAF Martlesham

During the course of the Second World War RAF Martlesham (NAC 081), by now an extensive airfield, was home to both RAF and USAAF squadrons. The extent of the base was transcribed from 1940s aerial photographs, revealing that the base, including anti-invasion defences, fieldworks and early warning systems, covered almost five square kilometres (almost two square miles). However, due to the extent and density of airfield and defensive structures the interior of the base was not mapped in detail during the project.

The exception to this was where the airfield's military activities might have impacted on archaeological remains. For instance, well known Bronze Age barrow cemeteries are located on Martlesham Heath, with a small number of barrows surviving as earthworks, although these larger barrows were not always visible on the 1940s aerial photographs (see Chapter Five). In the area of the surviving barrows, a number of smaller earthworks housing military defences can be seen on the wartime aerial photographs. It is possible that these military emplacements were sited on, or in, previously unrecorded small barrow mounds. For example, the circular earthworks visible in Figure 26A & B (FXL 040 TM235447; FXL 054, TM236442) may have been small barrows excavated to house Light Anti-Aircraft Artillery. A group of similar sized earthworks to the east (BGL 008, MRM 109-MRM 110, centred on TM249446; see Figure 26C) variously house gun pits and concrete structures such as pillboxes. Although the responsibility of the RAF and not the army, airfield defences were largely similar in construction to coastal anti-invasion defences. However, they did occasionally contain defences of unusual design, such as the Pickett-Hamilton Fort (see

Lowry 1995, 123). It is therefore possible that these RAF defences departed from the standard anti-invasion model and exploited the 'earthwork resource' available on the heath, a military reaction seen elsewhere in the country, for example on the Kent coast (Barber pers. comm.). However, most of these military installations were destroyed following the war and the 1940s and 1950s vertical photographs may be the only evidence for their existence. Further research is required into the form of airfield defences and the identification of any existing earlier aerial photographs not seen by the survey, to ascertain whether the earthworks pre-date the wartime defences. Until then, it must be considered possible that these earthworks were modern constructions.

