

South East Warwickshire and Cotswolds Higher Level
Stewardship Target Areas:
A Report for the National Mapping Programme



Russell Priest and Amanda Dickson
2013

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A Report for the National Mapping Programme

English Heritage; NHPCP Project No. 6053

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DOCUMENT CONTROL GRID

Title:	South East Warwickshire and Cotswolds HLS Target Areas NMP. Report.
Project number:	NHPCT project 6053
Author(s):	Russell Priest and Amanda Dickson (ed Toby Catchpole) Archaeology Service Gloucestershire County Council Shire Hall GLOUCESTER GL1 2TH
Origination date:	May 2013
Version:	Draft Version 8
Reviser(s):	AD final formatting
Date of last revision:	11/03/14
Status:	Final submission
Summary of changes:	Tidy illustrations, reference checks, final formatting
Circulation:	NHPCT, Helen Winton
Required Action:	Read through by SC and TC; Send to Helen Winton
Approval:	
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SUMMARY

This report describes the results of a survey project to identify, map and record archaeological remains visible on aerial photographs and lidar images in south eastern Warwickshire and the northeastern Cotswolds. It provides a synthesis of the archaeology to inform heritage protection in the project area.

The project was undertaken as part of the English Heritage National Mapping Programme by the Archaeology Service of Gloucestershire County Council. It covers an area of 670 squared kilometres, two thirds of which are within Warwickshire, one third within Oxfordshire and less than 1% within Gloucestershire. It began in October 2010 and mapping and recording was completed in August 2013.

The project identified and mapped sites ranging in date from the Neolithic to the 20th century. 681 new site records were created in the National Record of the Historic Environment for England (NRHE), an overall increase of 43% in the project area. A further 364 records were updated with new information,

The report highlights some of the newly identified archaeological sites and analyses their character, diversity, distribution and associations in the landscape through a series of case studies. Designated sites are also briefly discussed with regard to their identification, preservation and improved management as are the large numbers of undesignated sites threatened by intensive agriculture in the project area.

ACKNOWLEDGEMENTS

The South East Warwickshire and Cotswolds HLS Target Areas NMP project was undertaken by Amanda Dickson, Josephine Janik and Russell Priest of Gloucestershire County Council Archaeology Service (GCCAS). It was funded by English Heritage's National Heritage Protection Commissions Programme (NHPCP). Helen Keeley was the NCPHP Project Assurance Officer. Helen Winton of English Heritage (Aerial Investigation and Mapping team) acted as the NMP Quality Assurance Officer and Toby Catchpole of GCCAS was Project Manager. Jan Wills of GCCAS acted as Project Executive.

The main aerial photographic sources were provided by the English Heritage National Archive Services team, in particular Luke Griffin. Historic Environment Record data and assistance was provided by Susan Lisk of Oxfordshire County Council, Ben Wallace of Warwickshire County Council and Tim Grubb of Gloucestershire County Council. Thanks go to all.

Many thanks go to all the Aerial Investigation and Mapping team staff at English Heritage for their expertise and advice, for quality assurance and for supplying the PGA data. Thanks also to Chantelle Smith, of English Heritage, for providing Ordnance Survey data.

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ABBREVIATIONS

ALSF	Aggregates Levy Sustainability Fund
AMIE	Archives and Monuments Information, England
CUCAP	Cambridge University Committee for Aerial Photography
EHA	English Heritage Archives
GCCAS	Gloucestershire County Council Archaeology Service
HAR	Heritage at Risk
HER	Historic Environment Record
MOD	Ministry of Defence
NHLE	National Heritage List for England
NHPP	National Heritage Protection Plan
NHPCP	National Heritage Protection Commissions Programme
NMP	National Mapping Programme
NMR	National Monuments Record
NRHE	National Record of the Historic Environment
OS	Ordnance Survey
PGA	Pan-Government Agreement
RAF	Royal Air Force
UDS	Unified Designation System (formerly 'scheduling')
WHER	Warwickshire Council Historic Environment Record

1 INTRODUCTION

1.1 General background

This report describes the results of an archaeological aerial survey project covering the South East Warwickshire and Cotswolds Higher Level Stewardship Target Areas. The project was undertaken to the standards of the English Heritage National Mapping Programme by the Archaeology Service of Gloucestershire County Council. It was funded through the National Heritage Protection Commissions Programme (NHPCP) of English Heritage and has been structured according to the framework set out in Management of Research Projects in the Historic Environment (MoRPHE) Project Planning Note 7 (English Heritage 2006).

The project design (Catchpole and Dickson 2010) preceded the publication of the National Heritage Protection Plan (NHPP, English Heritage 2011). The project aims were therefore drawn up in line with SHAPE Sub-programme 32111.110 (National Mapping Programme: recording and mapping archaeological landscapes using aerial photographs, EH 2008, 57). The Primary Driver of the project was English Heritage Corporate Aim 3: Enable and promote sustainable change to England's historic environment (op. cit., 87).

The project area comprises a total of 670 squared kilometres within south east Warwickshire, northwest Oxfordshire and a very small area in eastern Gloucestershire (See Figure 1.2). The project area was devised to complete coverage of the South East Warwickshire Higher Level Stewardship (HLS) Target Area (Natural England 2008a) and the northern parts of the Cotswolds HLS Target Area (Natural England 2008b). These target areas have been identified across England and represent the areas where Natural England wished to focus delivery of HLS to maximise positive environmental outcomes.

The results of this project complement those of adjacent NMP projects (See Figure 1.1), namely the Warwickshire ALSF NMP surveys (Alexander 2007; Jones 2009), the Northamptonshire NMP (Deegan & Foard 2007), the Cotswold Hills NMP (Janik *et al.* 2011) and the North Gloucestershire Cotswolds NMP (Stoertz 2012) projects.

1.2 Aims and objectives of the NMP survey

The broad aim of the SE Warwickshire and Cotswolds HLS Target Areas project was to enhance the County Historic Environment Records (HERs) and National Record for the Historic Environment (NRHE) with the quality of information required to identify, interpret and improve the management of monuments in this overwhelmingly rural area, specifically through agri-environment schemes. The results will also inform strategic and development management planning decisions.

The project also aims to increase and enhance understanding of past human activity in the survey area by providing primary information and synthesis for all archaeological sites and landscapes. This information will inform future archaeological research as well as promoting public appreciation and enjoyment of archaeology (English Heritage 2008).

These aims were achieved through the accurate transcription, informed interpretation and description of all archaeological features visible on aerial photographs in line with the aims and objectives of the National Mapping Programme (Winton 2012). This included interpretation and mapping of earthworks, cropmarks (buried features) or structures

(including buildings) which may date from between the Neolithic period (circa 4000 BC) to the late 20th century Cold War era.

1.3 Summary of NMP methodology

The aerial survey methodology entailed the identification, interpretation, digital transcription and description of all archaeological features, dating from the Neolithic to the 20th century, visible on aerial photographs (See Appendix 1 for more details), adhering to the National Mapping Programme (NMP) standards (Winton 2012).

The project involved the systematic examination of all available aerial photographs, by far the largest collection being that held at English Heritage Archives (EHA), Swindon. This included vertical photographs taken for non-archaeological purposes and specialist oblique aerial photographs which focus on archaeological and architectural sites and landscapes. A number of aerial photographs belonging to the Cambridge University Committee for Aerial Photography (CUCAP) were also examined, but only those for which copies were held in the EHA as the Cambridge-based collection was closed for the duration of the project. Orthorectified vertical photographs supplied by Next Perspectives™ through the Pan-Government Agreement (PGA) as 1 square kilometre tiles in TFF format were used in the project. The photographic collections held by Warwickshire County Council and Oxfordshire County Council were also viewed. Lidar tiles provided in TIFF/JPEG format were also viewed where coverage was available in the project area. Online internet sources such as Google Earth (<http://earth.google.com/>) and Bing (<http://www.bing.com/maps/>) were also useful in providing recent georeferenced vertical aerial photographs.

Aerial photographs were transformed using specialist rectification software (Aerial 5.29) with Ordnance Survey MasterMap 1:2,500 scale mapping and a digital terrain model. This provided an accuracy of less than two metres to the 1:2,500 scale map for the rectified photographs. The Ordnance Survey advise that their 1:2,500 scale map data has an accuracy of ± 0.4 metres for rural towns and ± 1.1 metres in all other rural areas. Therefore the archaeological features transcribed for the NMP will on average be accurate to within two to three metres of true ground position. Archaeological features were traced from the georeferenced rectified photographs in AutoCAD Map 3D 2008 using standard NMP drawing conventions (See Appendix 1 for more details).

New sites and amendments to existing sites were recorded in the NRHE and copies of the digital drawing files were deposited in the English Heritage Archive in Swindon. A summary description of each archaeological feature recorded, as well as details of the sources consulted during the mapping process, are available on the PastScape website (<http://www.pastscape.org.uk/>). This information will also be disseminated electronically to the relevant Historic Environment Records.

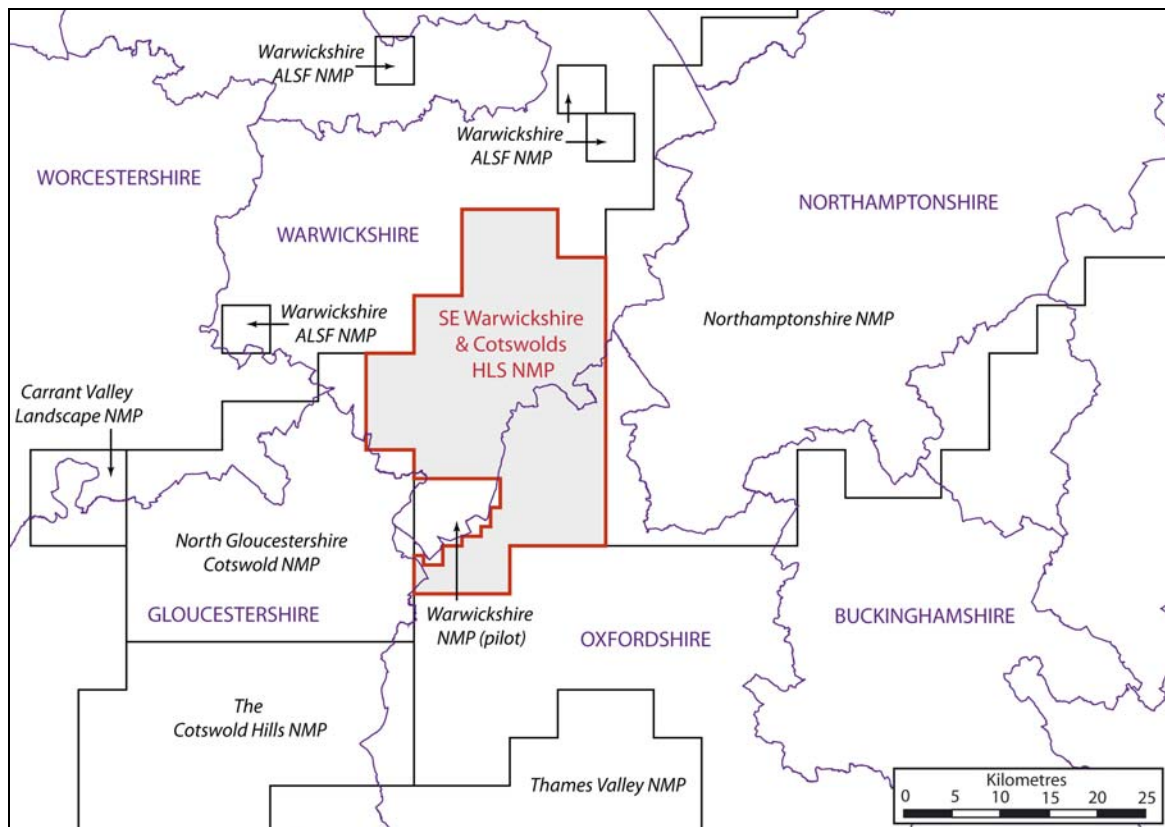


Figure 1.1: The SE Warwickshire and Cotswolds HLS project in the context of surrounding NMP projects. *Illustration based on information from OS mapping © Crown Copyright. All rights reserved. Gloucestershire County Council 100019134 2013*

1.4 The Character of the survey area

The project area is largely rural in character and is characterised by a rolling agricultural landscape. The majority of the project area is covered by individual farms and small villages, linked by a network of lanes and B roads. Market towns include Chipping Norton and Shipston-on-Stour. These are located at significant intersections on the road network and would have functioned as centres of the local economy. Although the project covered parts of the larger towns of Leamington Spa and Banbury, the land included is mostly suburban development of the last 60 years. Larger villages such as Bloxham, Middle Tysoe and Kineton regularly interrupt the pattern.

The Roman Fosse Way (NRHE: 1164971) extends through the project area, linking the Roman cities of Cirencester and Leicester, together with many other smaller towns and villages. Other A roads cross the project area linking the towns. The M40 motorway, built between 1987 and 1989 (The Motorway Archive 2009), crosses from near Banbury in the east to the Warwick-Leamington area in the northwest.



Figure 1.2: The SE Warwickshire and Cotswold Hills NMP project area in relation to major roads and settlements. © Crown Copyright. All rights reserved. Gloucestershire County Council 100019134 2013

Natural England has divided the country into a series of National Character Areas, which are the replacement for the former categories of Joint Character Areas and Countryside Area Descriptions. These are defined by a combination of landscape, biodiversity and geodiversity as well as economic and cultural activity (Natural England n.d.). Their borders follow the natural lines in the landscape rather than administrative boundaries, making them a useful way of appreciating the distinctiveness of landscape. The project area is divided between three of these NCAs namely the Cotswolds (107), Dunsmore & Feldon (96) and a small area of the Northamptonshire Uplands (95) around Banbury.

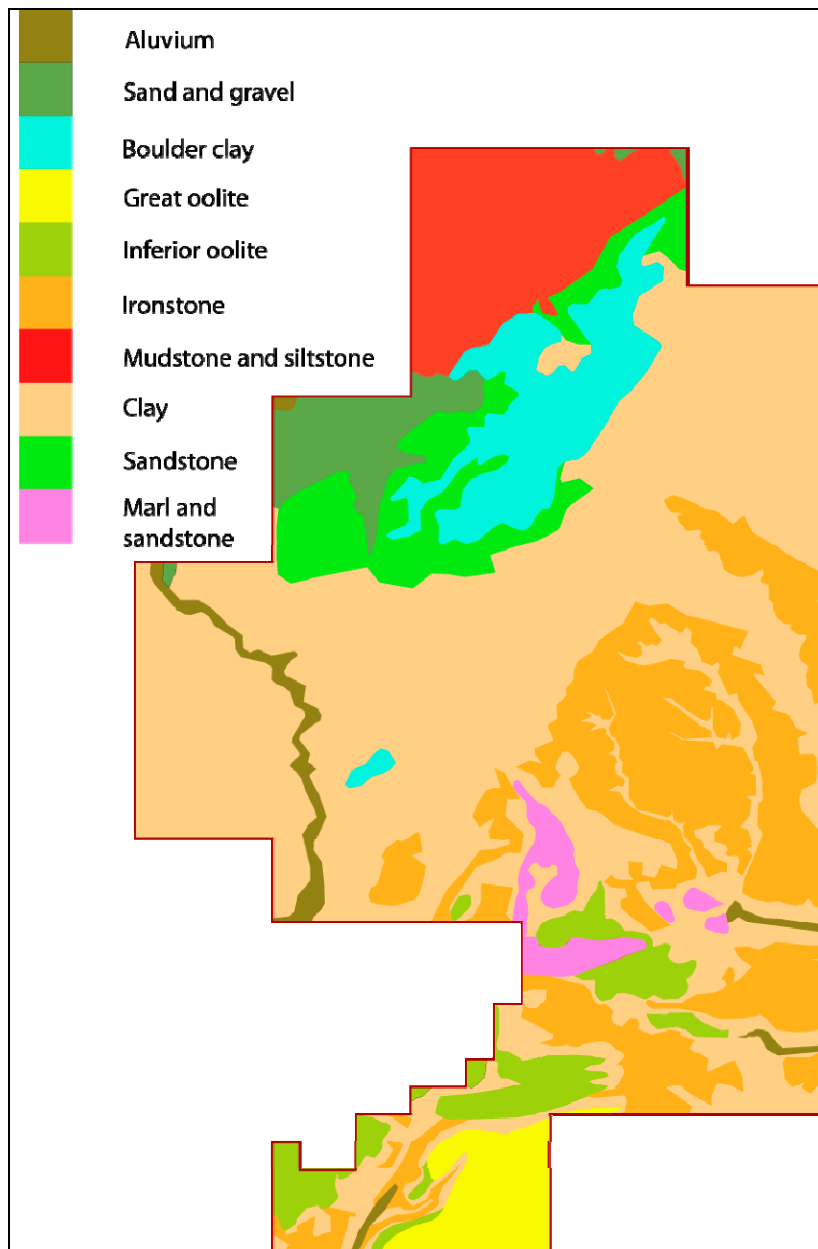
The Cotswolds (NCA 107) are part of a Jurassic limestone belt which stretches across the country from Dorset to Lincolnshire. It is described as a steep scarp crowned with high wold, with a long dip slope cut by a series of increasingly wooded valleys. There are scattered hamlets, farms and small villages on the higher ground and smaller towns and villages at the foot of the scarp, in the valley bottoms and on the springlines. Arable farming dominates the high wold and dip slope, with areas of permanent pasture on the slopes of the scarp and the river valleys (Natural England 2013a: 6). However, the principle historical land use was sheep grazing, with much of the land owned by extensive ecclesiastical and feudal estates (*ibid*: 9-10).

Dunsmore, part of The Dunsmore and Feldon area (NCA 96) is formed by a series of low lying ridges and valleys of heathland and glacial deposits lying between Leamington Spa, Coventry and Rugby (Natural England 2013b). The Feldon area is a gently rolling tableland of Lower Lias clays, which extend across the bulk of the central part of the project area (*ibid*: 8). In terms of the historic environment, the character area is made distinctive by the extensive area of ridge and furrow showing the location of medieval open field systems (*ibid*: 10). The earthwork remains of medieval settlements are also well preserved in Dunsmore & Feldon. Radwell, Tysoe and Napton are mentioned as three of the most coherent medieval township landscapes in England (*ibid*: 15).

Natural England's Joint Character Area assessment of the Cotswolds (Natural England 2013a: 4) presents four 'Statements of Environmental Opportunity', of which the second is:

"SEO2: Safeguard and conserve the historic environment, cultural heritage and geodiversity that illustrate the history, evolution, foundations, land use and settlement of the Cotswolds landscape and allow access to and interpretation of the relationship between natural processes and human influences".

The data from this NMP project feeds directly into work that is supported by Natural England, such as ensuring that above and below ground heritage assets are effectively and traditionally managed where necessary (*ibid*: 16).



1.5 Geology, soils and landscape

1.5.1 Introduction

The underlying geology of the project area comprises rocks of Triassic and Jurassic date, which are gently inclined to the southeast and outcrop in southwest to northeast trending bands, with generally the earliest rocks at the northwest and the youngest in the southeast. The geological resources referred to here are a combination of the 1:50,000 and 1:625,000 scale mapping from the British Geological Survey. The soils information comes from Cranfield University's Soilscales data which is freely available from their website (<https://www.landis.org.uk/soilscales/>).

1.5.2 Northern

The northernmost part of the project area is characterised by a mixture of mudstone, sandstone, marlstone, limestone and sand and gravel. Mercia Mudstone of mid to late-Triassic date outcrops in the northwest of the project area to the south and east of Leamington Spa and around Wellesbourne (see Figure 1.3 above), adjoining narrow bands of mudstones and limestones (including ironstones) of the Penarth Group of late Triassic and early Jurassic date. This area contains significant sand and gravel terrace deposits and riverine alluvium.

Ridge and furrow is widely dispersed in this area, suggesting smaller areas of lighter soils and a longer history of arable agriculture in the post-medieval period. The soils mostly comprise "slightly acid loamy and clayey soils with impeded drainage", with "loamy and clayey floodplain soils with naturally high groundwater" in the valley bottoms. The settlements are more dispersed than in the central area and cropmarks are fairly uncommon, as the soils and geology do not appear to be particularly responsive. Most of the cropmarks, such as the Chesterton group in Warwickshire (See section 4.10 below) are on the sandstone, but there is a lower density of extensive cropmark landscapes than on the limestone at the southern edge of the project area.

1.5.3 Central

The bulk of the Warwickshire part of the project area lies on a wide band of early Jurassic Charmouth Formation Mudstones of the Lias Group. This central area is characterised by clay soils and extensive ridge and furrow coverage. The only significant river valleys that affect solid rock outcropping in this area are the Dene to the south of Wellesbourne and the Stour from Shipston-on-Stour downstream (northwards) where the underlying Rugby Limestone (previously Blue Lias) and Langport Member (previously White Lias) are revealed. A substantial band of glacial till runs from between Kineton and the Fosse Way northeastwards to just west of Southam. Narrow strips at the western and eastern edges of this geology have "lime rich loamy and clayey soils with impeded drainage" but the majority of the area has "slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils".

One of the key themes of the archaeology of this central clay area is the conversion of the agricultural system from mixed to exclusively pastoral farming. The English Midlands are one of the most extensive areas of ridge and furrow landscape in Europe (Hall 2001, Catchpole & Priest 2012). The ridge and furrow of the English Midlands has been

analysed by a number of recent projects, including the Open Fields project and Turning the Plough 1 and 2 (Hall 1993, Hall 2001, Catchpole & Priest 2012), though most of these projects have focused on a more in-depth examination of smaller areas, combined with documentary analysis. This project has the advantage of using the recent PGA photography (most of which dates to within the last 6 years) to enable the most up to date assessment of the survival of ridge and furrow over very large areas.

Many of the parishes in the central area were depopulated and enclosed at various times from the 13th to the 18th century (Cantor 1987: 23-33) and the earthworks of shrunken or deserted settlements are widely preserved. Most of the extant villages and many of the hamlets also have areas of abandonment indicating their former larger extent.

Much of the central area has been brought back into cultivation since the 1960s, as arable cultivation became economically viable. This has meant a progressive levelling of the ridge and furrow landscape, although there are significant areas of contiguous ridge and furrow that are still extant as earthworks. This progressive levelling has led to the exposure of cropmark evidence for later prehistoric and Roman activity, which was formerly obscured by the ridge and furrow. The most favourable areas for cropmark formation are along river valleys, such as the River Stour and River Dene, in the west and northwest of the project area, where some freely draining soils, more conducive to cropmark formation, are present.

1.5.4 South – The Cotswolds

The southeastern third of the project area contains part of the Cotswolds scarp and dip slope. The Edge Hill escarpment divides the northwestern edge of the Cotswold Hills from the clay landscapes to the north (See Figure 1.4). The scarp edge is typically steep and wooded and marks an abrupt change in the character and geology of the landscape. The solid geology comprises Charmouth Mudstone overlain by relatively shallow strata of the Marlstone Rock Formation (Ferruginous Limestones and Ironstones) and Whitby Mudstones of the Lias Group, themselves overlain by Northampton Sands of the Inferior Oolite Group and there are areas of limestone on some of the hilltops. The underlying Charmouth Mudstone is exposed in the river valleys and elsewhere. Soils in this area comprise a mixture of “freely draining lime-rich loamy soils” and “slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils”.

Ironstone and limestone extraction has resulted in a number of extensive quarries in this area, mostly post-medieval and twentieth century in date. This activity is likely to have destroyed or damaged a number of archaeological sites from earlier periods, such as where quarrying has been noted adjacent to cropmarks.

The thinner, more freely draining soils of the Cotswolds are more conducive to cropmark formation than the heavier clay soils seen in much of the project area, particularly around Rollright and on a band of ironstone that extends from Sibford in the west to Barford St Michael in the east. Cropmarks have been recorded on other geologies by the project but they tend to indicate discrete sites, with more complex and widespread patterns seen on the Cotswolds.

The southwestern corner of the project area is geologically complex, with multiple layers of mudstones, siltstone and different limestones. Cropmarks are relatively infrequent and are largely restricted to the Oolite plateau. The outcropping of solid geology in the part of the project area approximately west and south of Hook Norton is determined by the steeply incised headwaters of the River Evenlode. The earliest rocks in this area comprise Dyrham Formation interbedded Siltstones and Mudstones of the Middle Lias Group, with

successively younger rocks of the Charmouth Mudstones, Marlstone Rock Bed and Whitby Mudstones exposed in the valley sides, capped by Chipping Norton Limestone of the Great Oolite Group. Ridge and furrow in this area is largely restricted to the heavy clay soils over the mudstones on the valley sides, characterised as “slightly acid loamy and clayey soils with impeded drainage”. There is almost no surviving ridge and furrow on the limestone, where the soil is characterised as “shallow lime-rich soils over chalk or limestone”.

In the extreme southwestern corner of the project area, to the north of Kingham, the soils mostly comprise “slightly acid loamy and clayey soils with impeded drainage” in the lower valleys. There is a small area of “slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils” on the eastern side of the Evenlode valley and “freely draining lime-rich loamy soils” which are found over later rocks of the Great Oolite Group that outcrop south and east of Chipping Norton. The Great Oolite area, although small, has some of the highest concentrations of cropmarks in the project area. There is very little evidence of ridge and furrow still visible, though there is some on the outskirts of Chipping Norton and along the river valleys. The strip lynchets which are still visible on the steeper slopes indicate that this part of the Cotswolds was probably cultivated in the medieval period as intensively as the clay, but that the shallow well-drained loamy soils have not retained the earthworks under the plough. The lighter soils of the Cotswolds are likely to have been cultivated earlier in the post-medieval period.

