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Results of NMP Air Photo Analysis in the Central Hampshire Chalk Downs

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Mapping Project

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The project was carried out using aerial photographs loaned by the English Heritage Archive. In addition digital photography was provided by Hampshire County Council.

The views and recommendations expressed in this report are those of Historic Environment Projects and are presented in good faith on the basis of professional judgement and on information currently available.

Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

Cover illustration

Iron Age hilltop enclosure with associated field system and later post medieval beacon on Mount Down, Hursley. ALK 7418/77 21st Jun 1924. Reproduced by permission of English Heritage.

Hampshire Downland Mapping Project
Results of NMP Mapping

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Abbreviations

AHBR	Archaeology and Historic Building Record
AMIE	English Heritage Archives and Monuments in England Database (part of the NRHE)
CC	Cornwall Council
CUCAP	Cambridge University Committee for Aerial Photography
EH	English Heritage
EHA	English Heritage Archive
GIS	Geographical Information System
HBSMR	Historic Buildings and Site and Monuments Record
HCC	Hampshire County Council
HE	Historic Environment, Cornwall Council
HEEP	Historic Environment Enabling Programme
HER	Historic Environment Record
HLC	Historic Landscape Character
NHPCP	Heritage Protection Commissions Programme
NMP	National Mapping Programme
NMR	National Monument Record
NRHE	National Record for the Historic Environment
OS	Ordnance Survey
PGA	Pan Government Agreement
RAF	Royal Air Force
RCHME	Royal Commission on the Historical Monuments of England
UID	Unique Project Identifier

1 Summary

This report outlines the results of an archaeological survey involving the systematic interpretation, mapping and recording of archaeological sites from aerial photographs across 403 square kilometres of chalk downland in central Hampshire. The analytical aerial survey was carried out using English Heritage's National Mapping Programme (NMP) methodology. Historic Environment, Cornwall Council (HE) carried out the project between September 2010 and April 2013. The project was funded by English Heritage (EH) through the Historic Environment Enabling Programme (HEEP) now the National Heritage Protection Commissions Programme (NHPCP).

The primary aims of the project were to define, characterise and analyse the historic environment, of the Hampshire Downland and thereby provide the appropriate tools to facilitate strategic planning decisions and the management and preservation of archaeological sites and historic landscapes within the project area. The data resulting from the project will also assist future formulation of research objectives and strategies as well as informing the presentation of, and increasing public awareness of, the rich archaeological resource and historic landscapes. The project achieved these aims by providing significant enhancement to existing baseline data through the mapping, interpretation and recording of 3096 archaeological sites of which 2103 were new sites, previously unrecorded.

New sites provisionally allocated a Neolithic date included nine potential long barrows and 'short' long barrows, one mortuary enclosure and two pit circles.

During the mapping 163 new Bronze Age barrow sites were identified confirming that these funerary monuments extended right across the downlands. Whilst few settlement sites and field systems were interpreted as Bronze Age, a number of enclosures and roundhouses were mapped which might be evidence of Bronze Age settlement or at least have Bronze Age antecedents.

The greatest numbers of sites recorded were dated to the later prehistoric and Roman periods. 974 sites were assigned an Iron Age, prehistoric/Roman or Roman date; of which 49% were new to the record. Types of new sites attributed to these periods included banjo enclosures, extensive field systems as well as three Roman buildings and a possible Roman temple or shrine.

The early medieval period is poorly understood in Hampshire; however one important new site was attributed to this period. An inhumation cemetery of at least 40 graves was identified immediately to the south of Tidbury Ring and considered likely to be of Saxon origin.

Sites relating to the later medieval period were sparse with only 39 identified during the mapping; however, of these, 62% were previously unrecorded. All new sites were agricultural features such as field boundaries, field systems, cultivation marks and trackways.

The second greatest numbers of sites recorded during the project were post medieval with 697 sites attributed to this period. This is a period that has, up until fairly recently, been overlooked by archaeological survey and field investigation and therefore 664 (95%) of sites were new to the record. The current project is perhaps one of the first to systematically record post medieval sites.

The systematic recording of military sites, particularly using the RAF vertical photographs taken during and soon after the war, has proved highly informative with many significant sites, particularly those associated with the use of the chalk downs for military training, being recorded for the first time.

This report describes the extent of the project area; the methodology used and gives an illustrative overview of the results of the aerial survey on a period by period basis.

2 Background to the project

2.1 Circumstances of and reasons for the project

The Hampshire Downs extend across central parts of the county and are part of the broad belt of chalk running through southern England, linking Salisbury Plain in the west with the South Downs in the east. The downs form a largely open landscape characterised by large fields associated with intensive arable production.

The Hampshire downland has a remarkably rich archaeological resource, much of which has been levelled by repeated ploughing. Intensive arable cultivation means that there is a continuing threat to the extensive below-ground archaeological remains.

There has been a long history of aerial reconnaissance over the downs since Crawfords pioneering work of the 1920's (Crawford 1923 and 1928).

Some archaeological transcription from aerial photographs has been carried out by staff at Hampshire County Council (HCC) over a number of years up to 1995. The transcriptions were originally made in ink and have since been scanned as raster data and subsequently automatically vectorised. The resulting plots form the cropmark layer within the Hampshire GIS and show dense patterns of features and many complex archaeological sites. The GIS shapefile contains no attached attributes and no records were created for many of the sites plotted in the HCC Archaeology and Historic Building Record database (AHBR). Whilst giving a flavour of the archaeological features within the area, these transcriptions were not produced to NMP standards and only cropmark sites were plotted.

The HCC mapping has been supplemented by mapping of prehistoric sites (Neolithic to Romano-British) to the west of the river Test as part of the Danebury Environs Project (Palmer 1984). In addition, mapping has been carried out over a very wide area of Hampshire Downland, extending from west of the Test Valley to Alton, and as far south as Bishop's Waltham by Richard Massey (Massey 2006). Massey's transcription and survey work was only concerned with the transcription and characterisation of Iron Age/Romano British settlement forms and features, and no earlier prehistoric monuments or landscape features were mapped or interpreted.

Bearing in mind the potential richness of the archaeological resource of the Hampshire downs, there was a need for this work to be brought up to NMP standards and updated in the light of recent photography.

Between early 2007 and May 2010, Cornwall Council's NMP team completed a project in the southern part of the downs (The Hampshire South Downs Mapping Project; English Heritage project no. 5174). That project added substantial amounts of new information: 83% of the 2,230 sites mapped and recorded in the Hampshire South Downs were previously unknown. The Cornwall NMP team had also previously mapped parts of Hampshire (Young 2008, Young 2011, Trevarthen 2010) and had established effective working relationships and data exchange mechanisms with Hampshire County Council Environment Department (HCC).

This Project was commissioned by English Heritage's Historic Environment Enabling Programme (HEEP) following the submission of a proposal towards the end of 2009 and a project design in July 2010.

2.2 Overview of NMP methodology

The NMP was initiated by the Royal Commission on the Historical Monuments of England (RCHME) in 1992. The aim of the NMP is 'to enhance our understanding about past human settlement, by providing information and syntheses for all archaeological sites and landscapes (visible on aerial photographs) from the Neolithic period to the twentieth century' (Bewley 2001, 78). To achieve this aim a methodology was developed from previous selective approaches to mapping from aerial photographs (e.g. Benson and Miles 1974). The guiding principle of the methodology is 'to map, describe and classify all archaeological sites recorded by aerial photography in England to a consistent standard' (English Heritage 2010).

The NMP applies a systematic methodology to the interpretation and mapping of archaeological features visible on aerial photographs (*ibid*). This includes not only recording sites visible as cropmarks and earthworks but also structures, such as those relating to twentieth century military activities. This comprehensive synthesis of the archaeological information available on aerial photographs is intended to assist research, planning and protection of the historic environment.

The Hampshire Downland Mapping Project followed standard NMP methodology and involved the systematic examination of all readily available aerial photographs from the English Heritage Archive (EHA) and Hampshire County Council (HCC). The important national collection of aerial photographs held by the University of Cambridge (CUCAP) was not available during the mapping stage and therefore not consulted. In addition online digital sources such as Google Earth and Bing were consulted. Archaeological features were digitally transcribed using the AERIAL (Version 5.29) rectification programme and AutoCAD Version Map3D 2012. Each archaeological site was recorded in the Cornwall Council's NMP Sites and Monuments Record (HBSMR) database and supplied to EH and HCC in .pdf and .rft formats.

Full details of the project methodology are contained in Appendix 1.

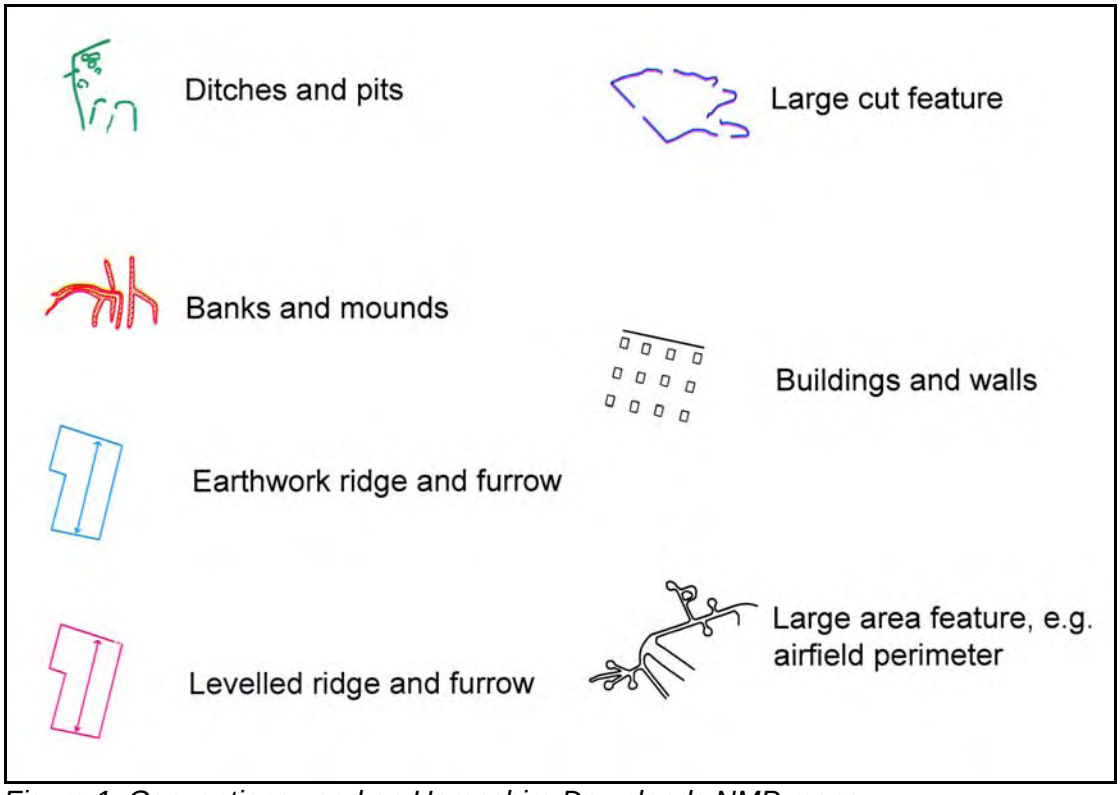

Figure 1. Conventions used on Hampshire Downlands NMP maps.

3 Aims and objectives

The overarching aim of the National Mapping Programme is:

'to enhance our understanding about past human settlement, by providing information and syntheses for all archaeological sites and landscapes (visible on aerial photographs) from the Neolithic period to the twentieth century' (Bewley, 2001, 78).

Further aims and objectives specific to this project are set out below:

3.1 Aims

1. To define, characterise and analyse specific aspects of the historic environment of the Hampshire Downland (see section Appendix 1 for definition of project scope).
2. To improve understanding and inform decisions regarding strategic planning, management and preservation of specific aspects of the historic environment of the Hampshire Downland.
3. To assist in the formulation of research objectives and strategies for the Hampshire Downland.
4. To inform the presentation of and increase public awareness of specific aspects of the historic environment of the Hampshire Downland.

3.2 Objectives

These aims were achieved through the following objectives

1. Digital mapping of the archaeological landscape within the Hampshire Downland to current standards adopted by NMP
2. Production and incorporation of baseline data into the Hampshire AHBR to inform strategic and management decisions
3. Publication and dissemination of the results of the project to raise awareness of the historic environment
4. Integration of the data resulting from the project into the National Record for the Historic Environment (NRHE) database (AMIE – Archives and Monuments in England)

4 The project area

The project area covered 403 kilometre squares of the central downland between Winchester, Andover and Basingstoke; an area roughly equivalent to 16 OS 1:10,000 quarter map sheets (Figure 2).The southern and western boundaries of the project area are formed by the limit of previous NMP surveys (EH projects 4766, 5174, 5783 and 6105).

The project area excluded the downland west of the Test Valley as this was subjected to intensive mapping during the Danebury Environs Project (Palmer 1984). Likewise the northern boundary of the project area is delineated by the approximate limit of the area already mapped by Richard Massey (Massey 2006).

The eastern boundary of the project area was formed by a north – south National Grid line (SU6000) running from New Alresford in the south to Basingstoke in the north. To the east of this line the landscape character changes; the downs forming a high, gently domed plateau capped by widespread and extensive deposits of clay-with-flints.

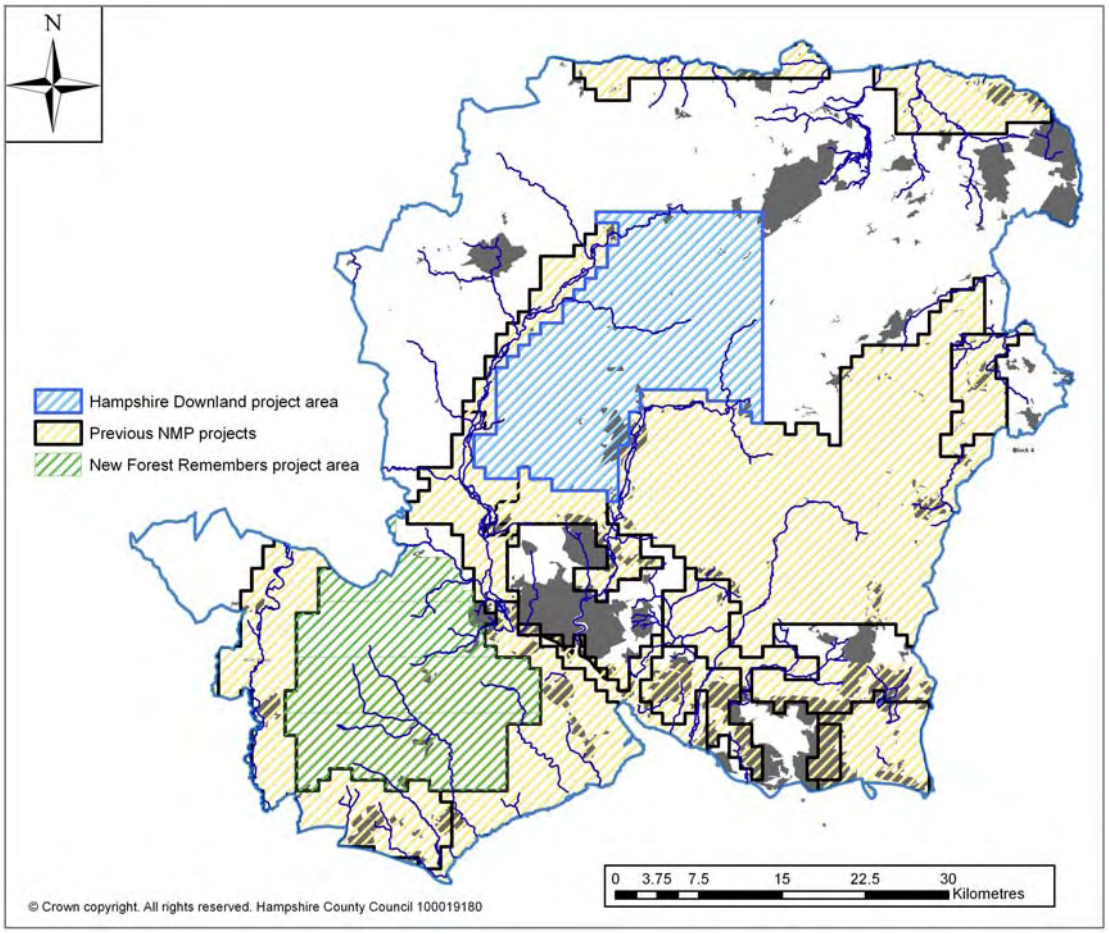

Figure 2. Map of Hampshire showing the Hampshire Downland project area and the extent of previous NMP projects.

4.1 Geology, soils and landscape character

4.1.1 Geology

The geology is dominated by very extensive areas of chalk, criss-crossed by numerous dry streams. Towards the southern and northern edges of the project area the chalk is capped by clay-with-flints. The downs are dissected by two main rivers;

the Dever which forms a major tributary of the Test and runs west-east, and the Candover Stream which runs north-south to join the Upper Itchen in the New Alresford area. Both rivers are flanked by deposits of periglacial head in their upper reaches and in the east the Dever is flanked by deposits of Lambeth Group clays, silts and sands as well as by clay-with-flints.

4.1.2 Soils

In terms of soils, the chalk bedrock is overlain by rendzinas – brown calcareous earths and argillic or paleo-argillic brown earths. These are characteristically well drained shallow chalky soils, associated with deeper loamy soils. The clay-with-flints are overlain by paleo-argillic brown earths which form deep well drained to moderately well drained loamy or silty soils over clayey soils.

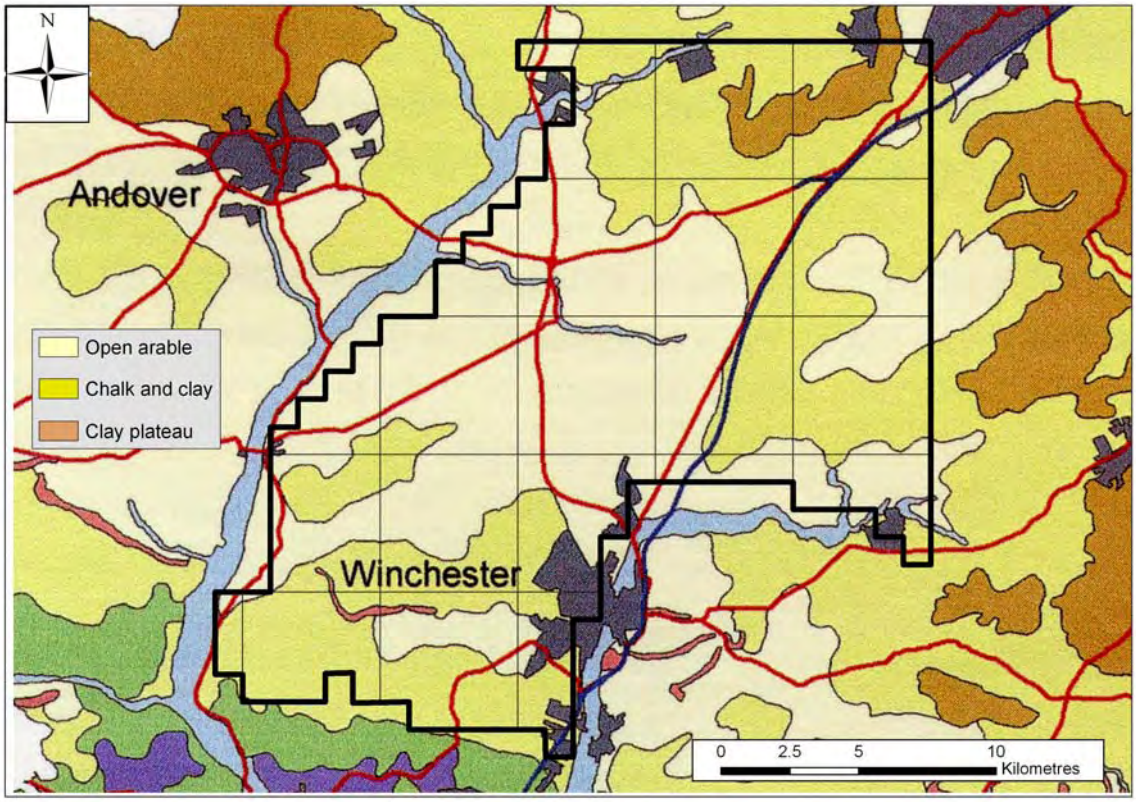

Figure 3. Landscape character types in the Hampshire Downland project area. (after HCC 1993).

The combination of chalky soils and rich brown earths and a largely open arable farming regime has provided excellent conditions for the formation of cropmarks right across the project area.

4.1.3 Landscape character

The project area is overwhelmingly rural in character. The only town of any size is Winchester, currently and historically the administrative centre of Hampshire. There are two principal landscape character types found in the Hampshire downland – open arable and chalk and clay (Figure 3). The open arable, which broadly occupies the central part of the project area, is a generally open spacious landscape with a gently undulating landform and comprises mainly intensive arable farmland (HCC 1993). It is a large scale landscape with a broad and open character with large or very large fields, apart from isolated areas of greater enclosure.

The chalk and clay landscape is one of farmland, woodlands and hedgerows. The variety of enclosure partly reflects underlying geology: the presence of clay on the ridges and hilltops and its absence in the valleys determines the distribution of woodland and farmland and the character of the hedgerows. Grazing land is common on the higher ground and steeper slopes but this is primarily a landscape of arable farming and many hedgerows and woodlands have been removed in recent years as field sizes have been increased for arable crop production.

In the far northeast of the project area, towards Basingstoke, there is a small tract of clay plateau landscape. In this area the chalk is capped by a shallow but virtually continuous deposit of clay, often with flints. It is typically gently undulating countryside characterised by farmland, woodland and hedgerows.

4.2 Historic landscape character

The underlying geology of the Hampshire downland is reflected in the area's Historic Landscape Character (HLC). The open chalkland in the central part of the project area is characterised by parliamentary-type fields (Figure 4). These field systems reflect (often informal) pre-parliamentary enclosure of the seventeenth to nineteenth century (Fairclough *et al* 2002). The nineteenth century in particular saw large parts of the Hampshire chalklands enclosed with medium to large straight-sided fields. Before then, the chalk landscape was a mixture of open downland and medieval open fields. The impact of parliamentary enclosure is reflected by the fact that only 2.4 km^2 of unenclosed downland now survives within the project area – the largest remnant is Stockbridge Down adjacent to Woolbury Hillfort.

Elements of the open fields are retained in the landscape around Sutton Scotney, Micheldever and Laverstoke in the form of ladder fields. These typically have long sinuous boundaries sub-divided by later straight cross divisions (the rungs of the 'ladder'). To the southwest of Winchester there is a small area of ex-downland fields. These are similar to the ladder fields in that they are characterised by long sinuous boundaries (probably reflecting former medieval open fields) but are bounded predominantly by roads, trackways or other rights of way.

The historic landscape character of the chalk and clay areas comprises three main types; wavy fields, assarts and assarted woodland. Wavy fields are in the main smaller and more irregular than the parliamentary fields of the open chalkland, and are generally enclosed with sinuous boundaries (or 'wavy' boundaries). This form of enclosure is thought to have begun earlier than the informal parliamentary-type enclosure, probably during the later medieval period. The gradual expansion of farmland resulted in assarting and the distinctive pattern of small, irregular fields with much surviving woodland is typical of the southern, western and northern parts of the project area.

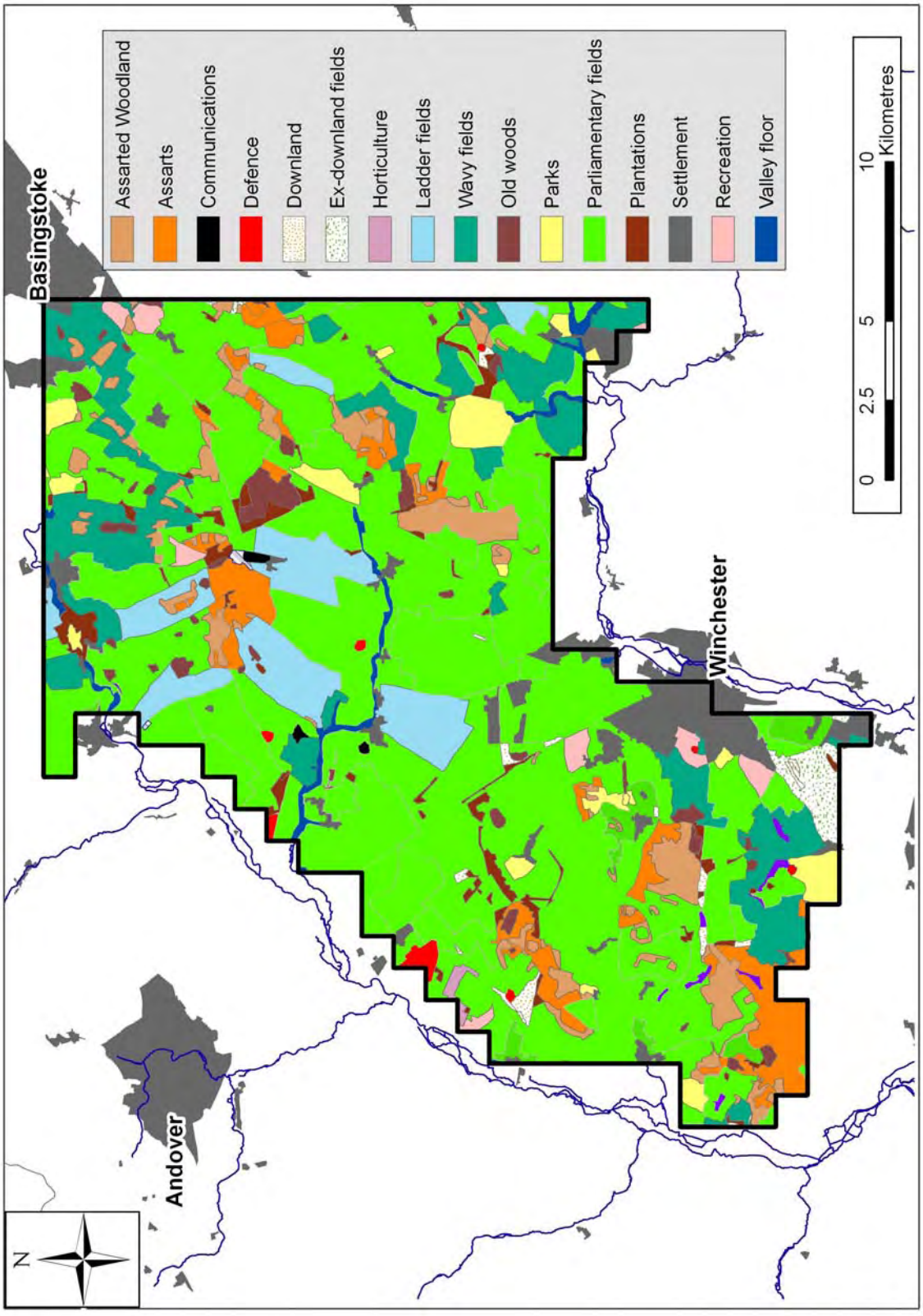

Figure 4. Historic Landscape Characterisation in the Hampshire Downland project area.

Together the various field types and assarted woodland make up 85% of the landscape in the project area. A breakdown of their extent is summarised in Table 1 below.

HLC type	Area (km^2)	% of project area
Parliamentary-type fields	230	57
Assarts and assarted woodland	43	11
Wavy fields	42	10
Ladder fields and ex-downland fields	28	7
Total	**343**	**85**

Table 1. Breakdown of the extent of HLC type within the project area.

4.3 Overview of the known archaeology of the project area, prior to mapping

The archaeology of the Hampshire downland is very rich; significantly much of it has been levelled by decades of continued ploughing. Prior to the current mapping project the AHBR contained 2,621 records for archaeological sites in the project area and AMIE, 1068 records (Figure 5). Of these, 1,957 were for monuments and 664 for findspots.

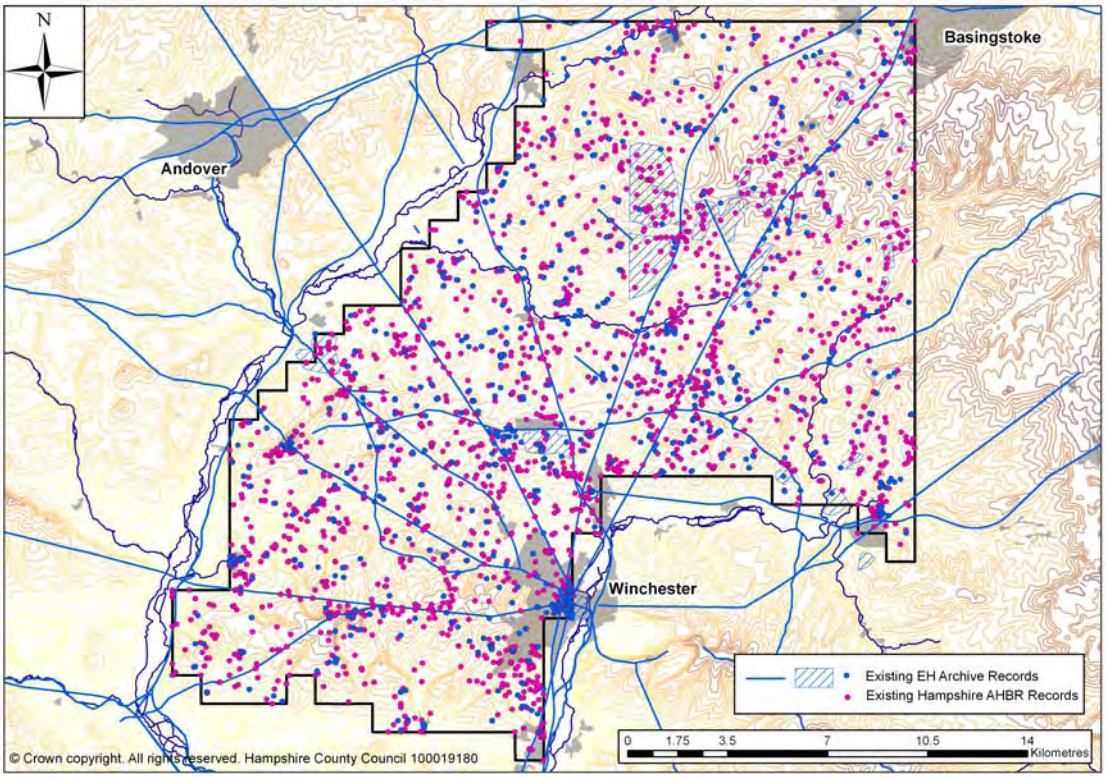

Figure 5. Distribution of all monuments recorded in the Hampshire AHBR and EHA AMIE databases prior to the NMP project.

Of the AHBR sites previously known, 65% had been identified from aerial photographs as cropmarks or soilmarks. Many of the cropmarks show fine detail of very extensive field systems and large multi-phased enclosure complexes. A breakdown of the AHBR sites by period is shown in Table 2 below.

Period	Find spots	Monuments	Sites
Palaeolithic	12	0	12
Mesolithic	30	0	30
Neolithic	96	16	112
Bronze Age	35	467	502
Iron Age	32	181	213
Prehistoric (generic)	129	152	281
Roman	199	133	332
Early medieval	34	20	54
Medieval	53	110	163
Post medieval	12	100	112
Modern	2	81	83
Unknown	30	697	727
Total	**664**	**1957**	**2621**

Table 2. A breakdown of the AHBR sites within the project area by period.

4.3.1 Prehistory

In the Hampshire Downland, evidence for human activity stretches back to early prehistory. The AHBR had a 112 monuments recorded for the Neolithic period prior to the mapping project. These included ten Neolithic long barrows, all sited in the open arable landscape. In addition, 96 Neolithic findspots were recorded with notable concentrations around Micheldever as a result of field walking in advance of construction of the M3. The current project has provisionally allocated a Neolithic date to several new sites including nine long barrows and 'short' long barrows, one mortuary enclosure and two pit circles.

The Bronze Age resource is dominated by barrows (443 previously recorded in the AHBRI): although spread throughout the project area, most are situated in the open arable landscape. A number of previously recorded enclosures have been interpreted as Bronze Age as well as evidence of land division in the form of field systems, cross dykes and linear 'ranch' boundaries. A Bronze Age settlement had also previously been recorded at Brockley Warren, Chilbolton. During the mapping 163 new barrow sites were identified across the project area as well as a number of enclosures and roundhouses which may be evidence of Bronze Age settlement.

There was abundant evidence that the downland was densely occupied during the Iron Age prior to the mapping project. This evidence included very extensive Celtic field systems, settlements, numerous enclosures (including 39 banjo enclosures previously recorded in the AHBR) and six hillforts, the best known of which is Woolbury. During the mapping project the greatest numbers of sites recorded were dated to the later prehistoric and Romano British period, 49% of which were new to the record.

4.3.2 Roman

Winchester, *Venta Belgarum*, became the fifth largest town in Roman Britain and four Roman roads run from the town through the Hampshire Downland. Sixteen villas

were previously recorded in the AHBR; these, in the main, are distributed towards the south, east and north, on the edge of the central chalklands. By contrast most of the records for Roman 'buildings' follow the valley of the River Dever and the 21 recorded rural settlements are mainly located in the open arable south of the Dever. Intense activity during the Roman period is attested by the large number of findspots, which largely replicate the villa distribution – on the edges of the open arable and in the chalk and clay areas. In addition, three Roman buildings and a possible temple site were identified during the mapping.

4.3.3 Early medieval

Like Hampshire generally, evidence for early medieval activity is sparse. There are two settlements recorded at Northbrook, Micheldever and at King's Somborne. Most of the AHBR records dating to this period are for findspots, with a concentration at Micheldever, which may have been the site of a royal palace. Eight inhumations or cemeteries were previously recorded, three of them in Winchester. A important new site was identified during the mapping; an inhumation cemetery of over 40 graves immediately to the south of Tidbury Ring.

4.3.4 Medieval

There are a number of 'high status' sites from the medieval period, including a ringwork and bailey at Ashley to the east of King's Somborne, Merdon Castle – a motte and bailey built in 1138, seven manor houses, three moats and two granges. Four of these are located in the Dever valley whilst the remainder are all situated in the chalk and clay areas.

In the medieval period Hampshire was the most extensively afforested county in England (Bond 1994) and contained at least 10 royal forests. The forest of West Bere was situated between Winchester and King's Somborne and two hunting lodges are recorded from this area as well as four deer parks. Other deer parks are found in the Dever Valley and on chalk and clay in the north and east.

Despite the extensive area of farmed land there is very little direct evidence for medieval farming. There are only two recorded examples of strip lynchets, one record for open fields and one record for ridge and furrow cultivation (this latter was only identified through geophysical survey) and this paucity of medieval farming features is typical of Hampshire as a whole (Hughes 1994).

Rural medieval settlements in chalkland areas were typically nucleated (Hughes 1981) and 16 deserted or shrunken villages are recorded in the project area.

A small number of new sites were assigned a medieval date during the mapping, these included field boundaries, field systems, cultivation marks and trackways.

4.3.5 Post medieval

A wide variety of post medieval sites are recorded but there are only a few examples of each. These range from high status sites such manor houses, country houses and associated features (lakes, parks, fishponds, deer parks, ice houses, etc) to industrial and infrastructure features such as brickworks, windmills, corn mills, a silk mill at Overton, milestones and the disused Mid-Hampshire Railway.