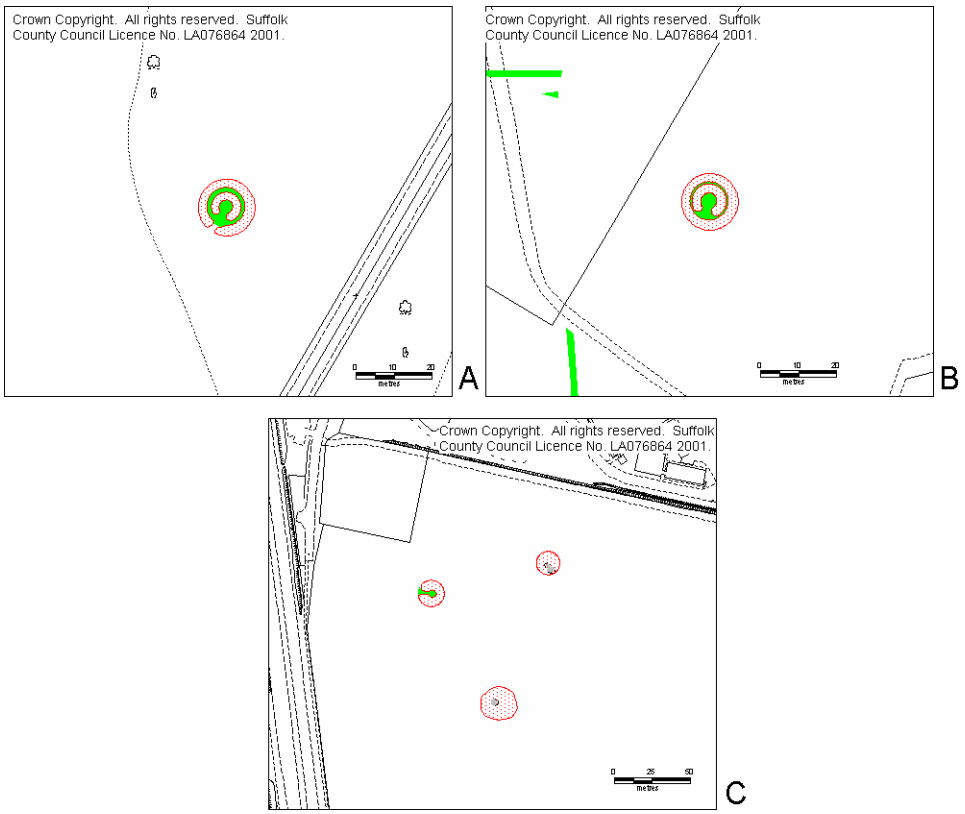


Figure 26: Circular earthworks on the perimeter of RAF Martlesham; small barrows or modern military constructions?

Many of the additional military features transcribed and recorded are similar to those noted on the coast and fulfilled comparable Anti-Aircraft, Anti-Invasion, logistical or Civil Defence roles. The site types and their development are discussed in more detail elsewhere (Hegarty and Newsome 2005; Lowry 1995; Dobinson 1996:2001) and will not be covered here, but the survey's findings are summarised below.

8.3.2 Anti-Aircraft Defences

The survey completed the transcription of anti-aircraft obstructions to the south of Ipswich, begun during the Suffolk Coastal NMP project (NAC 081, TM 208416). The obstructions, also called 'anti-glider' ditches, covered an area of approximately over two square kilometres. A variation on this theme, consisting of poles or similar structures erected on a grid pattern was also recorded, immediately to the east of the ditches described above, and covering a field to the west of Bucklesham (BUC 068, TM 235420).

Three probable Heavy Anti-aircraft Artillery (HAA) batteries were recorded in the survey area (IPS 489, TM 202418; KIR 042, TM 275397; MRM 111, TM 253481). IPS 489 was constructed within the area of the anti-glider ditches discussed above, a practice also seen at Orfordness, presumably to minimise the disruption of agricultural land and land purchase costs (Hegarty and Newsome 2005). The MRM 111 HAA complex also contained a range of earthworks and structures, including possible ammunition stores, air-raid shelters and was associated with a swastika shaped Command Centre about two hundred and fifty metres to the south-east (MRM 112, TM 253478). A possible Light Anti-aircraft Artillery (LAA) Battery was also recorded in Martlesham parish (MRM 122).

Before the development of gun-laying radar, HAA batteries required searchlights. As well as illuminating enemy aircraft as targets, searchlights also forced enemy bombers to fly at greater altitude, thereby reducing accuracy of raids. A searchlight battery and associated camp to the north of Kirton Village (KIR 043, 278401) was probably constructed to perform these functions for the HAA battery to the west of the village.

8.3.4 Early Warning

A radar station was visible within the area of RAF Martlesham, on the site of the existing WT station on Foxhall Heath (TM 222442), but as stated above, was not transcribed. A later Ground Control Intercept (GCI) radar station was recorded in Trimley St Martin parish (TYN 114, TM62388), immediately to the south of the location of its probable predecessor, a temporary 'Intermediate Mobile' GCI station. The VHF receivers of a probably temporary radar base have also been transcribed in Bucklesham (BUC 071, TM 242418); a camp approximately one kilometre to the north-west may be associated with this site (FXL 050, TM 231422; see section 8.3.7 below).

8.3.5 Anti-Invasion Defences

Second World War anti-invasion features were less evident in this survey than on the coast, the greatest visible concentration found on the outskirts of urban areas and towards the coast. This is unsurprising as the survey area is located inland of the vulnerable coastal area where anti-invasion defences were concentrated (Hegarty and Newsome 2005; Hegarty and Newsome forthcoming 2006). Nonetheless, five previously unrecorded pillboxes were transcribed. One possible pillbox to the north of Felixstowe (FEX 269, TM 303358) appears to be defended by a barbed wire entanglement but the remaining four (IPS 491-IPS 494) are typical isolated examples, located on the edge of Rushmere Heath, probably part of an early wartime strategy to defend Ipswich from potential enemy forces approaching from the east.

Anti-Tank Ditches are the most substantial anti-invasion defences mapped, located to the west of Felixstowe. The length of a previously recorded ditch has been extended by roughly two kilometres (FEX 166, TM 285349), whilst a second long ditch and two shorter obstructions have been newly identified (TYY 057, TM 287367; FEX 261, TM 281347; FEX 262, TM294361).