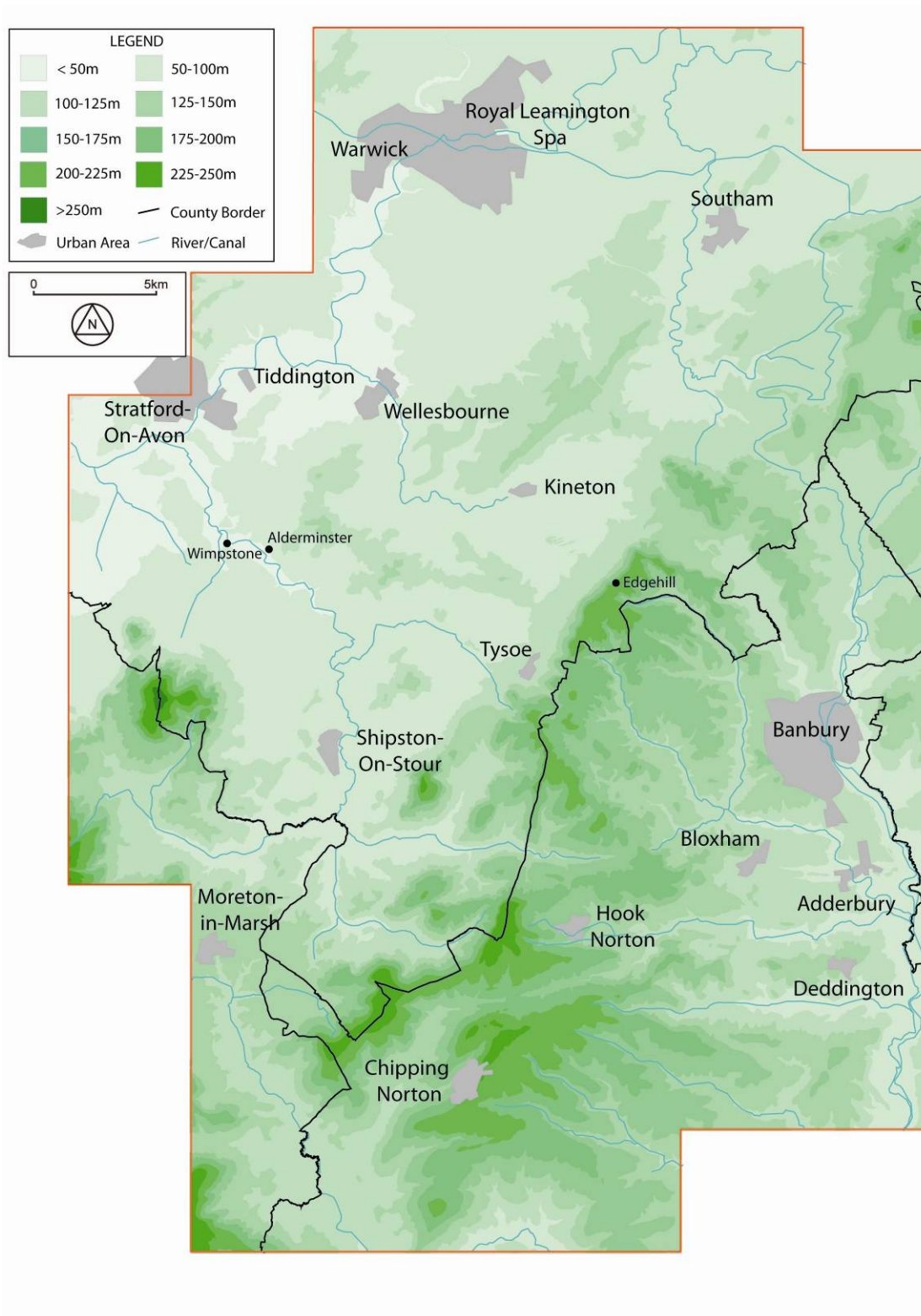


Figure 1.4: The topographical setting of the project area, showing the locations of the major towns and selected minor settlements. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

2 FACTORS AFFECTING THE AERIAL SURVEY

2.1 Introduction

The survival and visibility of archaeological sites is affected by geology, soils and land use. The mapping and interpretation of such features from aerial photographs can be limited by a wide range of factors including extent of photographic cover, the scale of the photographs, an unfavourable time of day or year for optimal visibility, or climatic conditions such as haze (Wilson 2000: 47).

Within the project area, buried archaeological evidence was visible as cropmarks and above surface remains visible as earthworks and structures. These archaeological features, interpreted and dated mainly from morphological characteristics, ranged in date from the Neolithic period to the modern era. There were several underlying factors affecting the results of the project, outlined below.

2.2 Aerial photographs as a source for archaeological survey

Vertical aerial photographs were taken, usually for non-archaeological purposes, throughout the 20th century, but mainly from the 1940s onwards. They were not necessarily taken during the optimal climatic conditions, time of year, or time of day for the best visibility of archaeological features; however they do offer extensive landscape-wide coverage at a range of scales and have the advantage of being taken to be viewed in stereo, giving a unique 3D image of an archaeological site or sense of topography within a landscape.

The majority of RAF verticals sorties and Ordnance Survey sorties cover the whole of England and were taken to aid new mapping to inform post-war planning and reconstruction. They are therefore a useful tool in studying changes within the landscape over the last 50+ years, including expansion of villages and towns, new and updated infrastructure and changes in agricultural regimes. The optimal scale range seems to be 1:15,000 scale or larger which accounts for the most of the EHA collection, but even small-scale prints can be an important source where changes, if not great details, are recorded (Winton & Horne 2010). For example, aerial photographs may show the original context of Second World War military remains which now exist in only a fragmentary state. Additionally, they may record details of military buildings, structures, earthworks, or even cropmarks which have been subsequently ploughed level, removed, or built over.

Google Earth, PGA aerial photographs and the 1940s RAF vertical photographs provided the most complete coverage of the project area. Runs of Ordnance Survey vertical photographs were less consistently available, partly due to the fact that the OS only photographed areas where updates to their mapping were required

The RAF coverage was the most important source for mapping the medieval ridge and furrow prior to changes in agricultural land use during the 1950s onwards, as the medieval landscape was largely levelled by the 1970s.

Later Ordnance Survey sorties were useful for the identification of cropmarks, even though the surveys were not archaeologically focussed. Near Heythrop Park and northeast of Chipping Norton, a number of new archaeological features were visible as cropmarks on aerial photographs taken in 1961 by Fairey Survey Ltd

Oblique aerial photographs, usually taken for a specific purpose, often provide large-scale targeted coverage of a particular archaeological site or other feature of interest and can therefore offer a good level of detail. They are also mainly (though not always) specifically taken at a good time of year for the visibility of cropmarks, or at the best time of day to reveal the presence of subtle earthworks (Wilson 2000: 30-40). However, the targeted approach introduces a degree of subjectivity and bias into the aerial photographic coverage, with well-known monuments or 'honey-pot' locations extensively photographed at the expense of less high-profile sites or areas less conducive to cropmark formation (Wilson 2005: 64-72).

Analysis of the oblique coverage in the project design identified concentrations of photographs in small dense groups, particularly along river valleys with light freely draining soils (Catchpole & Dickson 2010: 45). Along the river Stour, a higher than average density of oblique photographs was identified; these were mainly taken in 1996, when conditions were conducive to cropmark formation and a number of cropmark features were mapped from these images during the project.

Targeted oblique aerial photographic surveys tend to be taken from light aircraft and are often limited by airspace restrictions, such as in the north of the project area due to the civil runways around Birmingham, including Birmingham Airport. Restrictions due to security and safety have also limited flying activity, for example over part of the Kineton Ordnance Depot and in the vicinity of Edgehill, where gliding clubs operate from Shenington, Wellesbourne and Shotteswell. As such there are fewer specialist oblique photographs available for these areas. Webster and Hobley (1964:1) state that local flyer Arnold Baker "was seriously impeded" by air space restrictions in this region. In contrast, Featherstone and Bewley (2000) reported on a substantial number of new archaeological sites identified (as cropmarks) between 1994 and 1996 in northern Oxfordshire, due to the opening up of previously restricted airspaces.

Environment Agency lidar tiles available from English Heritage were restricted to the northern, western and part of the eastern edges of the project area. Some archaeological features, especially low earthworks, may have been missed as a result of the limited coverage but this may have been mitigated by the relatively small percentage of the project area under woodland and the good vertical coverage.

2.3 The nature of the evidence

As mentioned above, the survival of archaeological remains depends in part on land use; a largely pastoral agricultural regime does little harm to extant earthworks or sub-surface remains, whereas long-term ploughing for arable cultivation can remove traces of past activity. The dominant post-medieval land use was pastoral, so that ridge and furrow cultivation and numerous examples of deserted, shrunken and shifted settlements were recorded, particularly in Warwickshire. Conversely, the surviving medieval landscape reduced the visibility of buried remains in the project area by physically masking earlier features, with a notable exception at the Roman town of Chesterton, Warwickshire (NRHE: 335344), where the earthworks were incorporated into the medieval field layout.

The recent expansion of arable farming has resulted in additional cropmarks becoming visible on aerial photographs. Geology and soils also play a part in the visibility of buried archaeology, as cropmarks are generally more clearly visible on light, freely-draining soils, than heavier, more poorly drained soils (Riley 1983; Whimster 1989: 20-22; Wilson 2000: 69). Most cropmark sites were observed on the freely-draining soils along the valleys of the River Stour, Avon and Dene and also over the Middle Lias Ironstone (Marlstone) beds

and limestones of the Great and Inferior Oolite series. Some cropmarks were also recorded over the Lower Lias clay, for example the Roman villa at Butlers Marston (NRHE: 335452), which was clearly visible on aerial photographs taken in 1977 and 1978.

The biases inherent in archaeological prospection from the air and land use have greatly influenced the recorded archaeological evidence and are the main factors in the visibility of buried remains within the project area. Many of the pre-1970 oblique photographs which show cropmarks are concentrated over favourable soils or known 'honey pot' sites. Most agricultural earthworks survived until that date. From the 1970s onwards new archaeological sites became visible as ridge and furrow was levelled, but there has been a fairly low incidence of aerial reconnaissance for prospection over the project area.

3. A BRIEF SUMMARY OF THE RESULTS FROM THE PROJECT

3.1 Introduction

The project mapped and recorded a wide range of sites of different periods. Details of all sites are included in the monument records available on PastScape (<http://www.pastscape.org.uk/>) or from the relevant HER. Significant patterns and themes are discussed below. Key sites and discussions of their significance are illustrated in the case studies.

3.2 Neolithic

Aerial evidence for the Neolithic period in the project area is sparse, although other evidence, such as worked flint, suggests widespread activity. As is generally the case, only the diagnostic funerary and ceremonial monuments were visible on aerial photographs. Surface collection from the plough zone indicated some evidence of Neolithic settlement sites, such as on Madmarston Hill, Swalcliffe (NRHE: 335052). There are four recorded long barrows in the project area. Two were in a very plough levelled or damaged condition, such as on Adlestrop Hill in Gloucestershire (NRHE 332463) and Alderminster in Warwickshire (NRHE: 333205) and two were not visible on the available aerial photos.

Potential Neolithic features recorded during the survey include a probable pit circle (Page 24) in Wellesbourne (NRHE: 1547732), a feature tentatively interpreted as a cursus under the Thornton enclosure, Ettington, Warks (NRHE: 333196) and a probable henge near Broughton (NRHE: 337045). The possible henge is newly recorded and is discussed below (Page 32).

3.3 Bronze Age

There are large numbers of barrows within the project area, seen as both earthwork mounds and cropmarks of ring ditches. However, nearly as many barrows that were recorded from documentary evidence such as Saxon charters or the Victoria County History, could not be traced. In some cases, the area was overgrown with vegetation and in other cases there was simply no sign of a barrow; it seems likely that there was either never one there, or that it was levelled or destroyed before the earliest photographs were

taken and has not reappeared as a cropmark. In many cases, field or farm names suggested the former presence of barrows.

The distribution of barrows is skewed towards the lighter soils, with most of them being recorded on the limestone in the southern part of the project area and the sandstone to the north. It is difficult to draw firm conclusions about whether this is a true pattern or is an artefact of the visibility of cropmarks.

Large numbers of prehistoric settlement enclosures are known only from aerial photographs and have not been investigated further or dated, but there are some good examples of settlements which may date to between the Bronze Age and the Iron Age. These include the polygonal enclosure around a rectilinear enclosure at Wellesbourne (NRHE: 1529089) and a series of irregular curvilinear enclosures (NRHE: 1076175) to the west of Rollright. Some of these settlements are associated with pit alignments, such as at Haye's Barn near Swerford (NRHE: 1076185) and Gallow Hill Farm (NRHE: 1496184, discussed below Page 25 and 34) and in Brailes. Pit alignments have a broad date range and are very difficult to date from their character alone. Some of the earliest seem to date to the Neolithic period and relatively few were created after the Early Iron Age (Oswald 2011). Cropmark settlements can have many phases of activity over long periods of time.

There are also a number of hilltop enclosures, such as Castle Bank (NRHE: 337250) in North Newington. Castle Bank is still (just barely) upstanding as an earthwork. There are a number of other double ditched enclosures, some of which are similar in size and shape to Castle Bank, though they are levelled and have been recorded as cropmarks.

3.4 Iron Age

Most of the Iron Age sites recorded comprise enclosed and unenclosed settlements visible as cropmarks. A newly recorded rectilinear enclosure (NRHE: 1573228) in Brailes is typical of the form seen throughout the project area. Further examples of these include the enclosures at South Hill, Hook Norton (NRHE: 1460546, NRHE: 1566569 and NRHE: 1460546) and at Swalcliffe Grange (NRHE: 1564883). At Rollright, a rectilinear settlement enclosure (NRHE: 1076177) appears to have been built over a pre-existing pit alignment, suggesting that many of these sites had many episodes of change and adaption. More complex, curvilinear sites such as at Warmington (NRHE: 1508138, NRHE: 1508135) are also thought to be of Iron Age date. Many of these sites are likely to have continued in use into the Roman period.

Other, more distinctive types of settlement have also been recorded, such as banjo enclosures. These are typically sub-circular enclosures with a long funnel-shaped entrance passageway, giving a ground plan resembling a banjo or a frying pan. There is sometimes evidence of the entrance to the 'passageway' being emphasised, creating a more impressive façade. In terms of size, banjo enclosures are typically 0.2-0.5ha in extent and are occasionally as much as 1ha. They are often associated with pits and are conjoined to linear boundaries or complexes of other enclosures. There is not a great deal of dating evidence for banjo enclosures, but they seem to have been used for approximately 400 years from 400 BC (McOmish 2011). Examples of small 'banjo' enclosures, of around 75 metres in diameter, include those at Heathcote (NRHE: 335636) and at Enstone (NRHE: 1432458). Dwarfing these is a large and complex double ditched example in Rollright (NRHE: 1067071) that extends for c. 200 metres by c. 180 metres (Page 34).

There are several hillforts in the project area: Nadbury Camp (NRHE: 335146), Tadmarton

Camp (NRHE: 335064) and Madmarston (NRHE: 335052) are multivallate hillforts, with associated extensive unenclosed settlements (Page 27). Other sites, such as the Thornton enclosure (NRHE: 333196), are less elaborate and do not appear to have associated settlements. Many of the enclosures and perhaps even the settlements associated with the hillforts are likely to have Roman phases of settlement. This is often not definitively known, but scatters of Roman finds from across the area can be indicative.

3.5 Roman

A number of Roman villas were recorded in the project area, but several more, which are known from excavation and/or finds, were not visible on the aerial photos. Other villa sites had large numbers of associated enclosures that were visible on the aerial photographs, as were a number of chronological phases at some sites. At Wigginton villa (NRHE: 335107), a number of new elements and associated enclosures were recorded. At others, such as Butlers Marston (NRHE: 335452), a complex series of intercutting enclosures were recorded. Sections of Roman road have been recorded, such as the example west of Epwell (NRHE: 1570846), which was visible as an earthwork on photos taken in the 1940s. Chesterton Roman fortified town (NRHE: 335344), on the Fosse Way, is also a significant site and extensive areas of extra-mural settlement have been mapped (Page 44).

3.6 Medieval

As is usual in aerial evidence, there is a hiatus in the record that covers the early medieval period. This is due to a relative lack of distinctive site types from this period and the difficulty in confidently attributing an early medieval date to sites such as enclosures.

Ridge and furrow covered vast swathes of the project area, particularly the central region. Ridge and furrow earthworks result from medieval open field systems which often continued in use into the post-medieval period. The earthworks developed and changed over time but are difficult to date precisely (Taylor & Muir 1983: 201; Beresford & St. Joseph 1979: 27-28; Cantor 1982: 47). In some cases, plough headlands can be seen under the ridge and furrow (NRHE: 1529913), indicating earlier phases of open field layout. Beresford (1984: 121) comments: "ridge and furrow is like a high-tide mark. It shows where the plough has once been; but it does not say when; and it will cover up the marks of many earlier (or later) tides."

The evidence for the medieval period was also characterised by settlement abandonment and desertion, leaving a large number of earthworks. Most of the villages, certainly in Warwickshire, seem to have at least some medieval settlement earthworks indicating that they were formerly larger or shifted location. For example, Brailes (NRHE: 1573176, NRHE: 1573198) appears to have significantly reduced in size (Page 40). Crofts, boundary banks and building platforms were visible on the outskirts of many villages on the earlier photographs; although in many cases they have been affected by subsequent development as villages have re-expanded.

3.7 Post-medieval

Post-medieval quarries are evident in large numbers, many of which are 19th century and later in date. Most of these are located to exploit Oolitic limestone and ironstone, as, for

example, around Burton Dassett. There is also extensive large scale surface extraction of ironstone around Wroxton in Oxfordshire (NRHE: 1551618, NRHE: 1552029) (Figure 3.1).



Figure 3.1: A part of the extensive ironstone quarrying at Wroxton, Oxfordshire. The quarrying extends in a fan shape to both sides of the crossroads in the centre of the image. The pale stone and linear spoil heaps show the active edge of the quarrying. The smooth ground lacking in field boundaries or ridge and furrow indicates reinstated topsoil. *An extract from NMR RAF/106G/UK/1345 7200 01-APR-1946. English Heritage (EHA) RAF Photography*

Parks and gardens associated with country houses include two 16th–17th century examples, visible as earthworks and cropmarks. The Peyto mansion (NRHE: 335269) in Chesterton shows well as cropmarks and is discussed below (Page 44). There are also elements of a formal garden here, including some newly recorded enclosures that seem to be part of the formal landscape. At Salford, in Oxfordshire, a fine 16th–18th century formal garden can be seen as a series of terraces, with the house and associated features visible as cropmarks (NRHE: 332530).

A number of stack stands have been recorded. These circular or sub-rectangular platforms, overlying ridge and furrow earthworks, were used for drying hay. They indicate changes to the dominant agricultural regime where the former open fields became used for pasture.

3.8 Twentieth century

Twentieth century archaeology recorded by NMP is usually dominated by Second World War military installations; which was certainly this case in this project area. There are six military airfields, including a small example that was a private civilian aerodrome prior to requisitioning (Leamington Spa NRHE: 1529066). Only the Second World War

components of all these airfields was recorded by the project, though some continued in use after the war. The post-war history of these airfields has resulted in either extensive redevelopment (Gaydon NRHE: 1395626), continued airfield use (Wellesbourne NRHE: 1431276), or conversion back to farmland (Chipping Norton NRHE: 1391820). There are also a number of military camps, training sites and one prisoner of war camp across the area. These often utilised the grounds of country houses, such as the PoW camp (NRHE: 1471923) in Ettington Park (See Figure 3.3). Over Norton Park, near Chipping Norton, contained a military camp typical of those that appeared across the country in the build up to D-Day (NRHE: 1569114). The decoy factory in Cropredy, Oxfordshire (See Figure 3.2) was part of a national campaign of decoys designed to divert air raids and preserve key strategic sites (Dobinson 2000). The factory was built to look like the Banbury Alcan Factory which was producing aircraft parts during the war. It was built by Sound City Films of Shepperton Studios and was located 4kilometres to the north of the real factory. It was a successful decoy, in that it was bombed on the 3rd of October 1940 (Cannon 2009).



Figure 3.2: A decoy factory in Cropredy. It successfully diverted at least one air raid. *An extract from NMR RAF/106G/UK/1361 4389 03-APR-1946 English Heritage (EHA) RAF Photography*



Figure 3.3: The Prisoner of War camp in Ettington Park. Note the cropmarks of tents in lines along the inside of the perimeter fencing. *An extract from NMR RAF/106G/UK/1345 5371 01-APR-1946 English Heritage (EHA) RAF Photography*



Figure 3.4: A part of the extensive ordnance depot at Kineton, Warwickshire, surrounded by ridge and furrow. *An extract from NMR RAF/CPE/UK/1926 509216-JAN-1947 English Heritage (EHA) RAF Photography*

The ordnance depot at Kineton (NRHE: 1417810) extends over an area of circa 14 square kilometres and a small area of the dispersed ordnance storage buildings are shown above in Figure 3.4. The site was established during the Second World War with a technical and accommodation establishments and up to 220 ordnance stores connected by train tracks. A branch line connects the site to the national rail network. The site continues to be used by the MoD, although nearly all the Second World War buildings and structures have been demolished and redeveloped.

4. CASE STUDIES

4.1 Introduction

The case studies have been selected in order to develop a number of themes in the discussion of the archaeology of the project area. They are not intended to be a comprehensive discussion of the archaeology that was mapped across the project. The principles behind selecting the case studies are that they should include:

- Sites where aerial survey can contribute to discussions regarding historic and ongoing management. This applies to the medieval settlement evidence, e.g. Brailes.
- Sites where the project has added information relating to context, associations and significance, for example, the discussion of hillforts; and where development over different chronological periods can be demonstrated, such as at Chesterton.
- Areas which require further study but are under threat from extraction or modern development, concentrated here in the river valleys.
- Sites where significant archaeology has been recorded for the first time, such as at Broughton henge and Gallow Hill Farm, Brailes; and where significant numbers of new sites have been recorded, such as around Chipping Norton/Rollright.

4.2 Prehistory on the Avon, Dene and Stour river gravels

Extensive river gravel terraces are located along the Avon, Dene and Stour valleys, parts of which fall within the project area (see Figure 4.1 below). These freely draining river gravels are particularly conducive to cropmark formation (e.g. Fenner and Dyer 1994). An aerial survey along the Avon Valley carried out by Webster and Hobley in 1964, showed a dense distribution of visible prehistoric sites.

Despite further evidence recorded since 1964, the general distribution of Neolithic to Early Bronze Age activity in this part of Warwickshire, is still predominately on the more permeable soils of the river valleys (Barber 2002). The recent evidence is largely derived from findspots, surface scatters and isolated pits, but has been significantly enhanced by large scale excavations at Wasperton (Hughes and Crawford 1995), Charlecote (Ford 2003) and Barford (Oswald 1969, Cracknell and Hingley 1994), all on the river terraces of the Avon to the west of the project area. The excavations recorded a wide diversity of prehistoric features including cursuses, pit clusters, ring ditches, circular enclosures, a pit circle, hengiform enclosures and a parallel-ditched feature.

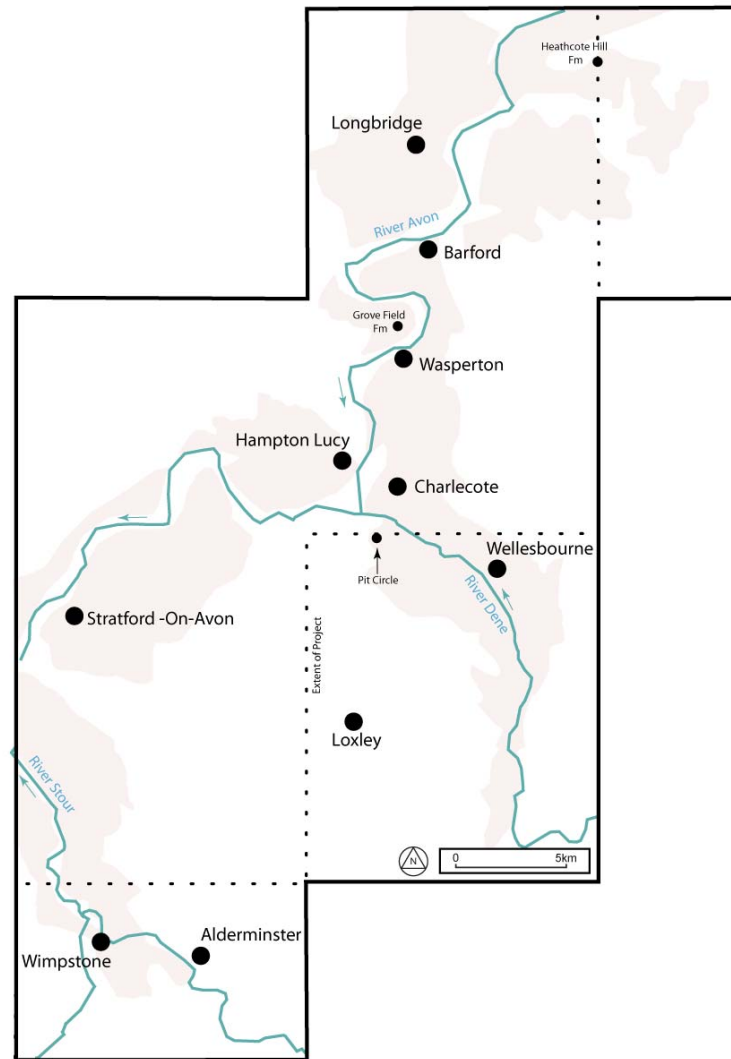


Figure 4.1: The gravel terraces along the Rivers Dene, Stour and Avon. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

Within the project area further evidence of prehistoric activity was visible in and adjacent to the Avon, Dene and Stour river valleys. A number of ring ditches, curvilinear and rectilinear enclosures and a pit cluster were visible at Heathcote Farm, Warwick (Webster & Hobley's Site 89). Although the site at Heathcote Farm was previously known, new features were recorded during this project and mapping has extended the area of known archaeology (NRHE: 1529088, 1529092, 1529090 and 1529091). Ring ditches and a linear boundary, possibly a pit alignment, southwest of Charlecote Park (Webster & Hobley's Site 76; NRHE 333122) were also re-mapped and recorded.

Perhaps of most interest were the ring ditches, enclosure, possible enclosure and a pit circle within and to the east of Charlecote Park (NRHE: 1547730, 1547732 and 1547739). None of these had previously been identified, although the photographs of the main group of features were taken in 1982 and those showing the ring ditch in 1964.