The low numbers of previously recorded sites perhaps reflects the fact that this period has up until fairly recently been overlooked by archaeological survey and investigation. During the mapping 697 sites dating to this period were recorded, 95% of which were new to the record. By far the majority of these new sites were features relating to extraction and agriculture.

4.3.6 Modern

The majority of modern sites previously recorded in the AHBR date from the Second World War. There are two main concentrations. The first includes 19 civilian air raid shelters in Winchester; the second consists of 24 pillboxes forming the perimeter defences of Worthy Down airfield. In addition there are anti-aircraft batteries immediately to the west of Winchester and at Chilbolton airfield, and bombing decoys to the south of Winchester and to the southwest of Basingstoke.

The systematic recording of military sites, particularly using historic RAF photographs taken during and soon after the Second World War, has proved highly informative with several new sites being identified. Many are associated with the use of the chalk downs for military training purposes, for example at Barton Stacey where extensive areas of practice slit trenching, shell holes and craters were recorded associated with the military training camp of Drayton Down.

4.3.7 Undated

There are numerous records for undated sites, most of which have been identified as cropmarks from aerial photographs. They comprise a wide range of site types but are made up predominantly of linear features and enclosures. These sites are distributed widely throughout all parts of the project area.

Four hundred and two sites mapped during the project were of uncertain date, of these 85% were previously unrecorded.

5 Overview of the aerial photographs

Over 80 years of aerial reconnaissance has taken place in Hampshire and this has ensured that there is extensive aerial photographic cover of the county. Available aerial photographs comprise specialist oblique photography, the earliest taken by OGS Crawford, Major Allen and Alexander Keiller in the 1920s and 30s. Extensive programmes of vertical photography were carried out by the Royal Air Force (RAF) in the years during and after the Second World War. Blanket vertical cover has continued up until the present day, initially by the Ordnance Survey (OS) in the 1960's and later from the 1970's onwards by HCC and the OS, the more recent sorties resulting in digital colour images.

The primary source of aerial photographs used during the course of this project was the EHA collection in Swindon. In addition photographs from Google Earth and Bing were accessed via the internet. Hampshire CC provided geo-referenced digital aerial photographs dating to 2005/6. Pan Government Agreement geo-referenced aerial photographs provided by EH were also used. Details of available photographs used during the project are contained in Appendix 1.

5.1 Crawford Collection photographs

The earliest oblique aerial photographs consulted during the project are from the NMR Crawford Collection. Whilst exact dates are not available for all of these prints, they were taken or collected by Crawford and others including Allen and the RAF in the 1920s and 1930s. The earliest dated prints are from 8th May 1922 and formed the basis of Crawford's first archaeological transcriptions using aerial photographs (Crawford 1923, Crawford and Keiller 1928). As well as being of considerable historic interest, these photographs provided valuable information at several different sites which have since been planted with trees and are no longer visible on any other images (Figure 6).

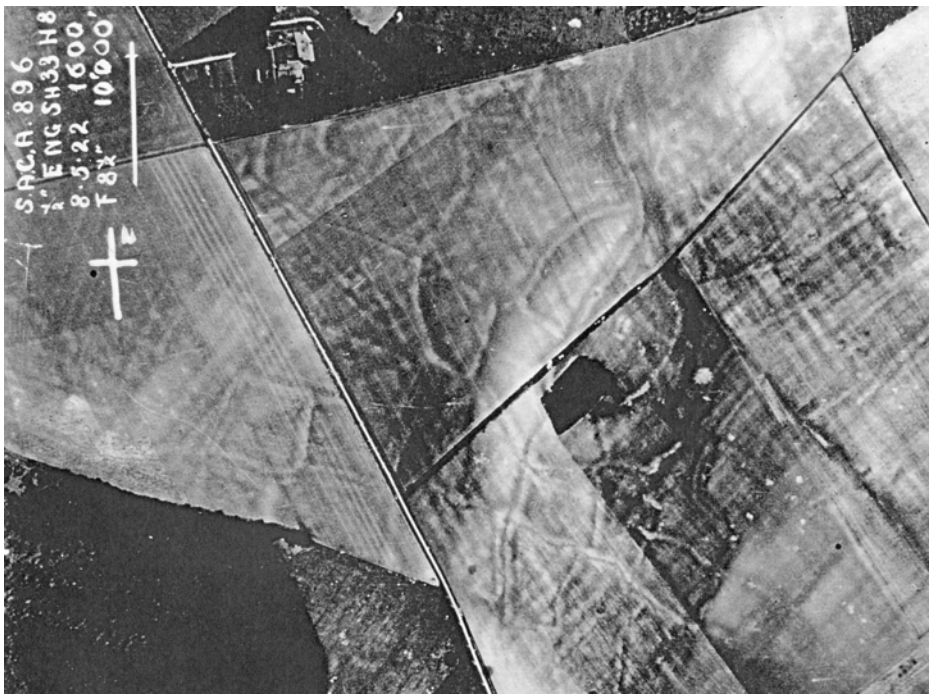

Figure 6. An extensive Celtic field system at Brockley Warren. Large portions of this site are now under tree plantation. This early Crawford Collection photograph, taken by the School of Army Co-operation in 1922, is one of the few which show its full extent. (MKM7978). Photograph: CCC 8566/340 08 May 1922. © English Heritage (Crawford Collection).

5.2 Specialist oblique photographs

The Cambridge University Committee for Aerial Photography (CUCAP) has undertaken an aerial reconnaissance programme since 1947 but unfortunately due to temporary closure of their archive facility, there was no access to that collection for the duration of Block 1 mapping. Due to the large numbers of photographs available for loan via the EHA collection in Swindon, it was decided that for consistency and due to pressures of time, the CUCAP collection would not be consulted for Block 2. A small number of duplicate prints from the collection were available via the EHA.

A systematic programme of reconnaissance has been carried out by the Royal Commission on the Historic Monuments of England, latterly as part of English Heritage, since the 1970s. The photographs from this and others collected by the National Monuments Record (NMR), now EHA, provided the bulk of the oblique coverage. Oblique photographs taken in slanting sunlight (either during the winter months or in the early morning or late evenings of summer) are an ideal medium for defining earthwork monuments. The low earthworks of the medieval village of Chilton Candover (Figure 7) provide a good example.

Figure 7. Low earthwork banks of the shrunken medieval settlement of Chilton Candover. The site which is clearly picked out in low sunlight was recorded as part of ongoing aerial reconnaissance by the English Heritage Aerial Survey team. (MKM265). Photograph: NMR 24794/8, 29th October 2007. © English Heritage.

Most of the sites recorded during this project were plough levelled features visible on oblique aerial photographs as cropmarks. Whilst cropmark sites have been photographed in the project area since the 1940s, significant numbers of previously unrecorded sites have been mapped for the first time (as well as significant extra detail to previously known sites) using aerial photographs taken over the last two and a half decades. This demonstrates that there is considerable potential for further discovery of sub-surface remains through continuing programmes of reconnaissance in the summer months.

Figure 8. A probable Iron Age settlement enclosure with later Roman villa buildings at Furzedown. (MKM3490 and MKM3498). Previously unrecorded, the site is clearly visible as cropmarks on this photograph which was taken in July 1989. Photograph: NMR 4440/22, 10th July 1989. © Crown Copyright. EH.

5.3 Vertical photographs

Vertical photographs provide coverage of all parts of the project area and have been taken at regular intervals from the early 1940s onwards. As part of the routine NMP process all readily available vertical aerial photographs (with the exception of the digital cover) were examined with a hand-held stereoscope. Viewing prints with a stereoscope provides a three dimensional view of the landscape, including any extant archaeological features. The advantage of vertical photography is that large areas are usually surveyed; a potential disadvantage is that they are not always taken at the most favourable times of day or year to maximise the visibility of archaeological features. Nonetheless the value of vertical photography to the project cannot be overstated.

A good range of sources of vertical photography were available to the project, and as a result a wide variety of archaeological site types were recorded. RAF vertical photographs from the 1940s to the early 1960s were an important source of information, particularly for sites relating to twentieth century military features.

The provision of a wide variety of sorties in addition to the RAF coverage (the HCC digital aerial photo tiles, the OS and the Meridian Airmaps (MAL) collections), ensured that coverage from vertical photography was extremely good. In addition those up-to-date images available online through Google and Bing were consulted.

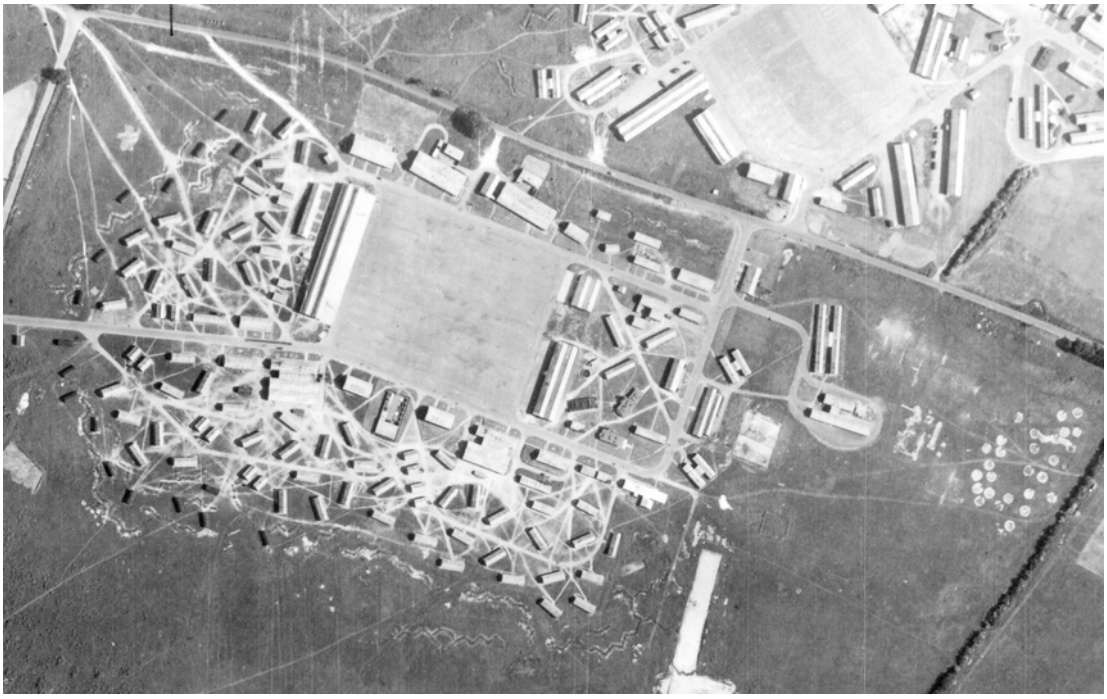

Figure 9. Barton Stacey Military Camp. Practice slit trenching and the sites of temporary bell tents are visible on this photograph taken soon after the end of the Second World War. (MKM428). Photograph: RAF CPE/UK/2150 Frame 3005, 11th June 1947. English Heritage RAF Photography.

By using the historical RAF verticals in combination with modern images, a direct comparison of the state of preservation of archaeological sites over time can be made. Whilst much the landscape of the Hampshire Downlands has been under the plough since medieval times, small pockets of extant features survived into the first half of the twentieth century and were visible as earthworks in the 1940s. Most of these have now been completely levelled and are visible only as crop or soil marks (Figures 10 and 11).

Figure 10. Celtic field system at Kings Worthy taken in 1946. Whilst suffering from the plough in places, the Celtic field system at Kings Worthy was still in relatively good condition at the time these RAF photographs were taken in 1946 (MKM3178).

Photograph: RAF CPEUK1842 Frame 3186, 18th November 1946. English Heritage RAF Photography.

Figure 11. Celtic field system at Kings Worthy taken in 2005.

Throughout the latter half of the twentieth century the lynchets of the Kings Worthy Celtic field system suffered severe attrition from the plough. By 2005, when this photograph was taken, the field system appeared completely levelled and was only visible as soilmarks and cropmarks. (MKM3178)

Photograph: 44901340, 21st November 2005. © Hampshire CC.

5.4 Military oblique photographs

A small number of military oblique photographs were available of the study area. These were from sorties taken by the RAF in the years 1945, 1950 and 1953. Many of these were of Winchester and its immediate environs.

Figure 12. Post-Second World War allotments on the edge of Winchester looking west. Photograph: RAF PFFO:540/335 Frame 0133 NMR SU4630/7, 14th May 1950. English Heritage RAF Photography.

6 Results of NMP mapping

6.1 Overview of results

In general terms, the nature of archaeological evidence available from aerial photographs determines the types of site recorded as part of NMP. Usually these are relatively substantial ditched or banked features either visible above ground as earthworks, or as cropmarks of sub-surface features. Historic photography also provides details of earthworks and structures which have been denuded or levelled by ploughing, or otherwise destroyed or removed in the last 70 years.

All sites mapped were recorded in the project HBSMR database which automatically generated unique project record numbers prefixed MKM. All sites discussed in this report will be referenced using this MKM number.

6.1.1 Numbers of sites in the project area

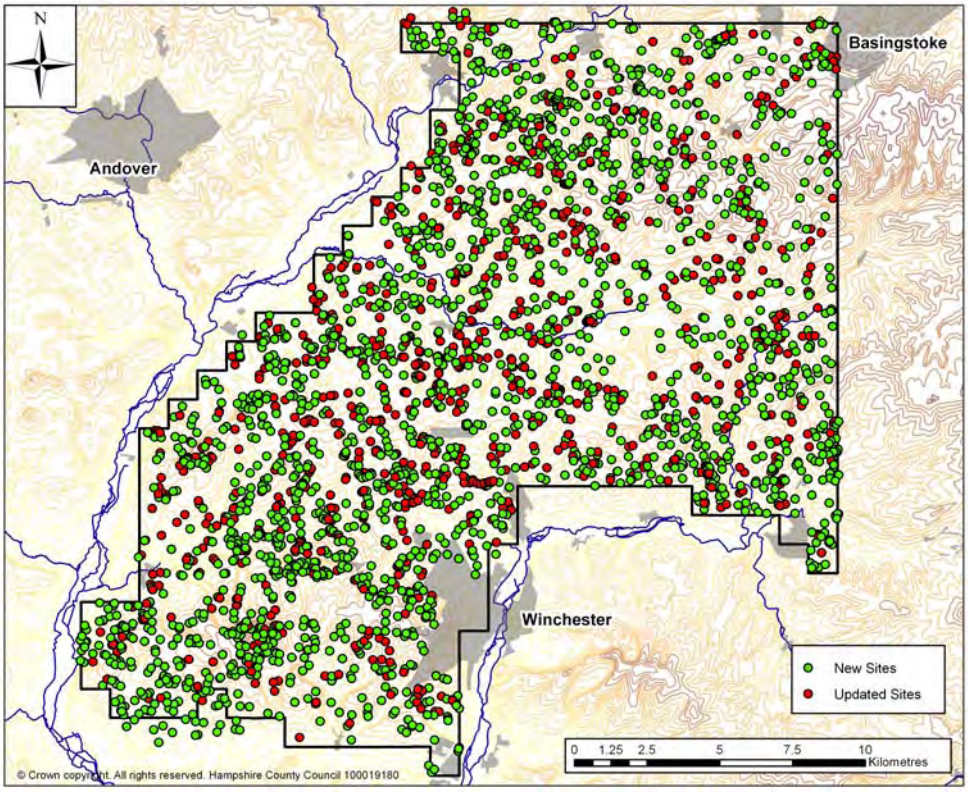

Figure 13. Distribution of all monuments recorded during the NMP project.

In terms of data recording, a site was either assessed as New or Updated (See Table 3 below). New sites were those not previously listed in either the HCC AHBR or the EH NRHE AMIE databases.

During the project 3096 monument records were created in the HBSMR database, of which 2103 (68%) were for new sites.

These sites are shown in the distribution map (Figure 13 above) which shows that the numbers of sites across the project area are fairly evenly spread in terms of overall distribution and numbers of new sites. This is to be expected considering the uniform underlying chalk geology (See section 4.1.1). Looking at site distribution in relation to land use and landscape character (Section 4.1.3), slightly fewer sites were identified within chalk and clay areas to the south and south-west of Basingstoke where grazing is more dominant than the open arable areas which cover the central

portion of the project area. No sites were identified within the urban area of Winchester. The numbers of sites recorded by period are listed in Table 3 below.

The date ranges used in this report conform to national standards and are those used in the HCC AHBR and CC HBSMR project database. The project database requires start and end dates for all sites (or automatically assigns dates based on the given period).

It should be noted that the nature of aerial photographic evidence means that generally only broad ranges can be assigned to sites unless there is further corroborative evidence from field work, artefact scatters or excavation. Where possible, sites have been assigned dates based on form, context and excavated precedents. Exact dates are not always possible. For the purposes of this report sites have been assigned as precise dates as possible based on the evidence. Some generalisations have been made; for example, ring ditches which were considered to be funerary related have been assigned to the Bronze Age despite their potential for being of late Neolithic/Early Bronze Age origin, similarly prehistoric enclosures, settlements and field systems have generally been allocated a later prehistoric date (Iron Age/Romano British) although many may have their origins in the Bronze Age.

Period	Updated Sites	New Sites	Total
Neolithic	27	12	39
Bronze Age	302	163	465
Iron Age	50	12	62
Prehistoric/Roman	416	468	884
Roman	18	10	28
Early medieval	0	1	1
Medieval	15	24	39
Post medieval	33	664	697
Historic	46	345	391
Modern	26	62	88
Undated	61	341	402
Total	**993**	**2103**	**3096**

Table 3. Numbers of sites recorded in the project database.

In terms of recording, a small number of sites were double indexed in the project database, where the exact nature of the site (in terms of date and function) was uncertain. Where the two potential interpretations have been allocated different periods the sites have been included in both sections of the period discussion below (examples of this include: Neolithic 'short' long barrows which may alternatively be two contiguous Bronze Age round barrows, Bronze Age barrows which may alternatively be post medieval tree rings and pit clusters which were recorded as either post medieval extractive pits or modern Second World War bomb craters.

6.1.2 Form and survival of sites

The form and survival of each site was recorded in the project database. At the direction of the EHA, the form recorded was the last known form of the site (e.g. as visible on the latest Google Earth images) and not necessarily the form of the site on the photographs from which is was plotted. For example, if a site was visible as an earthwork on early RAF 1940's photographs but was later plough-levelled and now only visible as cropmarks on the latest photography, then the site was recorded in the database as a Cropmark. Similarly, if a site was not visible at all (neither as earthworks nor cropmarks) on the latest imagery but had been plotted as an earthwork on early photographs, it would be recorded in the database as Levelled Earthwork.

Form	No: Sites	% or total
Cropmark	2636	85.14
Cropmark and earthwork	40	1.29
Cropmark and levelled earthwork	22	0.71
Earthwork	148	4.78
Earthwork and levelled earthwork	6	0.19
Levelled earthwork	190	6.14
Extant structure	20	0.65
Ruined or demolished structure	34	1.1
Total	**3096**	

Table 4. Form and survival of sites recorded in the project database.

Of the 3096 sites recorded during the mapping project 92% had been completely levelled. 2637 (85%) were visible only as cropmarks, 190 (6%) as levelled earthwork and earthwork, and a further 22 (1%) as cropmarks and levelled earthworks. Only 148 sites (5%) were still surviving as earthworks and a further 46 (1.5%) as a combination of earthworks and cropmarks or levelled earthworks. A small number of sites, mainly Second World War features, were recorded as structures; either extant, ruined or demolished. These sites are shown on the map below, Figure 14.

The map clearly shows that the plough damaged sites lie right across the project area. In the open arable areas, sites are almost exclusively cropmarks or levelled earthworks with the exception of the River Dever where some medieval settlements and post medieval water meadows and drainage features survive as earthworks. The River Itchen similarly has a cluster of medieval and post medieval earthworks along its valley floor.

The areas of chalk and clay to the west of Winchester have a higher portion of earthwork sites or sites showing as partial earthworks. Many of these are post medieval extractive sites although a small number of potential prehistoric lynchets and field boundaries lie on the steeper slopes immediately to the east of the River Test to the south of King Somborne. Extant barrow sites and hillforts make up a large portion of earthwork sites surviving on the higher ground.

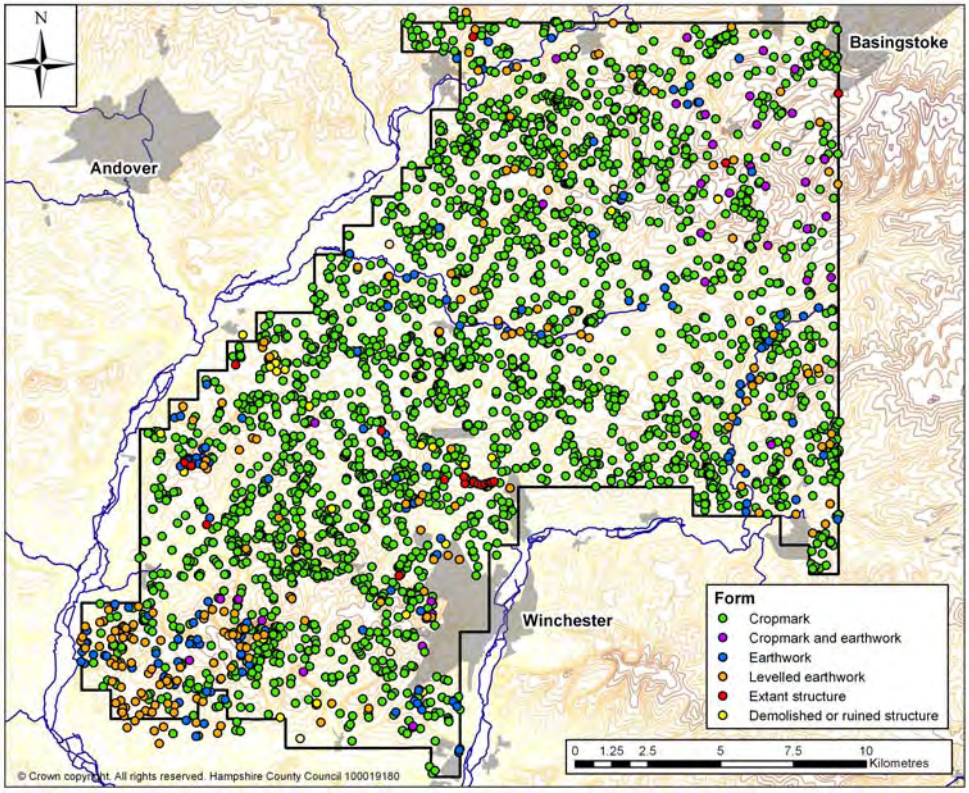

Figure 14. Distribution of sites by form and survival within the NMP study area.

6.2 Results: Neolithic sites (4,000BC - 2,200BC)

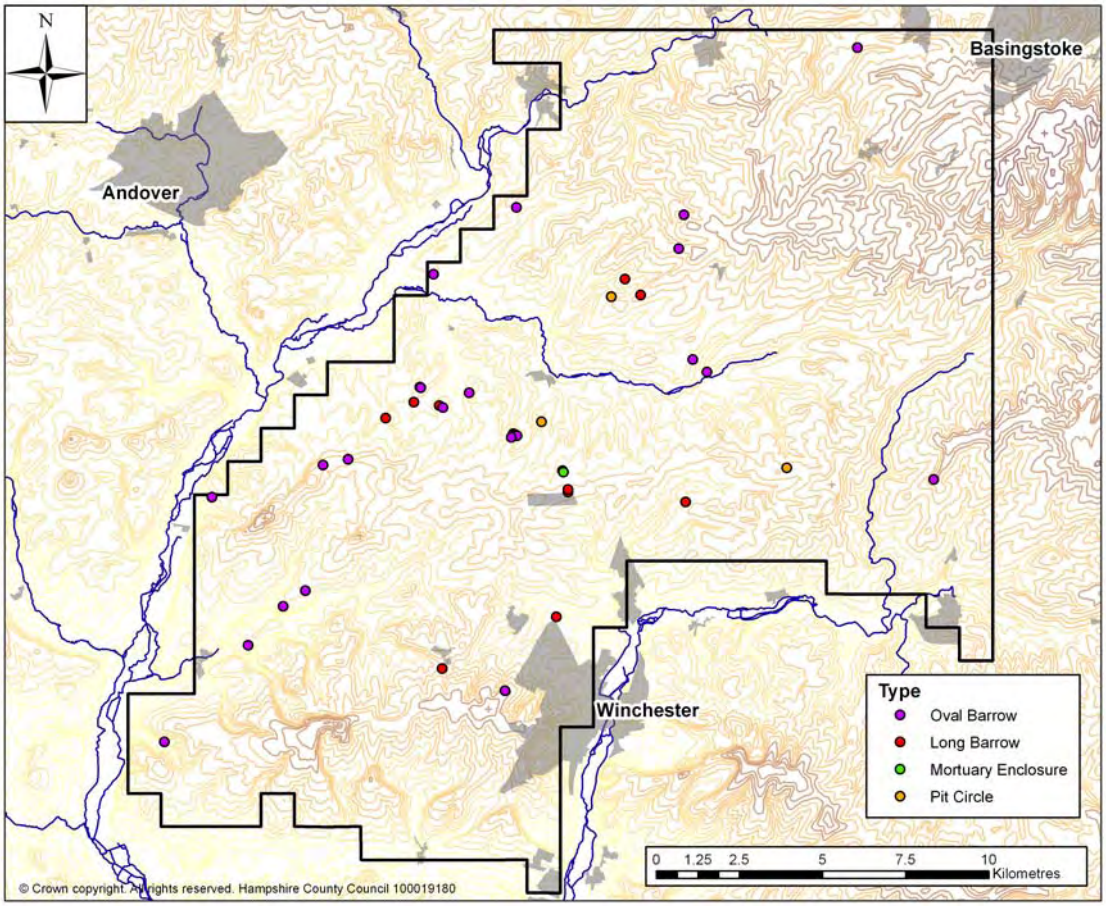

Figure 15. Distribution of Neolithic Sites.

Thirty nine sites of Neolithic or potentially Neolithic date were mapped during the project, of which 12 (31%) were new to the record. These include 34 long barrows, two potential mortuary enclosures and three pit circles. It is interesting to note that no henges or causewayed enclosures were found despite these monuments being known on other areas of chalk Downland in the south of England.

The sites generally lie in the central portion of the project area with many lying within the catchment of the River Dever.

6.2.1 Long barrows

Long barrows have been defined as linear mounds, usually between 25m and 120m long, whose mound length is at least twice its greatest width (EH 1989). They are rarely more than 50m in length, often with one end higher or wider than the other, and invariably they have adjacent ditches from which the construction material may have been derived (EH 2011b).

Long barrows include more ovoid types; these had previously been considered a separate class of monument dating to the Late Neolithic/Early Bronze Age (EH 1989). Defined as a mound of roughly elliptical plan, usually less than 45m long and about half as wide as long (*ibid*), they were considered a transitionary form between long barrows and round barrows. There is, however, little current evidence for a distinct class of 'oval' barrows, nor for long barrow belonging to the Late Neolithic/Early Bronze Age (Kinnes 1992, Field 2006). These ovoid barrows, may more properly be thought of as 'short' long barrows (McOmish *et al* 2002, 27), and

have therefore been considered alongside the long barrows as part of a range of probable Neolithic monuments.

Thirty four long barrows were identified during the mapping including four potential new sites. These include 13 long barrows ranging in length from 38m to over 105m and 21 'short' long barrows. They are sited in a number of topographical locations, generally on promontories and ridges within the landscape, but not necessarily the highest ground. It has previously been noted (RCHME 1979) that the requirement for visibility determined the selection of sites, with the most common situation being a prominent position on the skyline when seen from below and usually from a restricted range of view points.

Figure 16. Potential site of a previously unrecorded Neolithic long barrow at Littleton. (MKM3114). Photograph: NMR 928/17, 10th May 1976. © Crown Copyright. EH.

Whilst three long barrows are isolated from other Neolithic sites, there seems to be a tendency for groups of barrows to be co-located within a kilometre each other. Three groups of barrows were identified at Moody's Down, South Wonston and at Upper Cranbourne in addition to an important fourth Neolithic complex at Sutton Scotney (Figures 19 and 20).

Figure 17. Potential Neolithic long barrows, all previously unidentified prior to the mapping project. *NMP mapping © English Heritage*.

Of the twenty one 'short' long barrows, five were new to the record. Nine monuments had been double indexed as being of Neolithic or Early Bronze Age date.

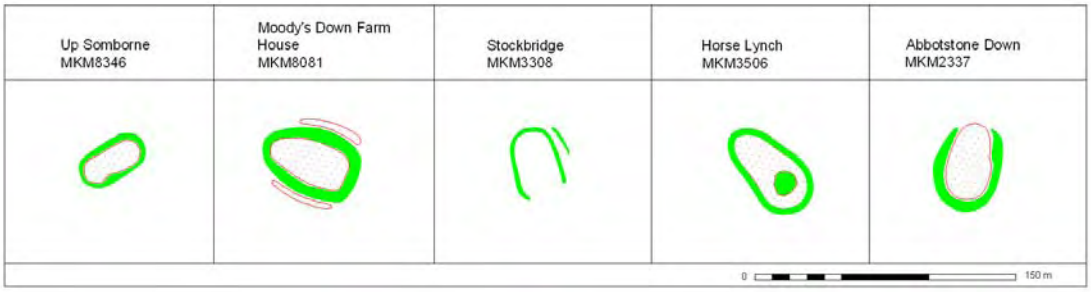

Figure 18. Neolithic 'short' long barrows in the study area. NMP mapping © English Heritage.

Sutton Scotney. One of the most important concentrations of potentially Neolithic monuments recorded during the project lies on a low ridge to the north west of Sutton Down Farm, Sutton Scotney (Figures 19 and 20). Here two near-identical monuments 150m apart were identified which are considered to be Neolithic 'short' long barrows. The barrows are between 21m and 24m in length and contain two parallel ditches, 14-16m apart and 12-14m long. These may be the remains of ditches enclosing the burial area. The surrounding oval ring ditches may be contemporary with the ditches or later additions to the site. The complex also includes a potential new long barrow to the west. The longer parallel features running into the modern hedge-line visible on the photograph below (Figure 21) are on a similar alignment to the adjacent 'short' long barrow ditches and may be the remains of a second Neolithic long barrow or ceremonial feature.

Figure 19. Potential Neolithic 'short' barrow and mortuary site at Sutton Scotney. (MKM7896 and MKM8289). Photograph: NMR 15143/7, 20th July 1994. © Crown Copyright. EH.

6.2.2 Mortuary enclosures

A number of rectilinear ditched enclosures have been identified and tentatively described as mortuary enclosures due to their close association with other Neolithic long barrows. Long mortuary enclosures were a class of monument, first defined by Atkinson in 1951 following the excavations at Dorchester on Thames, Oxfordshire, in 1948 (Atkinson 1951). Morphologically similar to long barrows, the function of mortuary enclosures is not known although they are generally interpreted as

ceremonial monuments of the Early and Middle Neolithic (EH 1989). It is often difficult to morphologically separate mortuary enclosures from long barrows and there has been speculation in the recent literature as to whether these rectangular banked or once palisaded enclosures should be considered separately or alongside long barrows, some examples being found beneath long barrows (EH 2011b).

Two rectilinear ditched enclosures have been identified in close proximity to Neolithic barrow sites. Although undated, they have been flagged in the project database as potential mortuary enclosures, see Figure 20 below. In addition, the two parallel ditches at Sutton Scotney (Figures 19 and 20) have been flagged as a potential mortuary enclosure or long barrow.

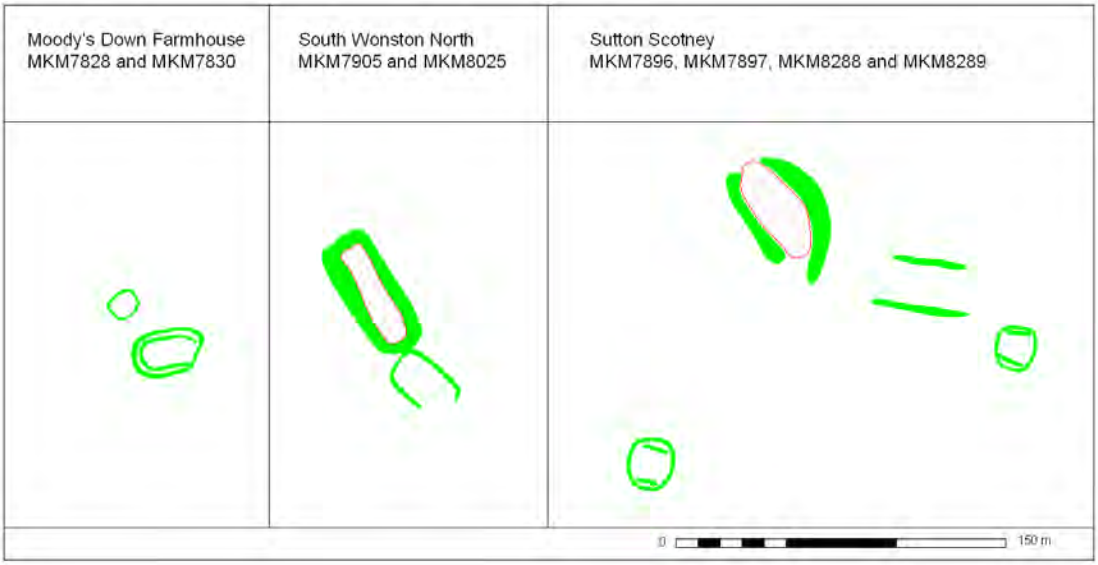

Figure 20. Potential Neolithic barrows with associated mortuary enclosures. NMP mapping © English Heritage.

6.2.3 Timber or Pit circles

A pit circle is a ring or arc of oval shaped holes; the numbers of pits ranging from eight to 14 and external diameters from 10m to 20m, (EH 1989). Where excavated, they appear to have been dug and backfilled within a short period of time, perhaps only weeks or months. Pit circles can only be distinguished from timber circles through excavation; timber circles comprising one or more rings of post-holes marking the location of wooden posts whereas pit-circles never held posts but may contain other deposits (EH 2011c). These circles have previously been interpreted as ceremonial monuments akin to henge monuments, however, more recent radiocarbon dating has revealed that they can be of later Neolithic or Bronze Age date (for example, Gibson 1994; 1998).

Three pit circles have been identified during the project, two of which are new to the record. All have external diameters of between 16-18m across and therefore fall towards the larger end of previously recorded sites (Figure 21 below).

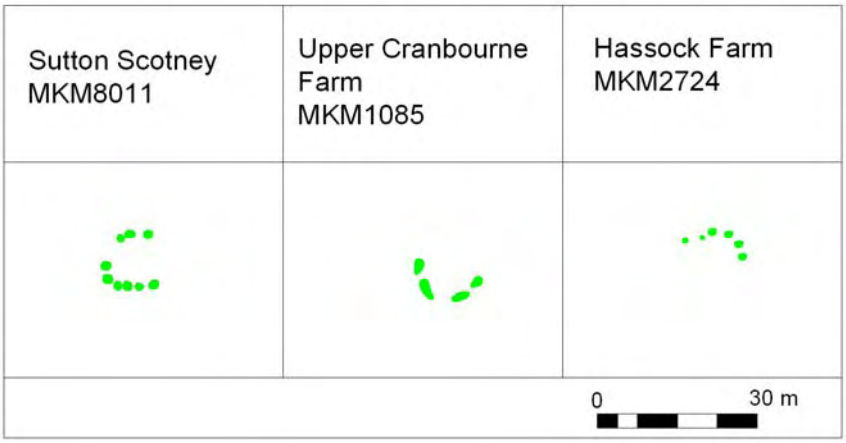

Figure 21. Potential later Neolithic pit circles. NMP mapping © English Heritage.