8.3.6 Civil defence

Five air-raid shelters were newly recorded, varying in type and form but all within the urban area of Felixstowe. Conforming to the pattern previously identified on the coast (Hegarty and Newsome 2005), they range in scale from two V-shaped domestic shelters, in the rear gardens of properties on Gulpher Road (FEX 263, TM293358; Figure 27A), to numerous and substantial covered shelters in the grounds of Orwell School (FEX 264, TM290 353; Figure 27B).

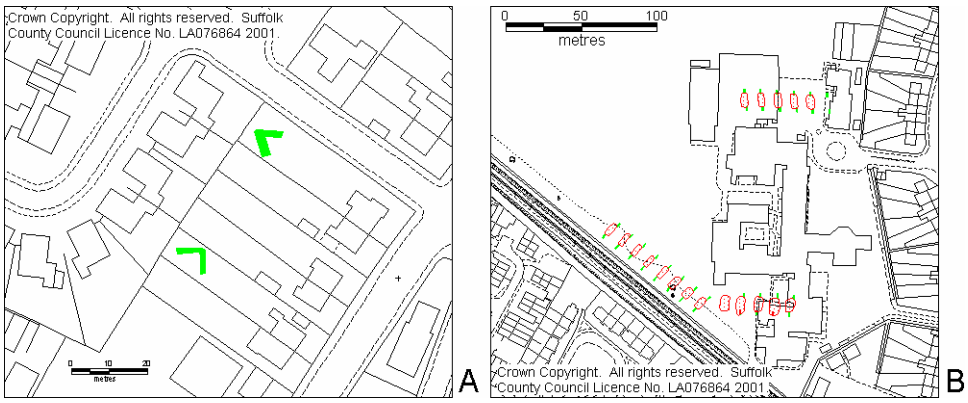


Figure 27: A variety of air-raid shelters were recorded in and around Felixstowe.

A paired complex of bombing decoys was constructed just over two kilometres to the east of the 'Anti-Glider' ditches described above. This consisted of a 'QL' decoy to the south of Bucklesham, (BUC 073, TM 241415) a type of decoy that employed electrical lighting to draw enemy bombers away from their intended target, and an SF, or 'Starfish' decoy, which employed fires to simulate a burning target, which was built about five hundred metres to the south (BUC 061, TM238410).

8.3.7 Military Camps and Training Activity

The location of five previously unrecorded temporary military camps have also been added to the SMR (MRM 128, TM 258460; BGL 044, TM 250427; FXL 050, TM 231422; BUC 067, TM 258404; NAC 097, TM 229409). With the exception of BUC 067, the function of the camps remains unclear and further research is required. The date of photography, number of vehicles visible and variety of tents in use at BUC 067 would suggest a function as a transit camp, a location where troops gathered in preparation for the D-day landings. It is possible that the relatively permanent camp FXL 050 provided accommodation for the radar base discussed above (see section 8.3.4), but it appears too substantial for such a fleeting use; indeed the structures within the camp appear to remain in use for some time after the war.

Evidence for Second World War military training activity is limited in this area. The exceptions include a dense pattern of impact craters contained within the area of the Anti-Glider ditches described above (see section 8.3.2), probably the result of some form of artillery exercise, and practice trenches on Bixley Heath (RMA 023, TM 200430).

9. CONCLUSIONS AND RECOMMENDATIONS

The first aerial survey component of *The Aggregate Landscape of Suffolk: The Archaeological Resource* has proved valuable in providing an up to date and wide ranging overview of the historic landscape of the Felixstowe peninsula. In filling-in the 'blanks' between the neighbouring areas of previous aerial survey, the survey has placed the visible sites into their widest possible context and enhanced the quality of data available to Suffolk County Council's sites and monuments record for this area, thereby ensuring that the archaeological potential of this busy aggregates extraction area will be given the greatest possible consideration in future aggregates industry mitigation decisions.