The pit circle is defined by 11 pits forming a circle about 11 metres in diameter (See Figure 4.2). Pit defined circles are generally rare although there is evidence of others in the surrounding region, including one at Hampton Lucy (Webster & Hobley's Site 65;

NRHE: 333108).

At Wasperton (Webster & Hobley's Site 70; NRHE 333126 and 333048) a small pit circle measuring 6.5 metres in diameter was excavated and tentatively dated to the later prehistoric period. The structure was interpreted as having features in common with the timber circles of late Neolithic or Early Bronze Age date (Hughes and Crawford 1995: 43). Unfortunately, no finds were recovered and the potential significance of the structures was not realised until a late stage and therefore no radiocarbon dates were obtained. The absence of finds, in comparison with the other excavated features of later prehistoric date, was suggested to imply an early date for the pit circle (ibid: 25).

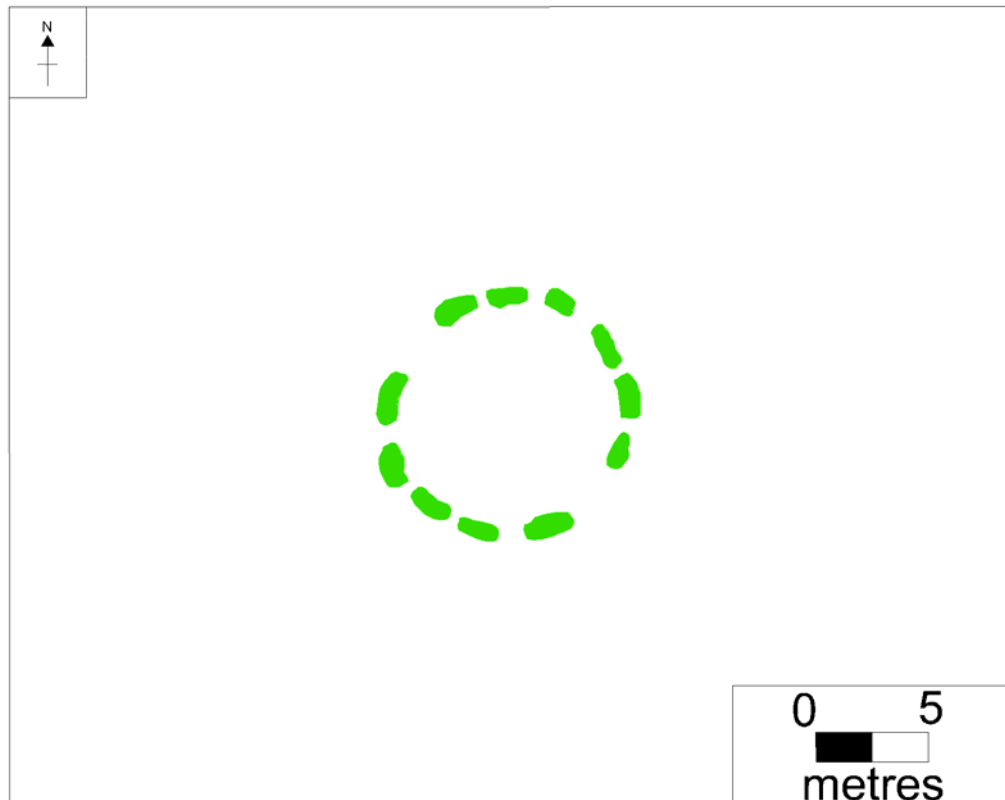


Figure 4.2. Pit defined circle visible as a cropmark east of Charlecote Park (NRHE: 1547732). OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013

Two pit circles (NRHE: 1035108) of a similar diameter were also excavated at Barford (Harding 1987: 279-80), which may also be of Neolithic date, though it should be noted here that Hingley (1996: 16-18) interprets the pit circles at Wasperton and Barford as Iron Age hut circles.

At both Barford and Wasperton features were truncated by medieval furrows and disturbed by modern deep ploughing, which had destroyed nearly all stratification (Oswald 1969: 25, Cracknell and Hingley 1994: 5. Hughes and Crawford 1995: 15). The pit circle and other features recorded in Charlecote Park are fairly unique in this area as the available aerial photographs suggest that they have been affected little by ploughing over the last 60+ years and no medieval ridge and furrow was evident. The buried remains, therefore, are potentially in a much better condition for securing absolute dates as well as stratigraphic and environmental data to further our understanding of these ritual and settlement complexes.

The river gravels are at risk from gravel extraction, agricultural cultivation and other modern development. The features at Heathcote Farm are located in an area of southern Warwick with encroaching modern development. A landscape assessment of this area concluded that the 'green' wedge, which the archaeology lies within, could be infilled by further development (Richard Morris Associates 2009: Appendix A Site C).

Assigning Neolithic to Early Bronze Age dates to cropmarks is problematic unless they show characteristics which can be regarded as distinctively Neolithic or Bronze Age. However the similarities in the morphology and landscape setting to the dated evidence excavated at Wasperton, Charlecote and Barford suggest that the archaeological features mapped at Heathcote Farm and Charlecote Park also provide evidence of prehistoric ritual and settlement activity.

4.3 Gallows Hill Farm, between New between Epwell and Winderton in the parish of Brailes.

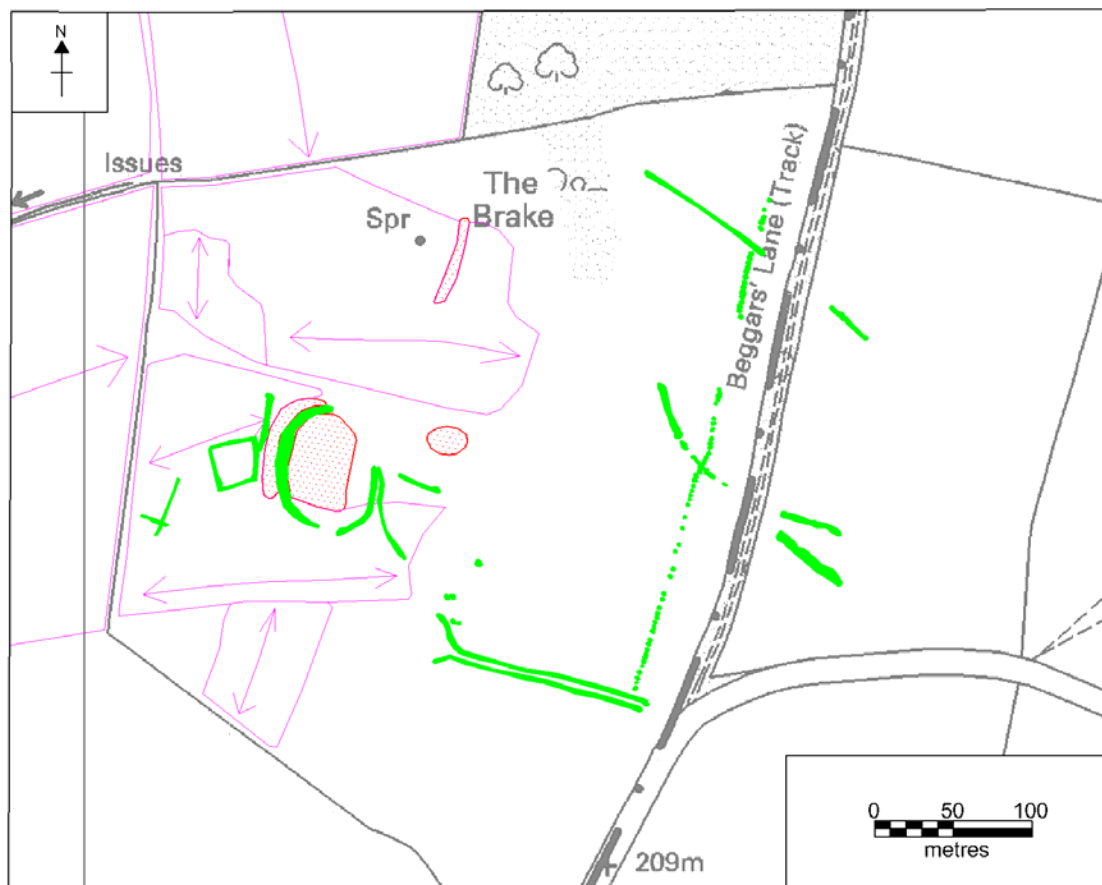


Figure 4.3: Earthwork and cropmark features at Gallow Hill Farm. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013

The site at Gallows Hill Farm in Brailes, Warwickshire (Figure 4.3), consists of a group of features that are likely to be of various prehistoric dates. A pit alignment (NRHE: 1496184) extends parallel with Beggar's Lane track, a trackway which marks the parish and county boundaries. This may be chance but is directly paralleled at Shorncliffe in Gloucestershire where a similar pit alignment is followed by a parish boundary (Powell *et al.* 2010, 49-50 & 200). The pit alignment is crossed by two other boundaries, which extend on the eastern side of Beggar's Lane, unfortunately the relationship was unclear so they could be earlier

or later. The pit alignment terminates at right angles to a probable drove or trackway (NRHE: 1496173). The flaring funnel end of the droveway points towards a pair of partial curvilinear enclosures, a square enclosure and further linear ditches.

The site was first recorded from photos taken in 2006, when it was entirely plough levelled and none of the features now recorded as earthworks were visible.



Figure 4.4. The large and small mounds at Gallow Hill Farm with their surrounding ridge and furrow. Note that the ridge and furrow extends over the top of a bank that flanks the large barrow. *An extract from NMR RAF/58/1567 F.21 0197 21-SEP-1954. English Heritage (EHA) RAF Photography.*

The site has been reinterpreted as a result of mapping it as earthworks on 1954 photos, surrounded by upstanding ridge and furrow (Figure 4.4). The earthworks include large and small mounds of indefinite nature. The 1:50,000 British Geological Survey map shows an area of limestone, outcropping through the clay at almost this point. The larger mound may therefore be of natural origin but enhanced and clearly the ditch dug around it is manmade. There are other examples of natural mounds being enhanced and modified, for example The Mount in Oxted, Surrey (NRHE: 403869). That feature was excavated and dismissed as natural, though a reanalysis of the archive revealed that there was a distinct ditch and that the structure of the mound indicated deliberate construction. Bradley (2000) discusses a wide range of prehistoric sites and concludes that there is a continuous spectrum from the natural to the artificial, with the cultural meaning of the site being negotiated within this.

The mound and surrounding curvilinear enclosure at Gallows Hill Farm has been tentatively interpreted as a large round barrow (NRHE: 1496194), or even a rather short and round long barrow. The area within the enclosure covers circa 72 metres by 53 metres. There is a bank outside the ditch and the ridge and furrow appears to overlie the bank and butt up against and respect the central barrow. The outer bank may be upcast from the ditch or a plough headland caused by the ploughs having to turn when they came

up against the mound. There is a smaller oval mound located a few metres to the northeast of the larger. This was damaged by previous ploughing, but was still visible as an earthwork in 1954.

A square enclosure and the enigmatic linear ditches to the west of the large mound (NRHE: 1573299) only became visible after the levelling of the ridge and furrow. Square enclosures of this size are more usually ascribed to the Late Iron Age or even Roman periods, suggesting that the mound may have been a focus for activity in much later periods.

A further focus for later activity is suggested in the name of the farm: Gallow Hill. However, as the mound is 15 metres below the OD height of the road and 260 metres to the west of it, the actual gallows may have been on higher ground and closer to the cross roads.

Recording the site as it was in the 1950s before modern ploughing has demonstrated both the usefulness of examining all aerial photographs in expanding the information available for known sites and also the limitations of interpreting complex sequences of archaeological activity from aerial evidence alone.

4.4 Hillforts

Hillforts are a class of monument that has a long history of investigation within the archaeological tradition (Cunliffe 1984, 2005; Payne *et al.* 2006; Brown 2009). Many of the so called 'developed' hillforts date to the Middle Iron Age period and are succeeded by unenclosed settlements in the Late Iron Age to Roman era (Mullin *et al.* 2011: 61). The re-examination of the hillforts in the project area has led to a number of new elements being recorded for the first time and provided as up-to-date information on their condition.

There are at least three elaborate multivallate hillforts in the area, all of which have associated unenclosed settlements nearby, visible as cropmarks: Madmarston Camp, Swalcliffe; Nadbury Camp, Ratley and Tadmarston Fort. In all three cases the hillfort enclosures are designated as Scheduled Monuments but the associated settlements are not.

Madmarston Camp (NRHE: 335052) is located just north of the villages of Swalcliffe and Tadmarton, overlooking a minor tributary of the Sor Brook. The hillfort is irregular in shape and has been dug following the contours of the top of the hill. It is defined by three circuits of banks separated by two ditches. The circuits of banks do not appear to be complete and are interrupted in some places. There is a probable entrance to the east and an offset possible entrance which faces southwest.

Madmarston is visible on aerial photographs taken in the 1940s and 1950s with blocks of ridge and furrow extending up the hill and abutting the hillfort (Figure 4.5). The area began to be ploughed in the 1960s and steadily dispersing earthworks and soilmarks are visible on photographs taken in subsequent decades (Figure 4.6). The three banks are barely visible on aerial photographs taken in 2009. Only a small section of the ramparts are now partially preserved, beneath an area of scrub in a ploughed field, which has changed size and shape several times since the 1970s.



Figure 4.5: Madmarston hillfort Earthwork. *An extract from NMR RAF/CPE/UK/1929 2279 16-JAN-1947. English Heritage (EHA) RAF Photography.*

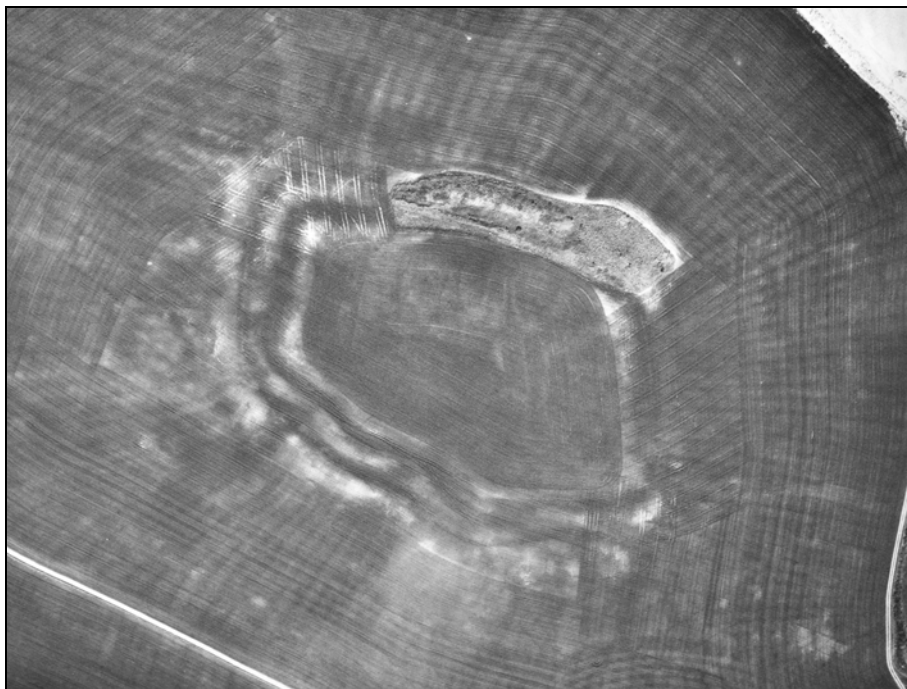


Figure 4.6. Madmarston hillfort under the plough. The field boundaries seen in 1947 have been grubbed out, leaving the hill to be worked as one large field. Ridge and furrow has been levelled and is visible as cropmarks. The ramparts of the hillfort are being ploughed and the banks are showing as soilmarks. The crop appears to have been harvested. *An extract from NMR SP 3838/14 NMR 717/267 21-JUN-1974. © English Heritage. (EHA).*

Madmarston seems to have developed from a Late Bronze Age hilltop enclosure, as there is evidence for a Late Bronze Age timber palisade (Allen 2000: 6); there are several examples where Iron Age hillforts have developed from Bronze Age precursors (Mullin *et al.* 2011: 63). There is a sizable and apparently unenclosed settlement below Madmarston

Hill on the terrace to the north of Swalcliffe stream (NRHE: 335045, Figure 4.7). This may be contemporary with the hillfort, or it might post-date it. The settlement includes roundhouses that are defined by rings of post holes, which are typical of Middle Iron Age settlements (Allen 2000: 7). The excavator of the site interpreted Madmarston as a “small, isolated and self-sufficient” hill fort (Fowler 1960: 30). The presence of other settlements which may be contemporary in the immediate area may suggest otherwise.

A cluster of pits, probably storage pits, can be seen on the band of lighter-coloured geology directly close to the field boundary at lower left on Figure 4.7. There are also a pair of enclosures to the north of Tadmarton village (NRHE: 1565040 and 1565045) that may be related to this Iron Age phase of settlement.

Nadbury Camp (NRHE: 335146), at the top of the Edge Hill escarpment, is another example of a ‘developed’ or elaborate multivallate hillfort, which has been recorded as being more complex than previously thought. It is located about 9 kilometres to the north of Madmarston. This site also seems to have been a long term focus of activity, probably from the Late Bronze Age onwards.



Figure 4.7. The Iron Age settlement below Madmarston hillfort. *NMR SP 3838/31 NMR 15529/13 18-JUL-1996. © English Heritage (EHA).*

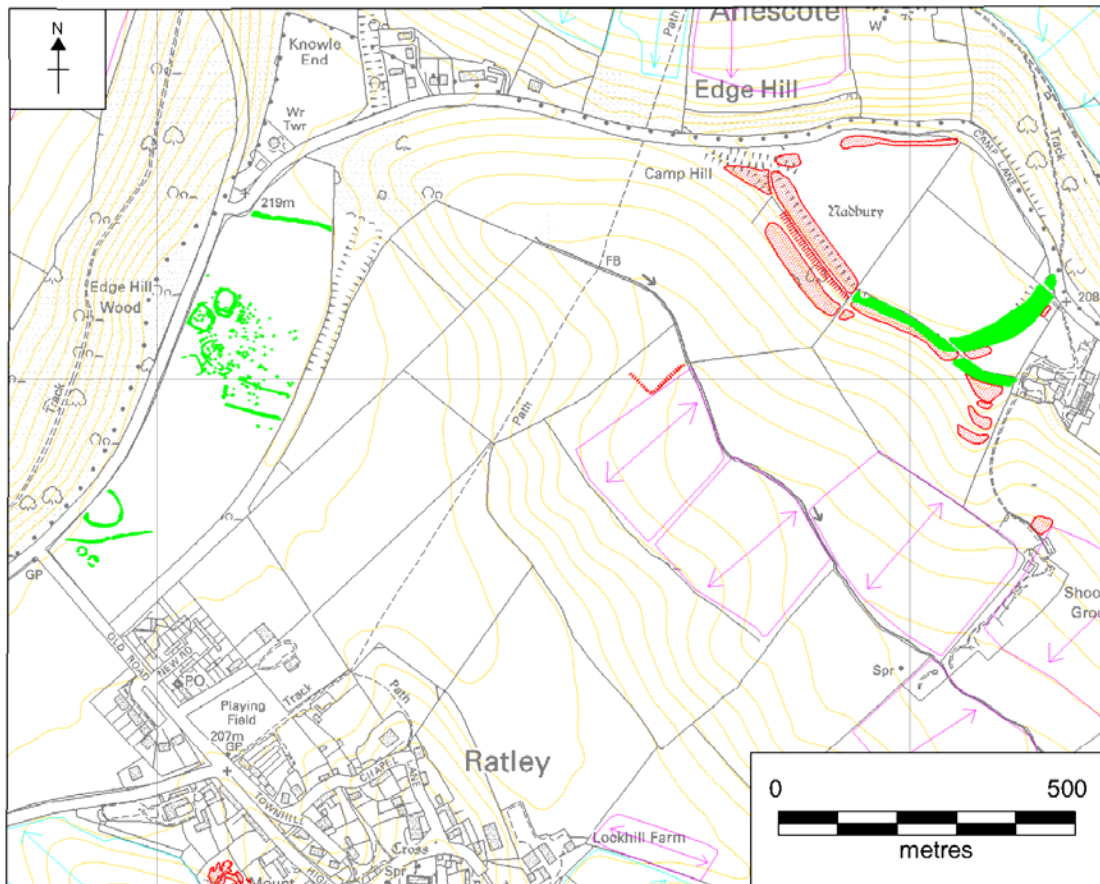


Figure 4.8. Nadbury Camp and its associated settlement. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

The historical aerial photographs and 19th century surveys (in NRHE: 335146) show Nadbury to be a multivallate hillfort, with an entrance represented by a hollow way at the western end. A faint series of parallel banks and a ditch suggest an annexe at the eastern end, now under Camp Barn Farm. Elaborations such as multiple ditches defining additional annexes are a known pattern in Middle Iron Age hillforts and are usually interpreted as being part of a display of prestige (Brown 2009). The hillfort is still visible, though it has been much reduced by ploughing and the outer bank appears to have been lost. This reduction of the hillfort to a single bank has erroneously led to some writers suggesting that it is early, dating to the Late Bronze Age to Early Iron Age (Hingley 1996: 18).

There is an unenclosed cropmark settlement to the west of Nadbury, which could be contemporary (NRHE: 1569885, see Figure 4.8). It comprises a number of rectangular and sub circular enclosures and a large number of storage pits. Nearby features include a circular enclosure, pair of ring ditches and boundary ditch to the south (NRHE: 1569846), and a substantial boundary ditch to the north (NRHE: 1569880). It is likely that the ring ditches are the remains of barrows that were located on the scarp edge for visibility and are unrelated to the later Iron Age settlement.

Tadmarton Heath hillfort (NRHE: 335064, see Figure 4.9), in contrast to Madmarston and Nadbury, is quite well preserved. Tadmarton is only 3 kilometres away from Madmarston. It is possible that there was interaction between the sites but, without detailed dating, there is no evidence that their activities overlapped. The inner bank and ditch at Tadmarton are still complete, though the outer bank and ditch have been damaged by

ploughing. There has been some damage from its current use as a golf course and a tee appears to be cut into the bank on the fort's southeastern side. The hillfort is bisected by a road, though it is not clear if this extends through original entrances.

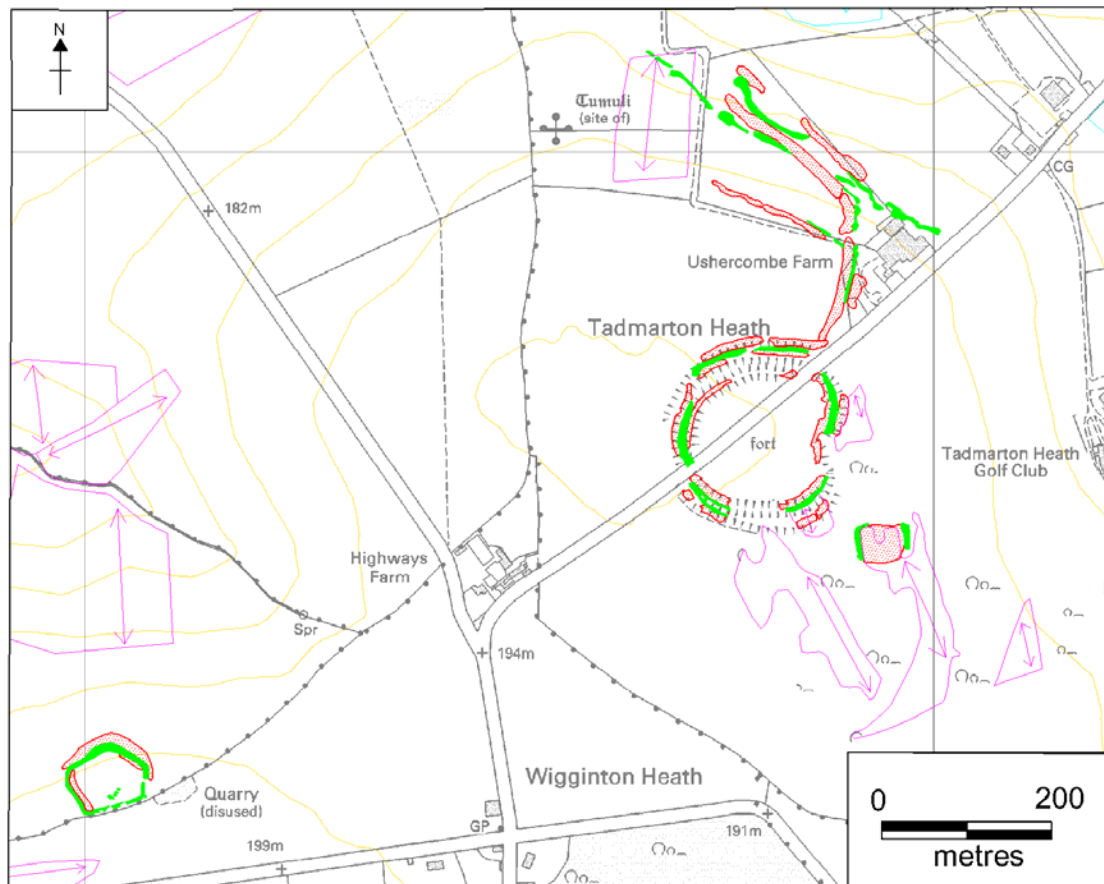


Figure 4.9. Tadmarton Fort and associated linear boundaries and possible hollow ways. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

A series of banks and possible hollow ways extend northwards from the hillfort (NRHE: 1564659). These may be the remains of a field system or droveways abutting the hillfort. However, these are not necessarily contemporary, as the hillfort may have been reused as a stock enclosure during the medieval period. They do appear to predate the ridge and furrow, as at least one hollow way has been overlaid by it. No chronological relationships were discernible from aerial photographs. The function of the square platform with ditches to the east and west sides located to the southeast of the hill fort is unknown (NRHE: 1564557). The historic mapping shows that it predates the golf course and it appears to predate the ridge and furrow as well. It has been interpreted as a 19th century gun battery (NRHE: 335064, now NRHE: 1564557), but the ridge and furrow evidence indicates that this is unlikely.