6.3 NMP results: Bronze Age sites (2,200BC - 800BC)

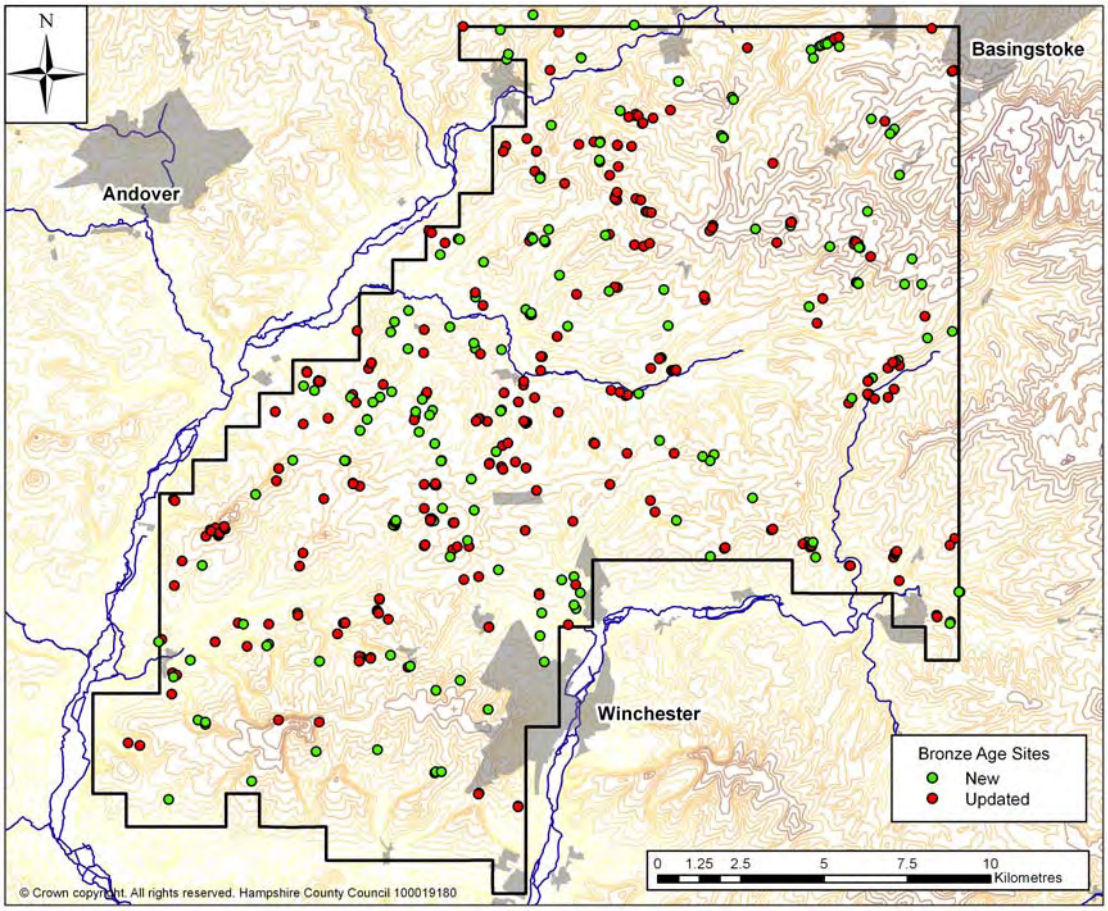

Figure 22. Distribution of Bronze Age Barrow Sites.

Four hundred and sixty five monuments recorded were attributed a Bronze Age date. These were all barrows and possible barrow sites and were in addition to a small number of oval shaped barrows and pit circles potentially of later Neolithic or Early Bronze Age date and described in the previous section 6.2. Of the 465 monuments, 163 (35%) were new sites.

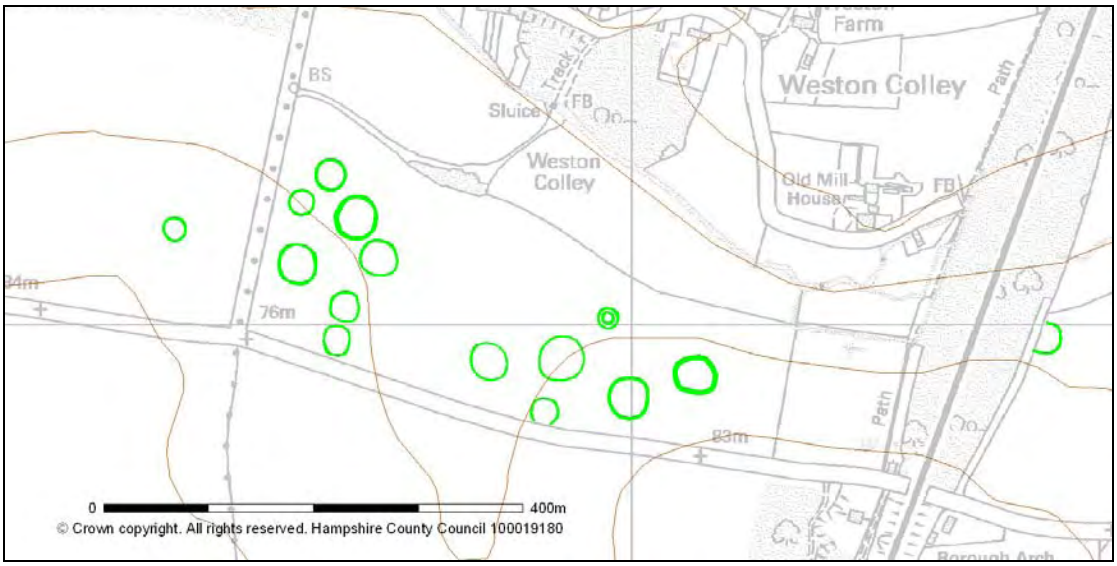

Figure 23. Bronze Age barrow cemetery at Weston Colley. NMP mapping © English Heritage.

Survival. Only 20 (4%) of the barrows still fully survive as earthworks with a further three surviving as partial earthworks and cropmarks. All of the remaining 442 sites, a staggering 95%, have been completely plough-levelled and are only visible as cropmark. This is a reflection of the widespread and longstanding intensive arable cultivation regime in place over much of the downland.

Distribution and location. The barrows are distributed right across the project area. Although generally located on higher ground, few were actually sited on hilltops with higher slopes including heads of dry valleys, ridges and spurs being the most commonly preferred sites. It has already been noted that Neolithic long barrows are often sited in prominent positions on the skyline when seen from below and not necessarily the highest points on hilltops and ridges (section 6.2.1 above), the same seems to be true for later Early Bronze Age barrows.

At Brown Candover, in the valley of the River Itchen, a loose linear arrangement of ten round barrows lie on the upper slopes of the ridge to the north of the river, above the 110m contour (Figure 24). Whilst not on the ridge-top itself these barrows can be seen on the skyline when viewed from the valley floor. Although no settlement sites were identified during the mapping, a small cluster of barrows also lie adjacent to the river at the valley bottom. Comparably sited barrows are known from elsewhere in Wessex, for example along the River Avon in Wiltshire (McOmish *et al* 2002, 33) and a similar pattern is found further a field, as for example at Raunds in Northamptonshire (Harding and Healy 2007)

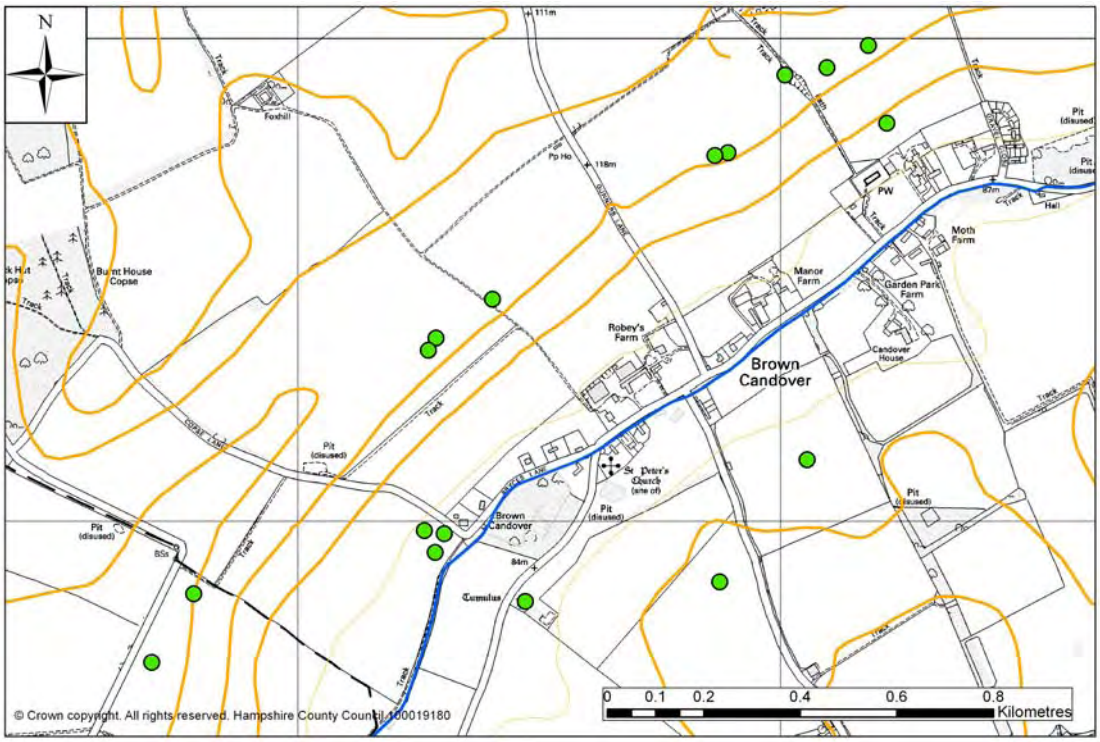

Figure 24. Bronze Age barrows at Brown Candover. NMP mapping © English Heritage.

A small number of barrows were located elsewhere within the river valleys; for example the large cemetery of 14 barrows and an outlier at Weston Colley which lies between 160 and 290m from the River Dever on its south bank (Figure 23).

The majority of sites were simple bowl barrows; a few saucer and disc barrows were recorded although usually as part of larger cemeteries.

Several contiguous barrows were indentified. These included pairs of barrows of fairly uniform size, in some cases enclosed by an oval enclosure. In addition, examples of single ring-ditches with smaller semi-circular or ovoid appendages were identified which may also be contiguous barrow sites (Figure 25).

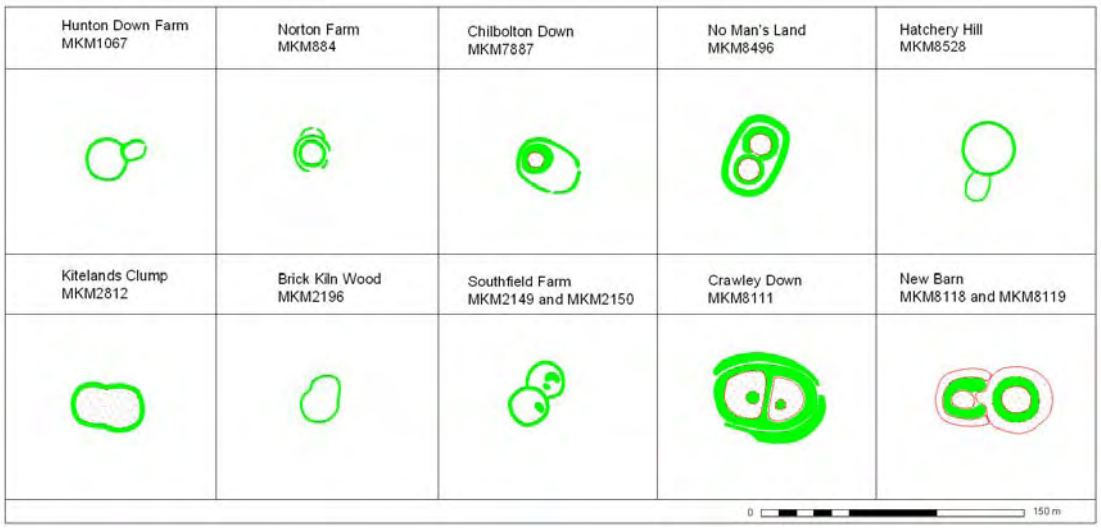

Figure 25. Contiguous Bronze Age barrows. NMP mapping © English Heritage.

Most of the barrows were recorded as individual features in the landscape, in pairs or ill-defined groups. At a number of locations however the barrows form more closely associated coherent groups or cemeteries. These include linear examples such as at Oakley Park (Figure 26) where up to nine ring ditches lie in a linear formation over a distance of 930m. All are plough-levelled ring ditches ranging in size from 11m to 46m across. The three larger complete rings within the ground of Oakley Park itself have been double indexed as possible post medieval tree rings; however their close alignment with the other prehistoric features which run along the top of a prominent ridge (including a possible Neolithic 'short' long barrow) is perhaps indicative of a similar prehistoric origin.

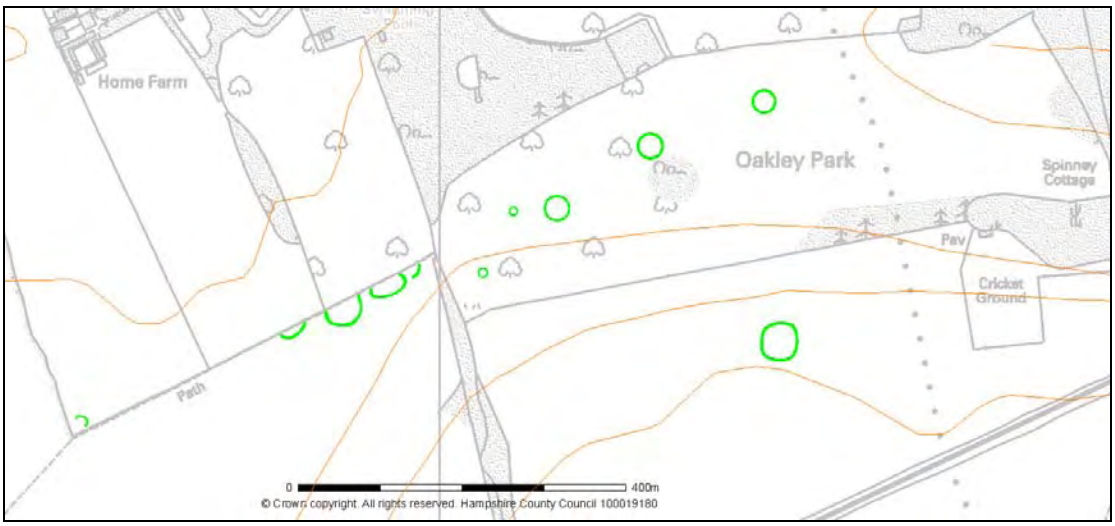

Figure 26. Bronze Age barrow cemetery at Oakley Park. NMP mapping © English Heritage.

Other cemeteries are less regularly arranged with close groups of barrows clustered together with no obvious pattern or planning. Examples include Weston Colley (Figure 23) and Crawley (Figure 27).

Figure 27. Bronze Age barrow cemetery at Crawley. NMP mapping © English Heritage. Photograph: NMR 36/40, 19th July 1967. © Crown Copyright. EH.

No Bronze Age settlement sites were positively identified during the mapping. The difficulty of locating Bronze Age settlement has previously been noted (Shennan and Schadla Hall 1981). This is in part due to many sites not having enclosing ditches, and the generally ephemeral character of settlement activity prior to the Middle Bronze Age (for example, Brück 1999). A number of cropmark enclosures and potential roundhouses were identified which might be evidence of Bronze Age settlement or at least have Bronze Age antecedents. These sites along with associated field systems were given a Bronze Age or Iron Age date and are therefore described in Section 6.6.

6.4 NMP results: Iron Age (800BC – 43AD)

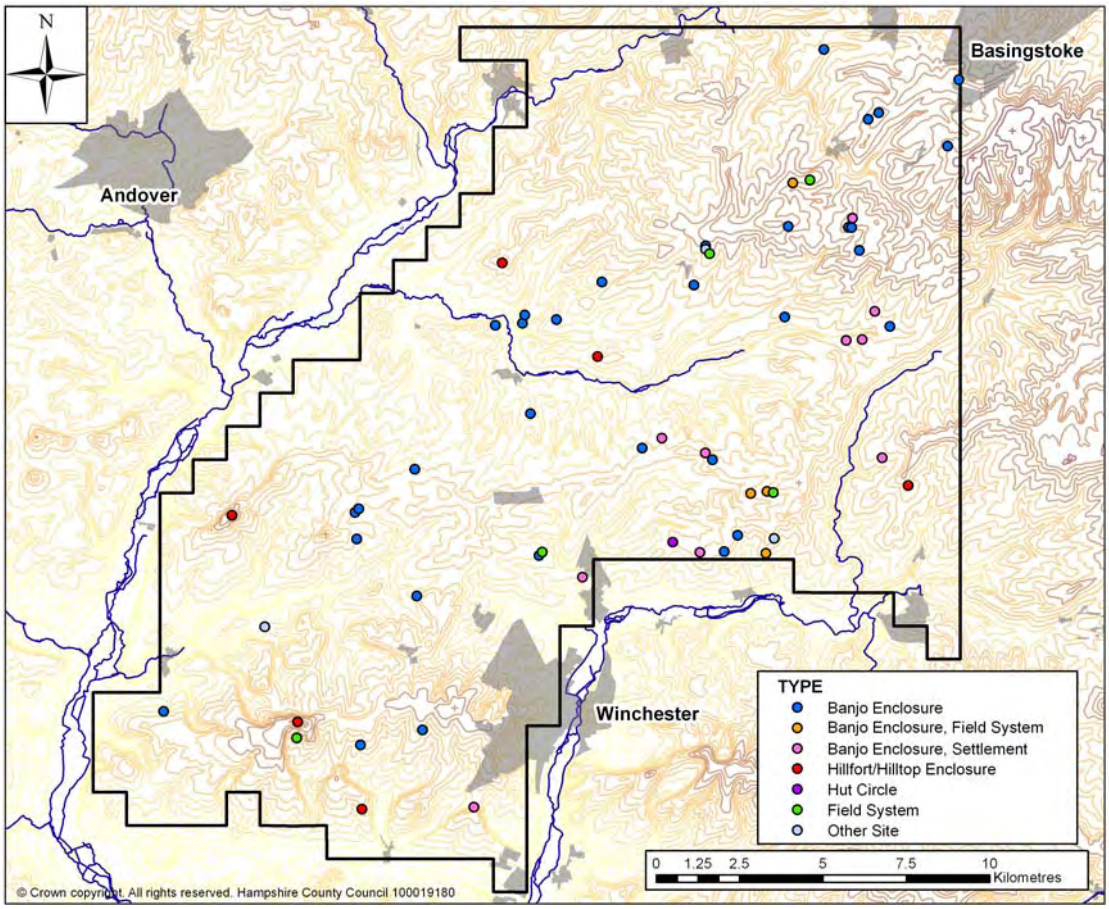

Figure 28. Distribution of Iron Age Sites.

Sixty two sites of a specifically Iron Age date were mapped during the project, of which 12 (19%) were new to the record. These sites are evenly spread across the project area with the exception of the north west corner which was devoid of Iron Age sites. This gap may be explained in terms of interpretation; here Iron Age sites may have been given a broader Iron Age or Roman date range.

6.4.1 Hillforts and hilltop enclosures

Hillforts are defended enclosures surrounded by one or more earthen ditched and banked ramparts. They are generally placed on hilltops, ridges and promontories although some are located in much more low-lying positions (EH 2011d). Whilst some may have their origins in the late Bronze Age, hillforts were generally built and occupied in the Iron Age.

Five previously identified hillforts lie within the project area and one large hilltop enclosure. The hillforts are all slight univallate hillforts as defined by EH (*ibid*), ranging from 4.1ha and 9.1ha in size. The simplicity of their design is probably indicative of an early date; some similar excavated examples have been dated to the later Bronze Age and Early Iron Age (*ibid*, Cunliffe 1993, 169). Whilst all are sites in defendable locations only two occupy true hill-top locations; Tidbury Ring (MKM921) and Woolbury Rings (MKM3323). Two others, (Norsebury Ring (MKM1057) and Oliver's Battery (MKM2335)) lie on slight slopes high-up in prominent locations on the ends of ridges.

The last site, Merdon Castle (MKM3866), lies on a small area of relatively flatter ground on an otherwise steep south facing slope overlooking a small tributary valley

of the River Itchen. The hillfort is much altered from its original form being reused as a motte and bailey castle in the twelfth century and more recently as part of a Second World War military training camp (Figure 29).

The Iron Age hillfort of Merton Castle was reused as part of a military training camp during the Second World War. Some of the buildings associated with the camp are visible under trees to the south of the ramparts on this photograph taken in 1947.

Photograph: RAF CPEUK1964 Frame 3186, 16th January 1947. English Heritage RAF Photography.

Figure 29. Iron Age Hillfort of Merdon Castle. (MKM3866)

One previously identified Iron Age hill-top enclosure was included in the survey area, that of Beacon Hill (MKM3778). The site is sub-circular, and slightly smaller than the hillforts being 2.7 ha in size. It lies on the top of a short ridge and is associated with a Celtic field system which, along with the enclosure itself, is possibly of later Bronze Age or Iron Age date (Figure 34).

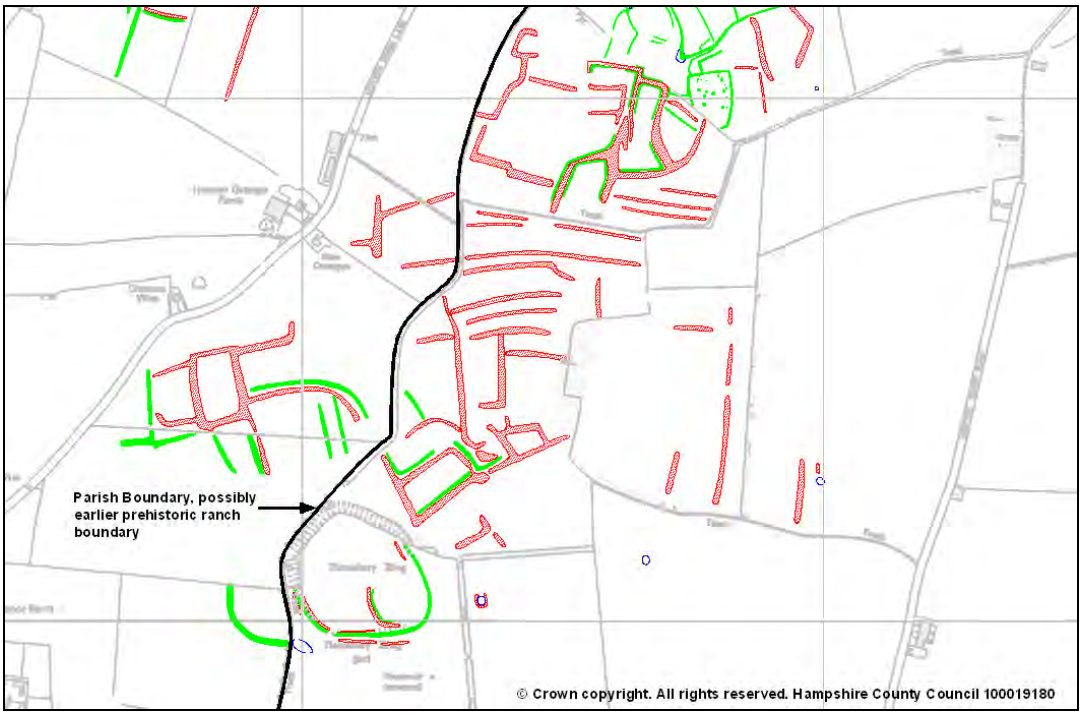

Figure 30. Norsebury Ring Iron Age hillfort and its environs. NMP mapping © English Heritage.

It has been suggested that early hillforts may have developed out of earlier enclosures attached to linear boundaries or at focal points along a network of linears

constructed in the Later Bronze Age (Cunliffe 1993, 167). The hillfort of Norsebury Ring lies on the parish boundary between Bullington and Micheldever. The boundary runs NE towards a junction of several later prehistoric long linear boundaries and is noticeably sinuous. It is therefore considered likely that the parish boundary is of much earlier origin and possibly fossilises a Bronze or Iron Age boundary up to which Norsebury Ring was constructed (Figure 30).

Whilst the boundary appears to cut through the adjacent field system it has been noted elsewhere that such boundaries bisect earlier field blocks (Palmer 184, 111) and this may indicate that the field system is of Bronze Age origin.

6.4.2 Banjo enclosures

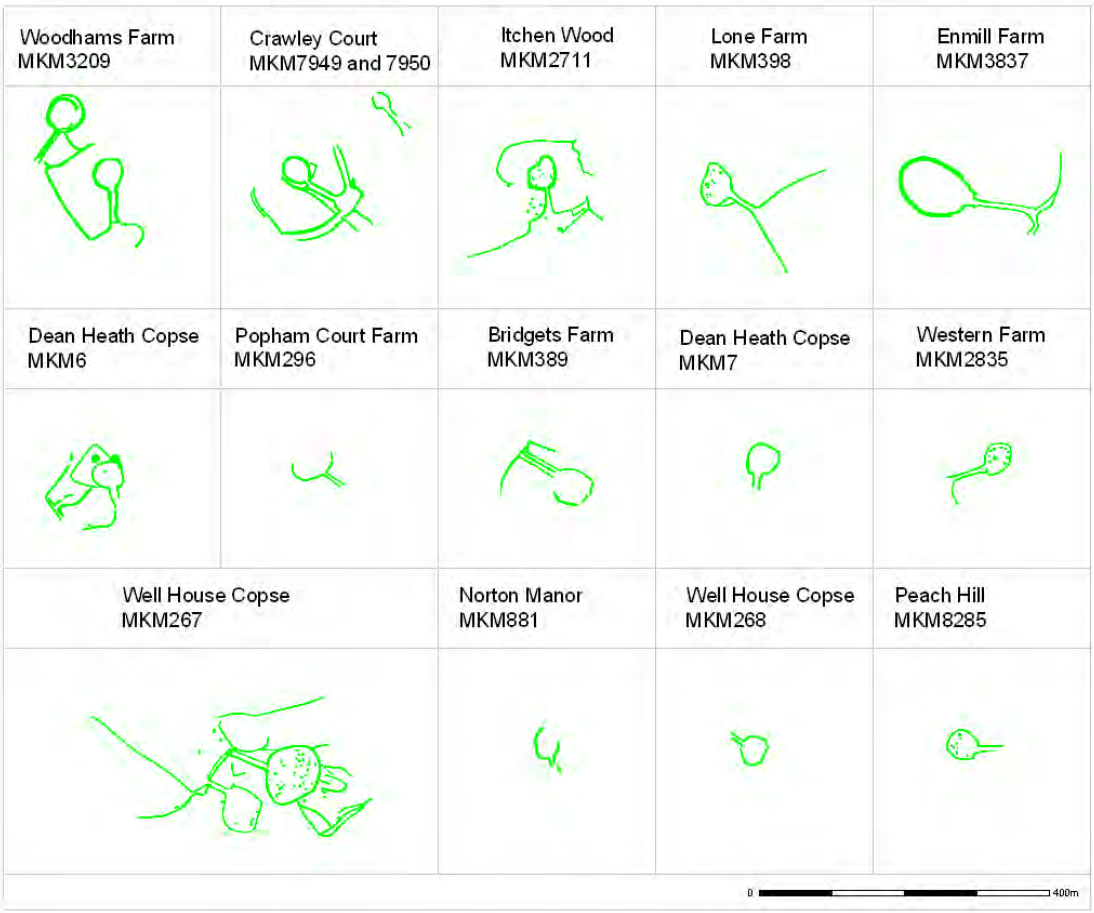

Figure 31. Iron Age Banjo enclosures. NMP mapping © English Heritage.

Banjo enclosures are a distinct class of enclosure dating from the Middle Iron Age onwards. Available evidence suggests a variety of functions. When first recognised as a monument class, banjo enclosures were interpreted as relating to stock control and containment due to their funnel-like entrances. Recent studies show that most if not all excavated examples have evidence for settlement activity within the central enclosure (EH 2011, Winton 2003). At some sites, the funnel or elongated trackway leading up to the central enclosure has been interpreted as evidence of a high status settlement with an elaborate entrance (EH 2011, Massey 1999).

For the purposes of this report, banjo enclosures have been strictly defined using the EH monument class description (EH 1989), other similar but not strictly banjo enclosures have been described separately in Section 6.4.3.

Banjo enclosures are usually curvilinear in plan although there is a great variety of shape and form. Although generally ranging from 0.2ha and 0.5ha in extent,

examples are know as small as 0.1 ha or as large as 1ha. The central enclosure is bounded by a bank with external ditch which is continuous around the entire circuit except for a single entrance. This entrance is their distinctive characteristic being approached by an elongated trackway which is contiguous with, and constructed at the same time and in the same manner, as the main enclosure itself. The trackways range between 25m-90m in length and are almost always longer than the diameter of the enclosure. Banjo enclosures sometimes have paddocks externally attached to the main enclosure and/or are set within a larger compound. (EH 1989 and 2011).

During the project 51 site records were indexed as banjo enclosures, of which 15 were true banjos (using the strict definition as described above). The majority of these are on the small side being between 0.1-0.2ha in internal area, see Figure 31.

6.4.3 Other Iron Age enclosures

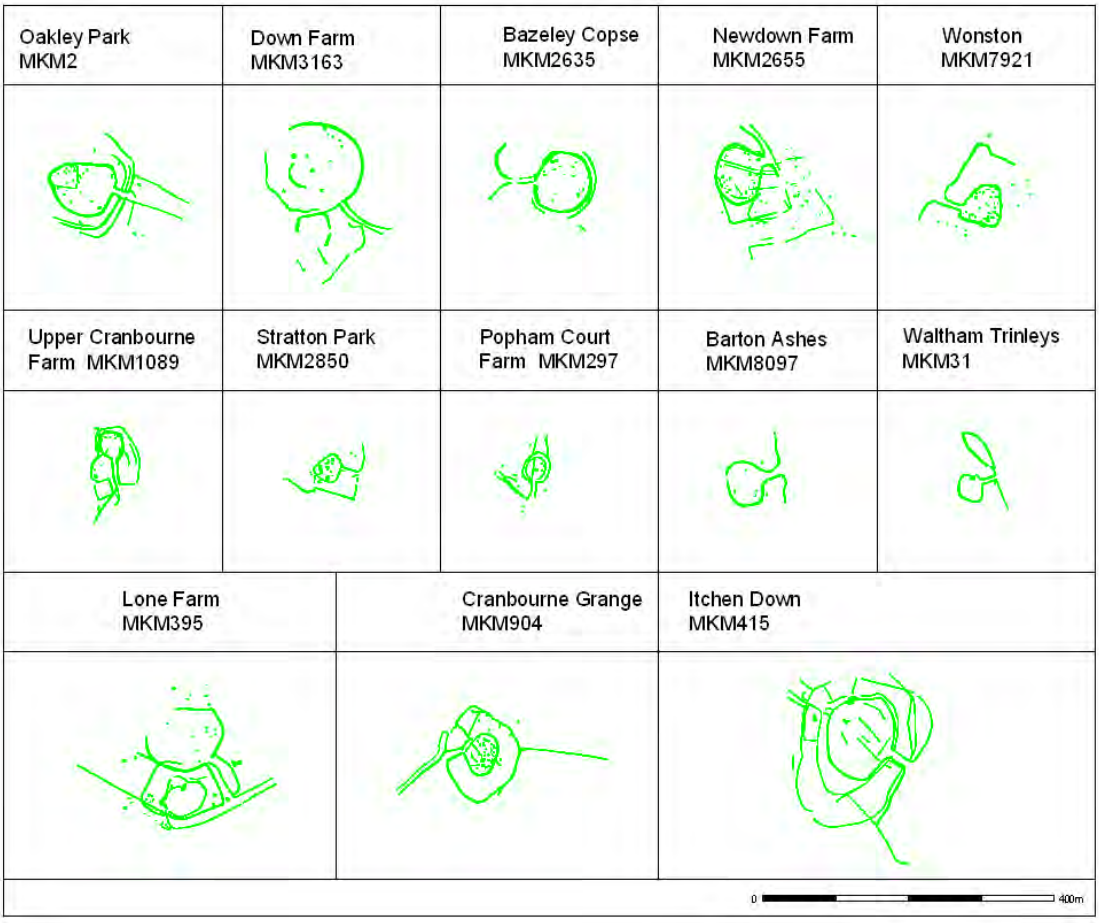

Figure 32. Iron Age banjo-like enclosures. NMP mapping © English Heritage.

In addition to the 15 banjo enclosures described above, 31 further banjo-like enclosures were identified; these did not meet the strict criteria due to size (being too large or too small), the length of trackway or having a rectilinear form (Figure 32).

Other banjo-like enclosures include those with antennae ditches extending from the entrances but with no trackway forming an approach to the central enclosure (Figure 33). These enclosures range from 0.14ha to 0.78ha and are considered to be of the Little Woodbury type. Little Woodbury enclosures usually contain one or more roundhouses and have considered have been small farmsteads housing an extended family unit (Cunliffe 1993, 180-1) Some of those encountered during the mapping project (particularly those on the smaller size and devoid of evidence of internal features) may be stock enclosures. However, it is now thought that 'banjo' enclosures

could have performed a range of functions, including acting as higher status settlement sites or ceremonial feasting centres (Perry 1986; Winton 2003).

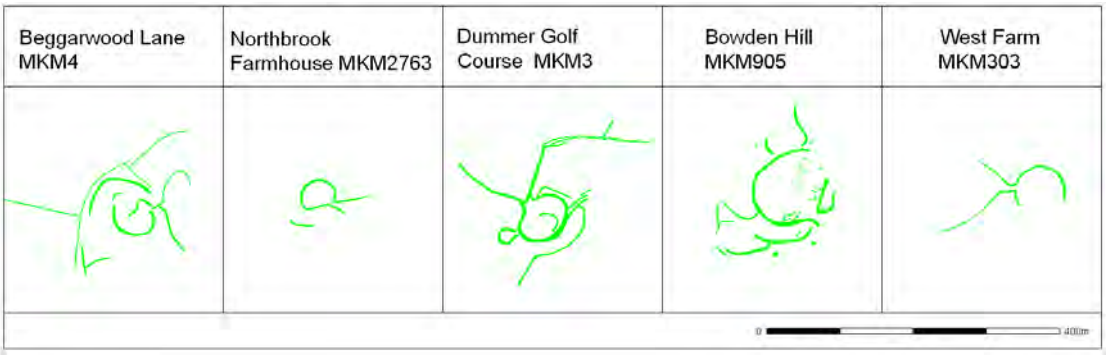

Figure 33. Iron Age enclosures with funnel or antenna entrances. NMP mapping © English Heritage.