The results for the area of the Felixstowe peninsula have been seen to follow many of the general patterns previously identified along the coast (Hegarty and Newsome, 2005). The most noticeable difference is in the significantly lower proportion of modern military anti-invasion features recorded, due largely to the survey area being located immediately behind the vulnerable 'coastal crust'.

Beyond the surviving heathland, intensive post-war arable agriculture has ensured that very few sites were visible as earthworks. Nonetheless, the value of the extensive vertical stereo photograph coverage must be emphasised, following the identification of several possible Bronze Age barrows as very slight earthworks.

However, the survey was most effective in enhancing the record for cropmark sites. The vast majority of both newly identified and amended records were for cropmark sites, most relating to probable prehistoric features. If proven to be of Neolithic date the possible Kirton cursus may prove to be both the earliest and most significant individual feature to be identified, of regional and national importance.

The most valuable contribution of the survey, however, is probably in revealing the scale of the later prehistoric cropmark landscape. Although probably organised or planned on a small scale, constrained by the local topography, the absence of any extensive co-axial field systems does not support any suggestion of wider planned landscape. However, ditched tracks or roads, now known to be very extensive, probably provided effective communication infrastructure between the settlements and their associated field systems.

The lack of evidence from the Anglo-Saxon and medieval periods is also in keeping with the pattern on the coast. This is probably due to a number of factors. Firstly, it is difficult to identify unenclosed settlements from the early medieval period on aerial photographs.

Secondly, a relatively high level of continuity in settlement location, if not population, since the late Anglo-Saxon period has been proposed for this area (see Hegarty and Newsome, pp72-75 for a summary). Nonetheless, it is likely that the cropmark palimpsest contains unrecognised early medieval elements amongst the prehistoric field boundaries and settlements.

Despite the relatively low level of anti-invasion defences into this area, the final theme to emerge was the impact of a twentieth century military presence. This was significant, if more localised than on the coast, contained largely within the area of RAF Martlesham.

The presence of RAF Martlesham was to prove important to the survey, even following the decision not to transcribe the military structures within its boundary. The Military Aerodrome Traffic Zone surrounding not only RAF Martlesham but also nearby Bentwaters and Woodbridge, has undoubtedly limited specialist aerial reconnaissance for archaeological survey. This was most apparent in the area between RAF Martlesham and the northern extent of the survey area; despite the blanket coverage of vertical photography taken over many years, fewer than twenty five sites were either newly recorded or amended over almost 14 square kilometres.

In the light of these conclusions the following general and specific recommendations are made:

- The possibly Neolithic Kirton cursus and Bucklesham mortuary enclosure should be targeted by field walking survey, geophysical survey and excavation, with the intention of providing dating evidence and in the case of the cursus, an indication of extent.
- The date of possible Bronze Age field boundaries should be identified; if proven to be of Bronze Age date their relationship with surrounding cropmarks should be investigated by geophysical survey and targeted excavation.
- The origin of the previously unknown, potentially Bronze Age Barrow earthworks on Martlesham Heath should be investigated using documentary, aerial and field survey techniques.
- The form and date of settlements located on trackways should be investigated by field walking, geophysical survey and targeted excavation. Our understanding of the relationships between these settlements would be greatly enhanced by the concentration of fieldwork, geophysical survey and where possible excavation, upon the currently poorly understood areas where these roads or trackways may meet.
- The extent of settlement continuity in the environs Bucklesham village should be the subject of extensive fieldwalking, documentary research and targeted intensive survey or excavation.
- Similarly, the park features at Beacon Hill House, Martlesham, undated earthwork possible field boundaries also in Martlesham and potentially post-medieval military

fieldworks in Great Bealings parish would all benefit from documentary investigation and field assessment to determine date and function.

- Identifying the function of the many modern military camps discovered in the survey area would be an ideal subject for local history research and would provide an origin for many structures still standing.
- Although it's location on a golf course makes the excavation of the enigmatic concentric ditched feature PFM 015 unlikely, its investigation by other means is recommended.

Nonetheless, the primary recommendation of this report is for future programmes of aerial reconnaissance to concentrate on improving the specialist oblique photographic resource of the area to the north of Martlesham Heath.