The polygonal enclosure (NRHE: 335076, see the Figure 4.9 above) to the southwest of Tadmarton fort measures around 87 metres across. It was visible as an earthwork on aerial photographs taken in the 1930s and 1940s but now only appears as a cropmark. There are indications that the site had both internal and external banks and a group of probable storage pits within the enclosure have been identified by this project. Polygonal enclosures have been recorded regionally, although they are rare. Three were mapped in the Cotswold Hills NMP project to the north of Cirencester (NRHE: 1485267, 1513439 and 918417) and excavations on NRHE: 918417 produced a Middle Iron Age date (Mudd *et al.*

1999: 42-55). If this polygonal enclosure can be inferred to be Iron Age, that may make its use contemporary with the Tadmarton Fort.

A further polygonal enclosure (identified and recorded for the first time by the SE Warwickshire and Cotswolds HLS NMP project) can be seen among the cropmarks of a probable Iron Age to Roman period unenclosed settlement near Wigginton (NRHE: 1076156). The enclosure is visible at the centre of a complex of cropmarks in the image below (Figure 4.10). It seems to be an integral part of a dynamic settlement, with many intercutting and abutting enclosures on different alignments together with large numbers of storage pits. Many such settlements had both enclosed and unenclosed phases, such as at Rollright (Allen 2000: 7).

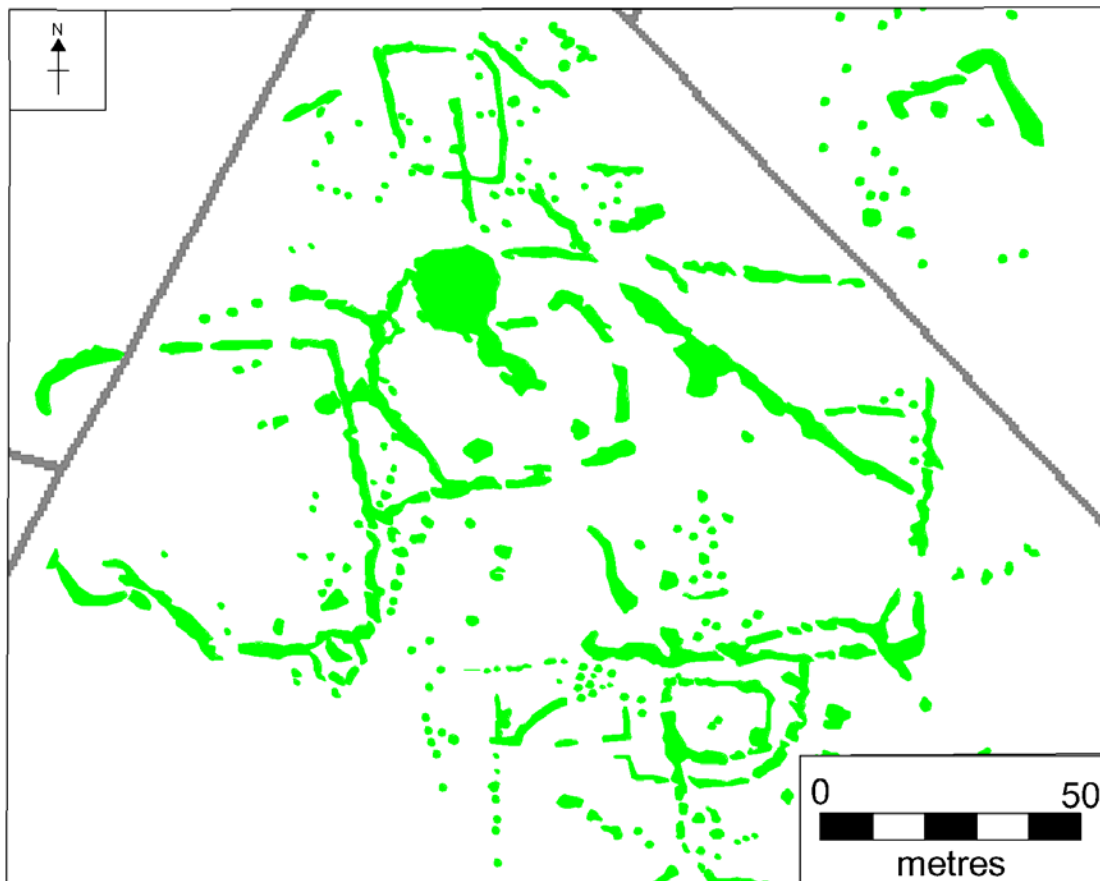


Figure 4.10. A close up of the main area of the Wigginton cropmarks, showing the polygonal enclosure at its centre. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

Sites like those recorded by the SE Warwickshire and Cotswolds HLS NMP project help redress the historical perception that there were hillfort areas and non-hillfort areas or even enclosed and unenclosed regions of Iron Age settlement. These patterns are increasingly shown to be an artefact of the preservation and visibility of the archaeology in different areas (Hingley 1996: 21, Allen 2000: 14).

4.5 A possible new henge at Broughton, Oxfordshire

A sub-circular enclosure visible as a cropmark is located just east of Broughton in Oxfordshire. This site was first photographed by Jim Pickering in 1970 and regularly

appeared as a cropmark during dry years. It had previously been interpreted as a Bronze Age or Iron Age settlement enclosure. This project has reassessed the available aerial photographs and the site is now thought to be a possible henge.



Figure 4.11. The possible henge at Broughton, Oxfordshire. *NMR SP 4238/30 NMR 21649/27 15-JUL-2002. © English Heritage (EHA).*

The site (NRHE: 337045, Figure 4.11) is located on a northwest facing slope approximately 366m above the Sor Brook. It encloses an area that measures c. 65m in diameter, to the outer edge of the enclosure ditch. The ditch is substantial, around 4 to 6 metres wide, with opposing entrances located at the south southwestern and north northeastern sides, the most common pattern seen in henges (Last 2011: 3) and enlarged ditch termini are visible in some of the photographs. The south southwestern entrance faces uphill into a ridge, which is a further feature seen at other henges (Martyn Barber pers. comm.).

The location of the site may also be significant (Figure 4.12). It is sited above the confluence of two streams with the Sor Brook. Henges and henge-type monuments are often located close to rivers, particularly confluences. In Oxfordshire, Devils Quoits, Stanton Harcourt is within 600 metres of the Windrush (NRHE 336520, Harding & Lee 1987: 239-242). Big Rings, Dorchester, was located 400 metres from the Thames (NRHE: 237825, Harding & Lee 1987: 228-231). In Warwickshire, the segmented ring ditch at Barford is in the henge tradition (Castleden 2002: 55-56) and is within a few hundred metres of the Avon (NRHE: 1035108, Harding & Lee 1987: 277).

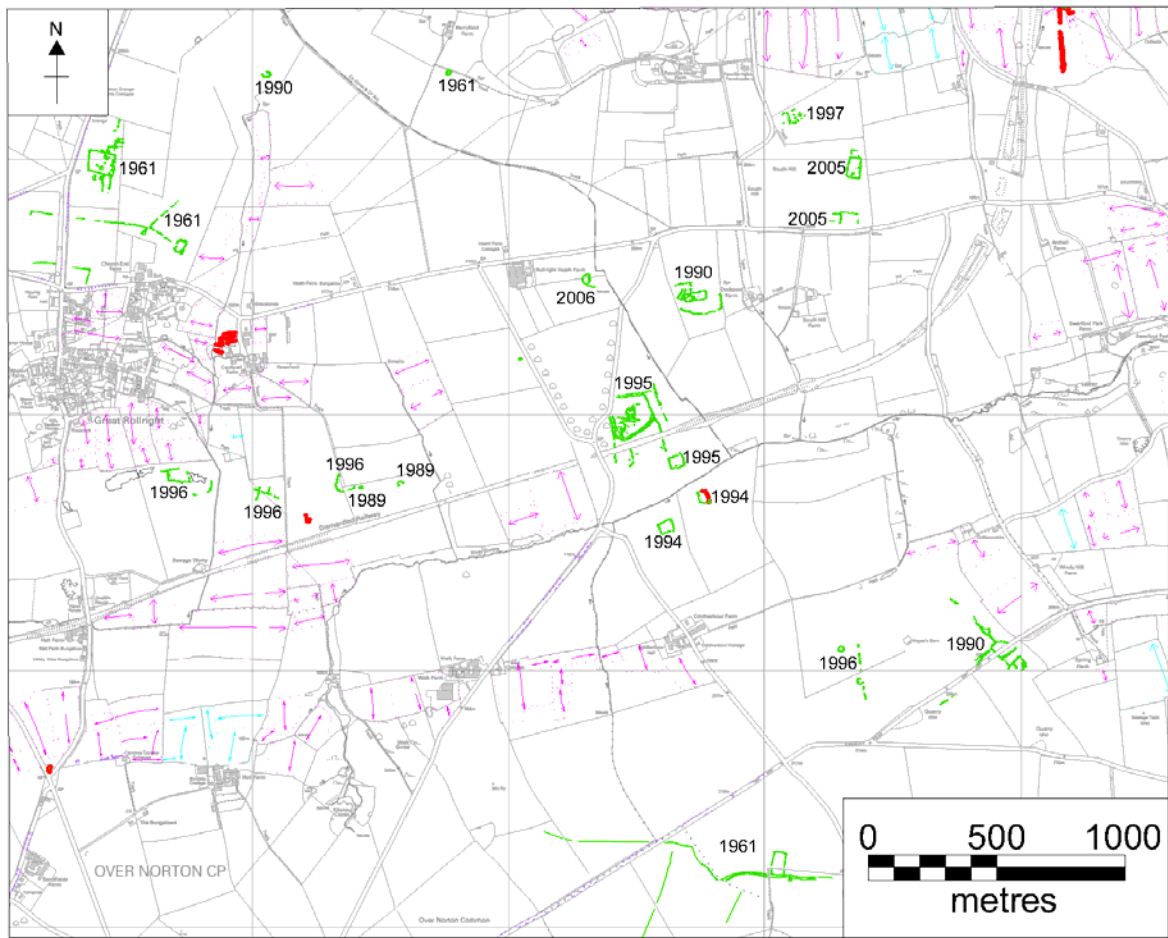


Figure 4.13. The enclosures and cropmark sites between Rollright and Swerford, labelled with the dates when the cropmarks were first photographed. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

The mapping extract above (Figure 4.13), indicates the extent and variety of the settlement evidence in the Rollright to Swerford area. The sites have been tagged with the year in which they were first photographed as cropmarks, to indicate how recently many were discovered. The area, which measures c. 4 kilometres east-west and 3 kilometres north-south, contains the greatest density of Iron Age sites in the project area. Most were discovered in the last 15 years.

The area is also one of the few parts of the project area that has provided evidence for large scale, probably prehistoric, land divisions. These include a field system to the north of Great Rollright (NRHE: 1076182, see below in Figure 4.16) and systems of boundary ditches and pit alignments in Little Tew and Heythrop parishes (NRHE: 1566530, 1076185, 1569064, Figure 4.14). This latter example may continue eastwards beyond the area currently covered by NMP projects.

The systems of landscape divisions comprising linear ditches and pit alignments can be compared with examples recorded elsewhere in the Cotswolds, such as at Bourton-on-the-Water (NRHE: 919828) and Windrush (NRHE: 1506690). Similar systems of landscape divisions are also found in other parts of Warwickshire, such as Wasperton and Dunsmore Heath. They appear to have been used to define territory around a cluster of enclosures or settlements (Hingley 1996: 12-13).

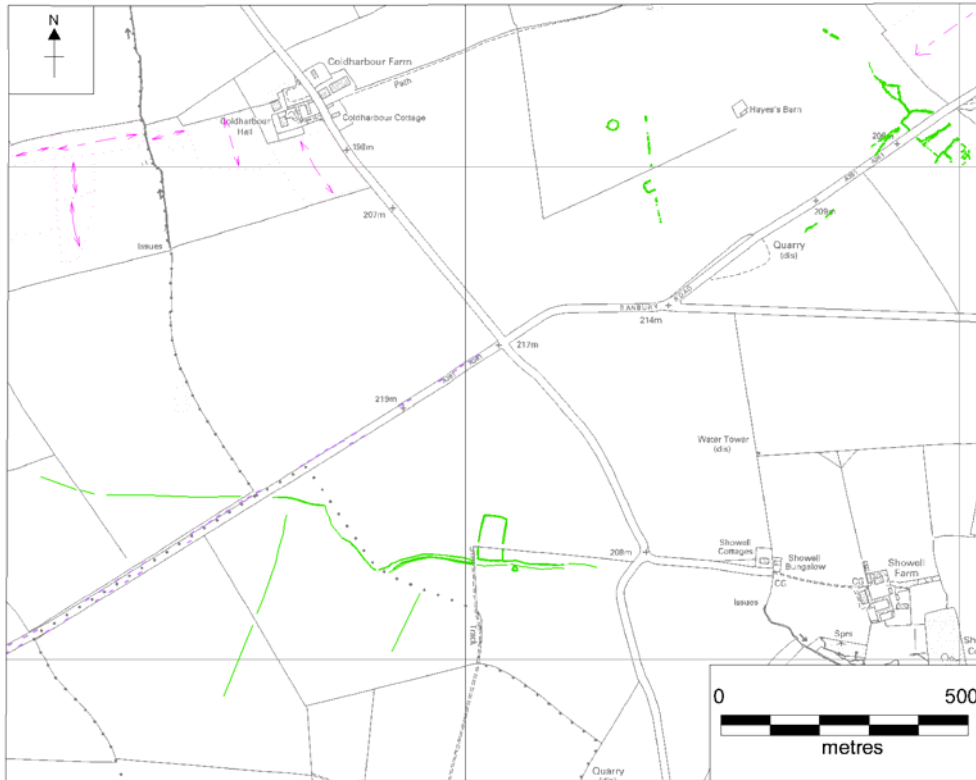


Figure 4.14. Linear ditches and pit alignment elements of the land divisions or field boundaries around Little Tew and Heythrop Park. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

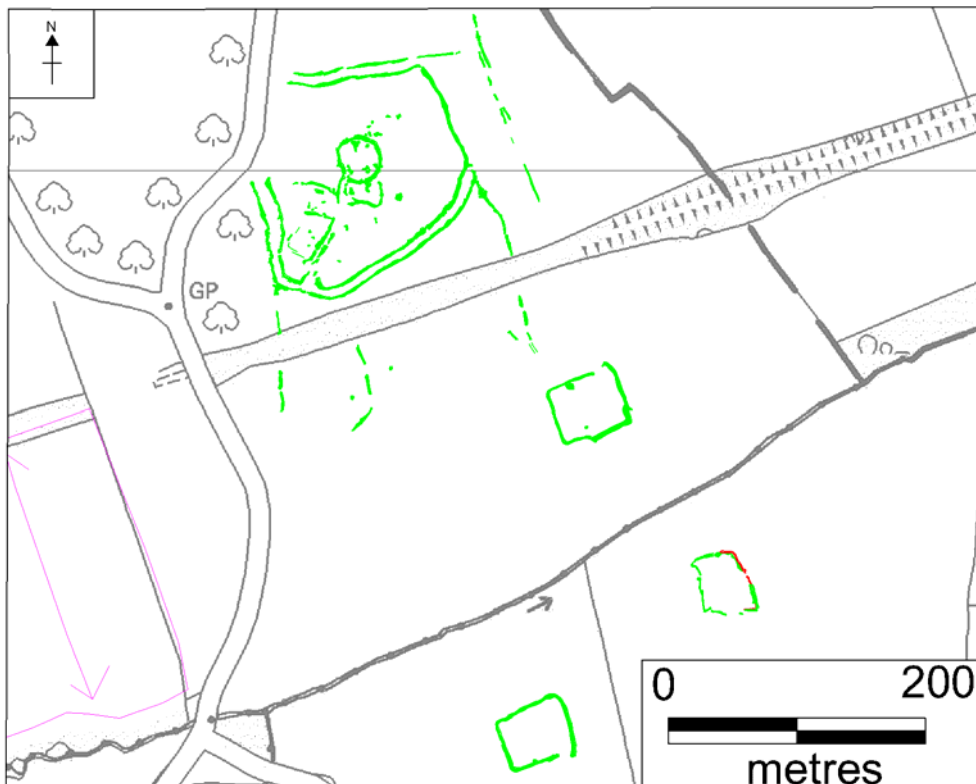


Figure 4.15. The Rollright banjo enclosure and associated field boundaries and enclosures. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

A large group of enclosures to the east of Great Rollright includes a double ditched banjo enclosure (Figure 4.15) with a number of internal features and external boundary ditches (NRHE: 1067071). The site is reminiscent of the Fewcott banjo (Featherstone & Bewley 2000: 21-22), which has similar internal and external track ways and divisions. Mingie's Ditch in Oxfordshire also had a similar double circuit of boundary ditches and the area between them has been interpreted as a corral for keeping horses overnight (Allen & Robinson 1993: xv). The internal circular and rectilinear enclosures could have been used for separating animals in a flock or herd, or managing herds belonging to different owners. Banjo enclosures are usually seen as functioning partly for stock management and partly for settlement, but there are a wide variety of forms (Bewley 2003: 132-133). The presence of many possible storage pits at the Rollright banjo enclosure may indicate a settlement role for this enclosure.

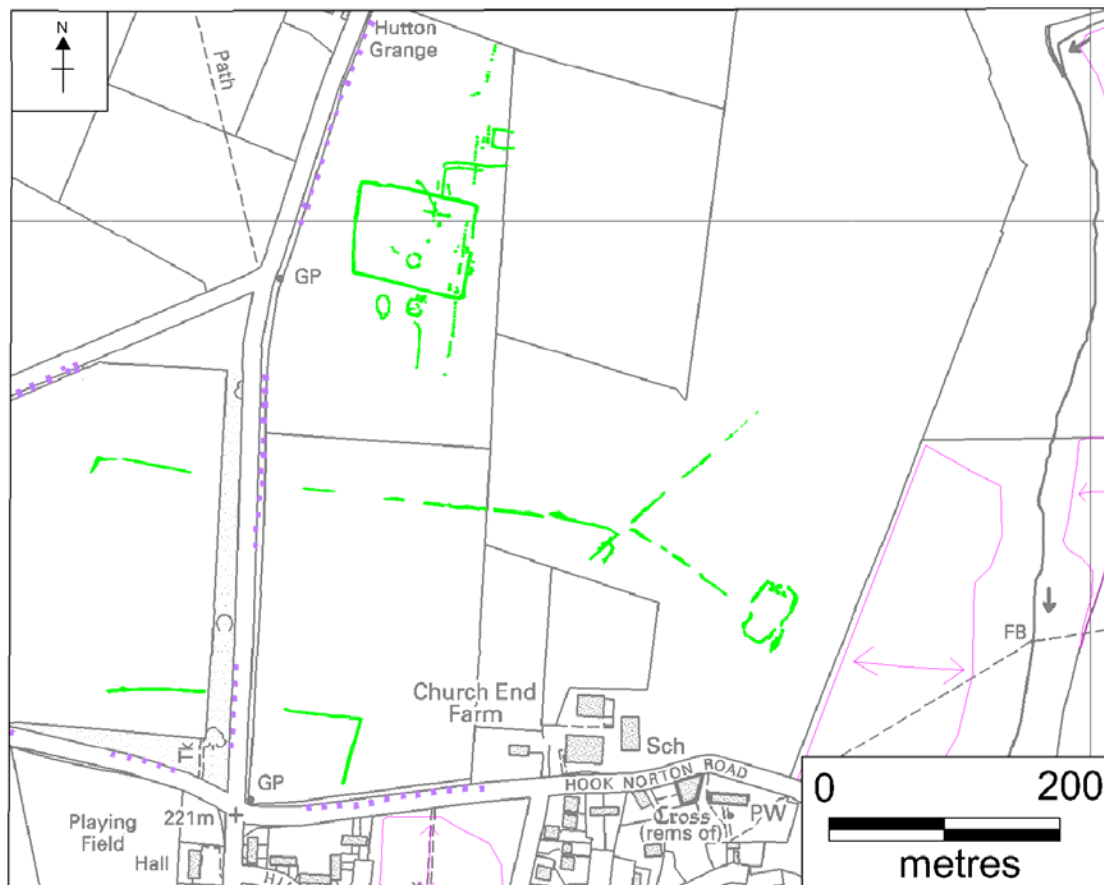


Figure 4.16. The enclosures and probable field boundaries north of Rollright. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

4.7 Parks and gardens

Salford, near Chipping Norton in Oxfordshire, is the location of a Tudor or Jacobean great house protected as a Scheduled Monument (LE1020974). The remains of the house and its garden (NRHE: 332530) are visible on aerial photos (Figure 4.17).

The garden consists of three terraces linked together by inclined planes, with an exedra on the upslope edge. These suggest a Tudor or Jacobean date. However, there are also a number of other indistinct earthworks which would be difficult to interpret from aerial photographs alone. Further features to the north of the garden earthworks have been

interpreted during a ground-based survey as part of a series of fishponds (Aston 1974: 17-18). The ditch, which extends from the top of the garden, down the southern edge and off the bottom of the image looks more like a leat or an ornamental water feature (Figure 4.18).



Figure 4.17. The formal garden and some of the water features in Salford, visible as earthworks. An extract from NMR RAF/58/1301 F.21 0004 03-NOV-1953. English Heritage (EHA) RAF Photography.

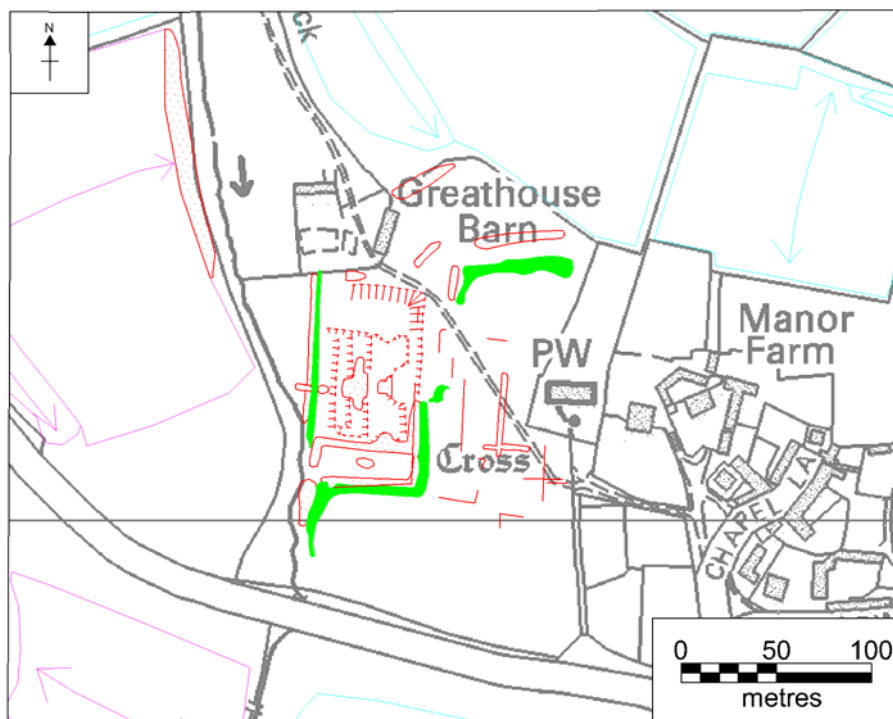


Figure 4.18. Transcription of the great house cropmarks and the formal garden earthworks. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

The house is indicated by the cropmarks of wall foundations between the formal garden earthworks and the extant church. The house appears to be symmetrical, with the outlines of two wings projecting on either side of the garden. A geophysical survey has provided more information, including the identification of a gatehouse lodge to the south of the church (MOX96).

Broughton Park is a Grade II Registered Park and Garden attached to Broughton Castle, thought to have been laid out in its current form during the 18th century (NRHE: 1082343). The present site of the park includes several enclosures labelled as 'park areas' on the estate maps of 1685 and 1724 (Parks and Gardens register 1001088). These appear to be coneygarth enclosures or park pales, perhaps both, which are related to the role of the park in animal husbandry. There are at least four pillow mounds within the enclosures, these are characteristically long mounds with rounded ends, which are sometimes surrounded by a ditch (Figure 4.19). Other features amongst these earthworks could be variant forms of pillow mounds, which can be formed by conjoined banks (Williamson 2006: 38-39). The enclosures would have functioned to constrain the rabbits and help exclude predators (Williamson 2006: 45-52). A warren could be subdivided in order to keep more than one type of rabbit and different parts of a warren could be ploughed in rotation to promote the fertility of the grass (Williamson 2006: 48-49).