6.4.4 Field systems

A number of field systems and field boundaries visible on the aerial photographs were recorded in the project HBSMR with a potential Iron Age date.

In the main, these were enclosed field systems which had been recorded prior to the project such as the field system on Mount Down associated with the hilltop enclosure described in Section 6.4.1 above.

The dates of origin and use of prehistoric field systems are not well understood. Many probably had an origin in the Middle Bronze Age with later adaptation into the Roman period (EH 2011e). They are discussed together more fully in Section 6.6.2 of this report.

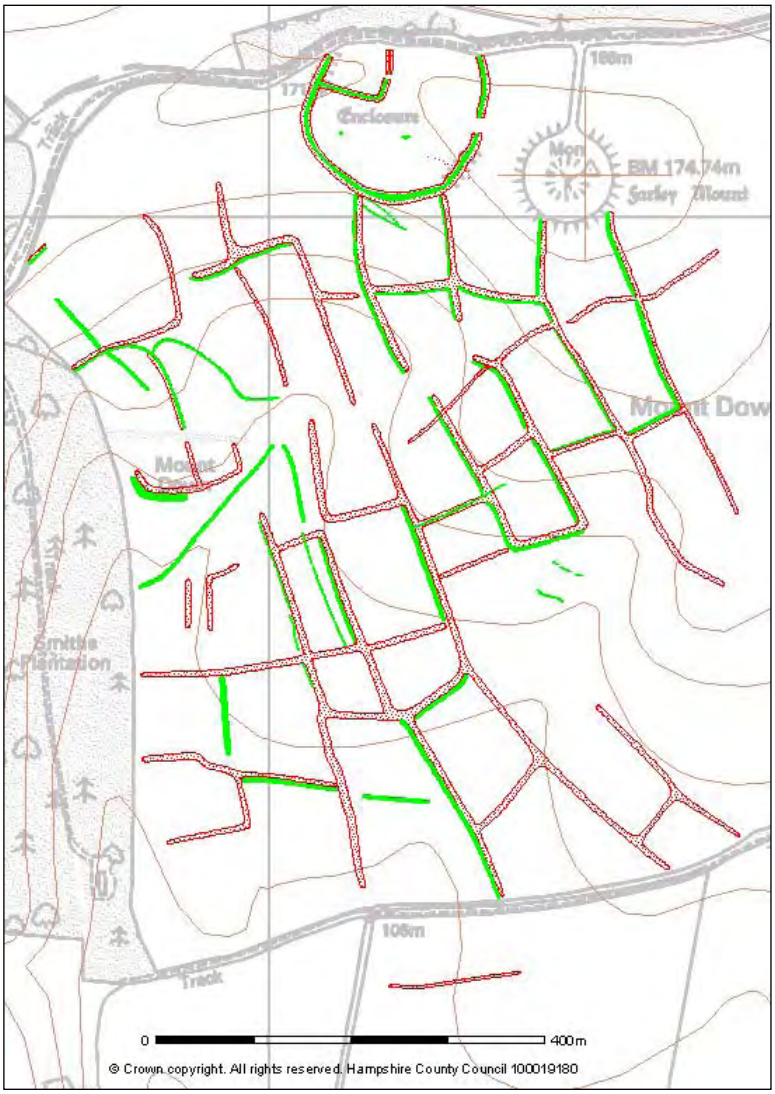

Figure 34. Iron Age hilltop enclosures and associated field system on Mount Down, Hursley. (MKM3778 and MKM3786). NMP mapping © English Heritage.

6.5 NMP results: Roman sites (AD43 – AD410)

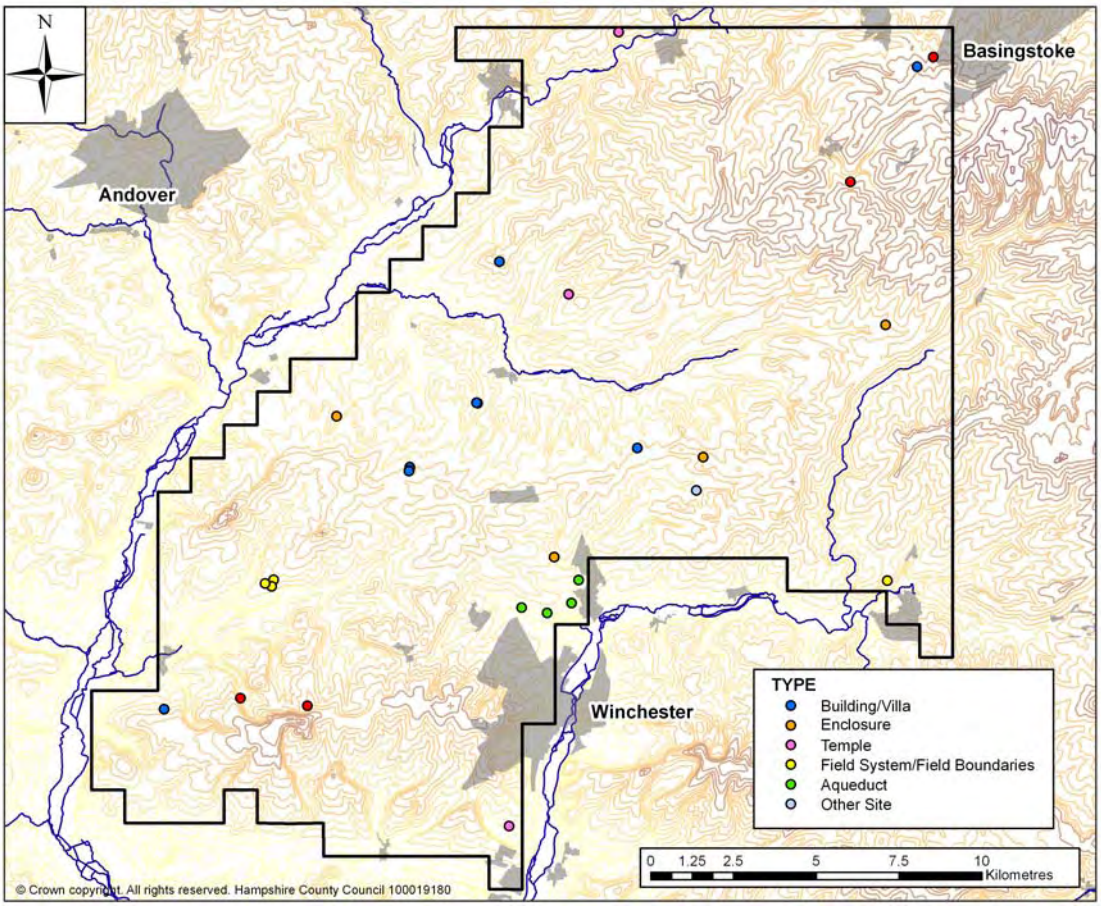

Figure 35. Distribution of Roman Sites.

Twenty eight sites were mapped during the project and allocated a specifically Roman date. Of these, ten (35%) were new to the record. As Figure 35 above shows, these sites are scattered right across the project area

6.5.1 Villas and other buildings

The foundations of 15 probable buildings were identified (Figures 36 and 38). These were considered likely to be the sites of Roman farms, probably of varying status or associated buildings such as barns. Documented 'villa' sites vary greatly in form from simple rectangular buildings to those appended with aisled structures, winged corridors and courtyards (EH 2011f).

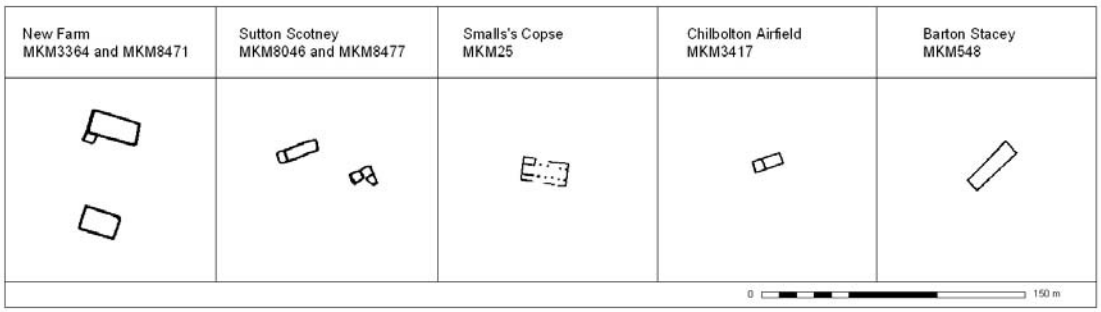

Figure 36. Possible Roman barn or villa sites. NMP mapping © English Heritage.

A significant number of the Roman buildings were co-located on the sites of earlier Iron Age enclosures, indicating a continued use and Romanisation of, these

potentially high status sites. Sites included the hillfort at Tillbury Ring as well as four banjo style enclosures (see Figures 9, 37 and 38).

The Iron Age univallate hillfort of Tidbury Ring lies in Bullington Parish, just north of the intersection between the A303 and A34 trunk roads (MKM921). A large rectilinear building (35m by 13m across) is visible as cropmarks lying within the ramparts on aerial photographs taken in 1948 (Figure 37); it has previously been interpreted as the site of a courtyard villa complex. The area is marked on the ground by a dense scatter of building debris (EH AMIE UID232181).

Figure 37. Tidbury Ring Hillfort with possible Roman villa site. Photograph: AP77 18th June 1948. Original photography Cambridge University Collection of Aerial Photography.

Figure 38. Co-location of Iron Age banjo-style enclosures and probable Roman villas. Left: Bazeley Copse (MKM2635 and MKM2636), right: Barton Ashes (MKM8097 to MKM8099). © Crown Copyright. NMP mapping © English Heritage. Base map is © Crown Copyright all right reserved. Hampshire CC Licence Number: 100019180

The probable site of a Roman villa has long been known at Stanchester Field to the east of Long Barn House; significant surface finds including hypocaust tiles, window glass, wall plaster and 1st to 4th century pottery have been recovered from the vicinity (EH AMIE record UID236285). Although the villa buildings were not visible on the

aerial photographs remains of an associated field system were identified. The site appears to be co-located with a previously unrecorded Iron Age banjo-like enclosure, MKM351.

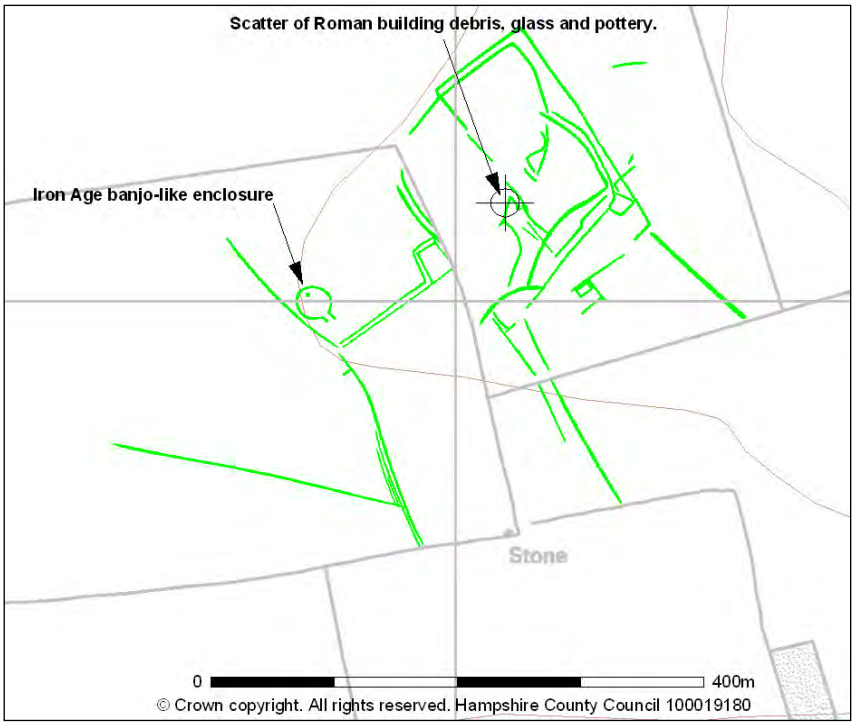

Figure 39. Long Barn House, site of a Roman villa. NMP mapping © English Heritage.

6.5.2 Aqueducts

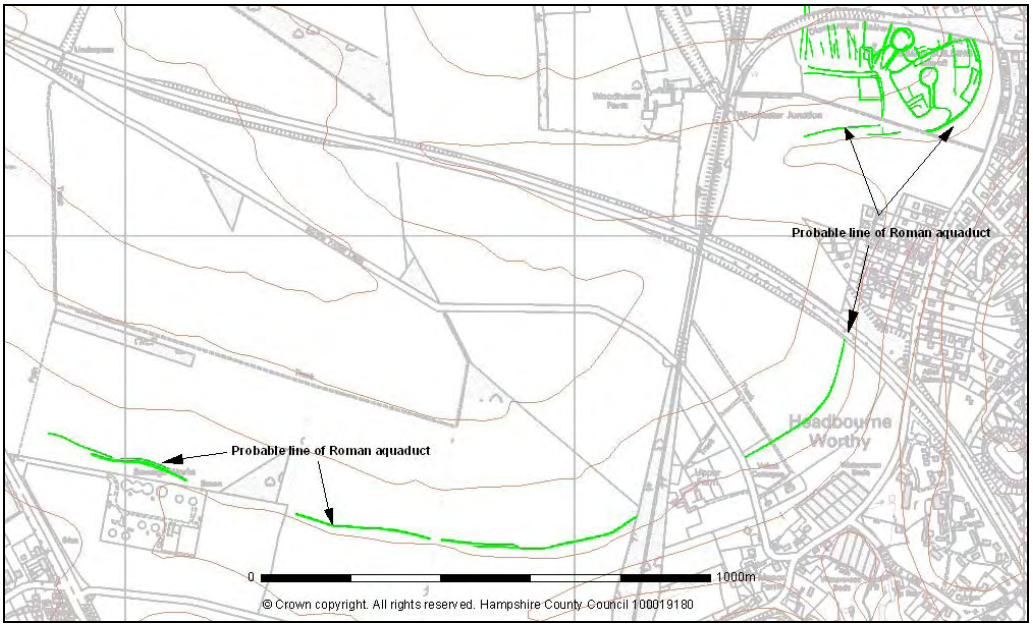

Figure 40. Probable Roman aqueduct at Headbourne Worthy. Closely following the contours the ditches are likely to form part of the system of aqueducts supplying Roman Winchester (MKM3208, MKM3236, MKM3237 and MKM3238). NMP mapping © English Heritage.

The probable line of a Roman aqueduct serving the Roman *civitas capital* of Winchester (*Venta Belgarum*) is intermittently visible as cropmarks for over 3 km to the west of Kings Worthy and Headbourne Worthy (Figure 40). Closely following the 50m contour, the aqueduct is likely to have carried water from the River Itchen and presumably started 6.5km to the east in the vicinity of Itchen Stoke where the 50m contour intersects the river. The aqueduct ditch skirts around an earlier Iron Age settlement and is very similar to another at Poundbury which was known to have originally run for 18km from the River Frome to Dorchester and was dug in the late first century AD (Royall 2011, Wacher 1974).

6.5.3 Temples or shrines

A number of Roman temple sites or Romano-Celtic rural shrines have been identified throughout southern and eastern Britain, many identified from aerial photography. They are generally of circular, square or polygonal form and built on a concentric ground plan with a covered walkway or ambulatory enclosing an inner chamber or *cella* (EH 2011g). Overall dimensions of known examples range from 90 to 580 square metres with the *cella* 4m to 14m across.

Three small concentric square enclosures were mapped and identified as potential temples or shrines (Figure 41). All are within the range of sizes described above with the enclosed areas ranging from 244 square metres to 535 square metres and inner enclosures from 8m and 14m across. The Upper Cranbourne Farm site lies on the line of an older prehistoric linear boundary and 82m to the west of the possible pit circle described in Section 6.2.4 above (MKM1085). It may therefore be sited in an area already well established as spiritually important in the earlier prehistoric periods.

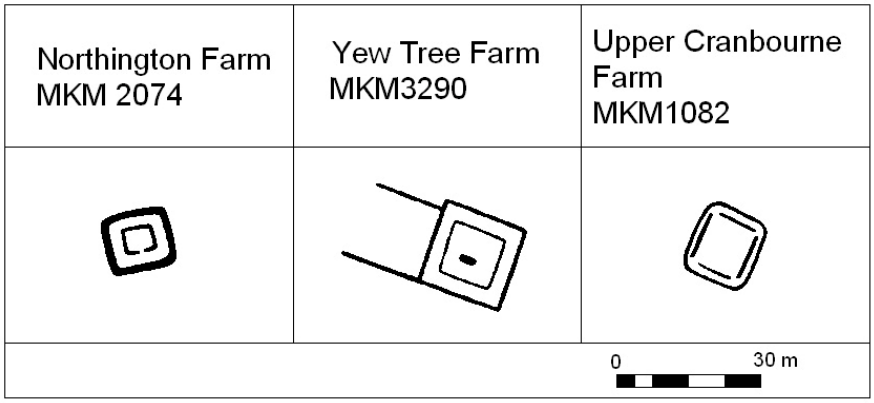

Figure 41. Potential Roman temple sites. NMP mapping © English Heritage.

6.5.4 Roman roads

As a *civitas capital*, Winchester was the focus of a number of major Roman Roads including those to *Londinium* (London), *Cunetio* (Mildenhall) and *Clausentum* (Bitterne). Four sections of road were identified during the mapping – two relating to the road to *Sorviodunum* (Old Sarum) and two to *Calleva Atrebatum* (Silchester).

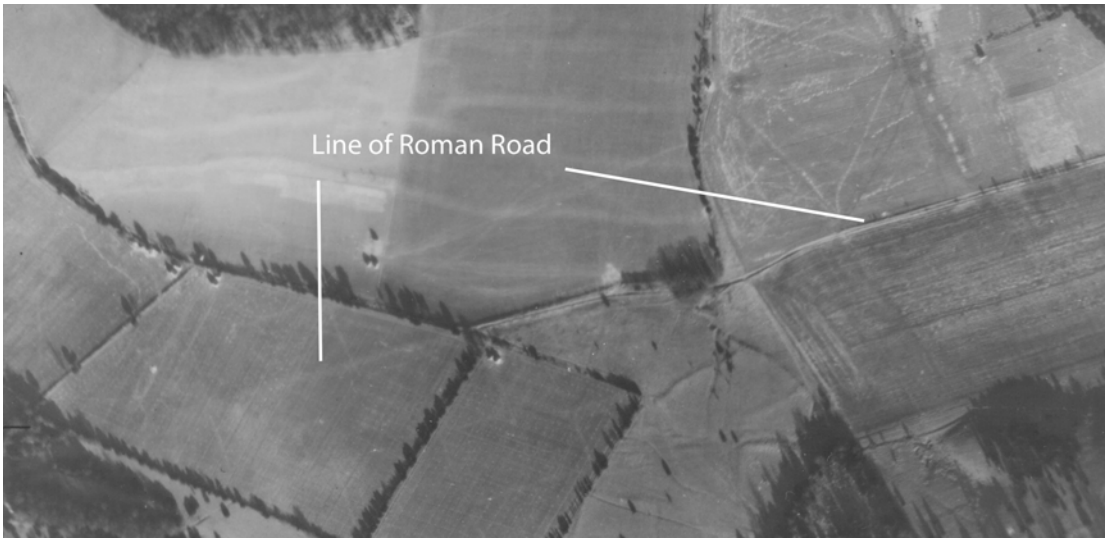

Figure 42. The line of the Roman Road from Winchester to Old Sarum. The road is partially fossilised in modern field boundaries and partially as a low earthwork bank running across the field to the left of this image. Photograph: RAF CPE/UK/1927 Frame 4030, 19th January 1947. English Heritage RAF Photography.

6.6 Prehistoric or Roman sites (4000BC –AD410)

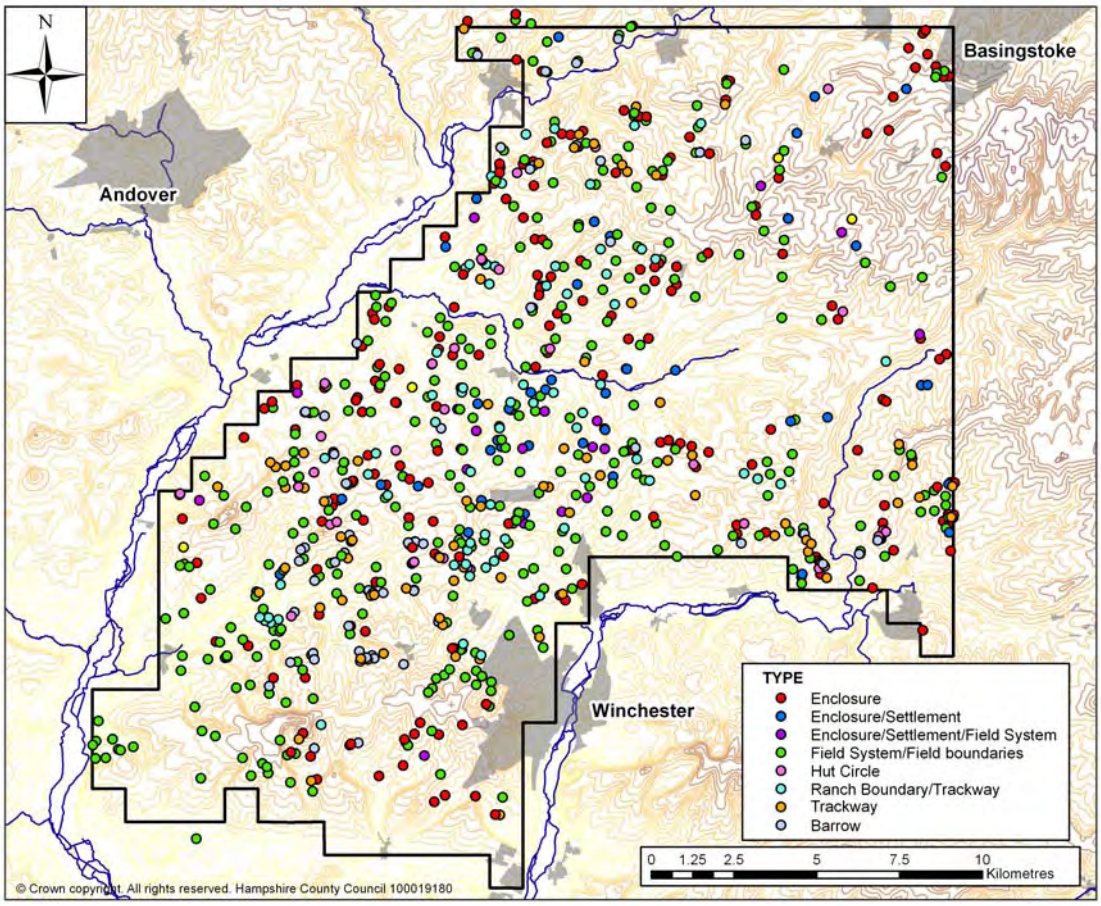

Figure 43. Distribution of prehistoric or Roman sites.

It was not possible to attribute a specific period to a large number of sites although being considered of Roman or earlier date. These sites included generic monument types such as field systems, trackways and enclosures. They formed the largest group of monuments encountered in the project with 709 generally prehistoric sites and a further 175 attributed more specifically to the Iron Age or Roman periods. For the purposes of this report, these sites are referred to as 'Prehistoric' in the following section even though some sites may have been in use into the Roman period. The sites are concentrated in a wide band across the central downland between the rivers Test and Itchen.

6.6.1 Linear boundaries

A number of long linear boundaries were identified running across the landscape for three to four kilometres. Forty four have been indexed as ranch boundaries in the project database although a number of others have been indexed as trackways or other boundaries within field systems (Figure 44). These linear boundaries, which have previously been termed 'ranch boundaries' in Wessex where most prolonged and intensive studies have taken place, are generally considered to have been constructed between the Middle Bronze Age through to the Iron Age although there is evidence for the construction of boundaries from the Early Neolithic onwards (EH 2011h). They are often associated with extensive field systems and have previously been considered to be territorial markers representing farm or estate boundaries in a predominantly pastoral economy. They appear in greater numbers form the later Bronze onwards, possibly associated with increasing reorganisation of the land due

to a rising population or the development of a powerful ruling elite (*ibid*). As has been found elsewhere in Wessex, in some cases the boundaries appear to cut through earlier field systems or were incorporated into later field systems, and it is likely that they developed over a considerable period of time (see Bradley *et al* 1994).

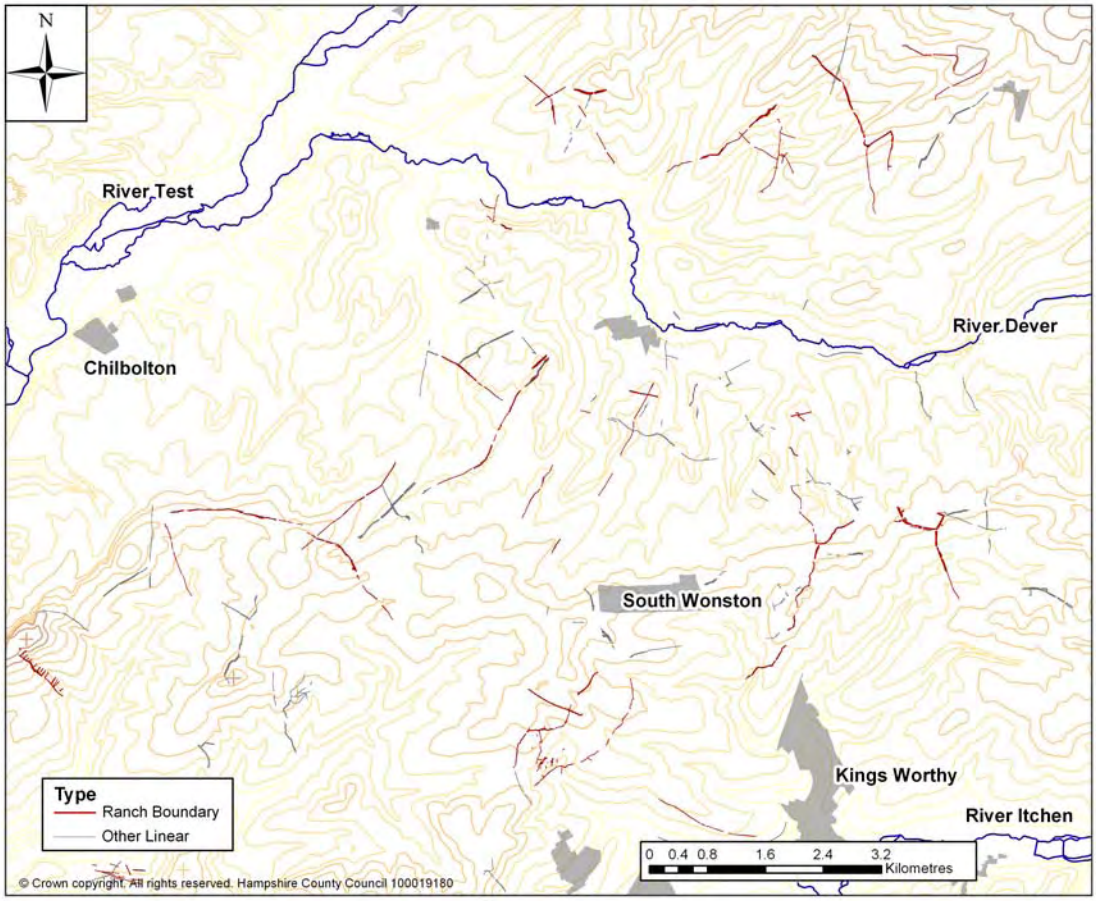

Figure 44. Prehistoric linear boundaries. NMP mapping © English Heritage.

It has previously been noted (EH 1989 and 2011h) that linear earthworks may relate directly to other monuments such as burial mounds and hillforts. Bronze Age round barrows often act as focal points on the alignments of linear boundaries and their incorporation into the boundaries may be suggestive of the earthworks formalising boundaries previously marked by the barrows. This appears to be the case at Laverstoke Grange Farm where a junction in two linear boundaries coincides with the site of a small barrow cemetery (Figure 45).

On Stockbridge Down, a linear boundary runs south eastwards from the hillfort of Woolbury Rings (MKM3323). To the north of the linear lie a set of prehistoric lynchets know locally as Jacob's Ladder and to the south, open downland with a dispersed Bronze Age barrow cemetery. The barrows are still surviving as extant earthworks suggesting that this area has never been under cultivation; the linear earthwork may therefore have formalised the boundary between the arable fields and a pastoral (and/or ceremonial) landscape (D Hopkins pers. com).

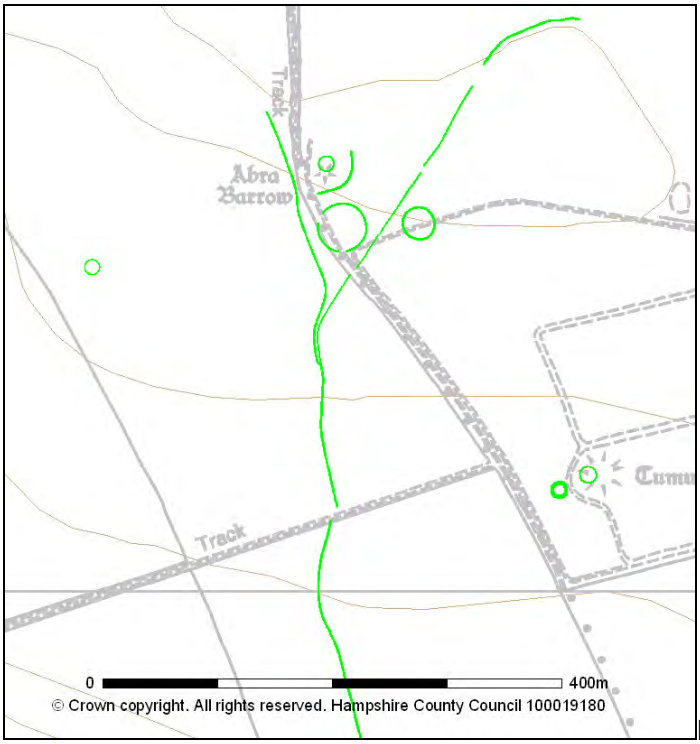

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Figure 45. Prehistoric linear boundary at Laverstoke Grange Farm. (MKM2344*).* NMP mapping © English Heritage.

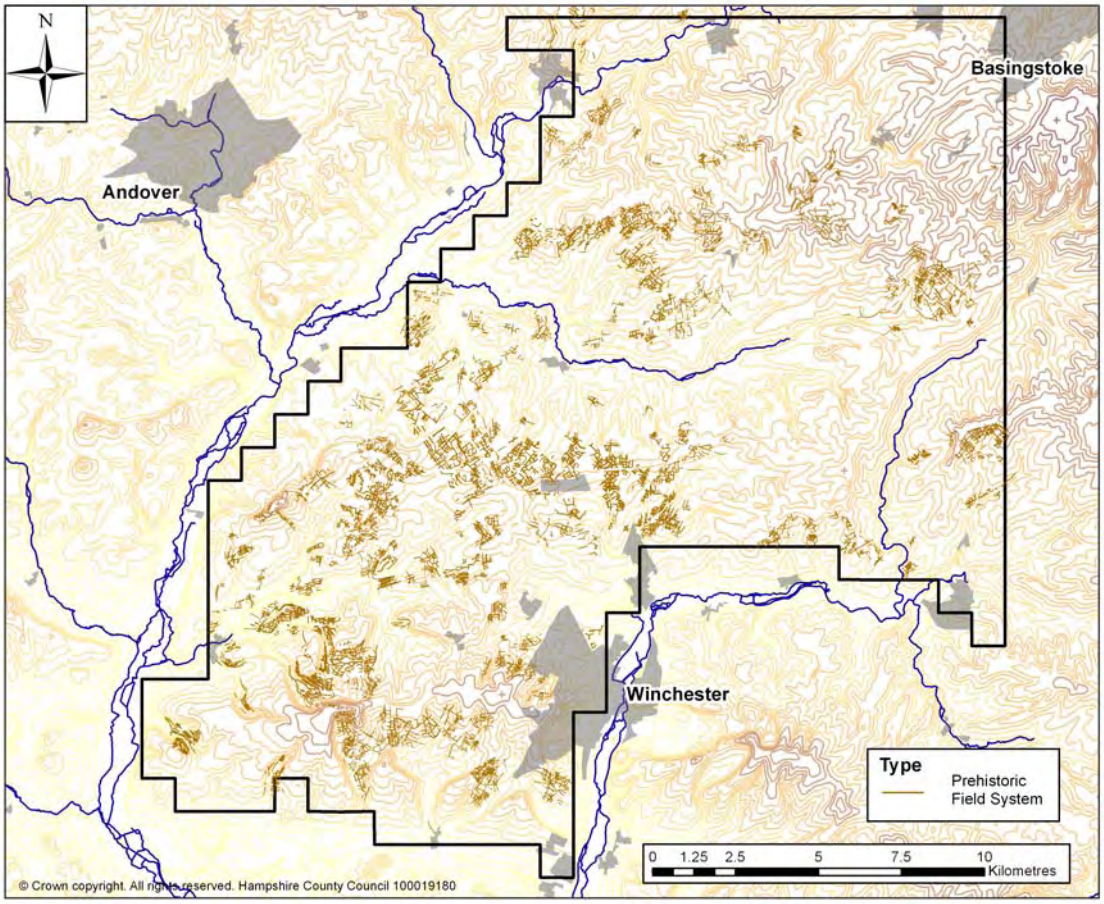

Figure 46. Distribution of prehistoric field systems.

6.6.2 Field systems

Extensive areas of prehistoric field system were plotted during the mapping project, particularly on the upper slopes of the chalk ridges. In Hampshire evidence dating the origins of the 'Celtic fields' to the Bronze Age comes from the Danebury survey (e.g. Palmer 1984, 70; Cunliffe and Poole 2000) however, it seems probable that they had later adaptations during the Iron Age and into the Roman period (EH 2011e).

Over 400 records for prehistoric field systems, field boundaries and lynchets were created during the project of which 37% were new sites. It is difficult to assign a specific date to these field systems from aerial photographic evidence alone and whilst several might be assumed to be Iron Age or Roman in date, many would have had their origins in the Bronze Age.

Whilst earthwork remains of prehistoric field systems were transcribed from RAF vertical photography from the late 1940s (Figure 10), most systems were plough-levelled and only visible as cropmarks having already been levelled by the early part of the twentieth century (Crawford 1923, 348). Of the 239 prehistoric field systems identified during the project only six (2.5%) had some earthwork elements remaining.