10. BIBLIOGRAPHY

Albone, J., Massey, S. and Tremlett,S. 2004 The National Mapping Programme in Norfolk, 2003-4. *Norfolk Archaeology* Vol XLIV part III. 548-555

Ashwin, T. 1996 Neolithic and Bronze Age Norfolk. *Proceedings of the Prehistoric Society*, **62**, 41-62.

Brennand, M., Clare, H. and Massey, S. 2002 Another Causewayed Enclosure from Norfolk? *PAST* **40**, 7-8

Buckley, D.G., Major, H., and Milton, B. 1988 Excavation of a Possible Neolithic Long Barrow or Mortuary Enclosure at Rivenhall, Essex, 1986. *Proceedings of the Prehistoric Society*, **54**, 77-91.

Crummy, P. 1980 1980 Cropmarks at Gosbecks, Colchester. *Aerial Archaeology: The journal for air photography and archaeology* **4**, 77-82

Dobinson, C. 1996 Anti-Invasion Defences of WWII. *Twentieth Century Fortifications in England **II**.* York: Council for British Archaeology

Dobinson, C. 2001 *AA Command: Britain's Anti-aircraft defences of World War II.* London:Methuen

Downe, R., King, A. & Soffe, G. 1978 The Roman Temple on Hayling Island. *Current Archaeology* **6**, 83-7

Dyer, C. 1996 The Neolithic Monument Complex at Fornham All Saints, Suffolk: Air Photographic Transcription and Analysis. Unpublished RCHME survey report.

Dymond, D. 1999 Agriculture in 1854, *in* Dymond, D. and Martin, E. (eds.) *An Historical Atlas of Suffolk,* 3rd edn. Ipswich: Suffolk County Council & Suffolk Institute of Archaeology and History, 136

Harding, J. and Barclay, A. 1999 An Introduction to the cursus monuments of Neolithic Britain and Ireland *in* Barclay, A. and Harding, J. *Pathways and Ceremonies: the cursus monuments of Britain and Ireland.* Exeter: Oxbow.

Hegarty, C. and Newsome, S. 2005 *The Archaeology of the Suffolk Coast and Inter-tidal Zone.* Unpublished report for the National Mapping Programme.

Hegarty, C. and Newsome, S. forthcoming 2006 *Suffolk's Defended Shore: coastal fortifications from the air.* English Heritage

Hill, J.D. 1999 Settlement, Landscape and Regionality: Norfolk and Suffolk in the Pre-Roman Iron Age of Britain and Beyond *in* Davies, J. and Williamson, T. (eds.) *Land of the Iceni: the Iron Age in northern East Anglia*, Norwich: Centre of East Anglian Studies.

Jones,D. 1998 Long barrows and Neolithic elongated enclosures in Lincolnshire. *Proceedings of the Prehistoric Society*, **64**, 83-114.

Lowry, B. 1995 *20th Century Defences in Britain: An Introductory Guide.* Council for British Archaeology.

Martin, E. 1999 Suffolk in the Iron Age, *in* Davies, J. and Williamson, T. (eds.) *Land of the Iceni: the Iron Age in northern East Anglia*, Norwich: Centre of East Anglian Studies.

Oswald, A., Dyer, C. and Barber, M. 2001 *The Creation of Monuments: Neolithic Causewayed Enclosures in the British Isles*. Swindon: English Heritage

Rackham, O. 1998 *The History of the Countryside.* London: Phoenix Giant

Rackham, O. 1999 Medieval Woods, *in* Dymond, D. and Martin, E. (eds.) *An Historical Atlas of Suffolk,* 3rd edn. Ipswich: Suffolk County Council & Suffolk Institute of Archaeology and History, 64

Williamson, T. 1998 The 'Scole Dickleburgh field system revisited'. *Landscape History* **20**, 19-28

Williamson, T. 2000 *Suffolk's Parks and Gardens: Designed Landscapes from the Tudors to the Victorians.* Macclesfield: Windgather Press.