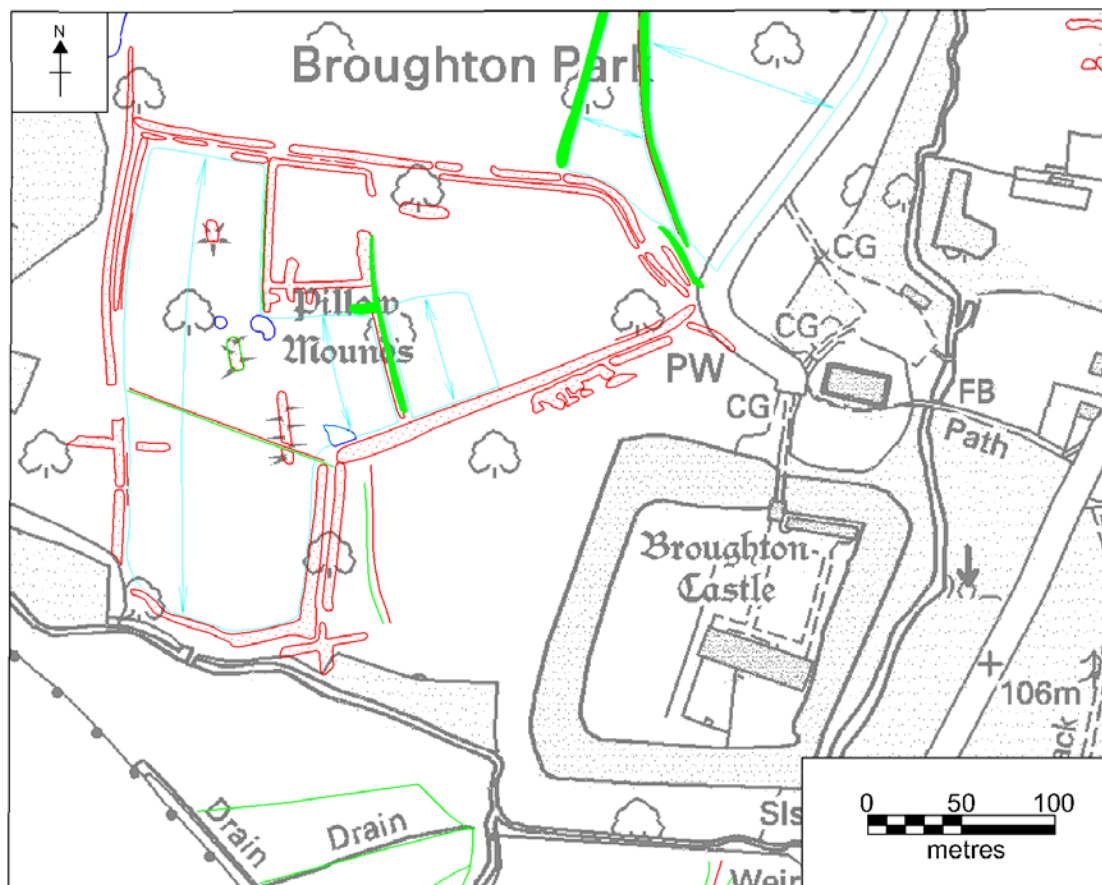


Figure 4.19. The pillow mounds and linear banks, perhaps coneygarths in Broughton Park. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

It is likely that there are more phases of activity represented by the earthworks in Broughton Park than just the rabbit warrens. The boundary banks appear to be overly emphasised and are doubled or even tripled at some points, which seems to be unusually

elaborate for a coneygarth. It is possible that these banks are the remains of deer pales. Broughton Castle was besieged by Royalist forces during the English Civil War and although these banks do not seem to be defensive in nature, they might be related to some kind of military activity. A ground-based analytical survey here might shed more light on these unusual earthworks.

4.8 Medieval settlement at Brailes

Brailes consisted of two settlements: the village of Lower Brailes, which contains the parish church and the former hamlet of Upper Brailes. Aerial photographs taken between 1947 and 2001 show extensive areas of well defined earthworks, particularly south of Green End Farm in Lower Brailes (NRHE: 1573198) and west of Grove End, Upper Brailes (NRHE: 1573176). The earthworks comprise numerous building platforms, crofts, hollow ways and probable ponds. They represent the extent of medieval settlement and shrinkage which occurred at the end of the period. An archaeological observation at land adjacent to Midcot, Upper Brailes, suggested possible abandonment of the site or conversion to pasture in the 14th century (Pratt & Rann 2009). There were a number of episodes of substantial depopulations and enclosure covering most of the northern part of the parish and the whole of the vill of Chelmscote, between the late 15th and the mid 16th centuries. These were often substantial enclosures, of up to 300 acres at a time (Salzmann 1949: 17-26). At Lower Brailes, documentary evidence records the conversion of 16 acres of arable into pasture and the ejection of 16 people in 1496 and further enclosure and depopulation before 1517 (Hilton 1952 :22), providing historical context for the archaeological evidence.

Dyer (1996: 130-131) has stated that shrunken settlement sites have not been systematically recorded, despite their importance in allowing a proper assessment of the size and form of settlements before the decline and abandonment of the late medieval period. Such recording would aid understanding of the “material consequences of the recession”. Although recorded on the Warwickshire HER and a few documentary sources, no detailed research, mapping or survey is known for the settlement earthworks at Brailes, although an Extensive Urban Survey is currently being carried out by Warwickshire County Council (pers comm. Ben Morton).

Recording shrunken settlement evidence can be difficult, as many villages that suffered a decline in the late medieval period have grown again more recently, so that the physical archaeological evidence is often no longer visible. The 1940s aerial photographs therefore provide crucial evidence, as they often show where shrinkage took place prior to subsequent development and growth (Ibid. 128). To this end, Palmer and Isham (1990) set about mapping the medieval landscape from the air in the West Midlands, including the associated medieval ridge and furrow. From their mapping, they found that “a settlements distinctive pattern emerged with full clarity” (Palmer & Isham 1990: 14-15).

NMP projects similarly provide good baseline data that further studies of settlements and field systems can be developed. Using all available aerial photographs has allowed new and unrecorded, particularly shrunken, settlement earthworks to be systematically identified (Figure 4.20).

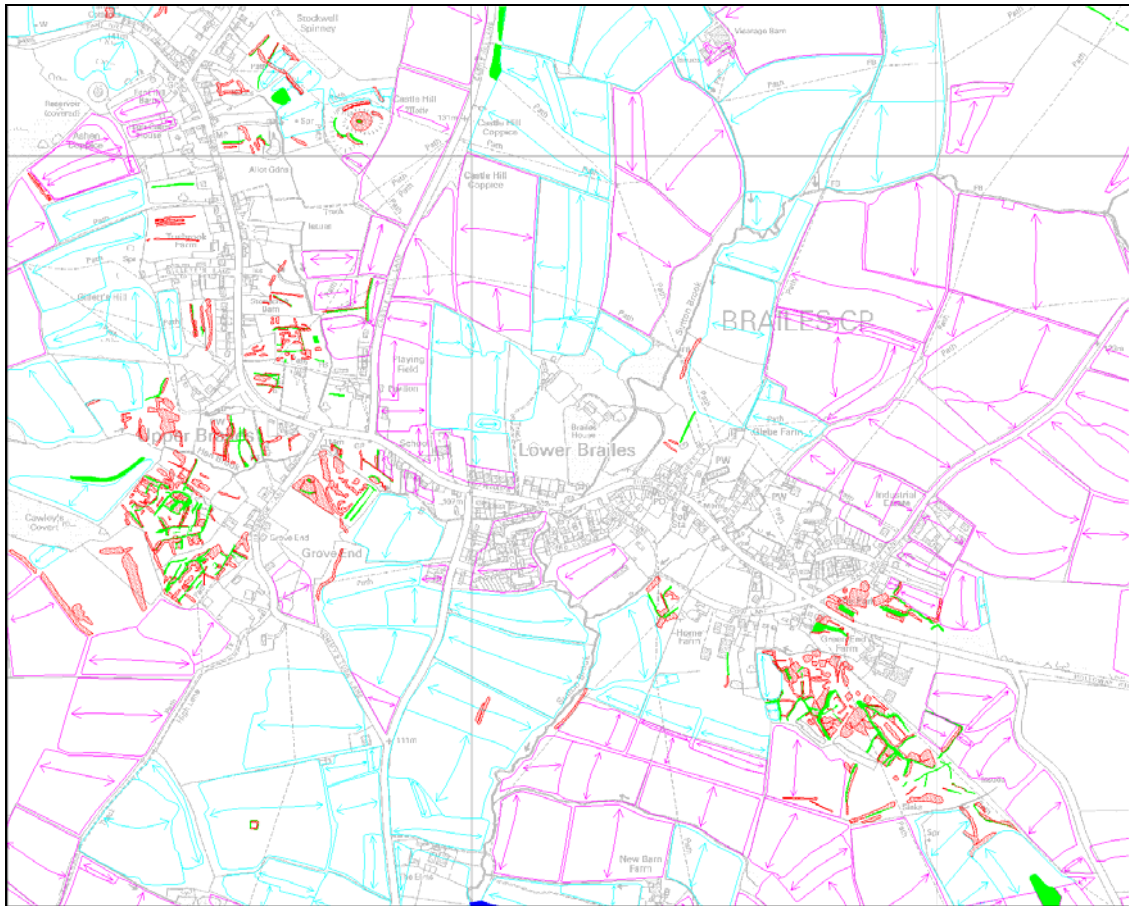


Figure 4.20. The medieval settlement earthworks at Upper and Lower Brailes. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.



Figure 4.21. Medieval settlement at Brailes showing visible denudation. Seen as earthworks (left) in 2000 and as cropmarks (right) in 2006 after recent ploughing. NMR 18674/15 17-FEB-2000 © English Heritage (left) and NMR 24344/18 12-JUL-2006 © English Heritage (right).

Some 1940s and later aerial photographs show medieval settlement earthworks that have since been levelled or severely denuded. For example, the earthworks at Green End Farm were under pasture in 2000 but have been ploughed since 2006, which has greatly reduced the height of the earthworks (Figure 4.21). Recent aerial photographs are vital in indicating the present state of preservation.

An attempt to map the best surviving ridge and furrow in the Midlands was carried out by the Turning the Plough Project (Hall 2001) and, more recently, the current condition of the areas previously identified by Hall was reassessed (Catchpole & Priest 2012), with a view to targeting the management of the best surviving examples. These projects are extremely useful but due to their targeted nature do not cover large connected landscapes. NMP, however, as well as identifying and mapping new or existing features, also records the condition of the earthworks as seen on the most recent available aerial photographs and can highlight sites such as Brailles where modern development or arable cultivation is destroying much of the remaining archaeological evidence, before it has been appropriately studied.

4.9 Depopulation in eastern Warwickshire

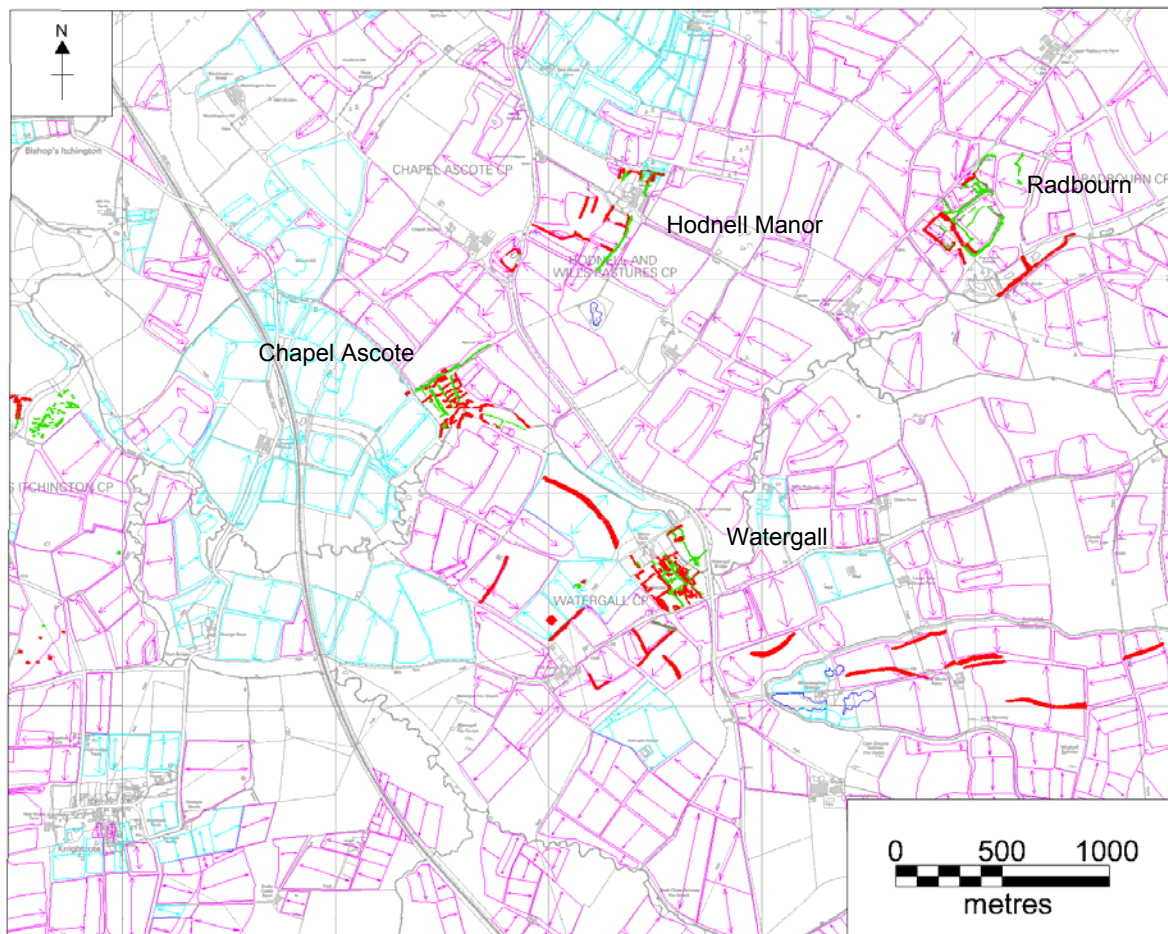


Figure 4.22. The Watergall area, showing the medieval settlements of Wormleighton, Watergall, Chapel Ascote, Hodnell Manor and Radbourne. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

There are a group of unusually well preserved medieval settlement sites in the four parishes of Watergall, Chapel Ascote, Hodnell & Wills Pastures and Radbourne (Figure 4.22). The open field systems associated with the villages were well preserved on the post-war RAF vertical aerial photographs. Beresford commented that, until 1939, the parish of Radbourne was nearly all grass. Even in 1945, only 100 of an available 1,100 acres were ploughed (Beresford 1945: 94). Most of the ridge and furrow has now been levelled. NMP survey has allowed the recording of the former open fields as a cohesive system. Plough headlands to the east, west and northwest of Watergall display evidence

for a former layout of the open fields beneath the final system of earthworks (NRHE: 1529913). This is quite rare in the project area, although it has fairly often been noted in other NMP project areas.

The Feldon was Warwickshire's traditional grain-growing district but in the later medieval period the area was undergoing depopulation by death, migration and being turned over to pasture (Carpenter 1992: 156). Documentary evidence often indicates that the populations of the villages had been declining over several generations, leaving the remaining population very vulnerable to enclosures and forced depopulation (Salzmann 1951: 114-116, Carpenter 1992: 137).

Medieval Feldon was characterised by small manors with fragmented landholdings and estates, many of which were amalgamated and turned over to sheep farming during the 15th and 16th centuries (Carpenter 1992: 156). Sheep were preferred because they generated a far larger income for the landowners than the subsistence tenant farmers and villagers that previously lived there (Beresford 1998: 28). The value of Radbourne, for example, more than tripled after it was turned over to pasture (Dyer 1982: 21).

The history of these five parishes shows that they were depopulated relatively early and were subsequently managed together as parts of large estates. By 1428 there were only four householders at Hodnall (Salzmann 1951: 114). The area was fully depopulated and cleared for sheep grazing by the end of the 16th century (WHER807, Beresford 1945: 92-94, 96, 98). The Catesby family, who had been amassing estates in the area throughout the 14th and the first half of the 15th centuries, are thought to be largely responsible (Beresford 1945: 94, Salzmann 1951: 114).

These settlements are a rare occurrence of a group of medieval settlements that are well preserved as earthworks over almost all of their original extent. Part of the site of Hodnell Manor is scheduled (NRHE: 1020421), as is the majority of Wormleighton (NRHE: 1016438). The group value of the settlements in this area adds to the significance of each (English Heritage 2013).

4.10 Chesterton

Chesterton in Warwickshire is a good example of a complex multi-period landscape (Figure 4.23). It therefore makes a good case study to demonstrate the scope of aerial survey and how it can contribute to heritage protection.

The medieval settlement around Chesterton Green, which was possibly originally known as 'Wygunchulende', is visible in the centre of the image (NRHE: 335311/WHER787). The central (more irregular) area shows a series of paddocks, pens and crofts, a probable windmill mound and relatively few building platforms. There is no actual dating evidence for this central part of the site, though it first appears on documentary evidence in 1352 (WHER787).

The much more regular, grid-like extensions of crofts and hollow ways to the north and west of the centre of the village, known as Netherend (WHER787/789) and Le Grenesyde (WHER781), seem to be later additions to the settlement. The pottery picked up during field walking and the records of observations from watching briefs indicate that the earliest pottery is 13-14th century in date. The suggestion is that Netherend, at least, represents a late and formally planned extensions or replacement for the earlier settlement nuclei (Bond 1982: 157). The number of Roman finds in Le Grenesyde suggests a Roman phase of settlement here as well, very probably the village or other buildings related to the

nearby villa at Ewe Field Farm (NRHE: 335257/ WHER782). Small areas of the earthworks to the north of Ewe Farm (UDS: 1020933) are scheduled, as well as a small area of Le Grenesyde (UDS: 1020261). It is claimed in the Scheduling descriptions that the central area of earthworks have been reduced by ploughing.

The Roman villa located at Ewefields has been excavated, the site is beneath the modern farm and could not be seen on the available aerial photographs. The dating of this villa is unclear, but it is likely to be contemporary with Chesterton Roman town (NRHE: 335344), at the northwestern edge of the parish. Geophysical survey indicates that the Roman town extends to the east and south of the Fosse Way and this project has recorded a new area of hollow ways and enclosures, seen on the far northern edge of image (NRHE: 1407819). The indications of Roman settlement elsewhere in the parish suggest that the Roman town may be more widespread than previously thought. Geophysical survey and field walking may be productive over the remainder of the parish.

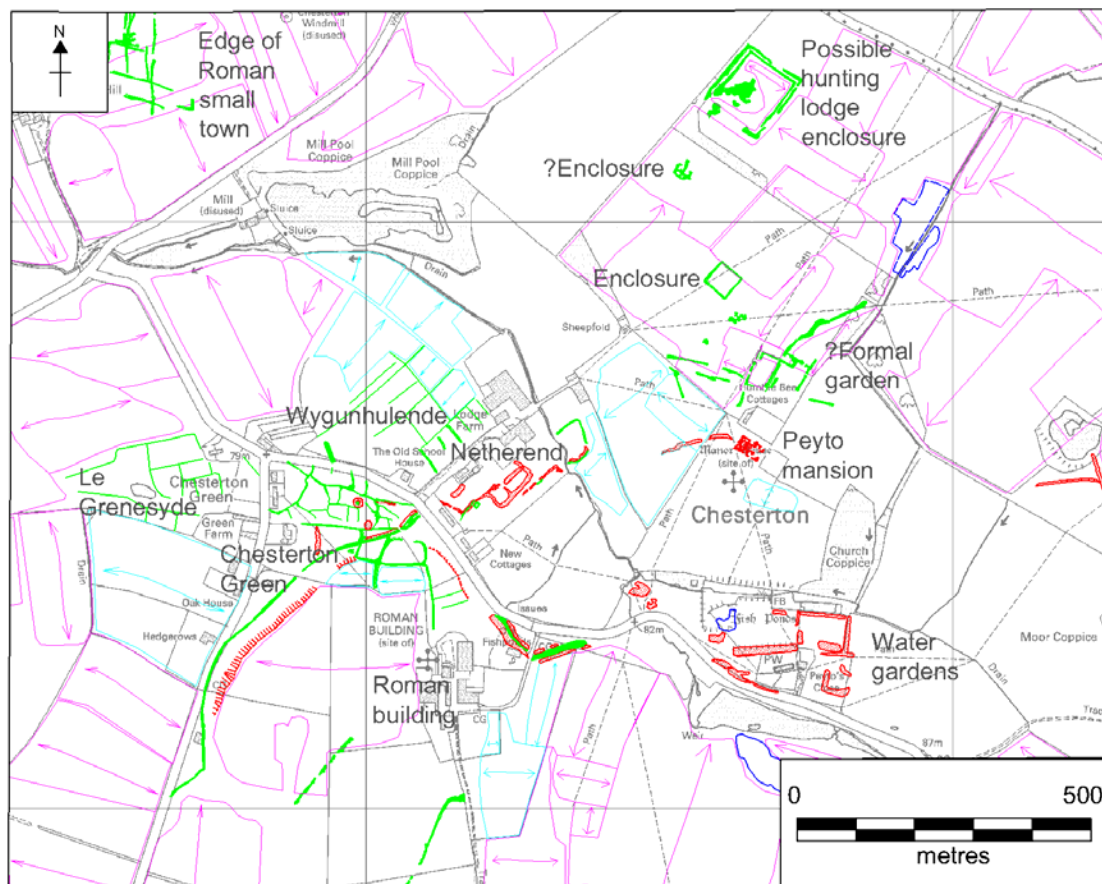


Figure 4.23. The area around Chesterton, Warwickshire, labelled with the principal sites discussed in the text. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

The northern part of Chesterton parish is the location of the Peyto mansion, a 16th century country house and its surrounding parkland. The house was built between 1650 and 1660, altered and enlarged from the 1650s onwards and demolished in 1802. The house is visible as a series of cropmarks showing the walls and maculae showing the locations of the fireplaces (Figures 4.24 and 4.25).

The site has long been known from aerial photographs and recent geophysical survey has recorded significantly more detail of the site of the Stuart house (WHER782). The only

above ground evidence of the house appears to be an elaborate gateway in the north side of the churchyard (WHER796). This was the family's private entrance into the church and is a noted example of high-quality brickwork of this period (Lynch 2007: 85-86). This project has recorded a number of garden features which may be related to this house, or to other phases of the designed formal landscape.



Figure 4.24. Cropmarks of the Peyto mansion, Chesterton, Warwickshire. NMR SP 3558/14 NMR 1231/25 12-JUL-1975. © English Heritage (EHA).

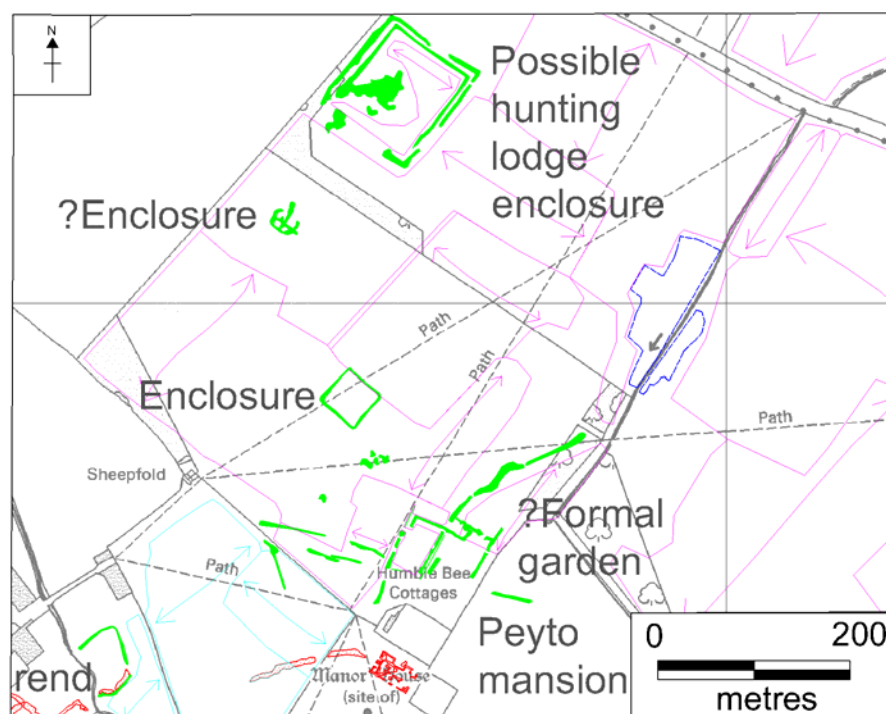


Figure 4.25. The Peyto mansion in Chesterton, Warwickshire, with associated enclosures and formal garden features. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

The cropmarks of the Peyto mansion are visible at the bottom of the image (Figure 4.25); the form of the house seems to indicate that its main aspect was to the northeast. The aerial survey has shown a series of cropmarks of trackways or possible garden features that might be indications of a formal garden or other landscaping (NRHE: 1546313), extending from the front of the house on a NE-SW alignment. The geometrical form of many of these features suggest formal beds or borders. The east-west aligned cropmarks, which the formal garden appears to cut, are more difficult to interpret. They might be a former phase of landscaping or field boundaries that are unrelated to the Peyto mansion. They are quite ephemeral and may be geological marks.

The rectilinear enclosure (NRHE: 1546316) at the centre of the image may well be related to a post-medieval designed landscape. The curved corners and lack of an entrance suggests that it might be a tree plantation enclosure. The curvilinear possible enclosure (NRHE: 1546274) to the northwest might be a feature of this designed landscape, but it is more enigmatic and difficult to interpret. The double ditched enclosure (NRHE: 335266) at the top the image has been most plausibly interpreted as the site of a hunting lodge which could be either contemporary with the Peyto mansion (late 17th century), or predate it, as there was a medieval manor house located to the east of the church (WHER6306). It has also been suggested that this is an English Civil War defence work and Roman pottery suggests that it was the location of Roman settlement, though neither of these suggestions appears to explain the form of the site.

All three of these enclosures are beneath the ridge and furrow (NRHE: 1532124), so the ridge and furrow dates to after these features were abandoned. The two smaller enclosures were only noted as they emerged as cropmarks from under the ridge and furrow, while the possible hunting lodge enclosure has a long history of being observed as earthworks.

This post-medieval ornamental landscape continues with the earthworks around the Church at Peyto's Close (NRHE: 335296). These have been interpreted by ground-based analytical surveyors as the remains of a series of water garden parterres linked by ornamental canals, though they were previously thought to be a moat and settlement earthworks (Everson 2007: 122). Elements of this water garden can be compared to the water garden in the grounds of Campden House in the north Cotswolds (Everson 1989: 109-121; Stoertz 2012: 58-59). The Chesterton Water garden can be linked to the concept of 'quietism' in Puritan thought, as a place for rest and contemplation and the re-creation of moral virtue (Everson 2007: 115). The central platform within the water garden was previously thought to be the location of the medieval manor (WHER790) and interpretation of the site was further confused when rabbits began bringing up medieval window glass. However, geophysical surveys revealed that there were no stone building foundations on this moated platform and that the window glass may well have been brought in from elsewhere and dumped (Reilly 2003, Everson 2007: 124). The medieval manor house is likely to have been to the east of the church, (WHER6306) and evidence from auguring and geophysics confirm substantial buildings and pathways enclosed by a wall. The earthworks of the water garden were at risk of significant local problems from animal burrowing and were on the Heritage at Risk register 2009 (English Heritage 2009: 65), but has since been removed from the register.