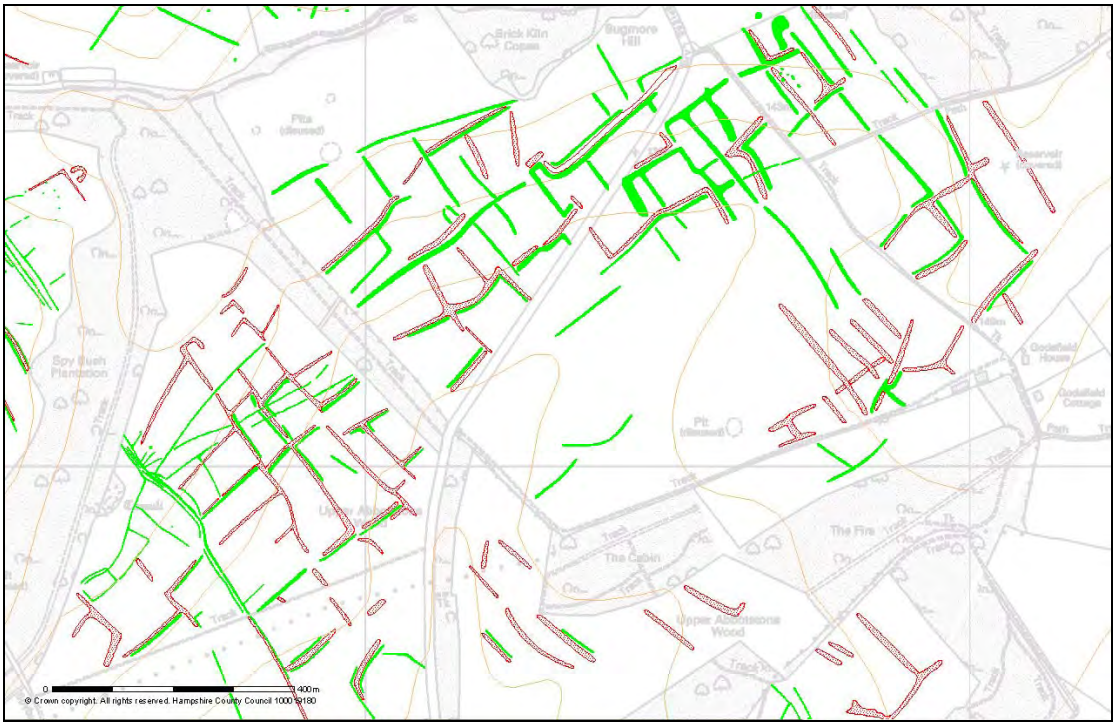

Figure 47. Regular cohesive field system on Bugmore Hill. (MKM2313). NMP mapping © English Heritage.

The field systems encountered within the Hampshire Downlands study area are similar to those surveyed and mapped elsewhere in Hampshire (Young 2008 and 2011) and Southern England (Bradley and Richards 1978, McOmish *et al* 2002, Yates 2007) which have been classified into two types, cohesive (regular or coaxial) and accreted (irregular) (EH 2011e).

The majority of the prehistoric field systems plotted were cohesive systems being those with relatively uniform field blocks laid out in a consistent manner and adhering to a particular dominant line of symmetry or along two axes set at right angles to each other (*ibid*, Yates 2007).

A regular cohesive field system lies on the southern slopes of Bugmore Hill, immediately to the north of the Iron Age hillfort of Oliver's Battery (Figure 47). The small size of the individual field units and wide lynchets are perhaps indicative of a later prehistoric (Late Bronze Age or Iron Age) origin.

The fields at Ashley (MKM8221) are dissected by trackways and linear ditches and appear to have undergone phases of alteration, with some fields becoming sub-divided, but the overall layout forms an extensive cohesive system with the main axis aligned roughly east-west (Figure 48).

Whilst the majority of field systems encountered are of a cohesive type, some accreted field systems were mapped. Regular accreted field systems tend to have sinuous field boundaries which may follow a general alignment but with no particular axis, whereas irregular accreted systems are characterised by small conjoined fields of irregular outline and size, often around settlements. A gradual development of accreted field systems is often apparent, indicated by changes in alignment by the addition of later fields.

The fields at South Wonston (MKM8180, Figure 49) appear to form an accreted system around a single focal point. The central 'hub' of the system is obscured by a modern road and tree plantations but it is likely that the system has developed over time around a central curvilinear settlement enclosure.

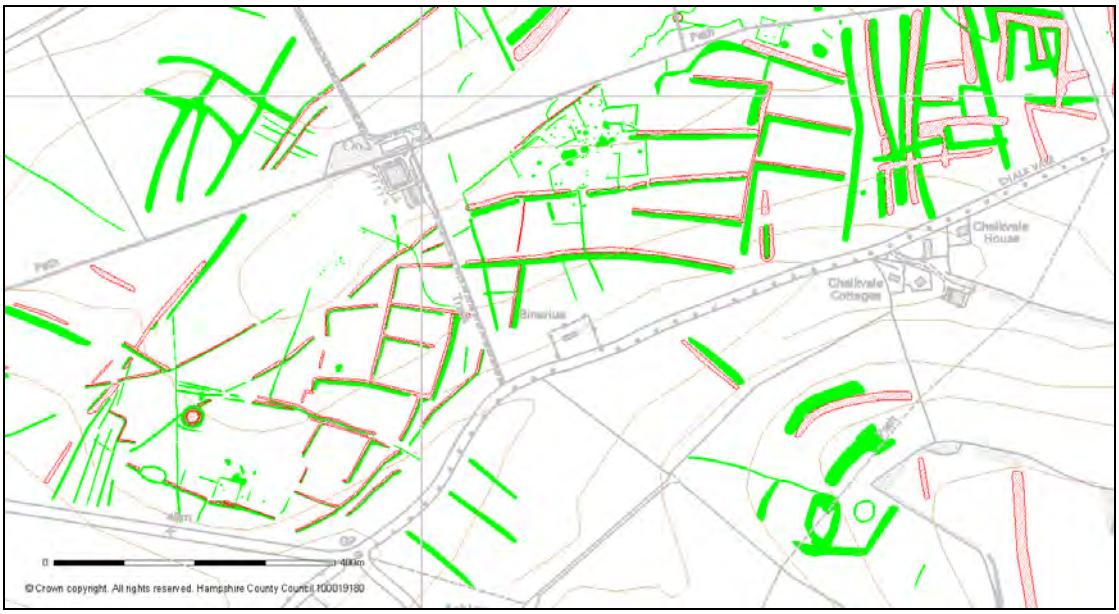

Figure 48. Cohesive field system at Ashley. (MKM8221). NMP mapping © English Heritage.

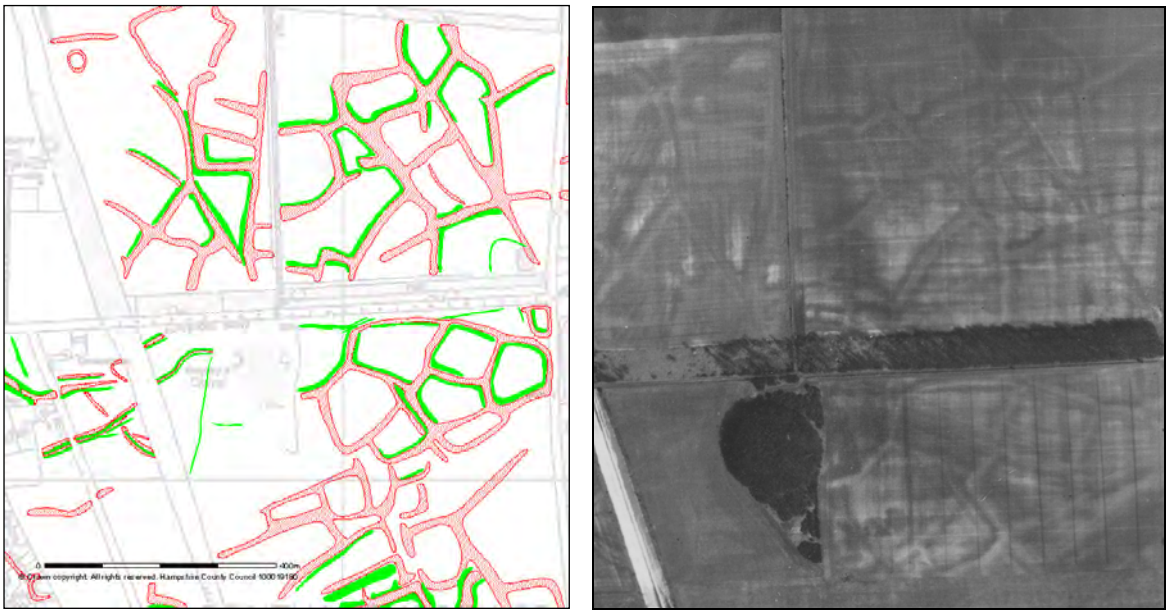

Figure 49. Irregular Aggregate field system at South Wonston. (MKM8180). NMP mapping © English Heritage. Photograph: RAF CPE/UK/1973 Frame 3448, 11th April 1947. English Heritage RAF Photography.

6.6.3 Settlements and enclosures

Three hundred and fifty two prehistoric settlement related features were identified during the project, including 49 settlements, 267 enclosures and 36 potential roundhouses (a further 30 ring ditches were double-indexed as hut circles or round barrows). Of the 352 sites, 141 (40%) were new to the record. All sites, bar one on Teg Down near Winchester (MKM3188), have been plough damaged and are now only visible as cropmarks on the aerial photographs.

These sites were all indexed in the project database with a broad prehistoric date range and whilst many may well relate to a specific period such as the Iron Age, it was felt at the time of recording that there was insufficient evidence to give a precise date based on the aerial photographic record alone. For example several of the enclosures illustrated in Figures 52 and 53 may be Bronze Age in origin whilst others are more akin to the banjo enclosures described in section 5.4.2 and are likely to date to the mid to late Iron Age or Romano-British period.

Roundhouses and unenclosed settlements.

No direct evidence for Bronze Age settlement was forthcoming during the mapping project although a number of small ring ditches, possibly the remains of unenclosed roundhouse settlements, were identified. Whilst some may date to the Bronze Age, unenclosed settlements were possibly in use up to the Roman period (Palmer 1984, 54). The most convincing of the unenclosed settlements lies on Itchen Stoke Down (Figure 51) where five curvilinear enclosures lie in close association with a dense pit scatter. The enclosures range in size from 12m to 21m across and each has an entrance gap (in one case two). The presence of these apparent entrances is perhaps indicative of the enclosures having a settlement related function.

There does appear to be a lot of variation in the orientation of entrances in the Itchen Stoke Down group despite Bronze Age and Iron Age houses usually having doorways which face south (Pearson 1996), however more recent work has indicated that there is more variation (Pope 2007).

The Itchen Stoke enclosures lie close to a linear boundary, possibly a later prehistoric linear boundary; Bradley and Entwhistle (1994) found on the Salisbury

Plain that linear boundaries were often aligned onto earlier barrow groups. The ring ditches may therefore alternatively be hengiform monuments or causwayed barrows, similar monuments having been found elsewhere in Wessex (White 1982).

Figure 50. Later prehistoric roundhouse at Lone Farm, Micheldever. (MKM330). Photograph: NMR 4291/30,3rd March 1989. © Crown Copyright. EH.

Figure 51. Later prehistoric unenclosed settlement on Itchen Stoke Down. NMP mapping © English Heritage.

Discrete enclosures.

Two hundred and sixty seven discrete enclosures were indexed in the project database as prehistoric or Roman in date, most of which are probably settlements although some may have been associated with stock rearing.

A wide range of size was noted with enclosures ranging from 2ha to less than 0.1ha. As elsewhere in southern England, the enclosures come in a wide range of forms - from near square to near circular or oval. The context and dating of these sites is problematic and a simple rectangular/curvilinear division is not necessarily indicative of date.

A large number of small enclosures with associated pits and/or field boundaries and track ways were encountered during the mapping. These can be interpreted as small farmstead enclosures of the Late Bronze Age or Iron Age periods; a selection of which are shown in Figure 54.

Figure 52. Later prehistoric enclosed settlements. NMP mapping © English Heritage.

Several examples of double-ditched enclosures were plotted. These ranged from those where the ditches were very closely spaced to those where the gap between the ditches was greater than the width of the inner enclosure, effectively forming a secondary concentrically enclosed outer space or compound, perhaps used for livestock, for examples see Figure 53.

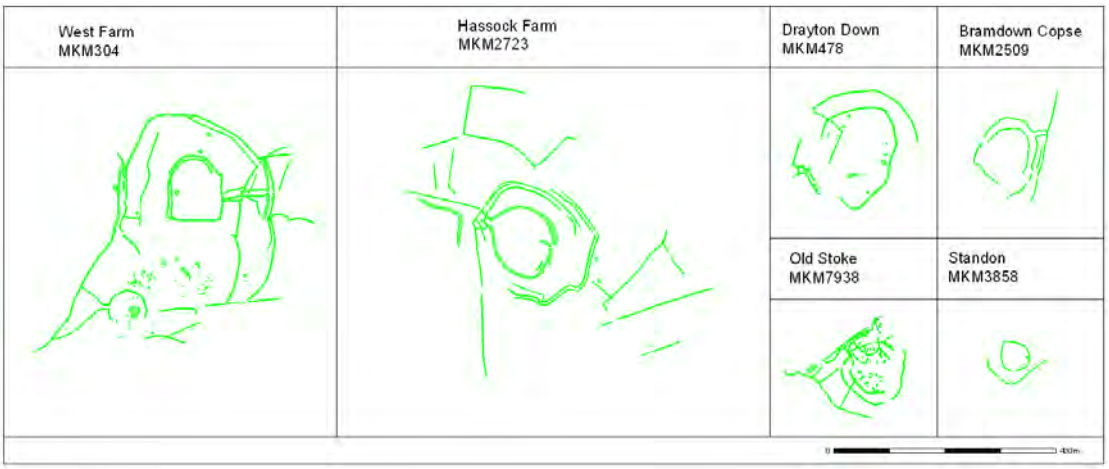

Figure 53. Later prehistoric enclosed settlements. NMP mapping © English Heritage.

A small number of larger settlement enclosures were also encountered which are considered to relate to farmsteads or villages perhaps housing more than one extended family (Figure 54). One of example lies on the hilltop of Brockley Warren and is associated with a number of barrows and other smaller enclosures (Figure 55). It appears to have been incorporated into a later Celtic field system and may of Bronze Age or Iron Age origin.

These larger enclosures differ from the hilltop enclosures described in Section 6.4.1 by not being sited in hilltops but more generally moderate slopes. An exception to this is the enclosure on Chilton Airfield (Figure 56, MKM3415) which is sited on a large plateau.

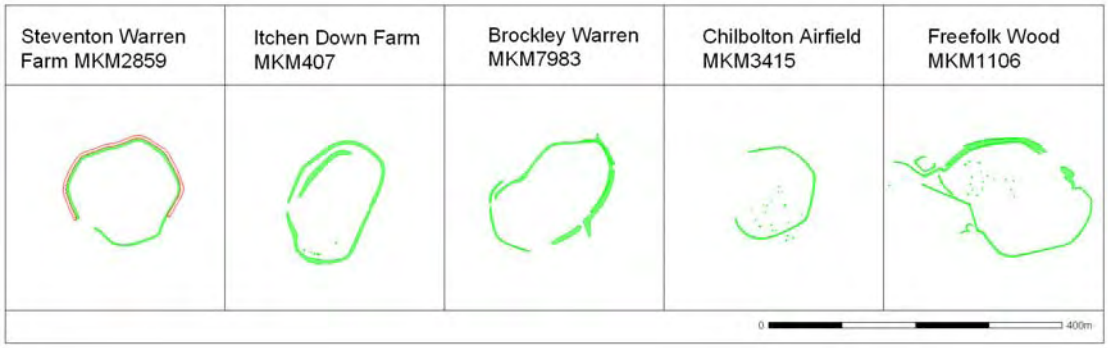

Figure 54. Later prehistoric enclosed settlements. NMP mapping © English Heritage.

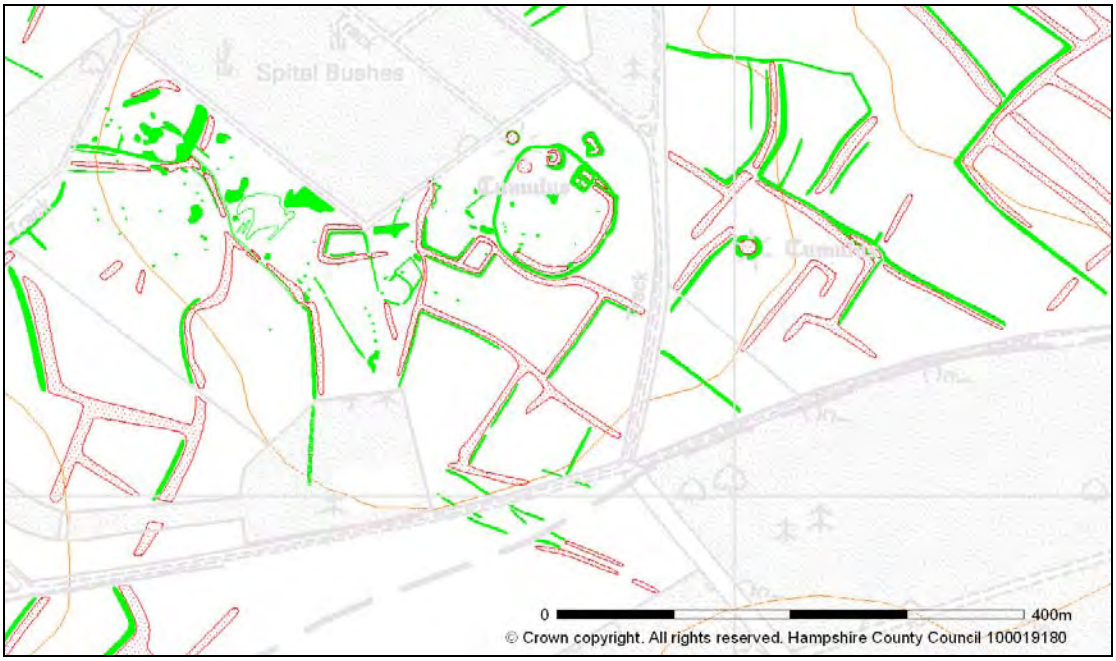

Figure 55. Brockley Warren, later prehistoric enclosed settlement with associated field system. MKM8035 and MKM8037. NMP mapping © English Heritage.

Enclosure complexes.

The years from 100BC to AD43 have been described as a 'period of reformation' (Cunliffe 1996, 29), with the hillfort-centred settlement pattern of the previous centuries giving way to a new socio-political and cultural system. This change is perhaps represented in the aerial photographic record through the appearance of new complex settlement types. A small number of ditched enclosure complexes were identified during the project, each comprising a series of small rectilinear enclosures often arranged along one or both sides of a trackway (Figures 57 and 58). They are often associated with wider field systems and pits.

These enclosure complexes perhaps offer evidence for nucleation of population and are considered to relate to this later Iron Age or early Roman period. Rog Palmer

has suggested (e.g. Palmer 1984, 10) that the small rectangular enclosures or paddocks found within these enclosure complexes are associated with stock rearing.

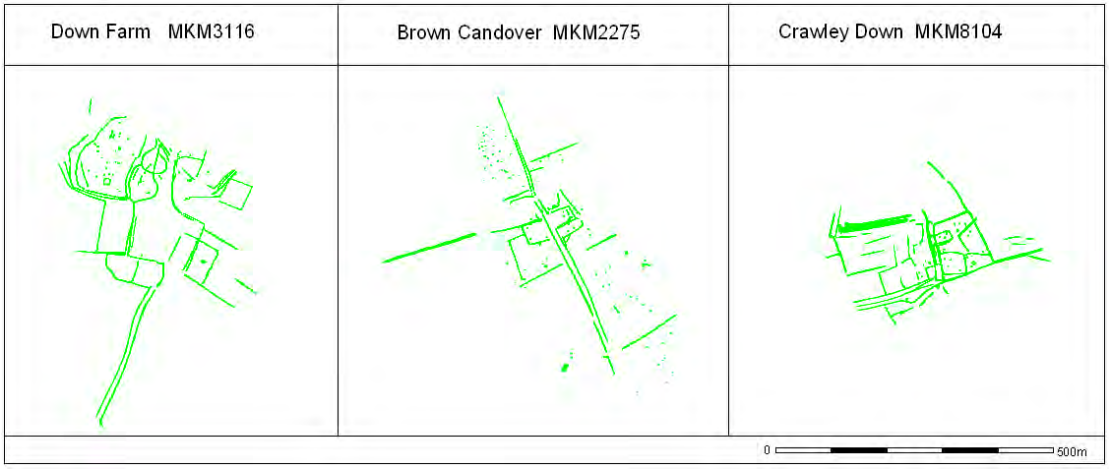

Figure 56. Later prehistoric settlement enclosure complexes. NMP mapping © English Heritage.

The site of an extensive Iron Age or Roman settlement is visible as cropmarks on aerial photographs to the north-east of Abbotstone Farm (Figure 57). It comprises a complex of 10-15 small rectilinear enclosures with associated trackways and field boundaries. A major double-ditched trackway runs east-west across the site where it meets a possible prehistoric linear boundary. A curvilinear enclosure appears to underlie the rectilinear enclosures towards the north of the complex, perhaps indicating an earlier (Bronze Age or Early Iron Age) origin.

Figure 57. Iron Age or Roman settlement complex at Abbotstone Farm. NMP mapping © English Heritage.

Square enclosures.

Three square enclosures considered to be Roman shrines or temples have already been described in Section 6.5.3. In addition to these, a number of other square or near-square enclosures were identified, these ranged in size from 15m to 50m across and were considered to be of Later Iron Age or Roman date; a selection are illustrated in Figure 58 below.

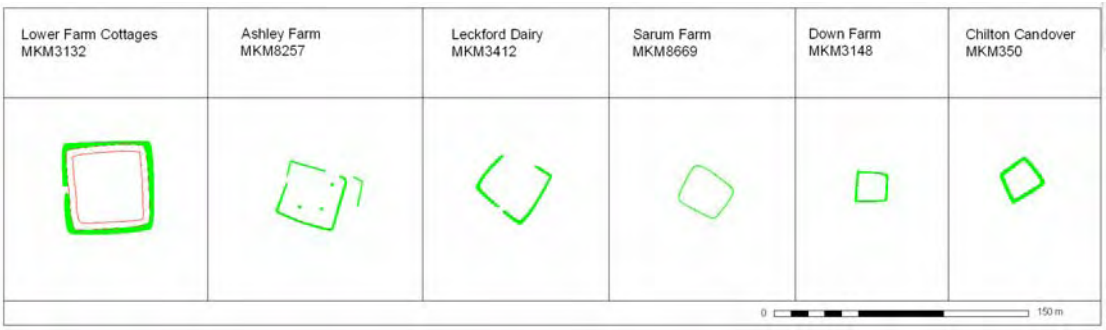

Figure 58. Later prehistoric or Roman square and sub-square enclosures. NMP mapping © English Heritage.

6.7 NMP results: Early Medieval sites (AD410 – AD1066)

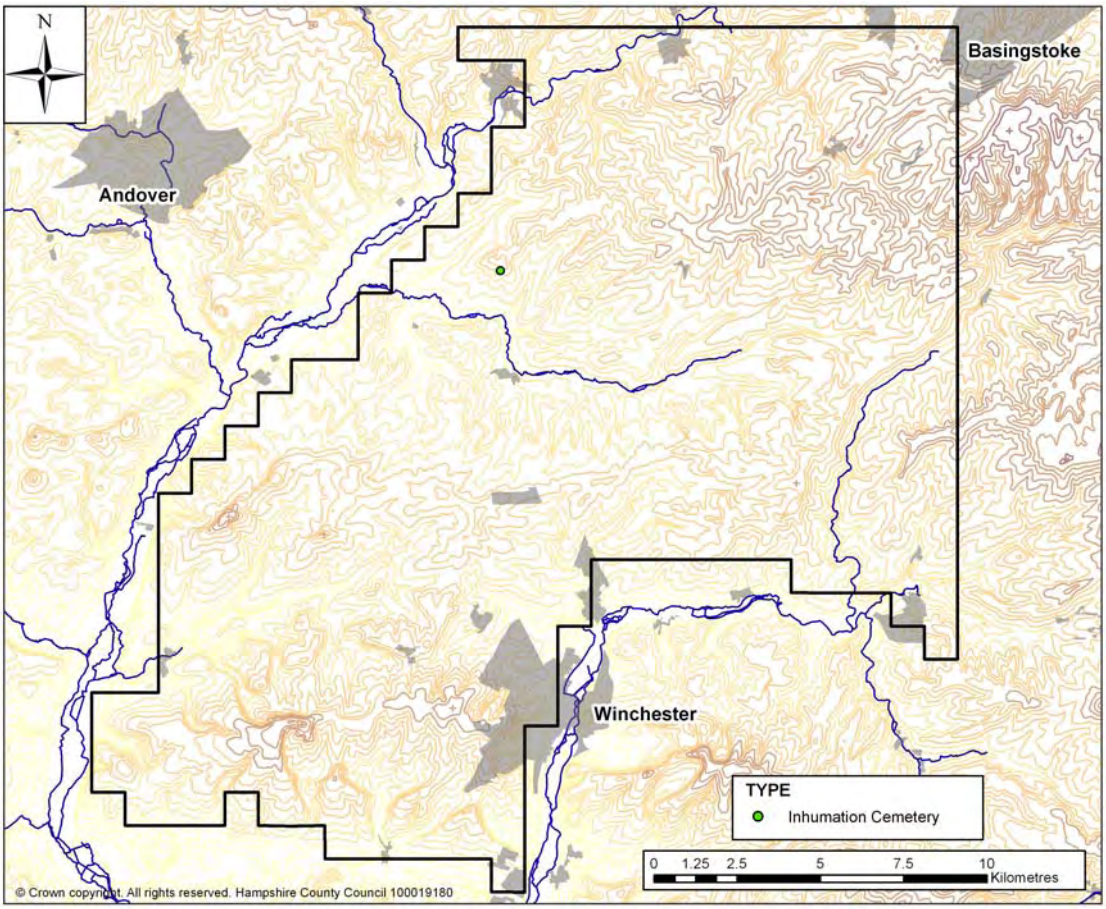

Figure 59. Distribution of early medieval sites.

Like Hampshire and Southern England generally, physical evidence for early medieval activity in the project area is sparse. Whilst a number of find spots have been recorded across the area only two settlements are recorded in the AHBR at Northbrook, Micheldever and at King's Somborne. Most of the sites attributed to this period of historic are associated with the early Christian church by way of early churches and burial sites. Eight inhumations or cemeteries were previously recorded, three of them in Winchester

One important new site was plotted during the NMP project and identified as dating to the early medieval or Anglo Saxon period (AD410-AD1065).

This is the site of an inhumation cemetery (MKM919) lying immediately to the south of the Iron Age hillfort at Tidbury Ring (Figure 60). The site comprises at least 40 graves, all roughly orientated east-west to northeast-southwest suggesting an early Christian (Anglo-Saxon) date.

A small ring ditch, 5.5m across lies within the cemetery. There are several known instances of graves being enclosed by circular or square ditches such as at Spong Hill (EH 1989). In these cases the enclosures are considered to be the truncated remains of barrows erected above and contemporary with the inhumations.

There is no evidence of a grave cut within the ring ditch at Tidbury Ring which may indicate that in this case it is the site of an earlier round barrow or Romano-Celtic temple or shrine. There are several known examples of the collocation of inhumation cemeteries with earlier barrow sites (*ibid*). The development or reuse of barrow sites

into Anglo-Saxon cemeteries may have been used to strengthen ancestral claims to land ownership.

The pattern of location of inhumation cemeteries within the landscape may indicate an association with rivers, barrow graves and parish boundaries (*ibid*). This site lies approximately 1.4km to the north of the River Dever and 400m to the south-west of the junction of three parish boundaries (Bullington, Longparish and Hurstboune Priors). However the close location of the Iron Age hillfort (itself on the junction of these three parishes) is perhaps more significant, the cemetery being sited according to this very recognisable landscape feature which would have further justified any territorial claim to the land.

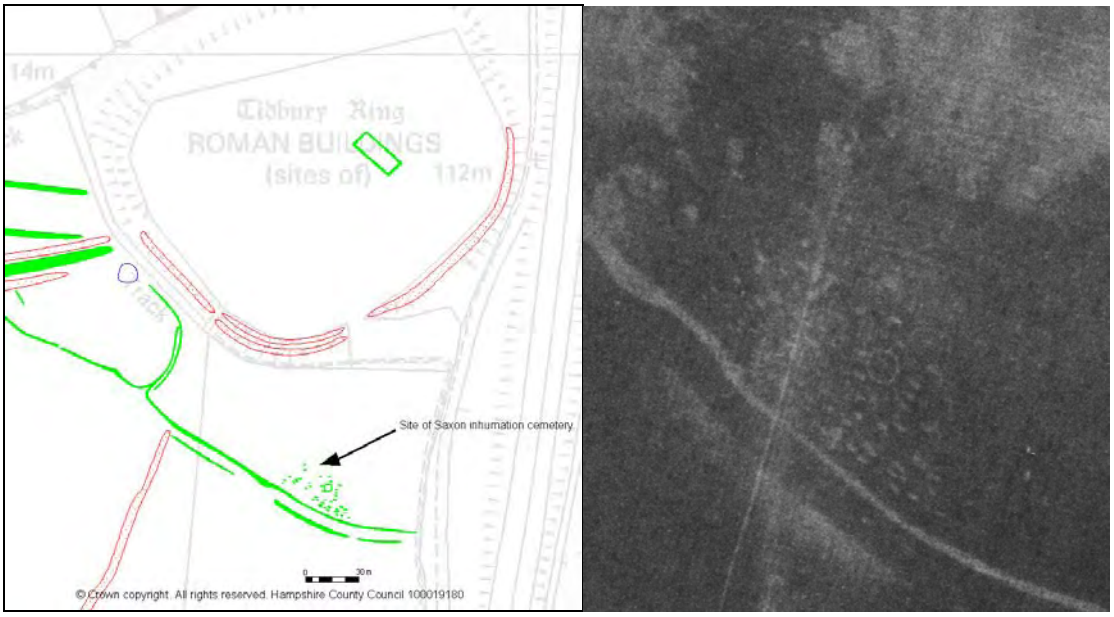

Figure 60. Early medieval inhumation cemetery at Tillbury Ring. MKM919. NMP mapping © English Heritage. Photograph: NMR 974/15, 26th July 1976. © Crown Copyright. EH.

6.8 NMP results: Medieval sites (AD1066 – AD1540)

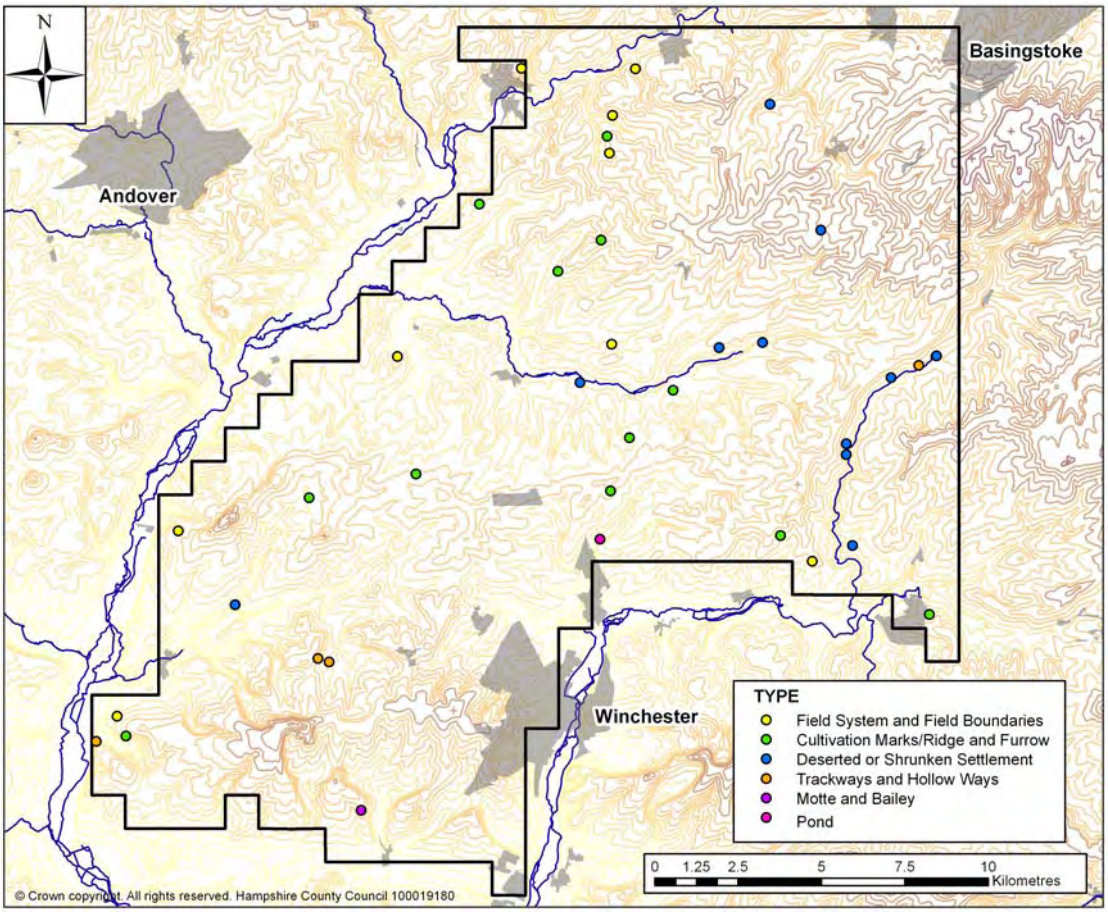

Figure 61. Distribution of medieval sites.

Although more richly represented than the early medieval period, sites dating to the medieval period are still sparse with only 39 identified during the project. Of these, 24 (62%) were previously unrecorded. As the distribution map above shows, the medieval sites evenly scattered throughout the project area.

The new sites are primarily related to agricultural activity and include field boundaries, field systems, cultivation marks and ridge and furrow. In addition new sites included a drove road and three trackways.

It must be noted that many more potentially medieval sites were encountered during the mapping project, however as some of these may have had earlier prehistoric origins or continued in use into the post medieval period they were given more general date ranges and are described in Sections 6.10 (Historic) and 6.12 (Undated) below.

6.8.1 Settlements

From the fourteenth century onwards, a decline in the rural population caused the shrinkage and desertion of a large number of medieval villages and hamlets in England. This population decline has traditionally been blamed on the Black Death of 1348-9 which may have reduced the population by as much as 50% (Hare 1994), however the reasons for abandonment are far more complex. Soil exhaustion, a change from an arable farming to a pastoral regime and, at the end of the medieval period, the movement of a large portion of the rural population into towns also contributed to abandonment of many rural settlements. The development and contraction of settlements is a complex response to changes in social, economic or

climatic conditions, each settlement being unique in it's reaction to those changes. No one factor can therefore be attributed as the cause of widespread settlement abandonment (EH 2011i).

Of the 11 settlements recorded, all bar three lie within the river valleys of the Dever and the Itchen. Of the others, Steventon shrunken village (MKM2496) and Little Somborne (MKM8419) are situated in dry valleys within the catchment of the River Test. The final site at Popham (MKM298) lies in a strategically dominant position, in a saddle within the ridge of higher ground south-west of Basingstoke.

Figure 62. Low earthworks associated with a deserted medieval settlement at Abbotstone. (MKM181). Photograph: NMR 24795/1, 29th October 2007. © English Heritage.