Williamson, T. 1997 Fish, fur and feather: Man and nature in the post-medieval landscape *in* Barker, K. and Darvill, T. *Making English Landscapes,*

Wilson, D.R. 2000 Air *Photo Interpretation for Archaeologists*. 2nd edn. Stroud: Tempus

Winton, H. 1998 The Cropmark Evidence for Prehistoric and Roman Settlement in West Lincolnshire *in* Bewley, Robert H. (ed) *Lincolnshire's Archaeology from the Air.* Gainsborough: The Society for Lincolnshire History and Archaeology

11. APPENDIX 1 – NMP METHODOLOGY

Archaeological scope of the survey

All archaeological features have been recorded, both plough-levelled and upstanding remains, with a potential date range from the Neolithic period to the twentieth century, including industrial and military features. Sites appearing on the Ordnance Survey base map which have not been photographed, or which are completely obscured by vegetation, have not been recorded, but have been discussed where they may relate to visible archaeological remains.

Plough-levelled features and earthworks

All cropmarks and soilmarks which represent buried cut features (i.e. ditches and pits), earthworks or stonework of archaeological origin have been recorded. All earthwork sites visible on aerial photographs have been recorded, whether or not they have been previously surveyed (including those marked on the Ordnance Survey maps), and whether or not they are still extant on the most recent photography. The accompanying Sites and Monument Record database record will specify which elements of any particular group of earthworks survive or have been levelled and/or destroyed.

Ridge and furrow and water meadows

Areas of ridge and furrow have been recorded using a standard convention to indicate the extent and direction of the furrows. Areas of extensive water meadows thought to pre-date 1945 have also been transcribed and recorded.

Buildings

Foundations of buildings which appear as earthworks or exposed stonework have been recorded. Cropmarks and soilmarks representing earthworks or buried foundations have also been recorded. Standing buildings which have been destroyed have been recorded when there is no other adequate record.

Industrial and 20th-century military archaeology

Areas of industrial archaeology have been recorded using the appropriate conventions where they can be recognised as pre-dating 1945. Extraction sites have been mapped if their inclusion was thought to enhance the record.

20th-century military features have been recorded to an appropriate level of detail. The major buildings and structures within military complexes, as well as isolated military structures, e.g.

buildings associated with searchlight batteries, pillboxes or anti-invasion obstructions have been mapped.

Field boundaries and geological marks

Removed field boundaries have not been routinely recorded unless they are extensive and could be confused with the remains of earlier field systems or are not recorded on historic Ordnance Survey maps, in which case their presence and extent has been noted in a monument record.

Geological features visible on aerial photographs have been plotted only if their presence helps to define the limits of an archaeological site. If the marks could be confused with archaeology then they may be noted in the SMR database monument record.

Sources

Aerial Photographs

Oblique and vertical photographs have been consulted where available.

1. National Monuments Record (NMR) vertical and oblique collections:

NMR Enquiry and Research Services
English Heritage
National Monuments Record
Kemble Drive
Swindon
SN2 2GZ
01793 414700

2. Unit for Landscape Modelling (formerly Cambridge University Committee for Air Photography (CUCAP) vertical and oblique collections:

University of Cambridge
Unit for Landscape Modelling
Sir William Hardy Building
Tennis Court Road
Cambridge CB2 1QB
01223 764377

3. Suffolk County Council Sites and Monuments Record (SMR) oblique collection:

Suffolk County Council Archaeological Service
Shire Hall
Bury St. Edmunds
IP33 2AR
01284 352445

Documentary sources

1. Suffolk Sites and Monuments Record

The relevant Monument and Event records from the SMR have been used as an aid to interpretation.

2. National Monuments Record (NMR)

The relevant Monument and Event (including Excavation Index and maritime records) records from AMIE have also been used as an aid to interpretation.

3. Historic maps.

These included Ordnance Survey first and second edition 25" maps from the late 19th and early 20th centuries. The 1955/6 edition Ordnance Survey Archaeology Division 1:10,560 field sheets (the precursors to the current NMR record maps) have also been consulted and have proved valuable in identifying removed field boundaries and structures.

4. Source material for modern military sites.

These sources included the results of two recent major projects, the Defence of Britain Project, administered by the Council for British Archaeology (CBA), and the *Twentieth century fortifications in England* report series by Colin Dobinson, commissioned by English Heritage from the CBA. The *Twentieth century fortifications in England* report series is unpublished but available for research at the NMR library.