5 PROTECTING THE ARCHAEOLOGICAL RESOURCE

5.1 Scheduled Monuments reviewed

Since 1882 the UK government has kept a schedule of nationally important archaeological monuments or heritage assets, thereby giving them legal protection. English Heritage takes the lead on this process and under the Ancient Monuments and Archaeological Areas Act 1979, it is illegal to destroy or damage a Scheduled Monument. It is worth noting that consent for certain works on Scheduled Monuments does not currently include some categories of agricultural work (DCMS 2010: 14). For example, a Scheduled Monument can continue to be ploughed if under the plough when added to the schedule.

Although an assessment of the Scheduled Monuments was not a specific requirement of this project, it was felt that it would be useful to briefly review them. Discussions with EH Designation teams suggest that NMP projects can assist their work by producing considered recommendations for further assessment. One of the outcomes of the recent Chalk Lowland and Hull Valley NMP project (Evans *et al* 2012) was to develop a model for recording aspects of Scheduled Monuments most useful for heritage protection. The Hull Valley project produced a spreadsheet recording the latest known condition, specific risks, comments on the scheduled area and discrepancies in interpretation or date. For this project, however, only a brief appraisal of each Scheduled Monument was undertaken.

Of the 53 Scheduled Monuments located within the project area, an assessment was only made of monuments that were mapped and recorded as part of the NMP project. The sites not included were either not visible on the available aerial photographs or also designated as listed buildings, such as churchyard crosses, or dovecotes.

NMP can often highlight discrepancies in the digital mapping of scheduled areas. For instance, where a polygon does not encompass the entire monument, or where new features are identified suggesting that the scheduled area should be reviewed or new information added to the description. Most recent (and recently reviewed) Scheduled Monuments should have a clear buffer encompassing all significant elements of the monument, but older Scheduled Monuments that used 1:10,000 scale Ordnance Survey paper mapping can require minor amendment.

New evidence gathered as part of NMP can also aid in re-evaluating a Scheduled Monument description. Rarely this may require a complete reinterpretation of a monument, but in most cases additional information or new features are mapped and recorded.

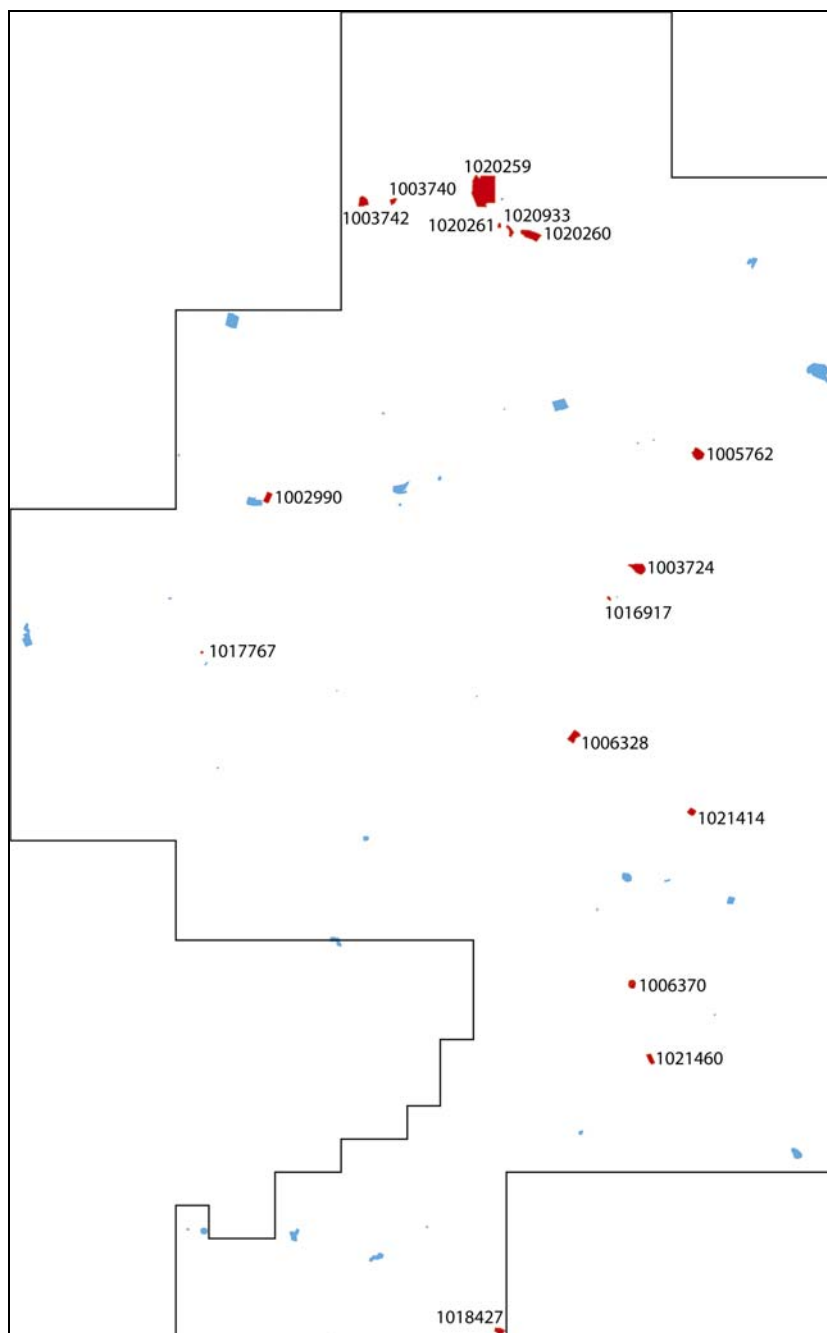


Figure 5.1. Distribution of Scheduled Monuments requiring amendment. Those shown in red and labelled require amendment, those in blue do not.

From this brief assessment, 16 Scheduled Monuments require major amendment either in interpretation, description or scheduled polygon (Figure 5.1). Twenty two of the Scheduled Monuments have former Old County Number (OCN) records, which were not reassessed by the English Heritage Monuments Protection Programme. These include some of the oldest designated heritage assets. English Heritage is currently carrying out a project to upgrade and modernise the documentation of OCN monuments, including those that require minor amendment. The assessment undertaken as part of this NMP project should assist in targeting examples in most urgent need of updating.

A detailed investigation of each site's condition was not possible but, using the latest available aerial photographs and NRHE record descriptions, 9 Scheduled Monuments

were highlighted as possible new additions to the Heritage At Risk register. The principal vulnerability of these monuments was either from dense tree or scrub growth or from ploughing, which was visibly reducing the height of earthworks within Scheduled Monuments. See below (Page 57) for further discussion of Heritage at Risk sites and archaeological monuments vulnerable to modern cultivation.

5.2 Potential candidates for designation.

During the project, archaeological features, sites and monuments were *briefly* assessed in terms of national and local significance (DCMS 2010) and a number of candidates for potential further designation assessment identified.

NRHE: 335452 – A Roman villa (or possibly two) within a subdivided ditched enclosure, Kineton

Two Roman buildings have been mapped on a site that has produced a dense scatter of surface finds, including pottery, worked and un-worked stone, flue tile, roof tile, glass oyster shell, iron and lead objects and a quern. The dateable finds indicate that the site was occupied throughout the Roman period. The Warwickshire HER record (WMA: 4530) also notes that the site is on a very exposed part of the hill and large quantities of unabraded pot and tile may indicate severe and recent plough damage. Further work is required to ascertain if the condition of the site may be good enough for scheduling. The English Heritage scheduling guide comments that, “where they retain reasonable archaeological potential, Roman settlement sites will be deemed to have national importance”, although “...considerations such as condition, group value and potential will require evaluation” (English Heritage 2013: 16).

NRHE: 332963 – A Bronze Age midden and multi-period activity, Whitchurch.

This site, though not fully appreciated from the aerial photographs alone, has been systematically investigated through geophysical survey and excavations (Waddington & Sharples 2011), which uncovered a large Bronze Age midden. It lies in an area of the West Midlands where later Bronze Age activity has traditionally been difficult to identify and a midden of its size was unexpected (*ibid*: 5). The site had a high quality and quantity of material, including a very substantial assemblage of metalwork. Prehistoric settlement sites of Bronze Age or earlier date are rare and are considered to be strong candidates for scheduling (English Heritage 2013: 16). Later Iron Age to Roman settlement evidence may extend northwards from the Bronze Age midden area, with ditched enclosures visible on aerial photographs (NRHE: 332965). The diversity of a site, in terms of its range of features is an important consideration for scheduling. The English Heritage scheduling guidelines comments that “Complex sites demonstrating different phases of development, perhaps over a long time period, may be favoured for designation – by reason of their greater archaeological potential – over those which have simplicity of form perhaps indicating relatively short term occupation” (English Heritage 2013: 14).

NRHE: 1547732 – A pit circle and adjacent sub-rectangular enclosure and ring ditches.

These features, located within Charlecote Park, were not known to the archaeological record prior to this project, despite one ring ditch having been photographed in 1964 and the main group of features in 1982. The pit circle is defined by 11 pits which form a circle c. 11 metres in diameter. It may have a similar function and date to those known nearby on the gravel terraces at Wasperton and Barford, which were tentatively given a Neolithic to Early Bronze Age date (Hughes and Crawford 1995: 25, 43, see section 4.2 above). Very little is known about pit circles nationally, certainly not enough information to classify them (Last 2011: 3). It is possible that they are a part of a continuum of monuments with timber circles and henges (Manning 2009). There are examples where pit circles form part of a larger complex of Neolithic monuments, such as at Dorchester-on-Thames (Last 2011: 4). English Heritage's selection guidelines that "some monument categories are so scarce that all surviving examples that still retain some archaeological potential should be preserved" (English Heritage 2012: 10). The minimal ploughing of these features suggest that they have potential to be unusually well preserved and are worthy of further study. The scheduling guidelines discuss pit circles with timber circles and comments that they are "...usually only discovered as crop marks and many no doubt have yet to be found. As rare monument types which provides an important insight into prehistoric ritual activity all surviving examples are worthy of preservation" (English Heritage 2012: 11).

NRHE: 337045 – A possible Neolithic henge monument at Broughton.

This site is discussed in a case study above (see Section 4.5). The site, previously recorded as a possible Bronze Age or Iron Age settlement enclosure, has been reassessed based on the available aerial photographic evidence and it is suggested it may be a henge. Henge monuments occur across the UK but they are rare nationally with only around 65 examples known (English Heritage 2012: 11). The Scheduling Selection guidelines state: "Periods about which particularly little is known will be of particular importance and this is especially the case for early religion and ritual sites (English Heritage 2012: 10). Henges are one of the few types of identified Neolithic structures and in view of their rarity and their significance for the period, all henges will be good candidates for scheduling (English Heritage 2012: 11).

NRHE: 1569885 – Cropmark settlement with associated linear ditch (NRHE: 1569880) and other enclosures (NRHE: 1569846).

Cropmarks in Ratley and Upton Parish include several rectangular and sub circular enclosures and a large number of storage pits (Figure 5.8). The proximity to Nadbury Camp, a Middle Iron Age hillfort, may suggest that it was succeeded by the unenclosed settlement in the Late Iron Age to Roman era, which is a pattern seen in a few well documented examples in Wessex. Models of development of this kind must be viewed with caution, but the other parallels in the project area show that further targeted research over these unenclosed settlements would be beneficial. Some types of prehistoric settlement sites are relatively common and considerations such as condition and potential will need evaluation. The possible association with the already scheduled Nadbury Camp could be considered to add to the group value of both sites (English Heritage 2013: 16).

A settlement at Wiggington was identified from aerial photographs in 1996, covering a large area with numerous pits, probably hut circles, large and small rectilinear enclosures, as well as a polygonal enclosure. The intercutting between the features suggests a multi-phase settlement with the potential to provide good dating evidence, although the condition of the buried features is unclear. Complex sites with evidence for a number of different phases suggesting occupation over a long period of time are favoured for designation (English Heritage 2013: 14). The presence of a large number of pits on the site may suggest that there is the archaeological potential for environmental evidence, although this would depend on soil conditions and the depth and state of preservation of these features.

5.3 Higher Level Stewardship Target Areas

In many circumstances scheduling a monument or site may not be the best or the most appropriate tool for its long term management and/or preservation and agri-environment schemes offer an alternative route for conservation of the historic environment. The current scheme, Environmental Stewardship (ES), is open to all farmers and is funded by the UK Government and the European Union. The current scheme is due to be replaced in 2015 and its replacement is under development. Farmers and land managers across England enter into voluntary management agreements with Natural England and in return for looking after wildlife, landscapes, historic features and natural resources, farmers and land managers are provided with financial incentives that support them in this work (Natural England 2010).

Higher Level Stewardship (HLS) aims to deliver significant environmental benefits in high priority areas. It provides funding for a range of on-going management regimes which benefit the historic environment, such as arable reversion (Natural England 2010, 47-49) and also for specific capital works, such as scrub clearance, consolidation works, the production of management plans and/or interpretation panels (Natural England 2010, 91-92).

Over 100 HLS target areas have been identified across England. They represent the areas where Natural England focuses delivery of HLS, in order to maximise positive environmental outcomes. Within these target areas, Natural England seeks multi-objective agreements that can make the greatest total contribution to the identified environmental priorities. The priorities for each target area are set out in the Target Area Statements (Natural England 2010). The Target Area Statements for South East Warwickshire (Natural England 2008a) and The Cotswolds (Natural England 2008b) both include features of the historic environment as an objective for preservation.

5.4 The Natural England sites

5.4.1 Introduction

In the early planning stage of this project, Natural England requested that the effects of changes in management regime on earthworks and particularly cropmarks, be recorded. The aim was to allow the better targeting of Stewardship schemes to where buried archaeology has been or is currently being damaged by ploughing or other agricultural practices. Natural England suggested that a detailed aerial photographic progression

analysis of selected sites would greatly improve management of these areas (Catchpole & Dickson 2010). Although a detailed progression analysis was deemed beyond the scope of this project, we did identify potential sites for further analysis to inform further discussions between Natural England and English Heritage.

The criteria for selecting these sites were refined during the course of the project following discussions between the project team. The following guiding principles were used to formulate a list:

- The site should be significant archaeology, but both scheduled and unscheduled sites can fall within this category;
- A balance between sites within and outside Environmental Stewardship agreements. In some cases, this can mean different parts of the same site;
- Showing degradation or at least change over time;
- Covering a variety of agricultural regimes or other environmental impacts.

A number of sites were selected, according to the criteria listed above and examined on aerial photographs to analyse how they changed over time. Tabular data was produced (Appendix 2) detailing these sites, together with a brief monument summary and comments relating to regime change. It was also noted whether the sites or monuments were within an existing Stewardship Scheme and whether they were listed as Scheduled Monuments. Two examples of such archaeological sites which may benefit from further analysis are detailed below.

5.4.2 Walton Deyville

In 1946 the main earthworks of the deserted medieval settlement of Walton Deyville (NRHE: 333220) could be seen to the south of Walton Hall (Figure 5.2). The contrast in this image is not particularly good, but the main north-south hollow way is just visible between the stream and the gardens. A Second World War camp located in the park was incorrectly thought to have disturbed the earthworks of the medieval settlement (Hooke 1984). The oblique aerial photograph (Figure 5.3) shows that the Second World War camp was not located over the main part of the medieval settlement. Photographs taken over the course of the following decades (Figures 5.3 and 5.4), however, indicate some degradation or even destruction to the site caused by the later management of the parkland.

Aerial photographs taken in 1974 and 1975 clearly show the earthworks. The central hollow way forks at its southern end and crofts containing building platforms extend back from the hollow way to either side. Figure 5.3 was taken in a dry summer and also shows the finer detail of building foundations, where the grass had become parched over the stone work.



Figure 5.2. Earthworks of the medieval settlement of Walton Deyville and a Second World War military camp in the grounds of Walton Hall near Wellesbourne, Warwickshire. *NMR RAF/106G/UK/1698 5318 27-AUG-1946. English Heritage RAF Photography.*

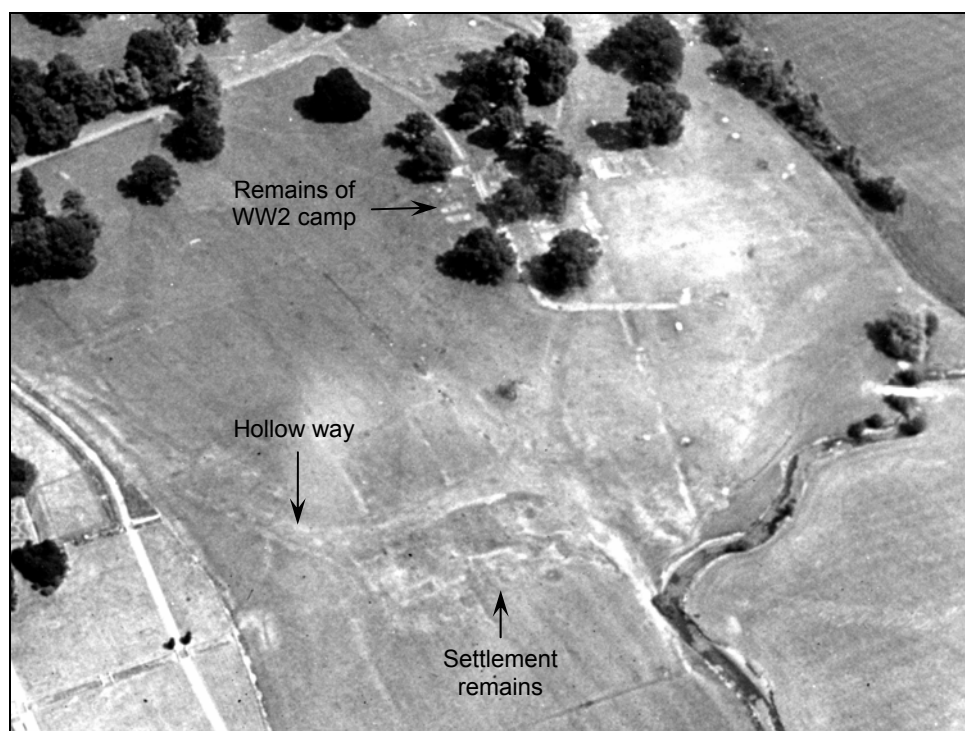


Figure 5.3. Parchmarks showing the medieval settlement of Walton Deyville. *NMR SP 2852/1 JAP 1228/26 12-JUL-1975. Looking east. © English Heritage (Pickering Collection)*



Figure 5.4. Earthworks of the medieval settlement of Walton Deyville showing change in land management. *Next Perspectives* PGA Tile SP2852 09-SEP-1999(L) & *Next Perspectives* PGA Tile SP2852 01-MAY-2007 (R) Aerial Photography: Licensed to English Heritage for PGA, through *Next Perspectives*™

The PGA image from 1999 (Figure 5.4) shows how the management of the site had started to impact on the earthworks. Sometime between 1975 and 1984 a north-south bund, created to contain slurry from adjacent fishponds (Hooke 1984), may have damaged the croft boundaries and building platforms located to the west of the village street. There also seems to have been some levelling of the features, and four-by-four vehicle circuits or possible horse gallops cuts into the northern part of the parkland. In 2007 (Figure 5.4), levelling is visible extending southwards from the top of the image and there is more ground disturbance on the western side of the park. Based on the aerial photographic evidence alone, the archaeological site has not been ideally managed with a view to its conservation and highlights the issue of increasing use of the countryside for leisure activities.

5.4.3 Thornton enclosure

Thornton enclosure (NRHE: 333196) is a Scheduled Monument (UDS: 1002990), which demonstrates how cropmarks are masked by the ridge and furrow while it is still extant. Thornton enclosure is a double ditched oval enclosure which is likely to date to the Middle Iron Age. The vertical photograph taken in 1971 (Figure 5.5) shows the site barely visible as earthworks in an area of deep ridge and furrow cultivation. The white areas are where the ridges are in the process of being levelled, with the characteristic zigzag patterns showing where ploughing is extending across the ridge and furrow at a right angle. The dots extending across the enclosure in diagonal lines are the result of photographic processing on the print and are not archaeological in origin.

However, in 1990 (Figure 5.6), the enclosure was visible after all the surrounding ridge and furrow had been levelled and the detail is much clearer. The double ditches, with enlarged ditch termini are now visible. There are also parallel linear cropmarks visible underlying the enclosure which have been suggested as a possible Neolithic cursus (Harding & Lee 1987: 281-3), though they equally be some other archaeological feature or geological marks. The damage caused by the post-medieval field boundaries (scrubbed out after 1946) to the ditch on the eastern and western sides is also marked. This is the kind of detail that was impossible to see until the medieval ridge and furrow was plough levelled. The scheduled area for this site only extends up to the post-medieval field boundaries to the east and west, while the monument clearly extends beyond these.



Figure 5.5. Thornton enclosure, near Ettington, just visible as soilmark in the germinating crop. *NMR OS 71060/121 12-APR-1971 © Crown copyright. Ordnance Survey.*



Figure 5.6. Thornton Enclosure visible as a cropmark underneath MD ridge and furrow. *NMR SP 2750/33 NMR 4636/78 04-JUN-1990 © Crown copyright. EH.*

5.5 Discussion of landscape/management changes

Aerial photographs provide a unique historical perspective on how a particular landscape has been managed over time. Almost all areas have aerial photographic coverage which stretches back 70 years, which can allow for a more nuanced study of how a monument can change over time, as opposed to just presence or absence. The photographs can give an idea of condition at particular points in time, although there are a number of downsides in using this technique for assessing the history of change at a site. The photos are not taken regularly, but are spaced at intervals of anything from a year up to a couple of decades. Additionally, not every run of vertical photos is good enough to be able to draw any meaningful conclusions about the condition and state of preservation of a site.

Therefore in some situations conclusions about the post-war changes to a site may be based on only one or two photos. These semi-random intervals between the photos can also make it harder to determine in detail the cultivation history of a site. Determining what a crop or a cultivation regime might be from a black and white photo is difficult and verticals are often taken at the wrong times of year to identify crops. There are some examples where sites can be seen to deteriorate over time, but still have some upstanding evidence remaining. Other sites remained unchanged for decades, but are suddenly absent from the images due to their destruction by a change in land use.

In conclusion, an assessment of the photographs can be a useful starting point in demonstrating how past and current land use may have impacted on the preservation of a site. Definitive conclusions about processes should be avoided and the inferences that can be drawn should be limited to the evidence visible on the photographs and their 'point in time' nature.

5.6 Heritage at Risk

Since 2008 English Heritage has built up an understanding of the condition and management of designated historic buildings, landscapes and archaeological sites through the Heritage at Risk programme. Regular reviews provide a dynamic picture on the condition of heritage assets thereby informing their management needs. The Heritage at Risk register (HAR) was viewed to assess the number of Scheduled Monuments within the project which are at risk. There are currently 11 Scheduled Monuments on that list, six of which are Old County Number records. Within our project area 20% are at risk, slightly higher than the national figure of 17.9% (English Heritage 2010: 5).

Darvill recognised that the use of steam ploughs during the interwar period and then the continuation of the use of powerful tractors can cause more damage in "one pass than primitive cultivation would have done in perhaps 50 years" (Darvill 1987: 128). The Monuments at Risk Survey (Darvill and Fulton 1998) demonstrated this by showing that about 40% of archaeological monument degradation and loss in the last half-century was attributable to agriculture.

However, by their very nature, Scheduled Monuments comprising buried archaeology, which are visible as cropmarks, are at potential risk as they are subjected to arable cultivation. Of the 11 Scheduled Monuments at risk, four of those comprise buried deposits, with a principle recorded vulnerability of ploughing, but their current condition is unknown.

It's worth pointing out here that certain types of cultivation and crop type may not

significantly damage buried archaeological features; and complete levelling of earthworks above ground does not always signify total loss, where the buried features survive. For example, Nadbury Camp (UDS 1003724; NRHE 335146), which is on the HAR register, was subject to a geophysical survey that indicated there was substantial occupation evidence in the interior of the site. This is despite half of the site being under the plough and where, in places, the rampart has been significantly reduced (McArthur 1990). Oxford Archaeology South, on behalf of English Heritage and Defra, has completed scientific trials into cultivation practices to minimise the impact on archaeological sites (Oxford Archaeology 2010).

5.7 Earthwork survival

In the project area, the degradation and loss of a number of mapped archaeological features through continued arable cultivation could be seen, particularly those originally visible as earthworks on 1940s RAF aerial photographs. Using a similar methodology to that used in the Chalk Lowland and the Hull Valley NMP project (Evans *et al.* 2012), an attempt was made to quantify the percentage of surviving monuments first visible as earthworks on the historical aerial photographs and the percentage levelled over a 60 year period.

Analysing the visibility and survival of archaeological features from aerial photograph data alone is dependent on the availability and quality of the photographs. For instance, some earthworks recorded as 'levelled' may actually retain height. Even slight earthworks can be visible on vertical aerial photographs using stereo pairs, but the PGA orthophotography is not available as stereo pairs and therefore earthworks are not always clearly visible on them. However, as found in the Chalk Lowland and the Hull Valley NMP project (Evans *et al.* 2012), the results can show an overall trend in either the loss or survival of earthwork monuments (*ibid.*: 52). Only features mapped as part of the NMP project were analysed and then only those originally visible as earthworks on the 1940s RAF photographs. Features that were first recorded as cropmarks and therefore not levelled as a result of modern cultivation, were excluded. Most archaeological sites comprise many mapped elements, such as the large Kington Ammunitions Depot, within one unique NRHE record; therefore in filtering the results each NHRE monument was only counted once. The results can be seen in Table 1.

	All Mapping	Mapping minus RnF	RnF only
Earthworks	29%	47%	27%
Levelled Earthworks	71%	53%	73%

Table 1. The percentages of levelled and surviving archaeology in the project area.

Ridge and furrow was initially included in the analysis giving a total of 71% levelled earthworks. The mapped ridge and furrow was so extensive within the project area and majority of it is levelled, so it is not surprising that the number of levelled earthworks was so high overall. Excluding ridge and furrow from the results shows a more accurate picture of the loss of archaeological earthworks. The results show that more than half (53%) of the other mapped archaeological features, visible as earthworks in the 1940s, were levelled on the most recent available aerial photographs, taken before 2007 (Figure 5.7).