The earthworks of Abbotstone deserted village lie 200m to the east of the River Itchen and include house platforms and property boundaries. The rectangular feature located within the large square enclosure to the right of Figure 62 is the site of the church.

The medieval settlement of Chilton Candover lies on a tributary stream of the River Itchen. The village was depopulated soon after 1562 when it was bought by John Fyssher. The records state:

" One Fisher, deceased, depopulated this place, extirpating the inhabitants, pulling downed the howses, onlie remayneth the churche and a ferme", (Beresford 1954, 352).

An extensive series of earthwork banks were identified on the aerial photographs (see Figures 7 and 63) which are considered to be the remains of tofts and crofts as well as ridge and furrow cultivation, the manor house and the remains of the church which was pulled down in 1876.

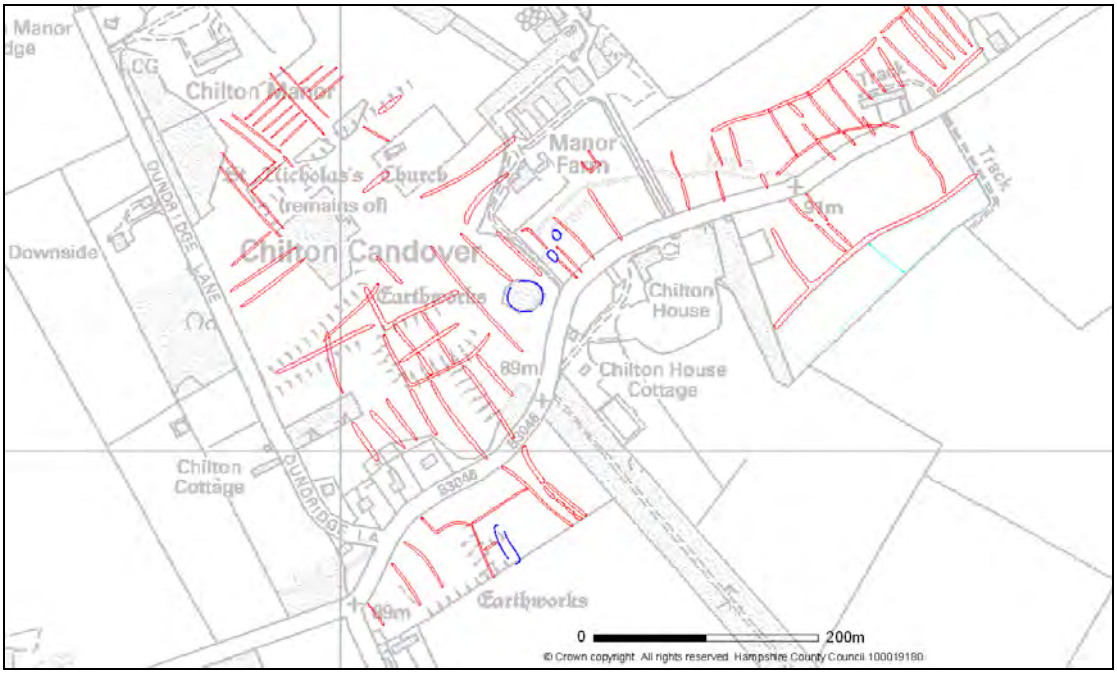

Figure 63. Deserted medieval settlement of Chilton Candover. NMP mapping © English Heritage.

6.8.2 Field systems

Very little evidence for medieval cultivation was identified during the project. A small number of sites associated with medieval agriculture were plotted including 11 areas of cultivation marks or ridge and furrow, two field systems and six areas of dispersed field boundary. All bar two sites had been completely levelled, most by the 1940's.

It is considered probable that much of Hampshire has been extensively cultivated since the medieval period and practically all traces of the medieval phases have subsequently been obliterated.

Figure 64. Traces of medieval ridge and furrow cultivation overlying prehistoric settlement features at Barton Stacey. (MKM443 and MKM449). *NMP mapping © English Heritage.*

6.9 NMP results: post medieval sites (AD1540 - AD1900)

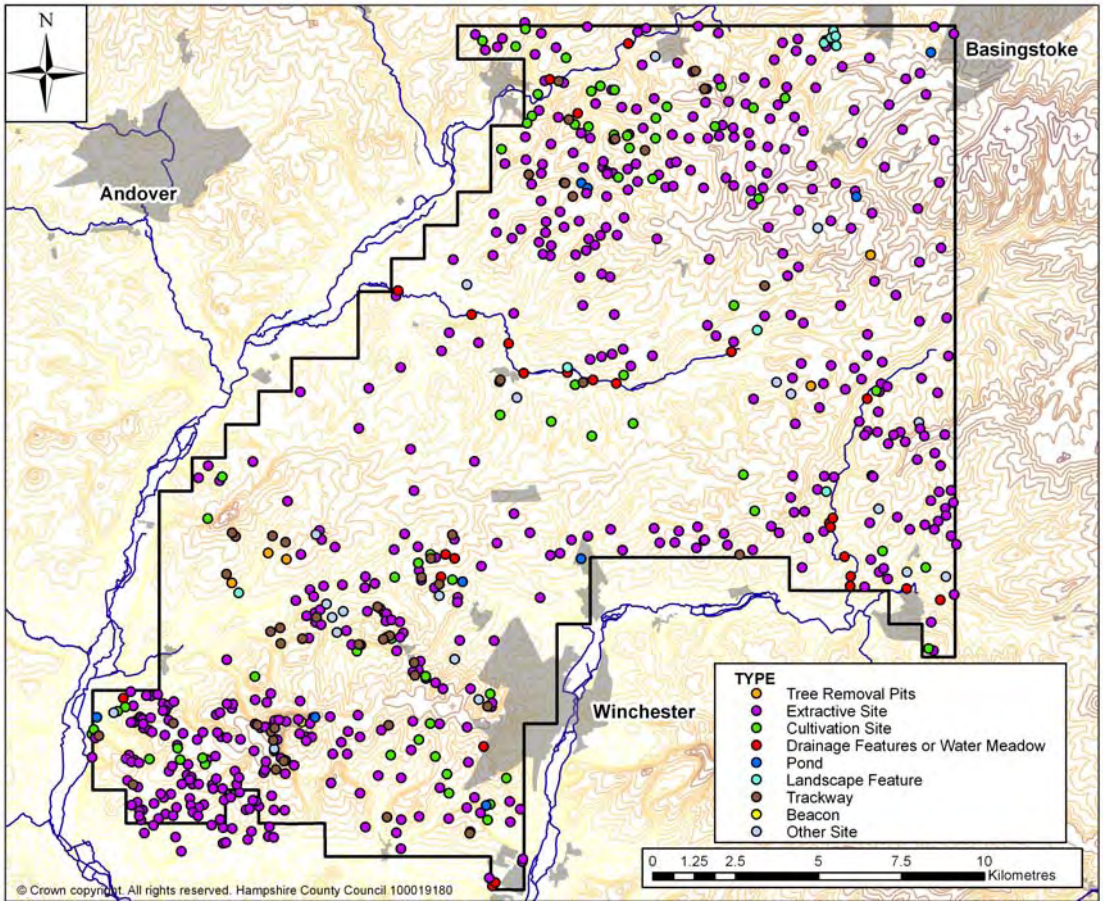

Figure 65. Distribution of post medieval sites.

During the mapping project 552 of sites identified were attributed a post medieval date. In addition a further 145 sites were allocated a post medieval or possible early 20th century date, these were features such as extractive pits and drainage systems could be nineteenth (post medieval) or early twentieth century (modern) in origin. Combined, these 697 sites amounted to almost a quarter of all site records in the project database. This is a period that has, up until fairly recently, been overlooked by archaeological survey and field investigation and therefore 664 (95%) of sites were new to the record.

The majority (86%) of these post medieval monuments were visible as cropmarks or levelled earthworks with only 95 (14%) surviving as extant earthworks or partial earthworks.

As with all interpretations based on aerial photographic evidence alone, precise dating can problematic. Many of the sites attributed to the post medieval period may have had their origins in the medieval period, for example the numerous extractive pits described in Section 6.9.3. below. Many more potentially post medieval sites were encountered during the mapping project, however as some of these may have had earlier medieval origins they were given more general date ranges and are described in Sections 6.10 (Historic) and 6.12 (Undated) below.

6.9.1 Agricultural features

Of the 697 post medieval sites recorded during the project, 102 (14.6%) were associated with agricultural activity. These monuments included 19 water meadows and water cress beds, 11 cultivation marks or ridge and furrow and 12 ditches, banks, drains and drainage systems. In addition, six sites associated with woodland

clearance were identified including one removed wood bank and five groups of pits or charcoal burning platforms.

60 field boundaries associated with post medieval parliamentary field systems were identified, being distinguishable from medieval boundaries by their ruler-straightness.

In addition to the above sites, 50 trackways were allocated a post medieval date.

Water meadows

Water meadows were important features of the post medieval landscape and developed on many river flood plains. They consisted of parallel networks of ridges and drainage channels, the water being diverted from the river in a series of leats controlled by sluices. These enabled the controlled flooding of the grasslands in winter or early spring which increased the overall grass production or accelerated the growth of grass earlier in the agricultural year.

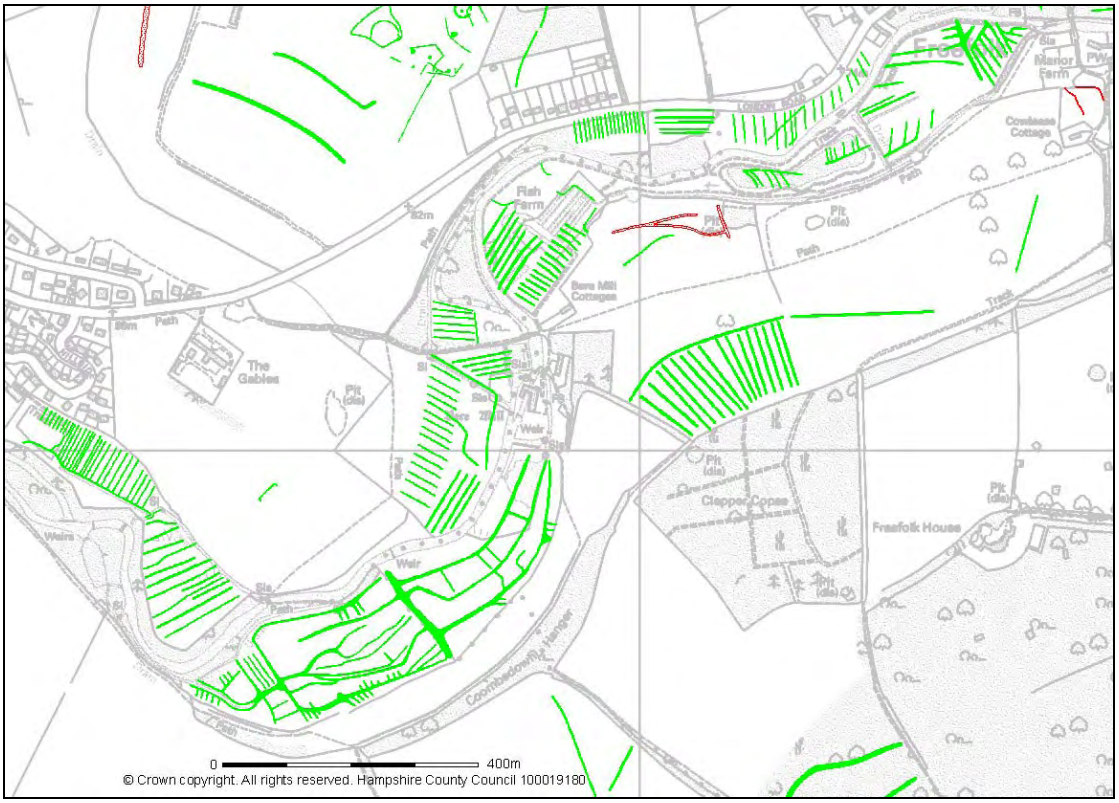

Figure 66. Post medieval water meadows in the Test valley near Whitchurch. (MKM2082). NMP mapping © English Heritage.

Of the post medieval water meadows, a high proportion (68%) are extant or partially extant. The most extensive systems lie within the flood plain of the River Test (Figure 66) with smaller systems plotted in the river valleys of the Dever and Candover Stream. In many cases, the main drainage channels were already partially marked on the OS First Edition maps although none had previously been recorded in the AHBR.

6.9.2 Landscape features

Six sites associated with post medieval landscaping and garden features were identified during the project. These included garden terraces and a possible roadway associated with the landscape park and country house at the Grange Northington. In addition fragments of the pre-landscaped field system were identified (Figure 67).

At Compton Manor, in the south west corner of the project area near Kings Sombourne, another roadway associated with an eighteenth or nineteenth century Landscape Park was recorded. Here, two tree-lined approaches were originally created through Compton Park, the northernmost of which is still extant (Figure 68).

Figure 67. Eighteenth and nineteenth century formal gardens associated with the landscape park and country house of The Grange, Northington. (MKM2453). NMP mapping © English Heritage. Photograph: NMR 24/34 21st April 1972. © Crown Copyright. EH.

Eighteenth or nineteenth century landscaping at Compton Park. The curved tree-lined roadway running roughly east-west towards the bottom of this image taken in 1946 was removed soon after and is no longer visible on later imagery; several of the trees however still remain.

Photograph: RAF CPEUK1981 Frame 3202, 26th October 1946. English Heritage RAF Photography.

Figure 68. Tree-lined roadways at Compton Park. (MKM2882).

6.9.3 Extraction sites

By far the majority, 511 (73%), of sites assigned a post medieval date are associated with extraction and of these only 11 had previously been recorded. They include large scale quarries as well as smaller extractive pits. Fifty two sites were specifically identified as chalk pits and two as gravel pits with a further 455 more general interpretations of pit, quarry or extractive pit plus one spoil heap. Some of these sites, particularly the larger pits and quarries, are marked on the OS First and/or Second Edition maps and several may have had their origins in the medieval period.

The extractive features are widely scattered across the chalk downlands although particularly on the higher ground to the north, east and south of the project area; there is a marked lack of sites in the central portion, the catchment of the River Dever. There is some correlation between the distribution of small extractive pits and areas of clay-with-flints, particularly in the south of the project area. It is considered likely that the chalk was locally excavated and spread across the surrounding field in order to improve the soil texture and fertility. One of the most extensive groups of pits lies to the north of Tidbury Ring in Longparish and Hurstbourne Priors where over 100 small pits are scattered in a loose grid-like pattern (Figure 69).

Figure 69. Post medieval extractive pits at Hursbourne Priors. (MKM1046-MKM1048). Photograph: RAF CPEUK1931 Frame 3296, 17th January 1947. English Heritage RAF Photography.

6.9.4 Miscellaneous post medieval features

In addition to the above sites, 72 miscellaneous features were allocated a post medieval date including 50 trackways and ten dewponds. Other features include a nineteenth century rifle range, two features associated with the railway, one allotment, one barn, one building and a probable brickworks at Overton.

Perhaps the most well-known site within the project area is the beacon and later eighteenth century commemorative monument at Farley Mount (see frontispiece). The monument consists of a pyramidal building raised upon a circular ditched mound, 36m across with outer ditch and bank approximately 100m in diameter. Although the mound has previously been interpreted as the site of a round barrow (Grinsell 1983-40), no evidence has been found to corroborate this.

The monument itself commemorates a horse named Beware Chalk Pit. The horse carried its owner to racing victory in 1734, a year after falling into a chalk pit whilst fox hunting (HCC 2013). The inscription on the plaque on the north wall reads:

"*Underneath lies buried a horse, the property of Paulet St. John Esq., that in the*

month of September 1733 leaped into a chalk pit twenty-five feet deep afoxhuntiing with his master on his back and in October 1734 he won the Hunters Plate on Worthy Downs and was rode by his owner and was entered in the name of "Beware Chalk Pit", (ibid).

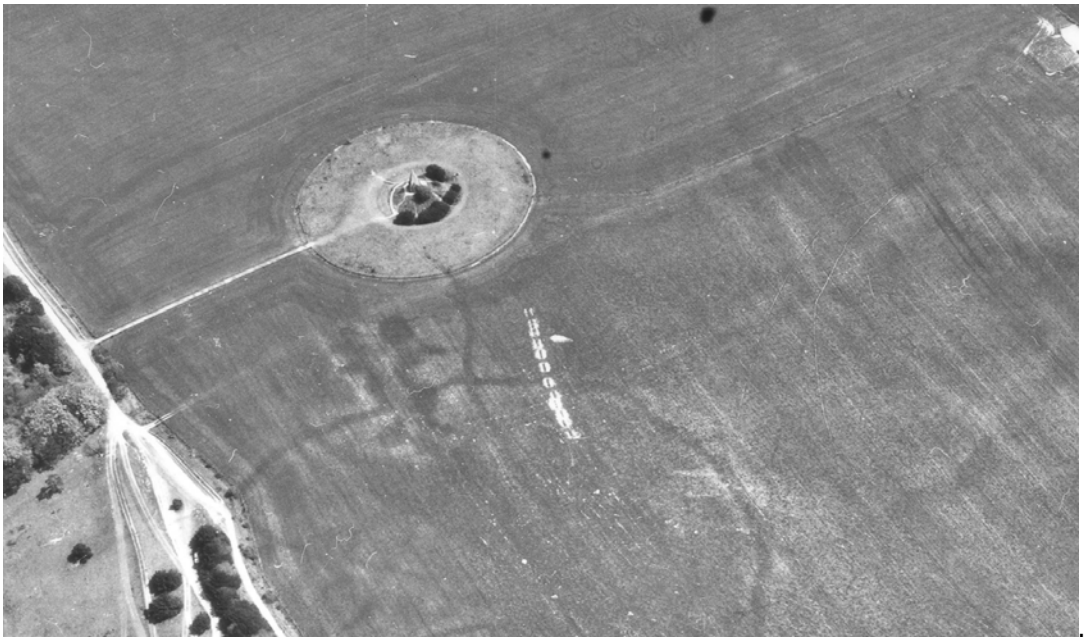

Figure 70. Post medieval beacon and eighteenth century commemorative monument of Farley Mount. The large extractive pit below the site may be the quarry site for the earthwork. MKM3780 and MKM3785). Photograph: NMR 27/24, 10th May 1967. English Heritage RAF Photography.

6.10 NMP results: Historic (Roman/post Roman or later) sites (AD43-AD1900)

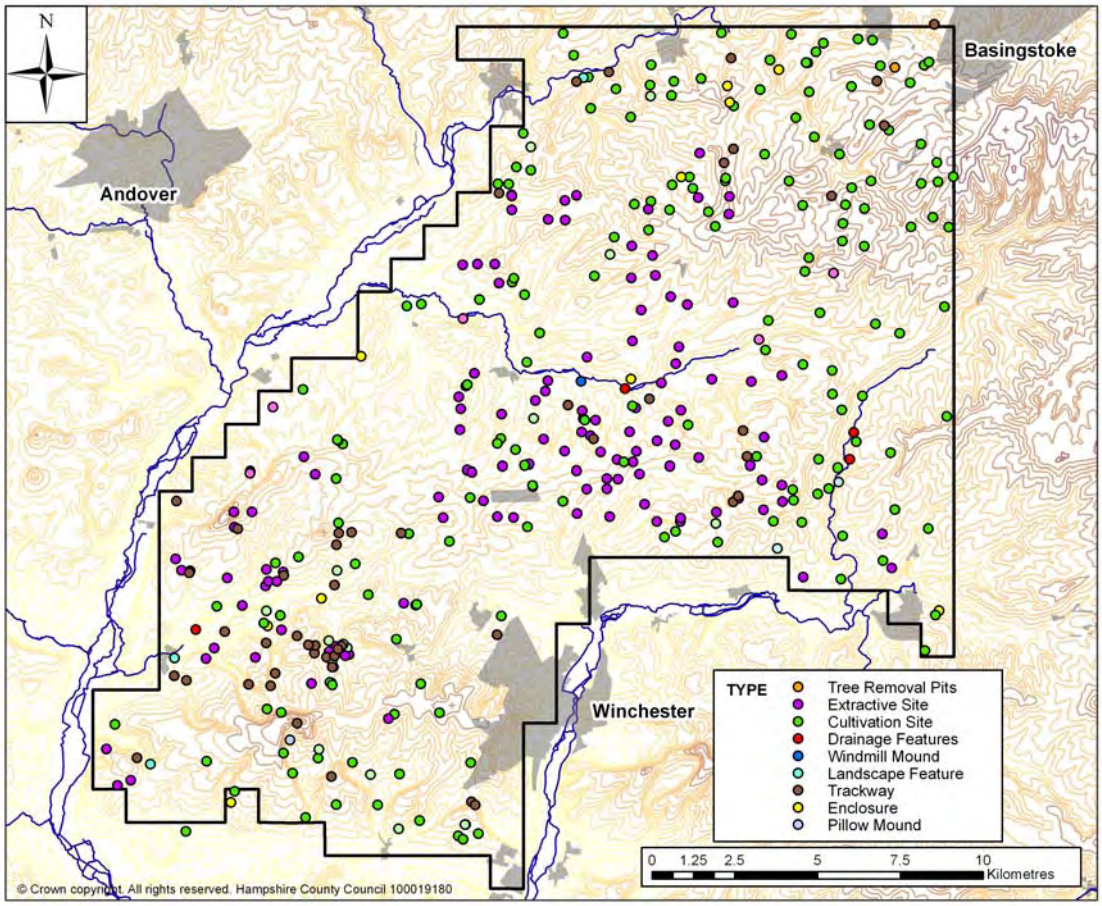

Figure 71. Distribution of Historic (medieval or post medieval) sites.

The nature of much of the evidence recorded during the project meant that for many sites it was not possible to ascribe a more precise date than Roman/post Roman or later in origin. This was particularly true for agricultural features such as field boundaries, fragments of field systems, trackways and areas of parallel cultivation marks (ridge and furrow) which could have been medieval or post medieval in date. Where a more specific date could not be determined from the aerial photographic evidence, these sites have been attributed a general historic date.

Of the 391 records allocated an historic date 95% were visible as plough-levelled cropmarks and levelled earthworks; 4.6% were still visible as upstanding monuments and 88% were new sites. Sites included 185 linear features interpreted as field boundaries or trackways, 17 field systems, 35 areas of ridge and furrow or cultivation marks and 95 pits, extractive pits and spoil heaps.

6.10.1 Pillow mounds

Rabbits were a particularly important commodity from the medieval period onwards. Warrens were established for the breeding, rearing and capture of rabbits and hares. Along with the keepers cottage and ancillary buildings, warrens incorporated artificial mounds know as pillow mounds often set within an enclosure. The pillow mounds were constructed as habitation and breeding places and often had stone-lined tunnels constructed within the soft soil mound allowing further burrowing (Williamson 2007).

One site of note lies on Mount Down where the remains of a medieval rabbit warren was identified as cropmarks overlying an earlier field system. The site comprises a rectilinear ditched enclosure with several associated banks and pits. Three pillow mounds are associated with the site. The enclosure itself is marked as Upper Warren on the OS 1st Edition map, the site may therefore have continued in use into the post medieval period, and subsequently was attributed a general historic date.

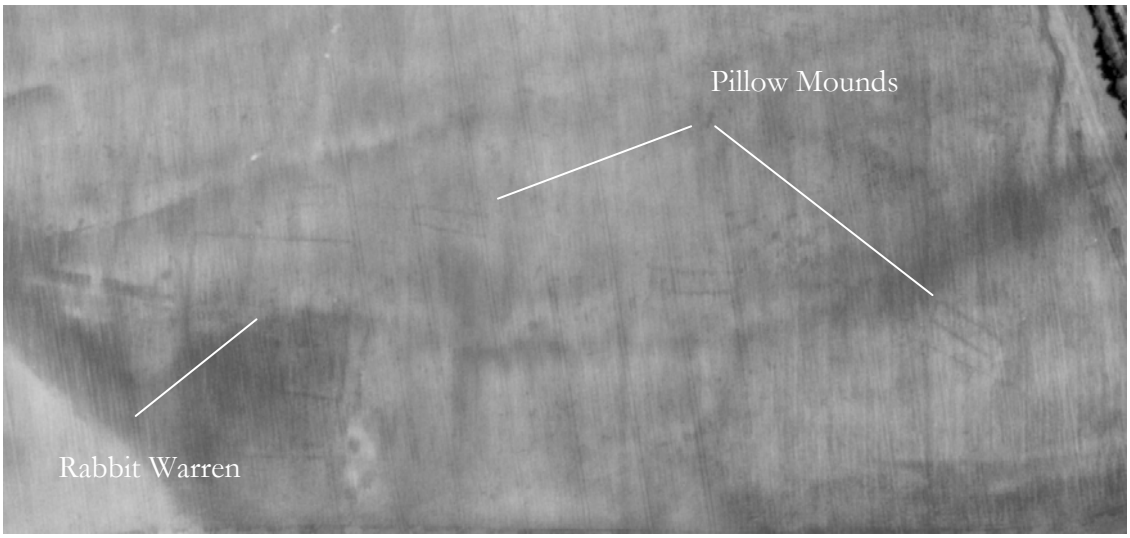

Figure 72. Medieval or post medieval pillow mounds associated with the site of a medieval rabbit warren on Mount Down. Photograph: OS/96060 Frame 108, 27th April 1996. © Crown Copyright, Ordnance Survey.

6.10.2 Enclosures

Eleven enclosures were attributed a general historic date-range. All are rectilinear in form. They range in size from 18m to 160m across and are likely to be field enclosures or smaller stock rearing enclosures (Figure 73). One probable building was allocated a Roman or later date (MKM548); it is 31m by 9m in size and considered to be an aisled building or barn, see Figure 38.

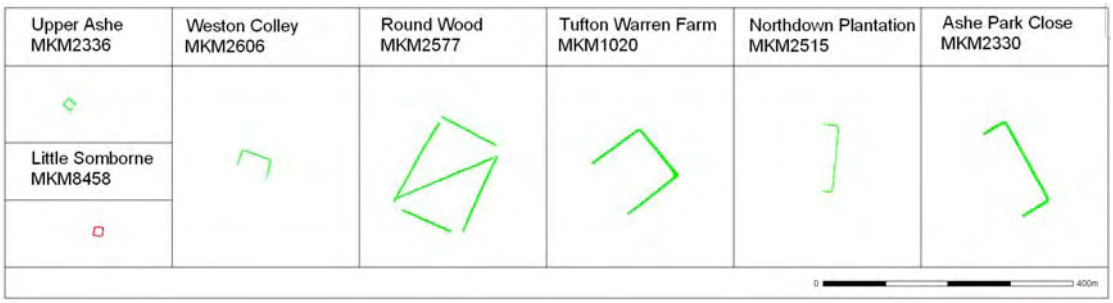

Figure 73. Roman or later rectilinear enclosures. NMP mapping © English Heritage.

6.11 NMP results: twentieth century sites (AD1901 onwards)

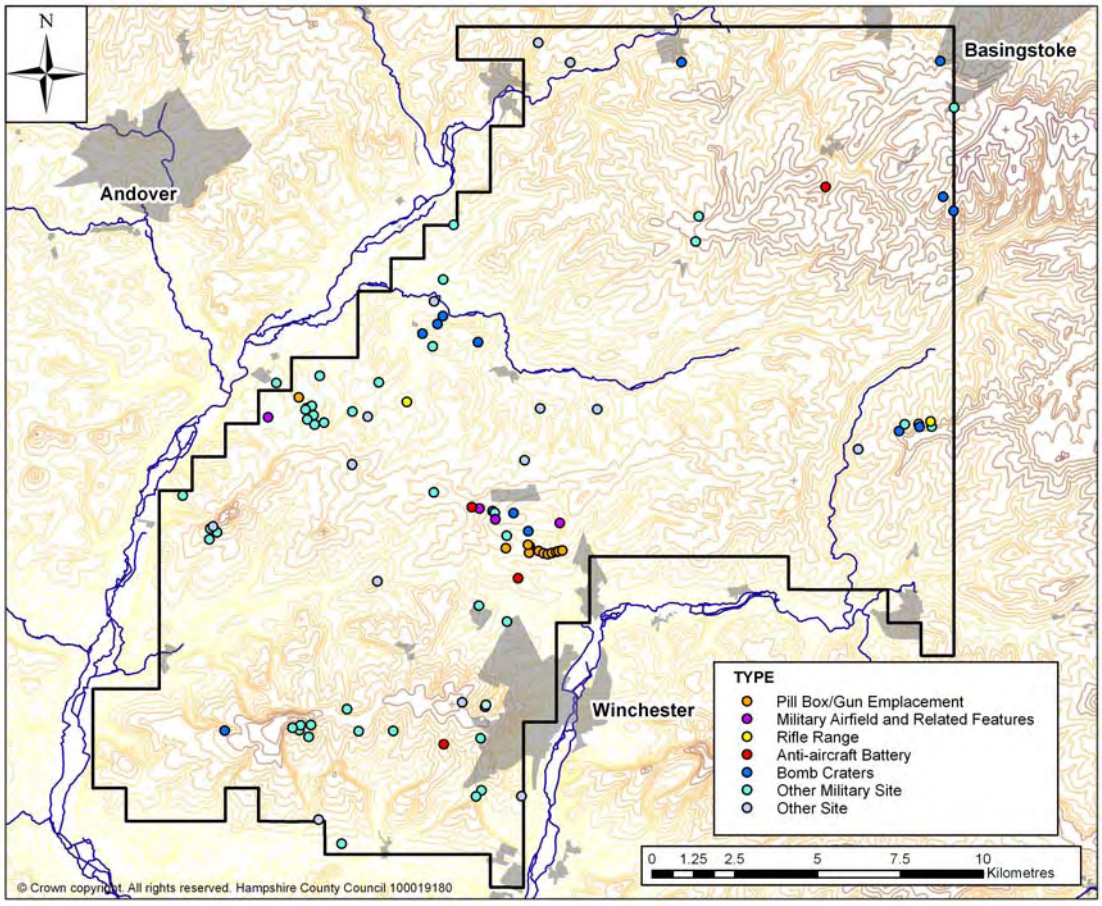

Figure 74. Distribution of twentieth century sites.

As part of the NMP remit, all early 20th century sites predating the end of the Second World War (1945) are mapped and recorded including all military features relating to the Second World War. Features post dating 1945 were not generally plotted unless they were abandoned military features associated with the Cold War. The project did not record structures still in use or fossilised in later structures that are still in use and therefore did not map extant field boundaries, roofed buildings, canals, railways or 20th century drainage features (see Appendix 1, methodology).

Eighty eight twentieth century sites were recorded during the course of the project, of which 66 (75%) were new to the record and 76 (86%) were related to First or Second World War military sites. This represents a significant enhancement of baseline data for this important period of the recent past.

Civilian sites not relating to the war included trackways, field boundaries, tree removal pits and pipelines. In addition, buildings and structures relating to the early twentieth century infectious diseases hospital on Teg Down were identified (MKM3194).

6.11.1 Airfields

Two military airfields are situated within the project area on Chilbolton Down and Worthy Down.

The first, RAF Kings Worthy, lies to the north of Winchester on the site of what is now Worthy Down Camp. This First and Second World War airfield appears to have only ever had grass runways and was protected with several lines of defence; the first being a line of type 22 pillboxes to the south of the airfield, ten of which were identified on the aerial photographs. In an attempt to conceal the airfield, the grass runways and open ground between was camouflaged during the war with a system of field boundaries being painted over the grass (Figure 75).

Figure 75. Camouflaged grass airfield of RAF Kings Worthy. The painted field boundaries are clearly visible on this photograph taken in 1944 (MKM7973). Photograph: US/7PH/GP/LOC290 Frame 5008, 20th April 1944. English Heritage USAAF Photography .

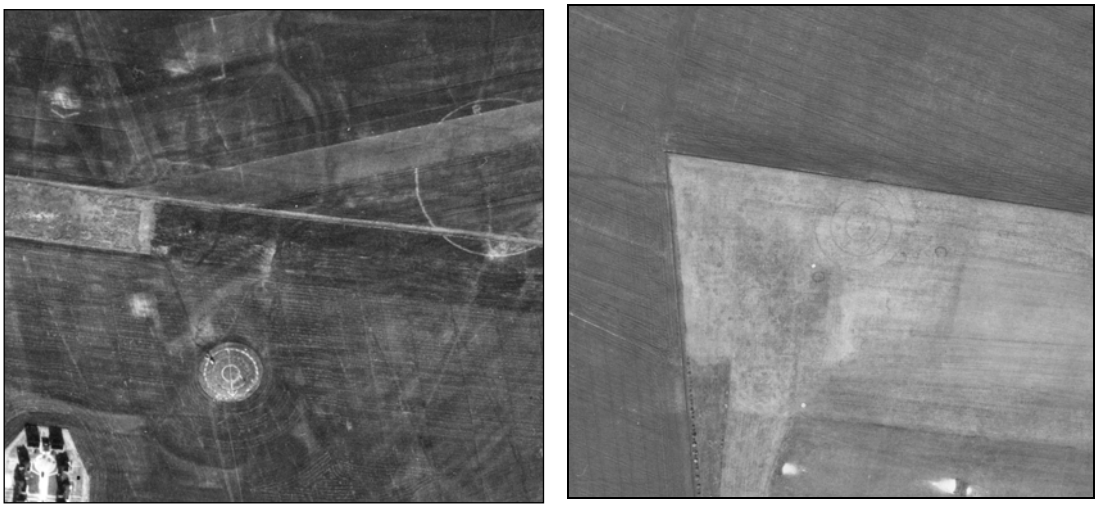

Figure 76. First and Second World War airfield of RAF Kings Worthy. The possible locations of barrage balloon mooring sites or targets are visible immediately to the south of the grass runways (left) and as cropmarks (right). Photographs: RAF/58/1634 F21 Frame 171, 24th November 1954. English Heritage RAF Photography (left) NMR 395/283 23rd May 1972 © Crown Copyright. EH.

Two concentric circular features were identified on photographs taken in 1947 and 1972 at RAF Kings Worthy (Figure 76). One was highlighted as a potential barrage balloon mooring site and the other a target.

Chilbolton Airfield lies to the north west of Winchester, adjacent to the River Test. The former military airfield opened in 1940, closed in 1961 and subsequently became a radio telescope research station (Brooks 2003, Willis and Holliss 1987). Aeroplanes and temporary tented accommodation associated with the site are clearly visible on aerial photographs taken in 1943 (Figure 77). The airfield was taken over by the 9th United States Army Air Force in 1944 and used in support of the D-Day landings after which it returned to RAF control in March 1945 and was used by training units. After the war the base was used for experimental and test flying. For the duration of the Second World War, the base was a grass airfield although in 1946 the airfield had concrete runways laid for use by jet aircraft.

Figure 77. Second World War airfield of RAF Chilbolton. Associated building complexes including command head quarters and barracks surround the periphery of the airfield. Temporary camps and airplane are clearly visible on this photograph taken in 1944 (see inset) (MKM3419). Photograph: US/7PH/GP/LOC290 Frame 50050 20th April 1944. English Heritage USAAF Photography.