Council for British Archaeology
Bowes Morrell House
111 Walmgate
York
YO1 9WA
01904 671417 http://www.britarch.ac.uk/projects/dob/index.html

Methodology

Digital Transcription

Rectification of photographs

The photographs were scanned and rectified using the AERIAL5 Photograph Rectification programme designed by John Haigh at the University of Bradford. Control information taken from digital copies of Ordnance Survey 1:2500 scale maps for terrestrial areas will be within a level of accuracy of +/- 3m. Where necessary, digital terrain models were created from the Ordnance Survey 5m-interval contours to compensate for height distortion across the control points.

The archaeological features on the rectified images were digitised in MapInfo GIS using the appropriate NMP conventions (see Appendix 2). The control points and mapped detail are accurate to the base map within 2m. Archaeological features are depicted according to the form of remains e.g. banks, ditches, stonework etc. The features transcribed from the photographs should be within 5m of true ground position.

Database Records

1. Sites and Monuments Record

Monument records have been created for each site mapped in a copy of the Suffolk County Council SMR, using the ExeGesIS HBSMR software. Each record is linked by a unique identifier reference number to a MapInfo monument polygon, defining the geographical extent of the record. The main elements of the monument record comprise location, indexed interpretation, textual description and main sources, including the aerial photographs which best illustrate the site.

Storage of data and archiving

The graphical record consists of the digital files created in MapInfo. A paper copy of each 1:10,000 sheet will be produced for the NMR archive. All other materials selected for archiving will be archived according to English Heritage guidelines.

The copyright for all transcriptions, digital files and accompanying records (paper and digital) is jointly held by English Heritage and Suffolk County Council.

Access to data

All NMP project data will be integrated into the main Suffolk County Council SMR database held in Bury St Edmunds, and into the NMR database (AMIE) held at the National Monuments Record in Swindon, and will therefore be available for public access.

Project statistics

During the project 204 new records have been added to the SMR. 154 existing records have been amended.

The number of new records can be broken down into broad period ranges as follows:

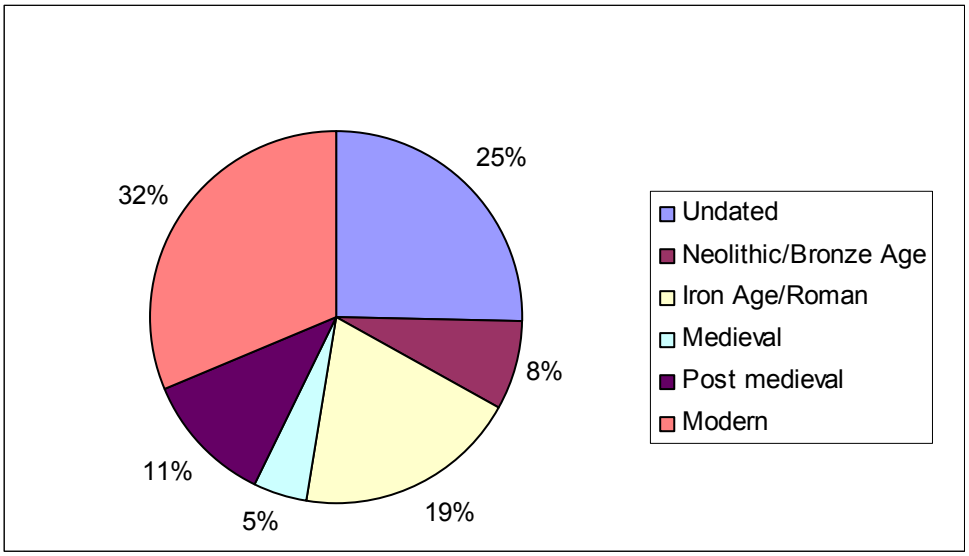


Table 1: Percentage of new records by period. It must be noted that many features have interpreted dates that span more than one period, and these figures must therefore be seen only as indicative of general patterns.

If you would like this document in a different format, please contact our Customer Services department:
Telephone: 0870 333 1181
Fax: 01793 414926
Textphone: 01793 414878
E-mail: customers@english-heritage.org.uk