A good example is Madmarston Hill camp, Oxfordshire (UDS 1006371; NRHE 335052) (Page 27, Figures 4.5 and 4.6). In the 1950s the ramparts were well defined and clearly

visible, but they are hard to detect on recent aerial photographs. This Scheduled Monument is not on the HAR register.

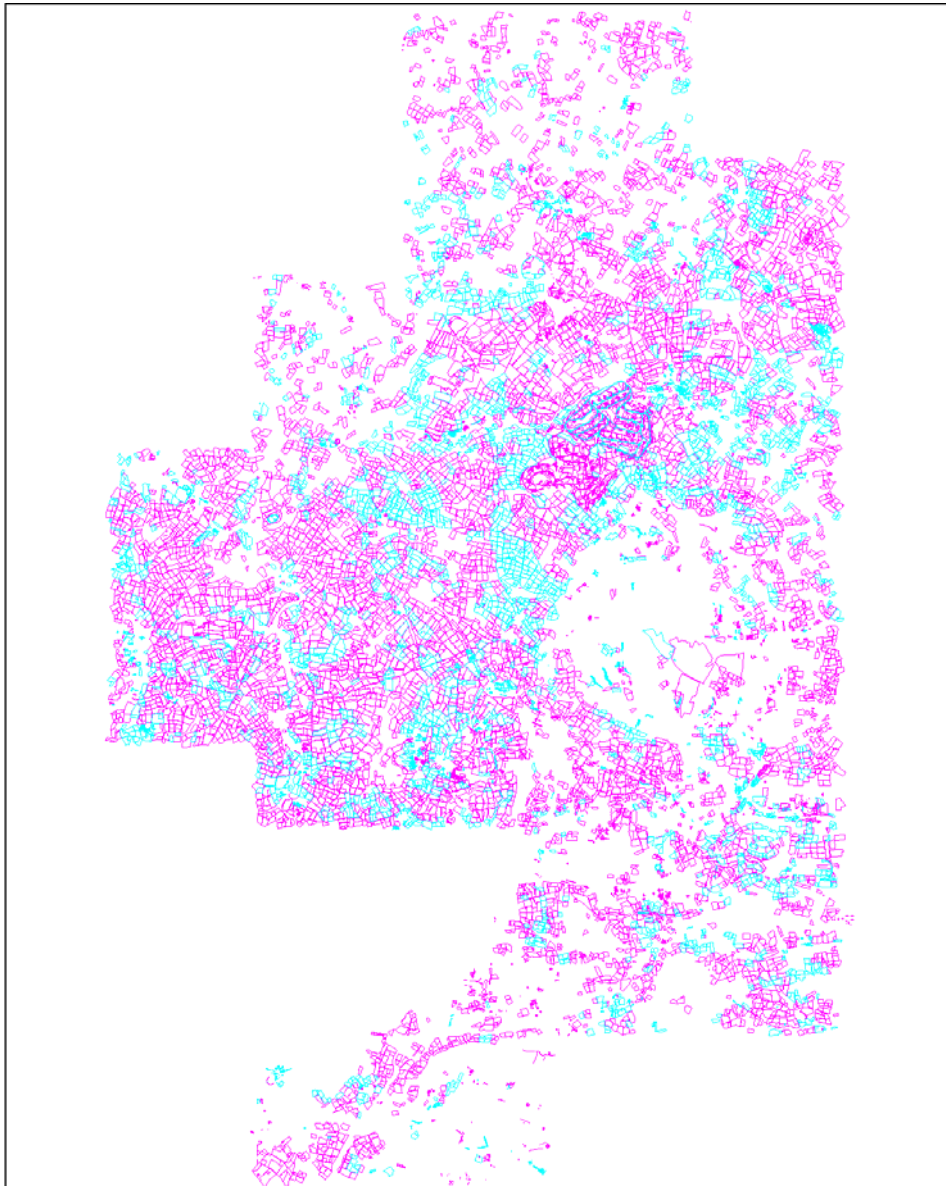


Figure 5.7. Earthwork survival in the project area. Surviving earthworks in blue and levelled earthworks and cropmarks in pink. Many of the cropmark sites will have been levelled in the recent past.

5.8 Cropmark Evidence

As discussed elsewhere in this report, the project has shown an increase in the number of buried prehistoric archaeological features that become visible as cropmarks and soilmarks, once the medieval and post-medieval ridge and furrow is levelled by the plough. The possibly Iron Age or Roman settlement northeast of Warmington (NRHE: 1508135, 1508138) is a typical example of a site that is visible on aerial photographs only after the ridge and furrow was levelled. So in certain cases such as at Warmington, modern cultivation has increased knowledge of the pre-medieval landscape.

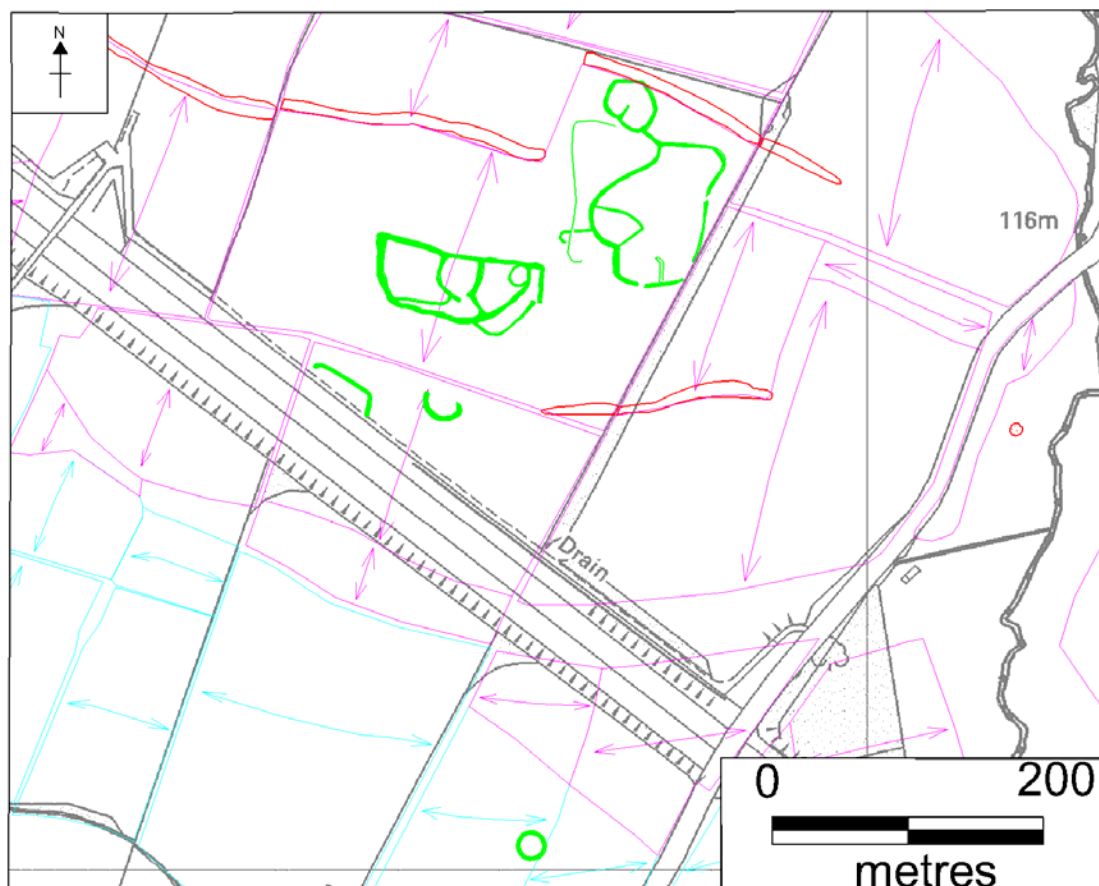


Figure 5.8. Possible Iron Age and or Roman settlement, northeast of Warmington. OS Map Base © Crown copyright. All rights reserved. Gloucestershire County Council 100019134 2013.

With 73% of all visible ridge and furrow levelled by 2007, quantification was also made of the number of features originally recorded as cropmarks. 261 cropmark features were mapped; 61% of which are new to the NRHE database. About 80% of these new sites are likely to represent sites of prehistoric or Roman date.

5.9 Summary

The need for continued assessment of degradation and current condition is essential to the protection of the historic environment and English Heritage have recognised this as a priority in its National Heritage Protection Plan (2D1) (Project No. BD1704). As part of this the Conservation of Scheduled Monuments in Cultivation (COSMIC) project (Oxford Archaeology 2006), which builds on the work of Darvill and Fulton (1998), will assess detailed options to avoid further damage to significant archaeological sites and monuments, both above and below ground. This includes monuments not listed in the HAR register.

NMP can assist by highlighting relevant information to the English Heritage Designation and HAR teams and local HERs to assist in the conservation and management of locally and nationally important sites. Designations and advice to agri-environment schemes have common aims, namely to assess the significance of the historic environment and determine appropriate levels of protection in order to conserve highly significant elements of it. Any system of management recommendations can only be as effective as the data that it has to draw on. The type of data generated by the National Mapping Programme

can feed directly into various methods of managing the landscape. Information about the extent, components and functions of different elements of an archaeological site, changes to it seen over time (with dated sources), as well as the last seen condition, is going to be useful in making those management decisions in the future.

5.10 Suggestions for future work

There are a large number of sites in the project area that are only superficially understood and would benefit from further research in order to more fully understand their extent, associations, significance and any management issues.

5.10.1 Sites which are poorly understood

- The rather unusual field systems and possible fishponds to the south of Ratley (NHRE: 1569849, 1569852), near Edge Hill, could benefit from Analytical earthwork survey. It is not clear what they are or what period they are from. Do they relate to the motte and bailey castle (NHRE: 335167)?
- The enigmatic scheduled bank between Broughton and Madmarston Hill (NHRE: 335055). The date and monument type are unclear.
- Castle Bank enclosure, North Newington (NHRE: 337250). This Scheduled Monument appears to overlie some field boundaries, which would be significant if this enclosure does indeed date to the Bronze Age.
- The possible coneygarths, pillow mounds and other earthworks in Broughton Park (NHRE: 1082343).

5.10.2 Sites under threat, perhaps under active destruction

- The western area of Brailes may still merit being surveyed; although the project has no evidence of condition since 2006.
- Castle Bank and Nadbury are being ploughed and are being visibly reduced in height. Thornton is long since plough levelled, but may still be being damaged.
- There are many sites in the Great Rollright to Swerford area which have been photographed for the first time in the last 20-30 years. There are indications of several enclosures that are obscured by a change in the crop on currently available images and it is possible that these cropmark sites are being degraded by further or more intrusive cultivation. More prospection in this area may yield a few more enclosures. More prospection is also suggested in North Wigginton, where there is an extensive enclosure and cropmark settlement.

5.10.3 Future research sites

Many of the medieval settlement sites are quite poorly understood. Most of them entered the archaeological record in the form of lists that were drawn up by local groups from documentary sources. Some of these sites were then visited and ground-based survey plans were produced. In many cases, the information added by the NMP has been the only record of the actual form and extent of settlements. Many sites are well preserved and would benefit from analytical earthwork plans that would allow a fuller interpretation

and understanding of the extant archaeology. These include. Watrgall, Radbourne, Horley, Broughton, Kingston Manor and Radway.

At Chalford, Oxfordshire, there is a long history of confusion in the written sources between similarly named medieval settlements (Upper/Over Chalford and Nether/Lower Chalford, as well as Old Chalford). This project has attempted to disentangle these records, but further historical research is recommended.

Many of the cropmark settlements could benefit from geophysical survey, or other non-intrusive techniques such as field walking. Field walking over the partially scheduled sites might establish more evidence of extent and phasing.

Some of the candidates include:

- New Bridges farm settlement, Tredington (NHRE: 1076850)
- Foxhill Bank enclosure, Alderminster (NHRE: 332962)
- Cropmarks the possible barrow just east of Gallows Hill Farm, Brailes, (NHRE: 1496194, 1496184, 1573299)
- A set of enclosures, paddocks and curvilinear boundaries that appear to be Iron Age or Roman, just north of Warmington (NHRE: 1508135).
- The Bronze Age midden at Whitchurch has had some productive geophysical surveying conducted on it in the past and would be better understood with selective excavation (see NHRE: 1573550, 332963, 332965)
- Geophysical survey to the north of Walton in Wellesbourne has showed an extensive landscape of enclosures (NHRE: 1547305) and could benefit from more examination.

6 CONCLUSIONS

This project has recorded an extensive range of archaeology over a wide date range. A total of 681 new records were added to the National Heritage Record for England (NRHE) and 364 records were updated. This has meant an increase in the total number of records of 43%.

The headline numbers of records and analysis of the statistics (see Appendix 5 below) should not obscure the essentially qualitative nature of this data. Many of the more useful records for heritage protection purposes will be where the extent, form, principle elements and current condition of a previously known site have been recorded for the first time. The information provided will prove vital in assessing the significance of the archaeological landscape and being able to make evidence-based management decisions about it. NMP projects provide data that aids understanding of relationships between and relative significance of heritage assets.

7 REFERENCES

- Alexander, M. 2007. Archaeological Resource Assessment of the Aggregates Producing Areas of Warwickshire. Warwickshire County Council. Aggregates Levy Sustainability Fund. English Heritage Project No 4681.
- Allen, T. 2000. The Iron Age Background. In Henig, M. & Booth, P. (eds.) *Roman Oxfordshire*. Sutton; Stroud.
- Allen, T. G. & Robinson, M. A., 1993. *The prehistoric landscape and Iron Age enclosed settlement at Mingies Ditch, Hardwick-with-Yelford, Oxon*. Oxford: Oxford University Committee for Archaeology.
- Aston, M. 1974. Salford, Oxon. In *Council for British Archaeology Group 9: South Midlands archaeology newsletter* vol. 4, pp. 17-18.
- Barber, M. 2002. Neolithic Enclosures and Landscapes in the West Midlands. West Midlands Regional Research Framework for Archaeology, Seminar 1: Earlier Prehistory: the Palaeolithic to the Bronze Age. University of Birmingham. Unpublished manuscript.
- Beresford, M & St Joseph, J K S. 1979. *Medieval England and aerial survey*. Cambridge, Cambridge University Press.
- Beresford, M. 1984. *Time and Place: Collected Essays*. Continuum.
- Beresford, Maurice. 1998. *The Lost Villages of England (Revised ed.)*. Sutton.
- Bewley, R. 2003. *Prehistoric settlements*. Stroud; Tempus.
- Bond, C. J. 1982. *Deserted medieval villages in Warwickshire and Worcestershire*. In Slater, T.R. & Jarvis, P.J. (eds.) *Field and Forest: An historical geography of Warwickshire and Worcestershire*. Norwich; Geo Books.
- Bradley, R. 2000. *An Archaeology of Natural Places*. London; Routledge.
- Brown, Ian. 2009. *Beacons in the landscape: The hillforts of England and Wales*. Oxford: Windgather Press.
- Cannon, B.P. 2009. Wartime Banbury - The Dummy Ally & Alcan Roll of Honour. From <http://www.sjbradley.com/memorial/dummyFactory.htm> [ACCESSED 07-AUG-2013]
- Cantor, 1982. *The English Medieval Landscape*. Croom Helm.
- Cantor, L.M. 1987. *The Changing English Countryside: 1400-1700*. London; Routledge & Kegan Paul Ltd.
- Castleden, R. 2002. *The Stonehenge People: An Exploration of Life in Neolithic Britain 4700-2000 BC*. Taylor & Francis e-library.
- Catchpole, T. & Dickson, A. 2010. SE Warwickshire and Cotswolds HLS Target Areas NMP. Project Design. Version 3 (Final) August 2010.
- Catchpole, T. & Priest, R. 2012. Turning the Plough update Assessment 2012. NHPP 2D1: Agriculture and Forestry Impacts Project No. 6468. Gloucestershire County Council. Available from <http://www.english-heritage.org.uk/publications/turning-the-plough-updateassess-2012/> [ACCESSED 07-AUG-2013]
- Cracknell, S and Hingley, R. 1994. Park Farm, Barford: Excavation of a prehistoric settlement site, 1998. *Transactions of the Birmingham and Warwickshire Archaeological Society* 98, 1-30

Cunliffe, B. 1984. *Danebury. An Iron Age hillfort in Hampshire. Volume I: The Excavations 1969-78.* Council for British Archaeology Research Report 52(i)

Cunliffe, B. 2005. *Iron Age communities in Britain.* London: Routledge

Carpenter, C. 1992. *Locality and Polity: a study of Warwickshire landed society, 1401-1499.* Cambridge; Cambridge University Press.

Darvill, T. 1987. *Ancient Monuments in the countryside: an archaeological management review.* London; English Heritage archaeological management reports 5.

Darvill, T. & Fulton, A. 1998. *The Monuments at Risk Survey of England, 1995: Main Report.* Bournemouth and London: Bournemouth University and English Heritage.

Deegan, A. and Foard, G. 2007. *Mapping Ancient Landscapes in Northamptonshire.* Swindon; English Heritage.

DCMS. 2010. Scheduled Monuments: Identifying, protecting, conserving and investigating nationally important archaeological sites under the Ancient Monuments and Archaeological Areas Act 1979.

Dobinson, C. 2000. *Fields of Deception: Britain's bombing decoys of World War II.* London; Methuen.

Dyer, C. 1982. Deserted medieval villages in the West Midlands. *Economic History Review* 35: 19-35.

Dyer, C. 1996. Rural settlements in medieval Warwickshire. *Transactions of the Birmingham & Warwickshire Archaeological Society.* 100, 117-132.

English Heritage. 2006. Management of Research Projects in the Historic Environment. The MoRPHE Project Managers' Guide. Swindon: English Heritage.

English Heritage. 2008. SHAPE. A Strategic Framework for Historic Environment Activities and Programmes in English Heritage. London: English Heritage.

English Heritage. 2009. Heritage at Risk register 2009: West Midlands. http://www.english-heritage.org.uk/publications/HAR_Register_West_Midlands_2009/westmidlands-2009-har-register.pdf

English Heritage. 2010. Heritage at Risk Register, 2009: West Midlands. London: English Heritage.

English Heritage. 2011. The National Heritage Protection Plan. Version 1: 23 May 2011.

English Heritage. 2012. Designation Scheduling Selection Guide: Religion and Ritual pre-AD 410. Available from <http://www.english-heritage.org.uk/publications/dssg-religion-ritual/> [ACCESSED 09-AUG-2013].

English Heritage. 2013. Designation Scheduling Selection Guide: Settlement Sites to 1500. Available from <http://www.english-heritage.org.uk/publications/dssg-settlement-sites-1500/> [ACCESSED 08-AUG-2013].

Evans, S., Boutwood, Y., Knight, D. & Oakey, M. 2012. East Riding of Yorkshire, Chalk Lowland and the Hull Valley NMP: Aerial Investigation and Mapping Report. English Heritage Research Report Series 39/2012.

Everson, P. 1989. The gardens of Campden House, Chipping Campden, Gloucestershire. *Garden History* 17 (2): 109-121.

Everson, P. 2007. *Reflecting a stance: Establishing a position; moving beyond description and function in designed estate landscapes?* In Finch, J. & Giles, K. (eds.) *Estate Landscapes: Design, Improvement and Power in the post-medieval Landscape*. Woodbridge; The Boydell Press.

Featherstone, R. and Bewley, R. 2000. Recent Aerial Reconnaissance in North Oxfordshire. *Oxoniensia* LXV, 13-30.

Fenner, V. and Dyer, C. 1994. The Thames Valley Project: A report for the National Mapping Programme. Royal Commission on the Historical Monuments of England. Available from http://www.english-heritage.org.uk/publications/thames-valley-mapping-project-nmp/ThamesValleyNMP_web.pdf [ACCESSED 18-JUN-2013]

Ford, W.J. 2003. The Neolithic complex at Charlecote, Warwickshire. *Transactions of the Birmingham and Warwickshire Archaeological Society* 107, 1-39

Fowler, P.J. 1960. Excavations at Madmarston Camp, Swalcliffe, 1957-8. *Oxoniensia* XXV: 1-49.

Hall, D. 1993. *The Open Fields of Northamptonshire; the case for preservation*. Northampton; Northamptonshire County Council. Available from <http://www.northamptonshirerecordsociety.org.uk/nrseBksOpenFields.html> [ACCESSED 07-AUG-2013].

Hall, D. 2001. *Turning the Plough. Midland open fields: landscape character and proposals for management*. English Heritage and Northamptonshire County Council.

Harding, A.F. & Lee, G.E. 1987. Henge monuments and related sites of Great Britain: air photographic evidence and catalogue. Oxford; *B.A.R British Series* 175.

Hilton, R.H 1952. *Ministers' Accounts of the Warwickshire Estates of the Duke of Clarence 1479-80*. Oxford; Oxford University Press.

Hingley, R. 1994. Park Farm, Barford: excavation of a prehistoric settlement site, 1988. *Transactions of the Birmingham and Warwickshire Archaeological Society* 98, 1-30

Hingley, R. 1996. Prehistoric Warwickshire: a review of the evidence. *Transactions of the Birmingham and Warwickshire Archaeological Society* 100: 1-24.

Hooke, D. 1984. Wellesbourne – A survey. *West Midlands Archaeology* 27: 113-116.

Hughes, G. and Crawford, G. 1995. Excavations at Wasperton, Warwickshire, 1980-1985, *Transactions of the Birmingham and Warwickshire Archaeological Society* 99, 9-45.

Janik, J., Dickson, A. and Priest, R. 2011. *An Archaeological Aerial Survey in the Cotswold Hills: A Report for the National mapping Programme*. Typescript. Gloucestershire County Council and English Heritage.

Jones, E. 2009. National Mapping Programme for Warwickshire (pilot project) Final Report. Unpublished report by Warwickshire CC for English Heritage

Last, J., 2011. Introductions to Heritage Assets: Prehistoric Henges and Circles. Available from <http://www.english-heritage.org.uk/publications/iha-prehistoric-henges-circles/prehistorichengesandcircles.pdf> [ACCESSED 04-JUN-2013]

Lynch, G. 2007. *The history of gauged brickwork: conservation, repair and modern application*. Oxford; Butterworth Heinemann.

Manning, A. 2009. A ritual landscape at Boscombe Down. Available from <http://www.wessexarch.co.uk/projects/wiltshire/boscombe/ritual-landscape-boscombe-down> [ACCESSED 09-AUG-2013].

McArthur, C. 1990. Excavations at Nadbury Camp, Warwickshire SP 390482. *Transactions of the Birmingham and Warwickshire Archaeological Society* 95, 1-16

McOmish, D. 2011. Introductions to Heritage Assets: Banjo Enclosures. English Heritage. <http://www.english-heritage.org.uk/publications/iha-banjo-enclosures/banjoenclosures.pdf> [ACCESSED 22-MAY-2013]

Moore, T. 2006. *The Iron Age*. In N. Holbrook, & J. Juřica (eds.) *Twenty-Five Years of Archaeology in Gloucestershire: a review of new discoveries and new thinking in Gloucestershire, South Gloucestershire and Bristol 1979-2004*. Bristol and Gloucestershire Archaeological Report No.3. Kemble: Cotswold Archaeology

Mudd, A., Williams, R.J. & Lupton, A. 1999. *Excavations alongside Roman Ermin Street, Gloucestershire and Wiltshire: the archaeology of the A19/A417 Swindon to Gloucester Road Scheme. Volume 1: prehistoric and Roman activity*. Oxford: Oxford Archaeology.

Mullin, D. 2011. *Places in between: the archaeology of social, cultural and geographical borders and borderlands*. Oxford: Oxbow.

Natural England n.d. National Character Areas – defining England's natural boundaries. Available from <http://www.naturalengland.org.uk/publications/nca/> [ACCESSED 06-AUG-2013].

Natural England. 2008a. HLS Target Area Statement WA15. South East Warwickshire Target Area. Available from http://www.naturalengland.org.uk/Images/hlstargeting/South_East_Warwickshire.pdf [ACCESSED 10-MAR-2014].

Natural England. 2008b. HLS Target Area Statement SW04. The Cotswolds Target Area. Available from http://www.naturalengland.org.uk/Images/hlstargeting/The_Cotswolds.pdf [ACCESSED 10-MAR-2014].

Natural England. 2010. Higher Level Stewardship. Environmental Stewardship Handbook. Third Edition. Available from <http://publications.naturalengland.org.uk/publication/31047?category=45001> [ACCESSED 10-MAR-2014].

Natural England 2013a National Character Area profile: 107 The Cotswolds. Available from <http://www.naturalengland.org.uk/publications/nca/cotswolds.aspx> [ACCESSED 06-AUG-2013].

Natural England 2013b. 96 Dunsmore and Feldon. Available from http://www.naturalengland.org.uk/publications/nca/dunsmore_and_feldon.aspx. [ACCESSED 06-AUG-2013].

Oswald, A. 1969. Excavations for the Avon/Severn Research Committee at Barford, Warwickshire (1966/67). *Transactions of the Birmingham and Warwickshire Archaeological Society* 98: 1-64

Oswald, A. 2011. Introductions to Heritage Assets: Prehistoric Linear Boundary Earthworks. English Heritage. Available from <http://www.english-heritage.org.uk/publications/iha-prehist-linear-boundary-earthworks/linearboundaryearthworks.pdf> [ACCESSED 07-JUN-2013]

Oxford Archaeology 2006. Conservation of Scheduled Monuments in Cultivation (COSMIC). Available from <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=12084> [ACCESSED 28-MAY-2013]

Oxford Archaeology 2010. Heritage Protection Reform Implementation – COSMIC Implementation Pilot Project, East Midlands Region Stage 1. Oxford, Oxford Archaeology. Available from <http://www.e-a-a.org/Main%20report.pdf> [ACCESSED 07-AUG-2013].

Payne, A., Corney, M. & Cunliffe, B. 2006. *The Wessex Hillforts Project. Extensive survey of hillfort interiors in central southern England*. Swindon; English Heritage.

Powell, K, Smith, S. and Laws, G. 2010. *Evolution of a Farming Community in the Upper Thames Valley, Excavation of a Prehistoric, Roman and Post-Roman Landscape at Cotswold Community, Gloucestershire and Wiltshire. Volume 1: Site Narrative and Overview*. Oxford Archaeology. Thames Valley Landscapes Monograph No. 31.