At both airfields, many associated sites were plotted and recorded including military camps, barracks and gun emplacements. At Worthy Down, a large polygonal banked enclosure 160m by 130m is size was identified to the west of the runways (MKM7976). It was interpreted as the possible site of a Gun Laying Radar Platform on the basis of morphological similarities with that previously identified at West-super-mare (Crowther and Dickson 2008, p201-2). Gun-laying radar (initially known as Radio Direction Finding) was the most sophisticated equipment used on heavy anti aircraft batteries during the Second World War (Dobinson, 1996, 128-138). Radar provided medium range warning of incoming enemy aircraft, tracking them and allowing fire upon airborne targets in poor visibility or at night. The operational equipment involved the anti aircraft radar receiver (GL) mounted on a platform and surrounded by a large horizontal wire mat to enhance its performance. The mats were octagonal in construction and 130yd (119m) across.

6.11.2 Radar/Radio stations

The site of one radar or radio station was identified at what is now Sir John Moore Barracks, north of Winchester. At least 30 individual masts with ancillary structures, command buildings and barracks were visible on aerial photographs taken in 1946 (Figure 78).

Figure 78. Second World War radar or radio station at Sir John Moore Barracks. The locations numerous masts are visible as long linear shadows on this image taken in low light in November 1946, MKM3113. Photograph: RAF/CPE/UK/1842 Frame 3115 18th November 1946. English Heritage RAF Photography.

A second possible site lies at Middlebarn Farm, Chilbolton (Figure 79). Here two square enclosure lie 1.5km apart, each are aligned with the corners towards the four cardinal points. The larger (MKM7794) is 76m across and appears to have an internal central structure and trackway leading up it. The second enclosures is smaller (17m across) with a central structure and four linears running up to 72m away from the enclosure in a cross formation. The similarity in alignment of the two enclosures, plus their identical central structures, are perhaps indicative of the features being related, possibly associated with radar or radio technology.

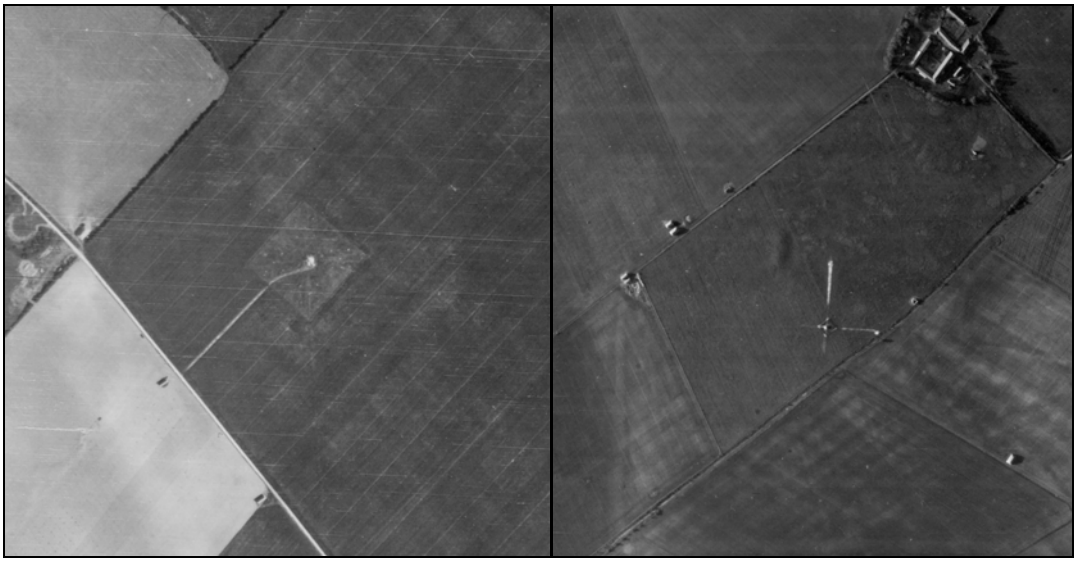

Figure 79. Second World War military installation at Middlebarn Farm, Chiltbolton. The two square enclosures lie 1.5km apart and are considered likely to be related, possibly associated with radar or radio technology, MKM7791 and MKM7794. Photographs: RAF/106G/UK/1656 Frame 3073, 11th July 1946. English Heritage RAF Photography (left); RAF/106G/UK/1035 Frame 4023 27th November 1945, English Heritage RAF Photography (right).

6.11.3 Military camps, training sites and practice trenches

There is a long history of military training in Hampshire with parts of the Downs being used during the First World War and earlier (D Hopkins pers. com). Military camps and traces of practice slit trenching were identified right across the study area as well as fox holes and shell holes. During the project 27 military camps, military sites and military training camps were identified as well as 18 areas of slit trenching, shell holes and craters.

Figure 80. Shell holes and craters associated with military training at Barton Stacey. MKM469. NMP mapping © English Heritage. Photograph: NMR 4680/31 14th August 1995. © Crown Copyright. EH.

Over a thousand small round hollows are visible as cropmarks and earthworks on aerial photographs to the south-east of Barton Stacey. They are considered likely to be bomb craters and shell holes relating to military training exercises dating to the Second World War and later (Figure 80).

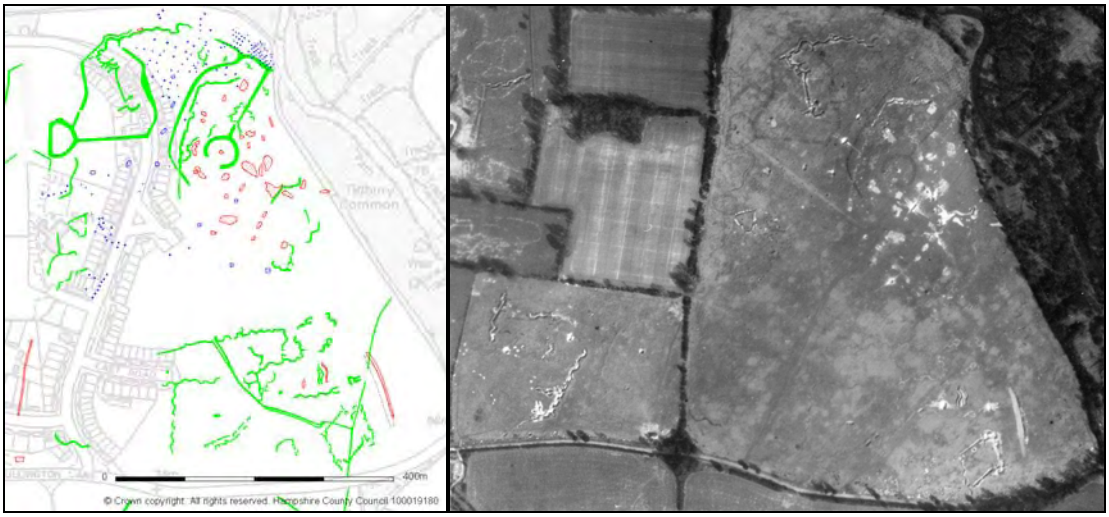

Figure 81. Military training earthworks including practice trenching and a possible minefield to the south of Drayton Down. (MKM470). NMP mapping © English Heritage. Photograph:RAF/CPE/UK/1973 Frame 3104 11th April 1947 English Heritage RAF Photography.

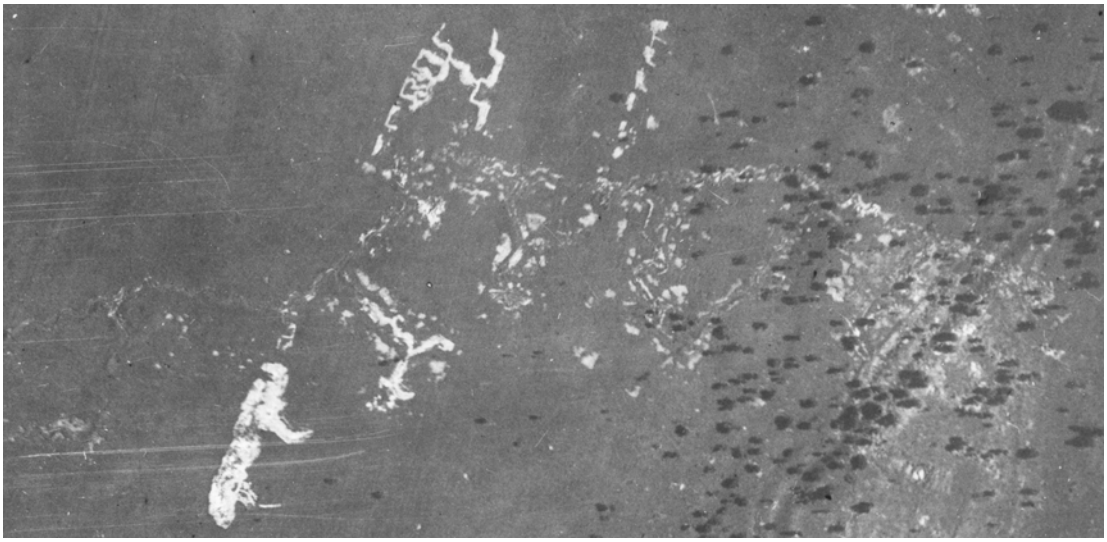

Figure 82. Military practice trenching on Mount Down, Hursley possibly dating to the First World War.

The site of a military camp is visible as extant structures on aerial photographs taken soon after the Second World War to the south of Stockbridge Down, MKM8179 (Figure 83). It is believed to have been used as a military hospital by the United States Forces during the war.

Figure 83. Stockbridge Down military camp. MKM8179.

Photograph: RAF/CPE/UK/1927 Frame 5070 16th Jan 1947, English Heritage RAF Photography.

One of the most significant concentrations of sites lies at Barton Stacey and is associated with the large military training camp of Drayton Down (Figure 9). The camp was established in 1938 and continued in use for several decades after the end of the war before closing and all buildings being demolished by the end of the 1980's. During the Second World War, American forces were stationed at Drayton Down prior to D-Day. (Glenister 2000-8).

Extensive areas of slit trenching and shell holes were identified to the south of the camp (Figures 80 and 81) some of which appear to pre-date the war and may relate to First World War activity on the Down.

6.11.4 Rifle ranges and butts

Two sets of rifle butts were identified in the project area including the Second World War rifle range at Moody's Down Farm House (MKM7869). The rifle range was constructed on the site of an important Neolithic complex comprising a long barrow (MKM 8080) and its adjacent 'short' long barrow (MKM8081). Early photographic evidence indicates that the two barrows were virtually plough-levelled by the 1920's and 30's and one of the rifle butts was positioned directly over the site of the 'short' long barrow (Figure 84).

Figure 84. Second World War rifle range and Neolithic barrows at Moody's Down Farm House. (MKM7869). NMP mapping © English Heritage. Photograph: RAF/CPE/UK/2150 Frame 3009 11th June 1947, English Heritage RAF Photography.

6.12 NMP results: Undated sites

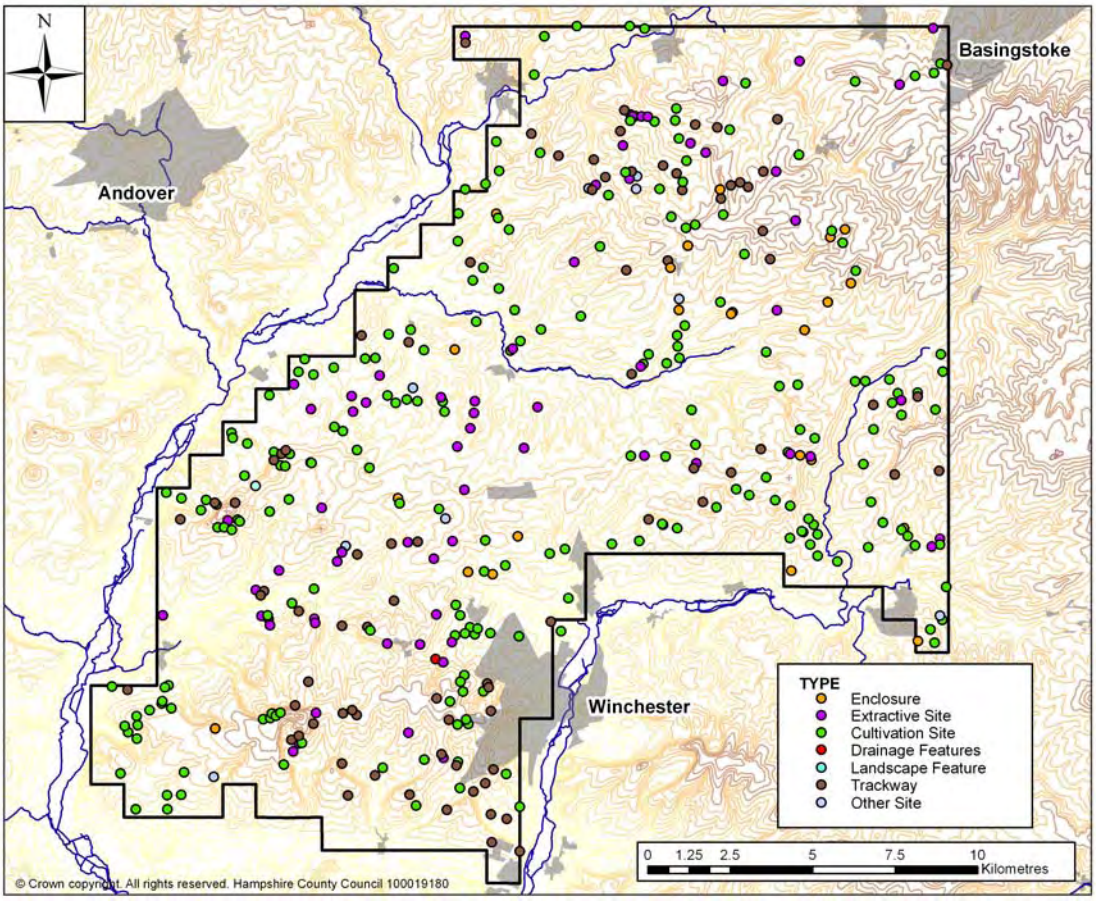

Figure 85. Distribution of undated sites.

A large number of sites were listed in the project database as of uncertain date; these are sites to which a more specific prehistoric or historic date could not be allotted with confidence. They include sites of ambiguous function such as mounds and ditches as well as site types that could range in date from the prehistoric through to the historic periods such as field boundaries and field systems, trackways, and enclosures. Many of these sites could well be of prehistoric origin. Of the 402 sites, the majority (85%) were previously unrecorded.

Sites of particular interest include a number of double ditched short parallel features identified on Itchen Stoke Down. In all, nine similar features were identified within a square kilometre of each other. They comprise two parallel ditches, each between 4m and 6m apart and between 27m and 42m long. There is a surprising conformity across the group with five of the nine being 27m long and six having the ditches 5m apart (Figure 86).

The date and function of the features is uncertain; they have certain characteristics in common with Neolithic monuments such as long barrows or mortuary enclosures (see Figure 19) and are also reminiscent of the pillow mounds in Figure 72. They may equally be of much more recent date, possibly even modern agricultural in origin.

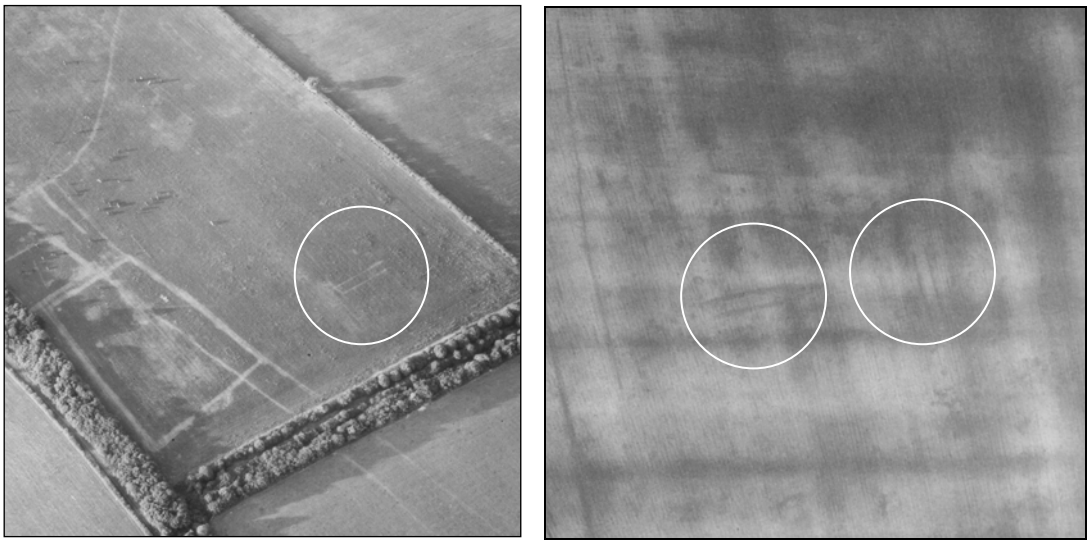

Figure 86. Undated ditched features on Itchen Stoke Down. MKM155 and MKM157. Photographs: NMR 15393/61 21st August 1995 © Crown Copyright. EH (left); NMR 704/210 6th March 1974 © Crown Copyright. EH (right).

Thirty undated enclosures were recorded including a large double ditched curvilinear feature with an associated cluster of pits at The Grange Farm, Northington (Figure 87). The features may form part of a large curvilinear enclosure. The site remains undated and whilst a prehistoric origin is possible, it may equally be associated with the removal of a number of landscape features marked on the OS 1st edition map.

Figure 87. Undated enclosures and pits at The Grange Farm, Northington. MKM2469 and MKM2477. NMP mapping © English Heritage. Photograph: NMR 395/151 23rd May 1972 © Crown Copyright. EH.

7 Conclusions

The richness of the cultural landscape of the Hampshire Downlands has been highlighted by the NMP mapping and recording of a large number of archaeological features. Three thousand and ninety six sites were identified from the aerial photographs of which 2,103 (68%) were new sites not previously recorded in the AHBR or AMIE databases. The project mapped a wide range of site types from all periods from the Neolithic to the mid twentieth century and demonstrated both the great complexity and intensity of use of the landscape within the project area.

Eighty six percent of the mapped features had been completely levelled and transcribed as cropmarks, soilmarks or levelled earthworks reflecting a long history of intensive agriculture over much of the project area. Only 194 (6.5%) of sites were still surviving as earthworks or partial earthworks. In this respect the project fulfilled its aim of improving knowledge of the archaeological resource, by providing a fuller awareness of the range and extent of archaeological remains within the project area.

The enhanced awareness of the archaeological resource will facilitate management of the area's historic environment on a site specific as well as a strategic level. By looking in detail at the areas of cropmark sites, NMP mapping will help define those parts of the Hampshire downland landscape most sensitive to threat by ploughing.

The main outcomes of the NMP mapping and recommendations for further survey and research are set out below.

7.1 Outcomes

Whilst many of the sites recorded during the mapping project were post medieval extractive features and cultivation remains dating to the historic periods, a significant number of prehistoric or Romano-British sites were identified as were a range of twentieth century military sites. A small number of sites dating to the early medieval and medieval periods were also identified. The mapping results have therefore greatly improved our understanding of the nature and extent of human activity on the Hampshire Downs for all periods.

Thirty nine sites identified were assigned a Neolithic or potentially Neolithic date, of which 12 were new to the record. These new sites included four potential long barrows, five 'short' long barrows, one mortuary enclosure and two pit circles. Most of the new sites lie in the central portion of the project area within the catchments of the Rivers Dever and Test. The project has significantly increased the numbers of these important prehistoric funerary sites and further investigation of the new sites is an important future research aim.

The mapping confirms that Bronze Age funerary monuments extended right across this part of the Hampshire downlands. Whilst the distribution of sites has not significantly changed as a result of the mapping project with large numbers of barrows previously recorded in the Hampshire AHBR, the numbers have increased with 163 new sites being identified – all of which have been completely plough-levelled and are now only visible as cropmarks. Whilst no settlement sites or field systems were specifically interpreted as Bronze Age, a number of enclosures and roundhouses were mapped during the project which might be evidence of Bronze Age settlement or, at least, have Bronze Age antecedents.

The numbers of later prehistoric or Roman sites encountered during the project are extremely significant with the greatest numbers of sites recorded during the project dating to the prehistoric/Roman period (see Table 3, page 19). Nine hundred and seventy four sites were assigned an Iron Age, prehistoric/Roman or Roman date of which 49% were new to the record. Types of new sites attributed to these periods were wide ranging including enclosures, settlements and extensive field systems as

well as five Iron Age banjo enclosures, three Roman buildings and a possible Roman temple all of which would benefit from further investigation.

The early medieval period is poorly understood in Hampshire, however one important new site was attributed to this period; an inhumation cemetery of at least 40 graves immediately to the south of Tidbury Ring and considered likely to be of Saxon origin.

Sites relating to the later medieval period were sparse with only 39 identified during the mapping; however, of these, 62% were previously unrecorded. All new sites were agricultural features such as field boundaries, field systems, cultivation marks and trackways. These, along with the large numbers of field boundaries of historic, post medieval and uncertain date which were also mapped, will inform any future research into the development of the historic landscape and Historic Landscape Characterisation.

The second greatest numbers of sites recorded during the project were post medieval (see Table 3, page 19) with 697 sites attributed to this period. This is a period that has, up until recently, been often overlooked by archaeological survey and field investigation. The current project is perhaps one of the first to systematically record post medieval sites; indeed, 664 (95%) of all post medieval sites were new to the record. A fuller picture of the location and extent of extractive features visible on the available photographs will hopefully assist our understanding of the importance and extent of the extractive industry, particularly at a small, local scale.

The systematic recording of military sites, particularly using the RAF vertical photographs taken during and soon after the war, has proved highly informative with many significant sites, particularly those associated with the use of the chalk downs for military training, being recorded for the first time. Further research into the impact of the Second World War on the Hampshire downlands using the exhaustive documentary sources from the period may prove invaluable in providing more precise dating and interpretations for some the features plotted.

7.2 Recommendations

- **Continuing aerial reconnaissance.** Specialist aerial reconnaissance has been undertaken over the project area in recent decades and a significant number of important new sites identified from this photography. In addition, a large number of remains were identified from vertical photographs taken by the OS and by the RAF in the 1940s. There consequently remains considerable potential for the discovery of archaeological sites through a continuing programme of aerial reconnaissance particularly during the summer months. The use of NMP mapping during future aerial reconnaissance will also allow much greater efficiency by facilitating better targeting in an area of very dense archaeological remains.
- **Further NMP projects.** The significant numbers of important new sites recorded during the project demonstrate the effectiveness of NMP mapping on the Hampshire Downlands. This is despite there having been a long history of aerial reconnaissance over the downs since the 1920's and previous archaeological transcription work having been carried out by HCC. Further NMP mapping for all parts of the county as yet unmapped would be of enormous value, especially in those areas subject to continued ploughing.
- **Further investigation of sites recorded from aerial photographs.** Although a large number of sites have been recorded from aerial photographs, a relative lack of field work and excavation means that little is known about them. In particular the date and function of many features is

unclear. A programme of ground based investigation of a representative sample of the sites recorded by NMP, involving field walking, geophysical survey and limited excavation, would significantly enhance current knowledge of prehistoric, Roman and Saxon rural settlement.

- **Further landscape-led research.** The NMP mapping project has clearly enhanced the baseline data for all future landscape-led research on the Hampshire Downlands. All themes, areas and sites described in this report have great research potential. The new distributions of sites could be reviewed in their HLC and landscape character context to see what impact they might have on our understanding of the organisation and development of the landscape across different periods and the evaluation of the present landscape.
- **Enhanced Designations.** The NMP mapping has significantly added to the numbers of important archaeological monuments within the project area. The extents of previously known sites (such as field systems) have in some cases also been increased. This is an important area of the country in terms of the National archaeological resource. Much of the Hampshire Downlands is under continual threat from ploughing and therefore is it strongly recommended that the current designations (in terms of the numbers and extent of scheduled sites) are reviewed at the earliest opportunity.

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Project Archive

The HES project number is **2013R027**

The project's documentary and drawn archive is housed at the offices of the Historic Environment Service, Cornwall Council, Fal Building, County Hall, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing the project design, project correspondence and administration.
2. This report held in digital form at: G:\Historic Environment (Documents)\NMP DATA\Hampshire Downland\Report
3. The AutoCAD drawings held in digital form at: R:\Historic Environment (CAD)\CAD Archive\NMP Archive\Hampshire Downland

Appendix 1 Methodology

Sources

Aerial photograph collections

All readily available aerial photographs were consulted during the project.

The English Heritage Archive (EHA) formerly the National Monuments Record (NMR) in Swindon holds large numbers of aerial photographs of the project area. These include vertical prints taken by the Royal Air Force (RAF) and Ordnance Survey (OS) ranging in date from the 1940s to 1999. The EHA also holds a large collection of oblique prints; including military obliques taken by the Ministry of Defence (MOD) between 1941 and 1950 and a collection of specialist oblique prints, slides and digital images which were taken for archaeological purposes and range in date from the 1960's to the present day. In addition a small number of very earlier oblique images taken in the 1920s and 30s by OGS Crawford are held in the EHA collection

Cambridge University Committee for Aerial Photography (CUCAP) holds an important national collection containing a number of vertical photographs taken for a range of non-archaeological purposes as well as specialist oblique photography resulting from archaeological reconnaissance. Unfortunately the collection was not available throughout much of the project mapping time and therefore was not consulted.

In addition to these two national collections, Hampshire County Council (HCC) holds a collection of vertical photographs. Images from several years of flying are held in this collection. The 2006 colour images were provided to the project as digital jpegs. Prints from the earlier flights are housed in the HCC offices and were not available for loan. As the project progressed it was felt that due to time constraints, and the large numbers of photographs already available from the EHA, the HCC prints would not be consulted.

In total 20,2025 aerial photographs were consulted during the project. These consist of 7,766 vertical photographs, 14,127 specialist oblique photographs and 122 military obliques.

The largest photographic collection was that of the EHA, of which 20,009 photographs were consulted. Available photographs consisted of 5,642 vertical prints, 13,711 specialist oblique prints and 122 military oblique prints, 5 digital images and 529 laser prints. A loan arrangement was put in place enabling the consultation of these photographs at Cornwall Council's offices in Truro.

Additional digital photographs available to the project included 2001 vertical photographs from HCC and additional photographic tiles for 15 quarter sheets from the Pan Government Agreement (PGA). Online photographic images from Google Earth and Bing were accessed via the internet.

Data sources

Data from the Hampshire AHBR

Data from the Hampshire HER (AHBR) was provided to the project team as a series of Arcview shape files with attached object data

Data from the National Monuments Record

Monument data from the National Record for the Historic Environment (NRHE) AMIE database was provided to the project team for the study area. This data included

details of all archaeological sites and was provided digitally in a series of PDF files and Arcview shapefiles.

Map Sources

In addition to the current OS MasterMap data which was used as the primary source of control for the rectification and mapping. The historic 1st Edition mapping dating from the late 19th century was consulted to further understand the archaeology of the project area and to aid interpretation of specific sites.

Archaeological scope of the project

All archaeological features were recorded, both plough-levelled and upstanding remains, dating from the Neolithic period to the twentieth century (pre-1945), including industrial and military features. Archaeological or historically significant sites appearing on the OS base map which have not been photographed, or which are completely obscured by vegetation, were not recorded. The project did not usually record structures still in use or fossilized in later structures that are still in use, e.g. buildings, field walls, canals, railways, leats and hedges, but if appropriate, some exceptions were made.

Plough-levelled features and earthworks

All cropmarks and soilmarks representing buried "negative" features (i.e. ditches and pits), earthworks or stonework of archaeological origin were recorded. All earthwork sites visible on aerial photographs were recorded, whether or not they had previously been surveyed (including those marked on the OS maps), and whether or not they are still extant on the most recent photography.

Ridge and furrow

All areas of medieval and post medieval ridge and furrow were mapped using a standard convention to indicate the extent and direction of the furrows. The project database included brief comment on preservation and visibility over the area mapped as well as any archaeological assessment.

Buildings and structures

The foundations of buildings and structures which appear as ruined stonework, earthworks, cropmarks, soilmarks or parchmarks were recorded. Standing roofed or unroofed buildings and structures were not recorded unless there was no other adequate map record. However, in specific archaeological contexts (e.g. industrial and military complexes and country houses), or when associated with other cropmark and earthwork features, and particularly when buildings have been demolished since the photography (even if depicted by the Ordnance Survey), then it may have been appropriate to map them, in order to make an association explicit.

Industrial features and extraction

Areas of industrial archaeology were recorded using the appropriate conventions where they can be recognised as pre-dating 1945. Roofed or unroofed buildings, when associated with other mapped features within industrial complexes, may have been recorded as described above.

All extractive features believed to pre-date 1945 were mapped. These included large-scale features such as quarries, pits and mines, as well as small-scale extraction of resources for immediate local use (e.g. minor stone quarries and gravel extraction).

Twentieth century military features

Twentieth Century military features were recorded to an appropriate level of detail. The extent of larger military complexes such as airfields and camps was depicted

using the 'extent of area' symbol. The major buildings and structures within military complexes as well as isolated military structures, e.g. pillboxes or buildings associated with searchlight batteries, were mapped and recorded.

Field boundaries and field systems

All removed field boundaries and field systems were plotted where they were considered to pre-date the OS 1st Edition map (c.1880) and are not already recorded on any other OS map. Where post medieval field boundaries mapped by the OS may be misinterpreted (e.g. within complex areas of archaeological features), these may have been plotted or mentioned in the text record.

Parkland, landscape parks, gardens and country houses

All park and garden landscape features (including deer parks) visible on aerial photographs but not previously recorded by the OS were be plotted. Similarly, the former existence of country houses either completely or partially demolished during the period of photography were mapped. If the house is depicted by the OS then it will not be mapped but will be mentioned in the text record. Normally the whole complex of house, garden and park was recorded using a single brief text record.

Transport features

Major transport features (i.e. disused canals and main railways) are included in the Ordnance Survey sphere of interest and subsequently appear on OS mapping; these were therefore not mapped. Smaller features which are outside the Ordnance Survey sphere of interest were mapped, as were trackways, pathways and roadways considered to be post-medieval or earlier in origin and not already recorded by the OS.

Natural features

Geological and geomorphological features visible on aerial photographs were not generally mapped. In exceptional circumstances however, they were plotted but only if their presence helped to define the limits of an archaeological site or if it was considered likely that an archaeological interpretation may have already been (or in future be) made in error, in which case the true origin of the features was discussed within the project database.

Transcription

The results of the mapping were produced entirely in digital format using AutoCAD.

Information was derived from the photographs available in the collections identified above.

1. Oblique and vertical photographs were scanned.
2. Digital transformations of the archaeological features visible on the photographs were produced using AERIAL (Version 5.29). Digital copies of current OS 1:2500 MasterMap were used for control information and as a base for mapping in AutoCAD (Version Map3D 2010). All digital transformations will therefore be within a level of accuracy within 5m to true ground position, but typically less than 2.5m to the base map. Where necessary digital terrain models (DTM) were used to aid more accurate rectification of the photographs.
3. The rectified images were imported into the relevant AutoCAD drawings.
4. Archaeological features were digitally transcribed in AutoCAD according to a nationally agreed layer structure and using agreed line and colour conventions as specified by Aerial Survey and Investigation (EH 2010).

5. Polygons were drawn around each separate monument to define its extent. Object data was attached to the monument polygons and archaeological features in AutoCAD in a table called RECORD. This recorded the Unique Identifier numbers (UID) for records within the AMIE and HCC AHBR databases.
6. Map Note Sheets (MNS) were maintained for each OS quarter sheet within the survey area. MNS record the progress of each sheet and the sources used.
7. Quality assurance checks were carried out on selected map sheets to ensure that all sheets were completed to NMP standards.

Data processing

Project database

Data for all features mapped during the project was input into their exegesis NMP HBSMR v3 database. The database automatically generated unique Project UID numbers (Monument Prefix MKM) and contained fields enabling monument indexing to be carried out to EHA and ALGAO standards. Appropriate data was entered into this database for each archaeological feature mapped (data recorded included summary, description, photographic references, site type and period, locational information and details of the interpreter).

AutoCAD attached object data

Three object data tables were incorporated into each AutoCAD drawing to enable concordance with the GIS and to facilitate basic analysis of the drawings.

The HBSMR number of all sites, and the HCC AHBR number and AMIE Hob UID of each site (where it existed) was recorded in the first table.

The second table recorded basic interpretative information and contained four fields; period, type, form, and photo number as well as including a comment field.

The third table recorded the date, surveyor, scale of survey, and copyright information.

These tables were attached to all plotted features and the relevant polygon defining the monuments.

GIS shapefiles

Each AutoCAD drawing was exported as an ESRI shapefile and imported into ArcView using the exeGesIS MapLink Software. This automatically linked each mapped site to the relevant record in the project database through the attached PRN number.

Data exchange

The mapped data was provided to HCC as AutoCAD drawings as well as GIS data in the form of ESRI shapefiles with site summaries attached.

Copies of the mapping were provided to EH in AutoCAD format suitable for incorporation in to the EH Corporate GIS.

All data supplied to EH and HCC was to NMP monument recording standards and in line with EH minimum standards for monument recording.

Copies of the Project Design, Final Report and all other relevant project documentation will be deposited with EH. The PDF version of the report will be deposited with Archaeology Data Service (ADS).

Project outcome

A series of AutoCAD drawings was produced showing all archaeological features visible on aerial photographs for each of the two mapping blocks.

The Hampshire AHBR was updated with shapefiles and descriptions of all archaeological sites mapped during the project.

The AutoCAD drawings with data attached were exported as ArcGIS shapefiles.

Appendix 2 Quantification Assessment

It is a requirement of NMP projects that the project design should include a quantification of the project area to determine the potential density of archaeological features and the nature of the aerial photography cover. The project timetable should demonstrate a link between the quantification and the expected progress per map sheet, in order to minimise the risk of variance from the project timetable.

Geology, soils and topography

The project area is overwhelmingly rural in character. The only town of any size is Winchester, which straddles two OS quarter map sheets, SU42NE and SU43SE. Winchester covers approximately 7 square kilometres of the project area and the AHBR contains few records for sites in Winchester which fall within the NMP remit – for the most part these are Second World War air raid shelters (some of which may be visible on 1940s RAF photographs). It is likely therefore, that NMP mapping of Winchester will be completed at a quicker rate than average. Elsewhere the small towns of New Alresford and Overton both cover roughly one square kilometre in map sheets SU53SE and SU54NW respectively.

The geology is dominated by very extensive areas of chalk, which, towards the southern and northern edges of the project area are capped by clay-with-flints. The chalk areas form an open landscape characterised by intensive arable production and although grazing land is common on the higher ground and steeper slopes, the chalk and clay also is primarily a landscape of arable farming. Chalk supports shallow, free-draining soils, providing highly favourable conditions for cropmark and soilmark formation. Therefore the open arable chalklands are of extremely high potential for NMP mapping; the chalk and clay areas less so.

The project area is dissected by two main rivers; the river Dever which forms a major tributary of the Test and runs west-east, and the Candover Stream which runs north-south to join the Upper Itchen in the New Alresford area. Both rivers are flanked by deposits of Periglacial Head in their upper reaches and the Dever is also flanked by deposits of Lambeth Group clay, silt and sand in the west. These geologies are less conducive to cropmark formation than the chalk. Consequently there may be less potential here than on the chalklands. On the other hand there are likely to be post medieval water meadows in the valley floors of the Dever and Candover and these are typically time-consuming to map.