Richard Morris Associates. 2009. Landscape Character Assessment for South Warwick, Appendix A. Unpublished manuscript, available from <http://www.warwickdc.gov.uk/NR/rdonlyres/8C3B62FE-09A7-4F75-B556-C06DA461D1E4/0/LandscapeCharacterAssessmentforSouthofWarwickAppendicesReduced.pdf> [ACCESSED 08-AUG-2013].

Riley, D.N. 1983. The frequency of occurrence of cropmarks in relation to soils. In G.S. Maxwell (ed.) *The impact of Aerial Reconnaissance on Archaeology*. Council for British Archaeology Research Report 49. London: CBA, pp. 59-73.

Salzmann, L.F. (ed.), 1949. A History of the County of Warwick: Volume 5: Kington hundred (Victoria History of the Counties of England). Available from <http://www.british-history.ac.uk/source.aspx?pubid=530> [ACCESSED 09-AUG-2013].

Salzmann, L.F. (ed.), 1951. A History of the County of Warwick: Volume 6: Knightlow hundred (Victoria History of the Counties of England). Available from <http://www.british-history.ac.uk/source.aspx?pubid=531> [ACCESSED 09-AUG-2013].

Stoertz, C. 2012. *The North Cotswolds: A Highlight Report for the National Mapping Programme*. English Heritage.

Taylor, C. and Muir, R. 1983. *Visions of the Past*. London; J. M. Dent & Sons Ltd.

The Motorway Archive, 2009. M40. Waterstock (J8A) to Umberslade (M42 - J3A). Available from <http://motorwayarchive.ihtservices.co.uk/en/motorways/motorway-listing/m40/m40-waterstock-j8a-to-umberslade-m42-j3a/index.cfm> [ACCESSED 06-AUG-2013].

Webster, G. and Hobley, B. 1964. Aerial Reconnaissance over the Warwickshire Avon. *Archaeological Journal* 121: 1-22.

Whimster, R. 1989. *The emerging Past. Air Photography and the Buried Landscape*. Abingdon: RCHME.

Williamson, T. 2006. *The archaeology of rabbit warrens*. Princes Risborough; Shire Publications.

Wilson, D.R. 2000. *Air photo interpretation for archaeologists*. Stroud; Tempus.

Winton, H. 2012. Standards for National Mapping Programme projects. Version 0.1. English Heritage unpublished manuscript.

Harding, A.F. & Lee, G.E. 1987. Henge monuments and related sites of Great Britain: air photographic evidence and catalogue. *BAR British Series* 175 (581).

8 APPENDICES

Appendix 1 NMP Methodology

These mapping conventions are used in illustrations throughout this report unless otherwise stated. See Appendix 1 for a full explanation of the standard NMP map conventions and layouts. References to monument records in the National Record of the Historic Environment database will be made in the format (NRHE: 1234567).

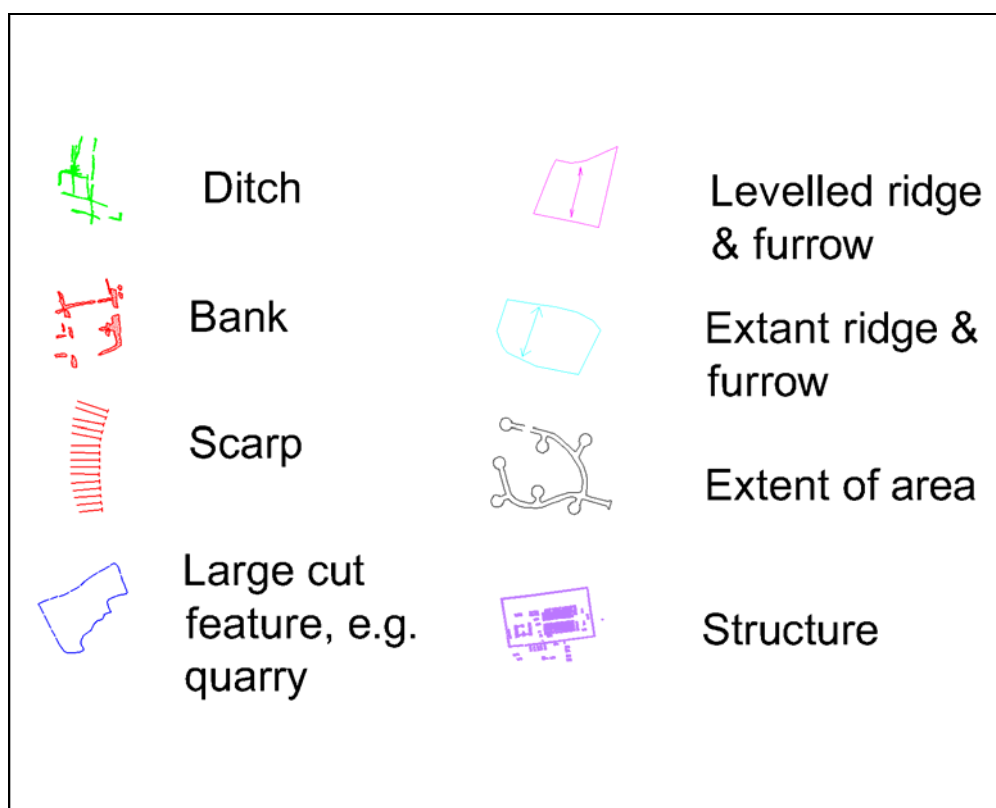


Figure 8.1 Mapping conventions used in this report

NMP Archaeological Scope

The NMP applies a systematic methodology to the interpretation and mapping of all archaeological features visible on aerial photographs. This includes recording sites visible as cropmarks and earthworks but also structures, in particular those relating to early 20th century military activities. The NMP typically records all archaeological features dating from the Neolithic up to the 20th century. The following list summarises which classes of monument are depicted and how to record them.

Earthworks, plough-levelled features and buried remains

All cropmarks and soil marks which represent sub-surface features of archaeological origin have been recorded. Some earthworks, for example field boundaries, have not been mapped where they are clearly marked on the first edition Ordnance Survey maps

unless they are associated with other mapped features. Features which have an uncertain date or which are thought to be possible geological marks have been recorded where they are associated with or may be confused with other archaeological features.

Post-medieval field boundaries

These have not been mapped, except where they are part of larger field systems and are not depicted by the Ordnance Survey. They may be mapped where they have been considered to be regionally or nationally archaeologically significant.

Military remains

Military buildings and structures from the Second World War (pre-1945) were recorded and mapped according to the form and extent of the remains. Some airfield features, i.e. runways, perimeter tracks and still extant buildings were not mapped where they are clearly visible on the Ordnance Survey maps.

Ridge and furrow

Medieval and/or post-medieval ridge and furrow was also recorded. Levelled and extant fields of ridge and furrow were depicted using different conventions and furrow directions were indicated by arrows.

Industrial archaeology

Areas of industrial archaeology have been recorded where the features can be recognised to predate 1945 and where their industrial buildings are no longer extant or not clearly marked on the first edition Ordnance Survey maps. Small local extractive sites were not mapped, except where they formed part of a significant, i.e. particularly extensive, area of extraction.

Buildings and structures

Buildings and structures were not generally mapped if first edition or later Ordnance Survey maps depict them. However, in specific contexts (e.g. industrial and military complexes, or country houses) and when in association with other features, they were sometimes mapped.

Transport

Major transport features (e.g. canals and railways) have not been mapped except where they are considered to be archaeologically significant.

Parks and gardens

Only vestigial features, not botanical features, were mapped. In urban areas only significant parks and gardens were recorded. 20th century features were not mapped.

Digital transcription

The aerial photographs were rectified using a specialist rectification software package (Aerial 5.29) with Ordnance Survey MasterMap 1:2,500 scale base mapping. A digital terrain model function was also used to compensate for steep or undulating topography. Due to the nature of some of the photographs, control points were sometimes hard to obtain and some control points were taken from soft boundaries i.e. hedges and diffuse field boundaries. However, all control points typically had an average error of less than two metres; meaning that each photograph was rectified to an average level of accuracy of less than two metres to the 1:2,500 scale base map.

Archaeological features were then traced, using standard NMP drawing conventions (see below), from rectified photographs and lidar tiles in AutoCAD Map 3D 2008. The Ordnance Survey advise their 1:2,500 scale map data has an accuracy of ± 0.4 metres for rural towns and ± 1.1 metres in all other rural areas. Therefore the archaeological features transcribed for the National Mapping Programme will on average be accurate to within two to three metres of true ground position.

Appendix 2 Sites for Natural England

NIRHE Number	Monument Summary	Scheduled	Stewardship	Comments
335266	A probably Medieval or post-medieval rectangular enclosure is likely to be the location of the lodge of the Peyto Mansion	N	Entry plus Higher Level	Long history of cultivation. Confusion as to whether it might be a Roman site. Already been damaged from gravel extraction might make the remainder of the site more significant.
1546316	A probably Medieval or Post-medieval or possibly Later Prehistoric, Iron Age or Roman square enclosure with rounded corners, defined by a single continuous ditch.	N	Entry plus Higher Level	Site under the plough and undated, though it may perhaps be related to a 16th century designed landscape.
335452	A Roman villa near Butlers Marston, Warwickshire.	N	Entry Level	It appears to be under pasture in 1945. PGA/Google photos taken in 1999 & 2007 show the field in arable.
333196	An Iron Age enclosure at Thornton Wood, Ettington.	Y	Entry Level	The site is under arable on all the aerial photographs. Also on At Risk Register (2010).
333205	A Neolithic long barrow is visible as an earthwork on aerial photographs on Long Hill, southwest of Loxley, Warwickshire.	Y	Entry Level	Site visible as earthwork, but only slightly and couldn't been seen on any other aerial photos. Possibly much reduced as field has been ploughed for decades. Height probably less than 0.6 m. Is on the At Risk Register (2010).
333220	The deserted medieval settlement of Walton Deyville, south of Walton Hall, Warwickshire.	N	Entry Level (partial)	Recent aerial photos (post 1984) show that the western part of the site may be damaged due to dump of slurry.
333233	The medieval moat and settlement of Thornton, Ettington.	Y	Entry Level	Mostly under a pastoral regime, but possibly subject to some ploughing.
333066	Enclosures which date to from the Bronze Age to Roman periods are visible as cropmarks on aerial photographs.	Y	None	Cropmark features were clearly visible on APs from 1961-1971 but no recent obliques have been taken and the features are not visible on vertical photographs. Features are on the At Risk Register (2010). The field which they are in is continually ploughed.

1547732	A possible Prehistoric pit circle is visible as cropmarks on aerial photographs north of Kingsmead Farm, Wellesbourne, Warwickshire.	N	Entry Level	Pit circles are rare. Field mostly under pasture, except when the cropmark was visible in 1982.(only visible on one set of APs though)
335344	The site of a Roman settlement at Chesterton, Warwickshire.	Y	Higher Level	Ploughed on aerial photographs and ridge and furrow has been reduced or levelled. This has revealed cropmarks of Roman features that were not originally visible as earthworks.
1529086, 1529085, 1529087, 1529089, 1529090, 1529091, 1529092	A group of cropmark features including enclosures and ring ditches located west of Heathcote Industrial Estate, Warwick	N	Entry Level	A group of enclosures within the same field. Likely to have group value. This area has potential for expansion.
337250	A probably Late Bronze Age or Early Iron Age univallate hillfort in North Newington, Oxfordshire.	Y	Entry Level	A long history of ploughing, mentioned in field visits in 1841 onwards, has reduced this site to cropmarks on the PGA photos. There were some additional internal and external features seen as both earthwork and cropmark on aerial photos.
1508135	A possibly Iron Age or Roman D-shaped enclosure is visible as cropmarks.	N	Entry Level	A D-shaped enclosure, part of a probable settlement complex (with 1508138), there are some good aerial photos of this site, but it usually only shows after the MD/PM ridge and furrow has been levelled after 1993. The cropmarks were first visible in 1990.
1508138	Possibly Later Prehistoric irregular ditched enclosures are visible as cropmarks, northeast of Warmington, Warwickshire.	N	Entry Level	See Above
1552288	A possible Bronze Age ring ditch is visible as a cropmark on aerial photographs.	N	Entry Level	Ditto
1552291	A possible Iron Age or Roman rectilinear enclosure is visible as a cropmark to the northeast of Warmington, Warwickshire.	N	Entry Level	Ditto
337097	Ilbury Camp, a univallate Iron Age hillfort, east of Nether Worton in Oxfordshire.	Y	Entry Level	This hillfort once was visible as an earthwork (as it is on the west side, however repeated ploughing over the years has seen the rampart reduced to very little height and really only visible as a cropmark

1432458	A possible Iron Age banjo enclosure is visible as cropmarks on aerial photographs.	N	None	A small area with quite a few cropmark features showing, but no medieval ridge and furrow.
334915	A Bronze Age or Iron Age irregular enclosure is located on Broadstonehill, Enstone, Oxfordshire.	N	None	A small area with quite a few cropmark features showing, but no medieval ridge and furrow.
1569118	A possible Bronze Age or Iron Age sub rectangular enclosure is located in Heythrop, West Oxfordshire.	N	None	A small area with quite a few cropmark features showing, but no medieval ridge and furrow
1501275	Possibly Later Prehistoric curvilinear, rectilinear and sub rectangular enclosures; ring ditches and linear features are located northwest of Spring Hill, Chipping Norton, Oxfordshire.	N	None	Although faint on aerial photos this could be an important cropmark complex reminiscent of Thames Valley. No overlain medieval ridge and furrow.
335146	Nadbury camp, in Ratley and Upton, Warwickshire is a probably Iron Age multivallate hillfort.	Y	Entry Level (partial)	The western half is in Entry Level. Ramparts are very denuded from ploughed.
1569885	A probably Later Prehistoric, Iron Age or Roman settlement is located in Ratley and Upton, Warwickshire.	N	Entry Level	There is a probable cross ridge dyke in the north of this field ('1569880) and a group of probably related enclosures to the south (1569846)
335048	A probably Later Prehistoric or Bronze Age or possibly Roman round barrow is visible as an earthwork.	N	Entry Level	Under cultivation.
1564883	A later prehistoric, Iron Age, Roman, medieval or post-medieval enclosure are located in Swalcliffe, Oxfordshire.	N	Entry Level	Under cultivation.
1076156	A probably Later Prehistoric or Roman extensive settlement is located in Wigginton, Oxfordshire.	N	None	Neighbouring and probably related sites 1566590, 1495843, 1495855 and 1432470 are in Entry level.
332485	A probably Later Prehistoric or Iron Age enclosure has been levelled to a cropmark and is located in Adlestrop, Gloucestershire.	N	Organic plus Higher Level	This enclosure surrounds a barrow which is scheduled (332463).
332944	The deserted medieval settlement of Broughton (Bruton), located to the east of the present village of Admington.	Y	Entry Level (partial)	The moat appears reduced by ploughing, particularly on the eastern side on aerial photographs taken in 2001 and 2006, compared to its state in 1946. The moat is not in Stewardship, yet the southern 'nebulous' earthworks are.

1570846	A section of Roman road in Epwell, Oxfordshire.	N	Entry	Appears to be improved grassland on recent aerial Google Earth photographs.
1573198	A Medieval settlement in Brailes, Warwickshire.	N	Entry	Extensive complex Med settlement, ploughed level between 2005 and 2006.
1496194	A possible Bronze Age round barrow and a conjoined curvilinear enclosure in Sibford Gower, Oxfordshire.	N	Entry	Possible barrow, enclosures, pit alignment, trackway. All under the plough on recent Google Earth photos.
335052	Madmarston hillfort, an Iron Age multivallate hillfort in Swadcliffe, Warwickshire.	Y	Entry	This hillfort has been extensively ploughed, very little of it is left visible as earthworks.
335064	Tadmarton Fort, a probably Iron Age multivallate hillfort covering an area of about five acres is in Tadmarton, Warwickshire.	Y	Entry Level (partial)	Quite well preserved, but slightly impacted by being on a golf course. Northern half and the hillfort and the banks are in entry level stewardship.

Appendix 3 Project Archive

All new monument records were created and existing ones updated or revised in the NRHE database (AMIE). All monument records within the NRHE database are given a unique identifying number and for clarity are referred to as for example, NRHE: 1234567, throughout this report. Each monument record provides a textual description of the site, as well as information on sources such as the best aerial photographs of the site and other indexed information.

Within the EHA catalogue of archive items; a Measured Drawing Record was created for the digital NMP transcription for each Ordnance Survey 1:10,000 scale quarter sheet, e.g. MD003039 (see table below). This drawing number is linked to all relevant monument records. An overall Event Record provides information on the project as a whole; for example why, when and who carried it out. This is also linked to all monument records created or amended during the project.

The official title of the project on the NRHE database is: "Gloucestershire County Council: SE Warwickshire and Cotswolds HLS Target Areas NMP". The Event Record for this project is: 1526083; the Project number is EHC01/193 and the Archive Number is AF0036.

Drawing number in EHA	1:10,000 Ordnance Survey quartersheet	Drawing number in EHA	1:10,000 Ordnance Survey quartersheet
MD003022	SP 36 SW	MD003036	SP 44 NW
MD003023	SP 36 SE	MD003037	SP 24 SW
MD003024	SP 25 NE	MD003038	SP 24 SE
MD003025	SP 35 NW	MD003039	SP 34 SW
MD003026	SP 35 NE	MD003040	SP 34 SE
MD003027	SP 45 NW	MD003041	SP 44 SW
MD003028	SP 25 SE	MD003042	SP 23 NE
MD003029	SP 35 SW	MD003043	SP 33 NW
MD003030	SP 35 SE	MD003044	SP 33 NE
MD003031	SP 45 SW	MD003045	SP 43 NW
MD003032	SP 24 NW	MD003046	SP 23 SE
MD003033	SP 24 NE	MD003047	SP 33 SW
MD003034	SP 34 NW	MD003048	SP 33 SE
MD003035	SP 34 NE	MD003049	SP 43 SW

Table 3: The EHA project drawing numbers.

All monument records created and updated were exported from AMIE as flat tables to the relevant HERs, along with all mapping produced as ESRI .shp files at the cessation of the project.

Appendix 4: Project sources

Aerial photographic sources

The main photograph sources consulted were:

English Heritage Archive Services
Engine House
Fire Fly Avenue
Swindon
SN2 2EH

Tel: 01793 414 600

archive@english-heritage.org.uk

The collection of aerial photographs viewed comprised vertical sorties from the RAF, Ordnance Survey and Meridian Airmap Ltd, taken from 1941-2006; as well as specialist oblique photography taken between the 1930s and 2007. The most recent oblique photography was taken by English Heritage's in-house aerial photographer, Damian Grady.

Monument sources

Monument information was consulted from the following:

National Record of the Historic Environment database (AMIE)

Monument records can be viewed online at: <http://www.pastscape.org.uk/>

Gloucestershire County Council Historic Environment Record

Further details can be found online at:

<http://www.gloucestershire.gov.uk/index.cfm?articleid=2277>

Warwickshire County Council Historic Environment Record

Further details can be found at online at:

<http://timetrail.warwickshire.gov.uk/>

Other sources

Historic Ordnance Survey maps were also consulted as an additional source to aid interpretation, including the first edition and current Ordnance Survey maps.

Geological information was obtained from maps produced by the British Geological Survey (BGS) and soil maps via the 'Soilscapes' website of the National Soil Resources Institute (<http://www.landis.org.uk/soilscapes/>) developed at Cranfield University.

Google Earth (<http://www.earth.google.com>) was a very useful resource, particularly the ability to compare photographs from different periods.

Books and journal articles were also referred to as well as some internet resources (see References section).

Appendix 5: NRHE statistics

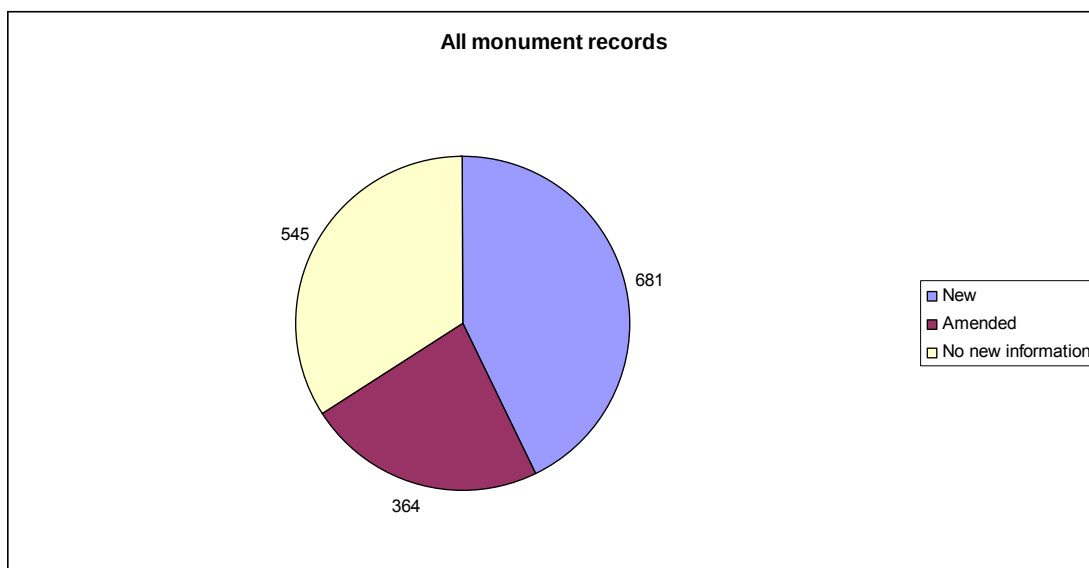


Figure 8.2 All NRHE monument records that have been amended and created as part of this project

As a result of the SE Warwickshire & Cotswolds HLS Target areas, a total of 681 new records were created in the NRHE and 364 existing records were updated or amended. Figure X shows clearly how much the record of the archaeological and historical environment was enhanced as a result of the project. There is an increase in NRHE records over the project area of 43% as there were 909 records before the project began and 1590 afterwards. This percentage increase does not take account of the number of records that were revised as a part of this project, many of which were substantially rewritten.

The nature of archaeological aerial survey, generally speaking, means that only relatively large earthworks, cropmarks and structures are recorded. Usually no new information is added to monument records which describe buildings, finds, or other archaeological structures not visible from the air. This accounts for the relatively high percentage of records where no new information was added (see Archaeological scope of the survey, Appendix 1 for further details).

Figure X shows the number of monuments recorded by period. It must be noted that most records were double-indexed with more than one period term where the date is uncertain or where the site is known to have phases that extend across more than one period. In many cases, sites do not have period-specific characteristics that are visible from aerial survey, so it is prudent to index them with as many period terms as are thought to be necessary. These statistics group prehistoric sites together, so that all Neolithic, Bronze Age and Iron Age sites will be counted once in the same category. Most of the double counting of sites is likely to be of sites that have been indexed as Iron Age/Roman or as

medieval/post-medieval. All of the ridge and furrow records, for example, have been indexed as both medieval and post-medieval.

However, the overall pattern of the distribution of sites by period is likely to be relatively accurate, even if some of the figures within the categories vary. Querying the EHA database by period only produced a discrepancy of 8.3% compared to querying it for monument totals.

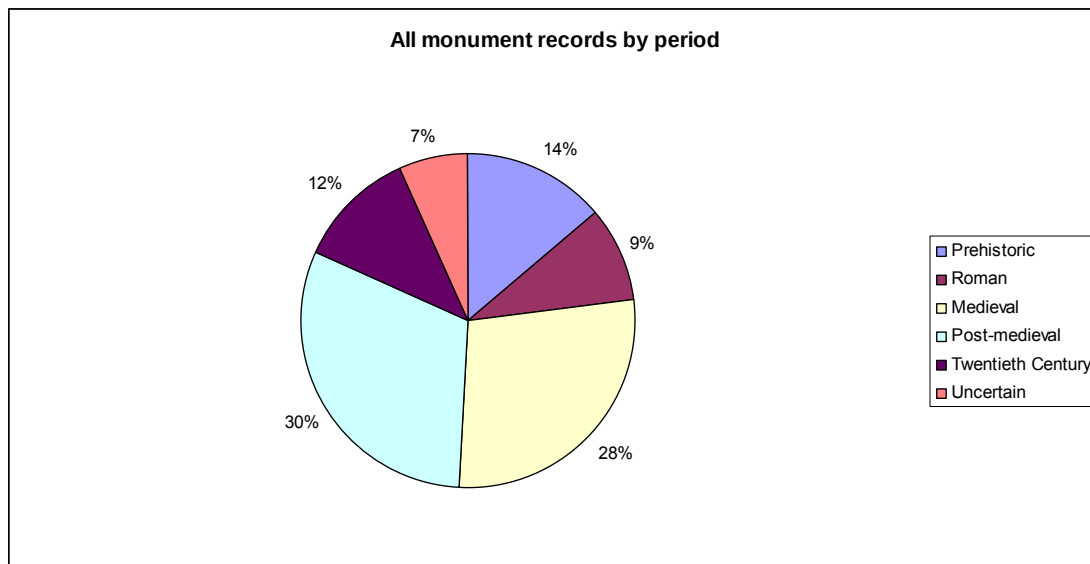


Figure 8.3 All NRHE monument records by period.

Figure 8.4 shows the percentage change to the NRHE across the project area by quartersheet. The warmer colours show the biggest changes. It seems from this analysis that the greatest percentage changes have come from areas which were least known before. In the northeastern corner of the project (SP45NW, SP35SE), a small number of 'new' medieval settlements together with several records for quarries, ridge and furrow, stack stands, hollow ways and enclosures have caused a huge change to the pattern of records of known sites. There are no towns and very few extant villages of any size in this area and very little history of investigation, so the pre-existing records were very sparse. The other area of the greatest change is the central area of the project, around SP33NW, SP33NE and SP34SW. This is the edge of the limestone plateau and a significant proportion of the new records are due to newly recorded cropmarks of enclosures and other sites.



Figure 8.4: Percentage change of NRHE monument records by quartersheet. Note the discontinuity at the top end of the scale