The Archaeology and Historic Buildings Record

In general terms the nature of archaeological evidence available from aerial photographs determines the types of sites recorded as part of NMP. Usually these are relatively substantial ditched or banked features visible above ground as earthworks or as cropmarks or soilmarks of sub-surface features. Historic photography provides details of earthworks and structures which have been denuded or levelled by ploughing, or otherwise destroyed or removed over the last 60 years. Historic photographs are also an important source for evidence of twentieth century military features. Previous mapping on the Hampshire chalkland (EH 5174) demonstrates that 71% of sites survive only as cropmarks or soilmarks. Thus it is likely that cropmark archaeology will form a key component of the Hampshire Downland project.

The Hampshire AHBR contains 2,620 records for archaeological sites in the project area. Of these, 1,956 are for monuments and 664 for findspots. Of the monument records, 297 are for features outside the NMP remit; the bulk of them buildings of one sort or another. This leaves 1,659 sites relevant to NMP, of which 65% - 1,064 sites – are recorded as cropmarks or soilmarks. A breakdown of the distribution of AHBR sites records per map sheet is shown in Table 1 below.

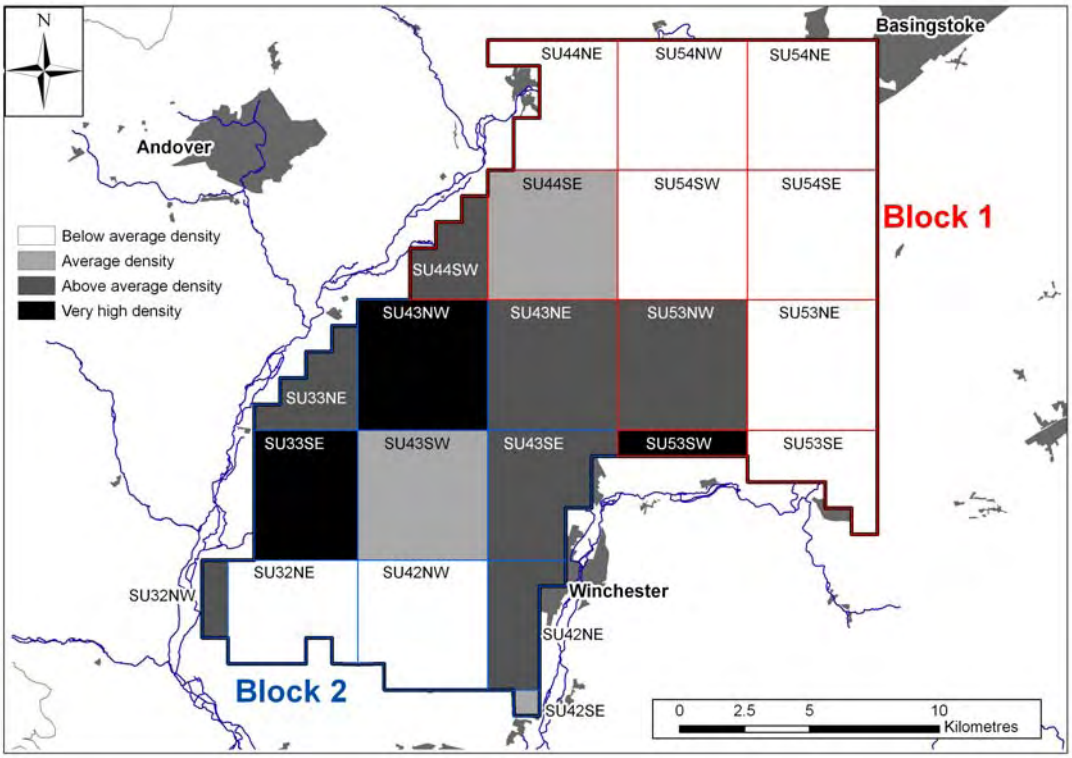
Map sheet	Km^2	Findspots (per km^2)	Relevant monuments (per km^2)	Cropmarks (per km^2)
SU32NE	19	48 (2.5)	57 (3)	20 (1)
SU32NW	3	8 (2.6)	14 (4.6)	4 (1.3)
SU33NE	10	8 (0.8)	54 (5.4)	32 (3.2)
SU33SE	20	29 (1.4)	133 (6.6)	42 (2.1)
SU42NE	11	63 (5.7)	57 (5.2)	12 (1)
SU42NW	24	41 (1.7)	60 (2.5)	25 (1)
SU42SE	1	3 (3)	4 (4)	1 (1)
SU43NE	25	26 (1)	123 (4.9)	87 (3.5)
SU43NW	25	9 (0.36)	175 (7)	148 (5.9)
SU43SE	19	67 (3.5)	96 (5)	41 (2.1)
SU43SW	25	14 (0.5)	109 (4.4)	81 (3.2)
SU44NE	19	1 (0.1)	59 (3.1)	56 (3)
SU44SE	25	26 (1)	102 (4)	88 (3.5)
SU44SW	9	2 (0.2)	48 (5.3)	40 (4.4)
SU53NE	25	20 (0.8)	82 (3.3)	60 (2.4)
SU53NW	25	87 (3.5)	131 (5.2)	77 (3.1)
SU53SE	13	15 (1.2)	38 (2.9)	22 (1.7)
SU53SW	5	7 (1.4)	28 (5.6)	22 (4.4)
SU54NE	25	42 (1.7)	63 (2.5)	38 (1.5)
SU54NW	25	42 (1.7)	61 (2.4)	52 (2.1)
SU54SE	25	34 (1.4)	84 (3.4)	63 (2.5)
SU54SW	25	72 (2.8)	81 (3.2)	53 (2.1)
Total	**403**	**664 (1.6)**	**1659 (4.1)**	**1064 (2.6)**

Appendix 2, Table 1. Number of AHBR records per 1:10,000 OS quarter map sheet. Mean numbers of records per kilometre are shown in brackets.

In theory the distribution of cropmarks should indicate the areas of highest potential in the Hampshire Downland. In practice, however, the distribution of relevant monument types is likely to provide a more accurate indication. This is because a significant proportion of the features comprising the AHBR cropmark layer do not have accompanying AHBR record entries. As a result the number of records contained in the AHBR for cropmark sites understates the actual number of cropmark sites.

Using the average number of relevant site types per square kilometre the potential of each map sheet was graded according to the following criteria.

Monuments/km^2	Grade (density)
2-3	Below average
4	Average
5	Above average
6-7	Very high



Appendix 2, Figure 1. Project area map sheets colour-coded according to the density of monument records.

Aerial photographs

Vertical photography

Vertical prints are held in three main collections; the EHA, CUCAP and HCC. In addition a copy of digital vertical images (1km^2 tiles) taken in 2005 for HCC is held by the NMP team. Further digital PGA imagery (also in 1km^2 tiles) is available to the project. At least five sets of Google Earth digital imagery is also accessible. Digital imagery provides uniform coverage across the whole project area, whereas the photographic prints provide greater or lesser coverage. A breakdown of the number of vertical prints per map sheet is shown in Table 2 below.

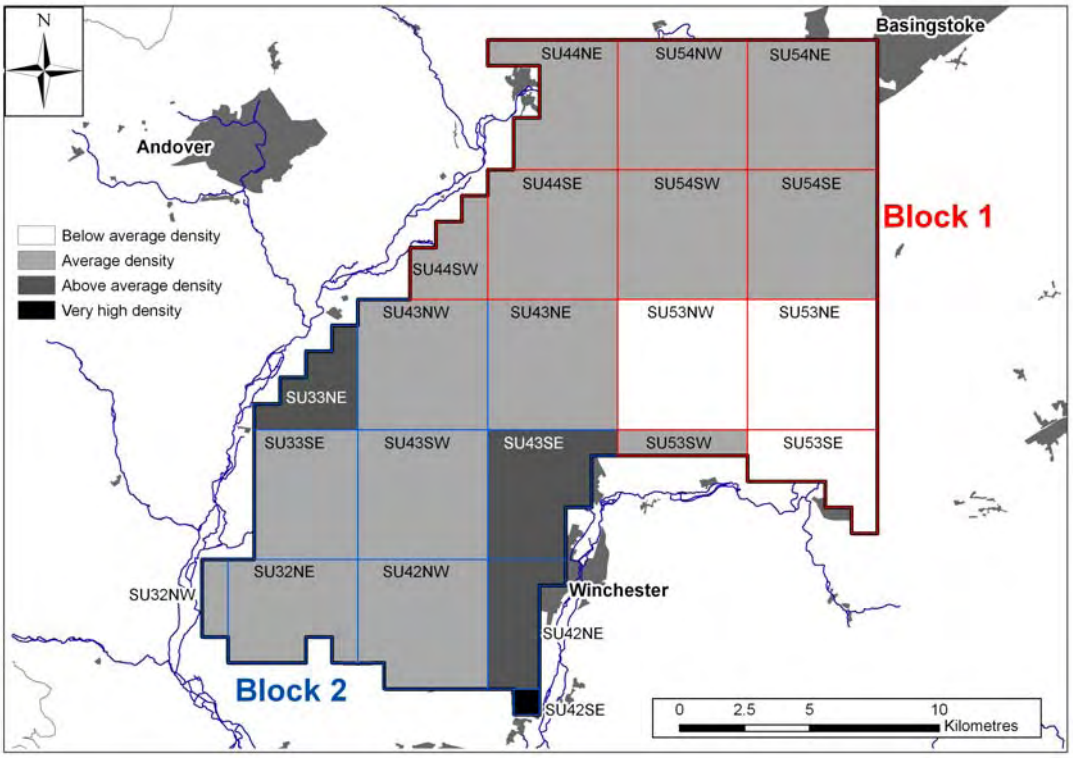
Map sheet	Km^2	EHA (per km2)	CUCAP (per km2)	HCC (per km2)	Total (per km2)
SU32NE	19	271 (14.3)	22 (1.2)	51 (2.7)	344 (18.1)
SU32NW	3	47 (15.7)	0	5 (1.7)	52 (17.3)
SU33NE	10	196 (19.6)	25 (2.5)	22 (2.2)	243 (24.3)
SU33SE	20	220 (11)	19 (1)	42 (2.1)	281 (14.1)
SU42NE	11	260 (23.6)	50 (4.5)	29 (2.6)	339 (30.8)
SU42NW	24	366 (15.3)	22 (0.9)	61 (2.5)	449 (18.7)
SU42SE	1	32 (32)	8 (8)	5 (5)	45 (45)
SU43NE	25	358 (14.3)	39 (1.6)	56 (2.2)	453 (18.1)
SU43NW	25	387 (15.5)	47 (1.9)	59 (2.4)	493 (19.7)
SU43SE	19	369 (19.4)	46 (2.4)	43 (2.3)	458 (24.1)
SU43SW	25	317 (12.7)	30 (1.2)	52 (2.1)	399 (16)
SU44NE	19	253 (13.3)	15 (0.8)	50 (2.6)	318 (16.7)
SU44SE	25	343 (13.7)	23 (0.9)	54 (2.2)	420 (16.8)
SU44SW	9	145 (16.1)	16 (1.8)	20 (2.2)	181 (20.1)
SU53NE	25	158 (6.3)	0	62 (2.5)	220 (8.8)
SU53NW	25	175 (7)	16 (0.6)	61 (2.4)	252 (10.1)
SU53SE	13	126 (9.7)	6 (0.5)	26 (2)	158 (12.2)
SU53SW	5	65 (13)	9 (1.8)	14 (2.8)	88 (17.6)
SU54NE	25	434 (17.4)	12 (0.5)	68 (2.7)	514 (20.6)
SU54NW	25	320 (12.8)	6 (0.2)	69 (2.8)	395 (15.8)
SU54SE	25	295 (11.8)	7 (0.3)	63 (2.5)	365 (14.6)
SU54SW	25	305 (12.2)	10 (0.4)	54 (2.2)	369 (14.8)
Total	**403**	**5442 (13.5)***	**428 (1.1)**	**966 (2.4)**	**6836 (17)**

Appendix 2, Table 2. Number of vertical photographs per 1:10,000 OS quarter map sheet. Mean numbers of photos per kilometre are shown in brackets.

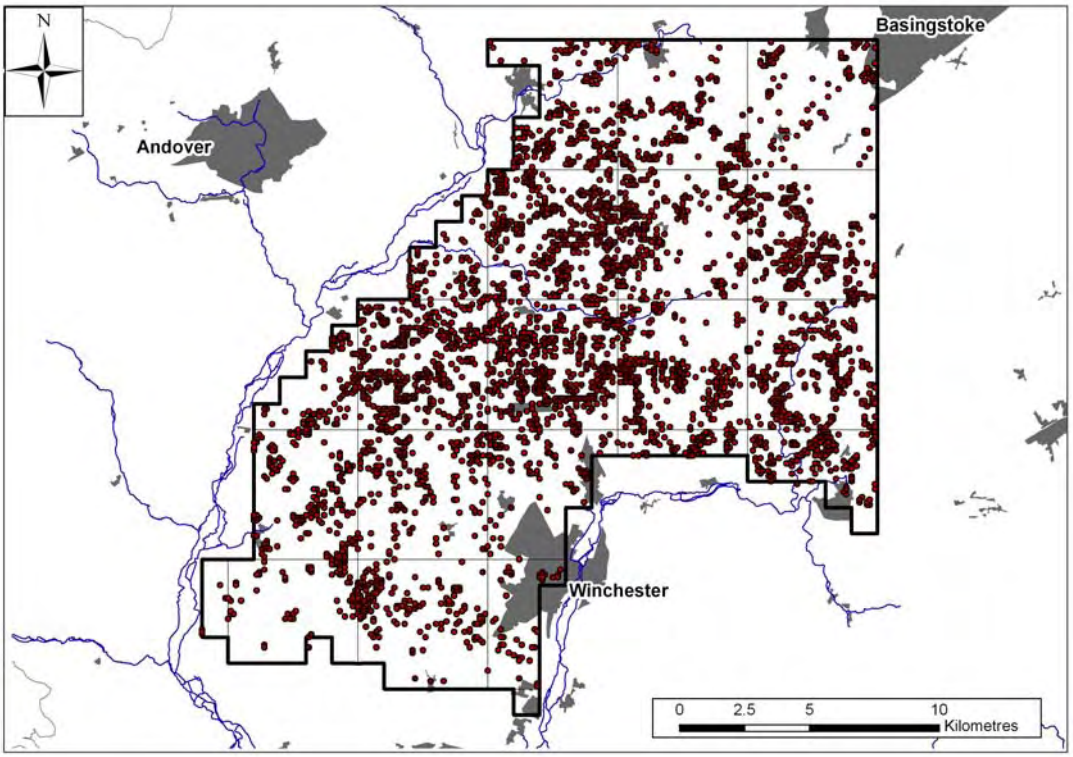
* This figure does not include prints falling just outside the project area which will be loaned to the project as an approximate 1km overlap (in order to provide stereo pairs if necessary).

Using the average number of prints per square kilometre the vertical coverage for each map sheet was graded according to the following criteria.

Verticals/ km^2	Grade (density)
9-12	Below average
13-21	Average
22-31	Above average
32-45	Very high



Appendix 2, Figure 2 Project Area colour-coded according to the density of vertical coverage for each map sheet.



Appendix 2, Figure 3. Pattern of specialist photography.

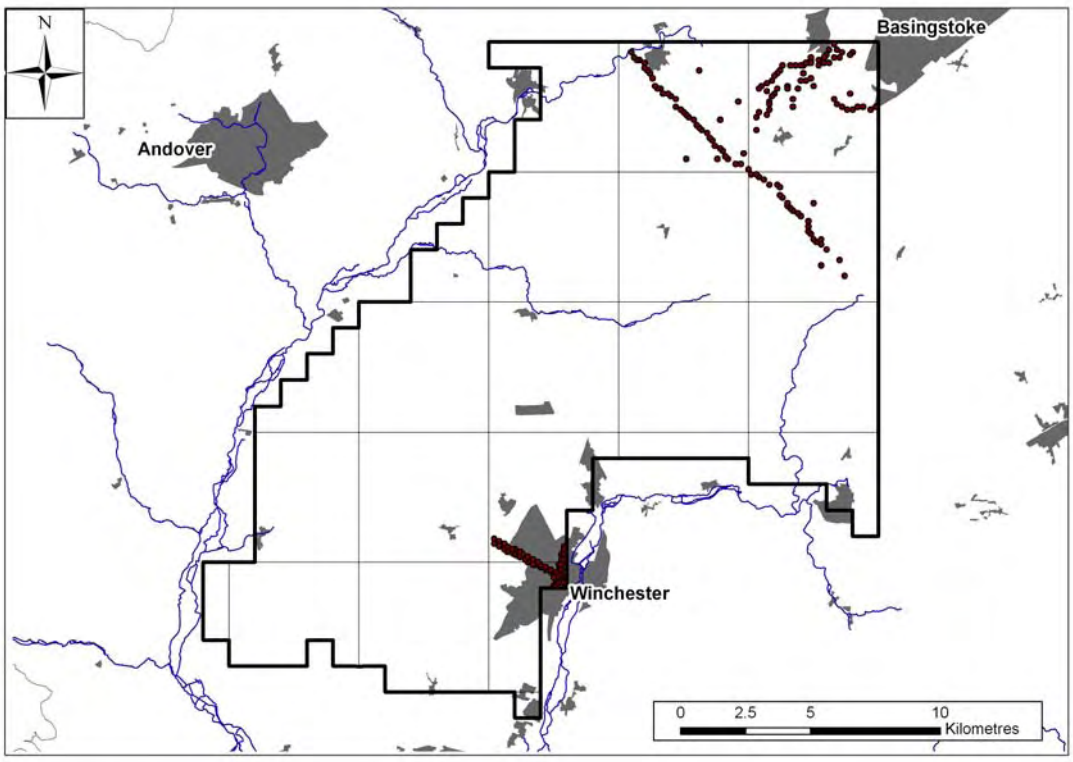
Specialist oblique photography

Oblique aerial photography, taken specifically to record archaeological features, provides probably the most accurate indicator of the distribution and density of archaeological remains. Certainly the pattern of specialist photography shows where the archaeology is to be found.

There is a large amount of specialist photography available to the project, housed in two collections – the EHA and CUCAP. Figure 3 above shows the pattern of oblique photography throughout the project area. Generally the whole area has been intensively flown but there are hotspots. Most notably more photographs have been taken in the central western area then in the northeast and the far south.

Military oblique photography

In addition to specialist photography there are a small number of military obliques. These indicate the likely location of twentieth century military features and the pattern of military photography is shown in Figure 4.



Appendix 2, Figure 4. Pattern of military oblique photography.

This patterning suggests a possible stop line to the southwest of Basingstoke (or perhaps D-Day encampments) and defence activity around Winchester. On the whole though, it does not seem as if there will be an exceptional amount of twentieth century military archaeology in the project area.

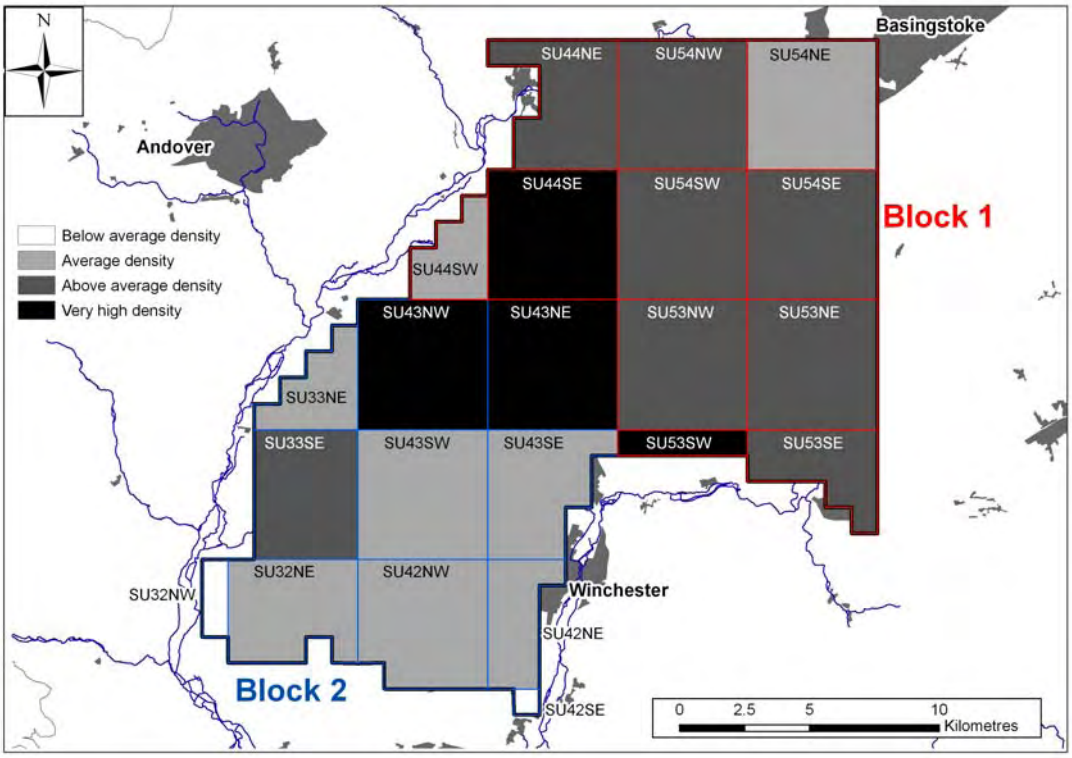
The quantification of oblique photographs is shown in Table 3 below.

Map sheet	Km^2	EHA (per km2)	Military (per km2)	CUCAP (per km2)	Total (per km2)
SU32NE	19	203 (10.7)	0	6 (0.3)	209 (11)
SU32NW	3	16 (5.3)	0	0	16 (5.3)
SU33NE	10	160 (16)	0	43 (4.3)	203 (20.3)
SU33SE	20	405 (20.30	0	44 (2.2)	449 (22.5)
SU42NE	11	77 (7)	30 (2.7)	20 (1.8)	127 (11.5)
SU42NW	24	346 (14.4)	0	82 (3.4)	428 (17.8)
SU42SE	1	0 (0)	0	0	0
SU43NE	25	863 (34.5)	0	211 (8.4)	1074 (43)
SU43NW	25	919 (36.8)	0	189 (7.6)	1108 (44.3)
SU43SE	19	179 (9.4)	25 (1.3)	59 (3.1)	263 (13.8)
SU43SW	25	331 (13.2)	0	41 (1.6)	372 (14.9)
SU44NE	19	367 (19.3)	0	63 (3.3)	430 (22.6)
SU44SE	25	955 (38.2)	0	140 (5.6)	1095 (43.8)
SU44SW	9	141 (15.7)	0	13 (1.4)	154 (17.1)
SU53NE	25	626 (25)	0	67 (2.7)	693 (27.7)
SU53NW	25	502 (20.1)	0	129 (5.2)	631 (25.2)
SU53SE	13	307 (23.6)	0	128 (9.8)	435 (33.5)
SU53SW	5	224 (44.8)	0	75 (15)	299 (59.8)
SU54NE	25	240 (9.6)	62 (2.5)	39 (1.6)	341 (13.6)
SU54NW	25	359 (14.4)	42 (1.7)	170 (6.8)	571 (22.8)
SU54SE	25	528 (21.1)	28 1.1)	140 (5.6)	696 (27.8)
SU54SW	25	423 (16.9)	0	121 (4.8)	544 (21.8)
Total	**403**	**8171 (20.3)**	**187 (0.5)**	**1780 (4.4)**	**10138 (25.2)**

Appendix 2, Table 3. Quantification of oblique photography.

Using the average number of prints per square kilometre the oblique coverage for each map sheet was graded according to the following criteria.

Obliques/ km^2	**Grade (density)**
0-5	Below average
11-20	Average
22-34	Above average
35-60	Very high



Appendix 2, Figure 5. Project area colour-coded according to the density of oblique coverage for each map sheet.

In estimating the likely timescale for the mapping, interpretation and recording of each map sheet all thee factors (density of relevant monuments, vertical coverage and oblique coverage) should be taken into account. However experience of other NMP projects in chalkland areas, especially the Hampshire South Downs which abuts the proposed project area, clearly demonstrates that the most reliable indicator of site density is the pattern of oblique photography. Therefore this is the factor given most weight in the quantification.

The area of the South Downs project forming the closest parallel with the Hampshire Downland is Block 3A which comprised 102 square kilometres abutting the south eastern boundary of the Downland project area. This was the busiest and most complex area in the South Downs and the average time taken to map, interpret and record 1 kilometre square was 1 day. For Block 3A of the South Downs 2,382 obliques were loaned; this works out at an average of 23 photographs per km^2, and 1,854 vertical prints were loaned, averaging 18 prints per km^2. In terms of the photographic resource available for the Hampshire Downland this comes in as an average amount of vertical photography and a slightly above average amount of oblique photography.

Using South Downs Block 3A as a benchmark the following rates of progress have been used to calculate timescale.

Grade (density) per km^2	**Time taken (days) per km^2**
Below average	0.6-0.8
Average	0.8-1.0
Above average	1.0-1.2
Very high	1.2-1.4

In this way the following timescale estimates for mapping, interpretation and recording the Hampshire Downland were calculated. In Table 4 below figures per square kilometre have been rounded up (0.5 becomes 1) or down (1.4 becomes 1).

Map sheet	**Km^2**	**Relevant sites (per km^2)**	**Verticals (per km^2)**	**Obliques (per km^2)**	**Grade**	**Timescale (days/map sheet)**
SU32NE	19	3	18	11	Average	17
SU32NW	3	5	17	5	Below average	2
SU33NE*	10	5	24	20	Above average	12
SU33SE	20	7	14	23	Above average	20
SU42NE	11	5	31	12	Average	10
SU42NW	24	3	19	18	Average	24
SU42SE	1	4	45	0	Below average	0.5
SU43NE	25	5	18	43	Very high	32
SU43NW	25	7	20	44	Very high	35
SU43SE	19	5	24	14	Average	17
SU43SW	25	4	16	15	Average	22
SU44NE	19	3	17	23	Above average	20
SU44SE	25	4	17	44	Very high	32
SU44SW	9	5	20	17	Average	9
SU53NE	25	3	9	28	Above average	28
SU53NW	25	5	10	25	Above average	28
SU53SE	13	3	12	34	Above average	16
SU53SW	5	6	18	60	Very high	7
SU54NE	25	3	21	14	Average	23
SU54NW	25	2	16	23	Above average	26
SU54SE	25	3	15	28	Above average	28
SU54SW	25	3	15	22	Above average	25
Average		**4**	**13-21**	**11-20**	**Total days =**	**433.5**

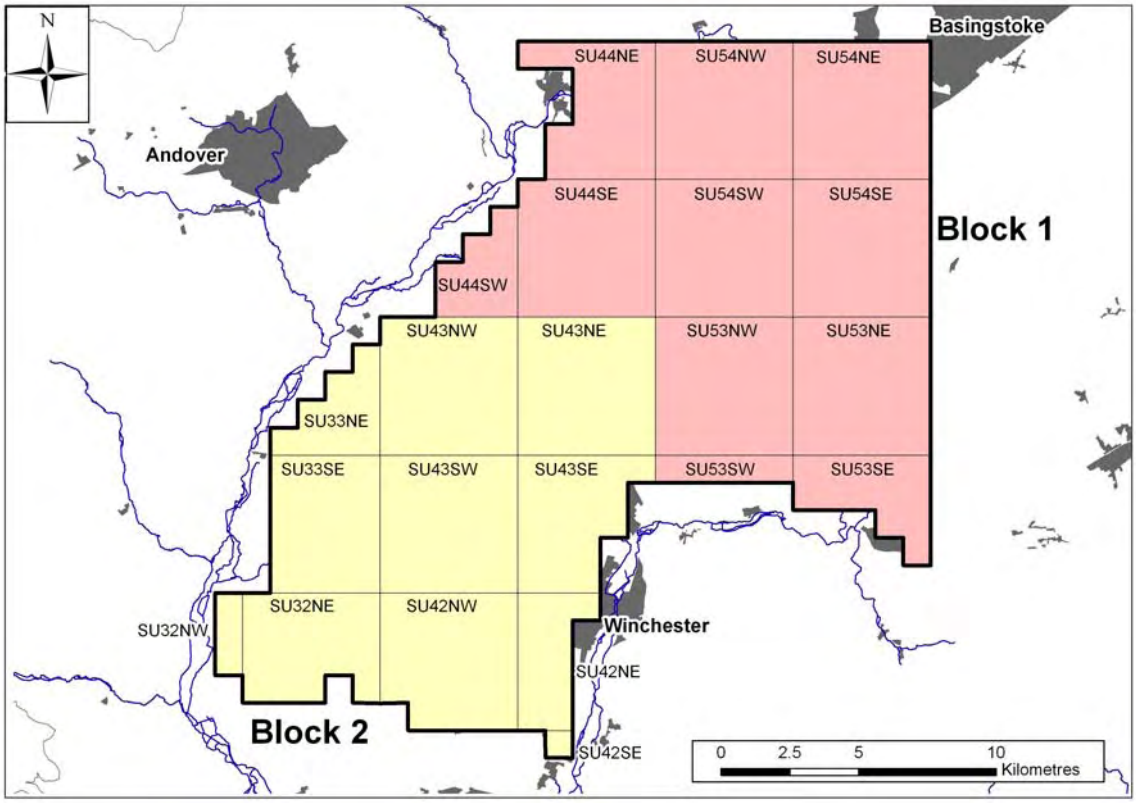
Appendix 2, Table 4. Quantification of timescale estimates for mapping and recording of the project area.

SU33NE has an average number of obliques (at the very top end of the average range of 11-20), but has a higher than average number of vertical and relevant monuments so qualifies as an above average map sheet.

Appendix 3 Working Blocks

For practical purposes the project area was sub-divided into two working Blocks (Appendix 3, Figure 1). The make up of each Block was constrained by the size of the photo loans available from the EHA (dictated by the number of available photographs) and by the likely work load (best practice favours a Block containing a mixture of some 'busy' map sheets and some sheets with fewer sites).

The decision about how best to sub-divide the project area was informed by a quantification of the number of available aerial photographs for each quarter map sheet and also the number of AHBR site records for each map sheet (indicating the likely archaeological potential of each sheet). This quantification assessment is presented in Appendix 2.



Appendix 3, Figure 1. Map of the Hampshire Downland project area showing the two working blocks.

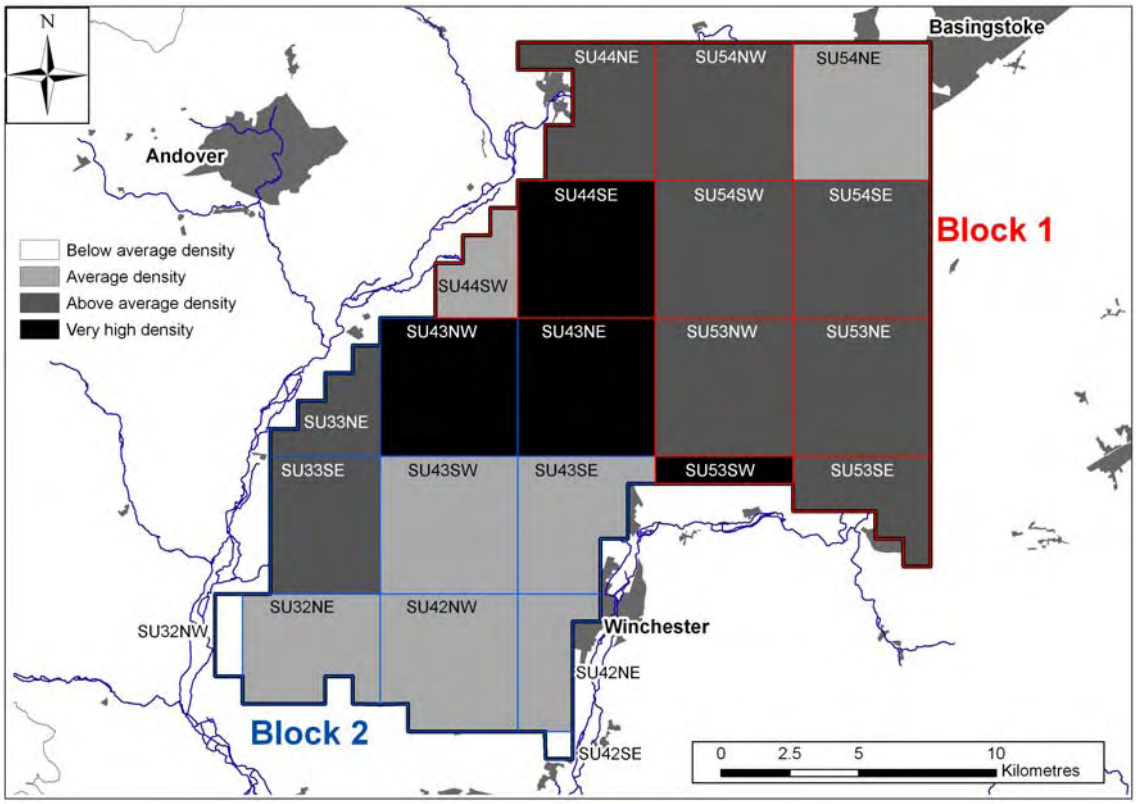
Block 1. Basingstoke, Laverstoke, Bullington, Micheldever and Alresford

This Block included whole or parts of 11 1:10,000 OS quarter map sheets and covered 221 square kilometres. The whole map sheets are: SU44SE, SU53NE, SU53NW, SU54NE, SU54NW, SU54SE and SU54SW. The partial map sheets are SU44SW, SU 53SE and SU53SW.

The Block encompassed the eastern and northern part of the project area, extending from the Itchen Valley at Old Alresford, northwards up the valley of the Candover Stream to the higher ground on the southwest edge of Basingstoke. In the west it included the upper reaches of the River Test around Overton and much of the Dever valley and catchment. In the west, around the Dever valley the landscape is predominantly open arable on chalk; in the east and particularly in the north the open

arable is interspersed with chalk and clay and, around Basingstoke, with a small tract of clay plateau.

The quantification of AHBR records and aerial photographs for the project area (see Appendix 2) indicated that two of the map sheets in Block 1 (SU44SE and SU53SW) had very high archaeological potential. Seven map sheets had above average potential and only one, SU54NE had 'average' potential (Appendix 3, Figure 2).



Appendix 3, Figure 2. Map of the Hampshire Downland project area showing the anticipated archaeological potential of each quarter map sheet.

Block 2. Winchester, Wonston, Chilbolton and King's Somborne

This Block included the whole or parts of 11 1:10,000 OS quarter map sheets and covers 182 square kilometres. The whole map sheets are: SU43NE, SU43NW and SU43SW. The partial map sheets are: SU32NE, SU32NW, SU33NE, SU33SE, SU42NE, SU42NW, SU42SE and SU43SE.

The Block includes Winchester, which straddles two map sheets and the northern and western sides of the Itchen Valley. The northern portion of the Block takes in part of the Dever Valley and stretches as far west as the Test Valley. In the south, around Compton, Hursley and Braishfield, the chalk dip slope drops down to the South Hampshire Plain. Much of the block is characterised by open arable but in the south this gives way on the dip slope to chalk and clay.

The quantification of AHBR records and aerial photographs for the project area (see Appendix 2) showed that two map sheets (SU43NE and SU43NW) have very high archaeological potential. Two map sheets (SU33NE and SU33SE) have above average potential, five map sheets have average potential and two (SU32NW and SU42SE) have below average potential (Appendix 3, Figure 2).

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