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The Blackdown Hills Area of Outstanding Natural Beauty & East Devon River Catchments Aerial Investigation and Mapping Survey

Cain Hegarty, Stephanie Knight & Richard Sims

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THE BLACKDOWN HILLS AREA OF OUTSTANDING NATURAL BEAUTY

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SUMMARY
This document is the final report for the Aerial Investigation and Mapping (AI&M, previously National Mapping Programme or NMP) interpretive aerial photograph survey of the Blackdown Hills Area of Outstanding Natural Beauty (AONB).

It takes the form of an illustrated report providing a review of the archaeological highlights and themes to emerge from the survey.

ACKNOWLEDGEMENTS
This survey was funded by Historic England, the public body that looks after England's historic environment. This includes the statutory protection of historic buildings and archaeological sites, development and promotion of national frameworks, policies and best practice in heritage protection. The survey was undertaken by AC Archaeology on behalf of Devon County Council.

Helen Winton, Historic England Aerial Investigation and Mapping Manager acted as Project Assurance Officer. Helen Winton and Fiona Small oversaw Quality Assurance.

Devon County Council Historic Environment Record (DCCHER) support and quality assurance was provided by Stephanie Knight. Support, training and quality assurance for the Somerset Historic Environment Record (Somerset HER) was provided by Chris Webster of the South West Heritage Trust, Taunton. We are also grateful to David Hunt for expert advice and comments regarding the Taunton Stop Line in Somerset.

The project was overseen by Bill Horner, County Archaeologist for Devon County Council, who also provided advice on interpretation and invaluable local detail. John Valentin of AC Archaeology, Chris Webster of the South West Heritage Trust, Bill Horner of Devon County Council and Linda Bennett, formerly of the Blackdown Hills AONB all kindly provided comment on early drafts of the report.

The project was primarily carried out using aerial photographs generously loaned by the Historic England (HE) Archive. The HE Archive aerial photographic loans and digital geographical data for aerial photographic coverage were administered by Luke Griffin. Recent vertical aerial photograph coverage was supplied to the survey in digital format via Aerial Photography for Great Britain, supplied to English Heritage (Historic England) by Next Perspectives.

We are also grateful to the Forestry Commission for the use of imagery derived from lidar data commissioned as part of the community history element of the Neroche Landscape Partnership Scheme.

Bluesky were commissioned to carry out additional bespoke lidar survey of two priority transects funded by Devon County Council, Somerset County Council, the Blackdown Hills AONB and East Devon AONB. Geophysical survey of sites identified by the survey was generously funded by Devon County Council and carried out by Chris Smart of the University of Exeter's Department of Archaeology.

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Historic England Archive.

DATE OF SURVEY
January 2016 – May 2018.

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1. BACKGROUND & METHODOLOGY

Background to the Survey

This survey took as its starting point the Blackdown Hills Area of Outstanding Natural Beauty (AONB) and the catchments of the rivers Axe, Culm and Otter. The AONB covers 370 square kilometres of gently sloping plateau, steeply inclined escarpment and wooded river valleys straddling the Somerset and Devon border (Figure 1). This archaeologically understudied designated landscape presented compelling research opportunities.

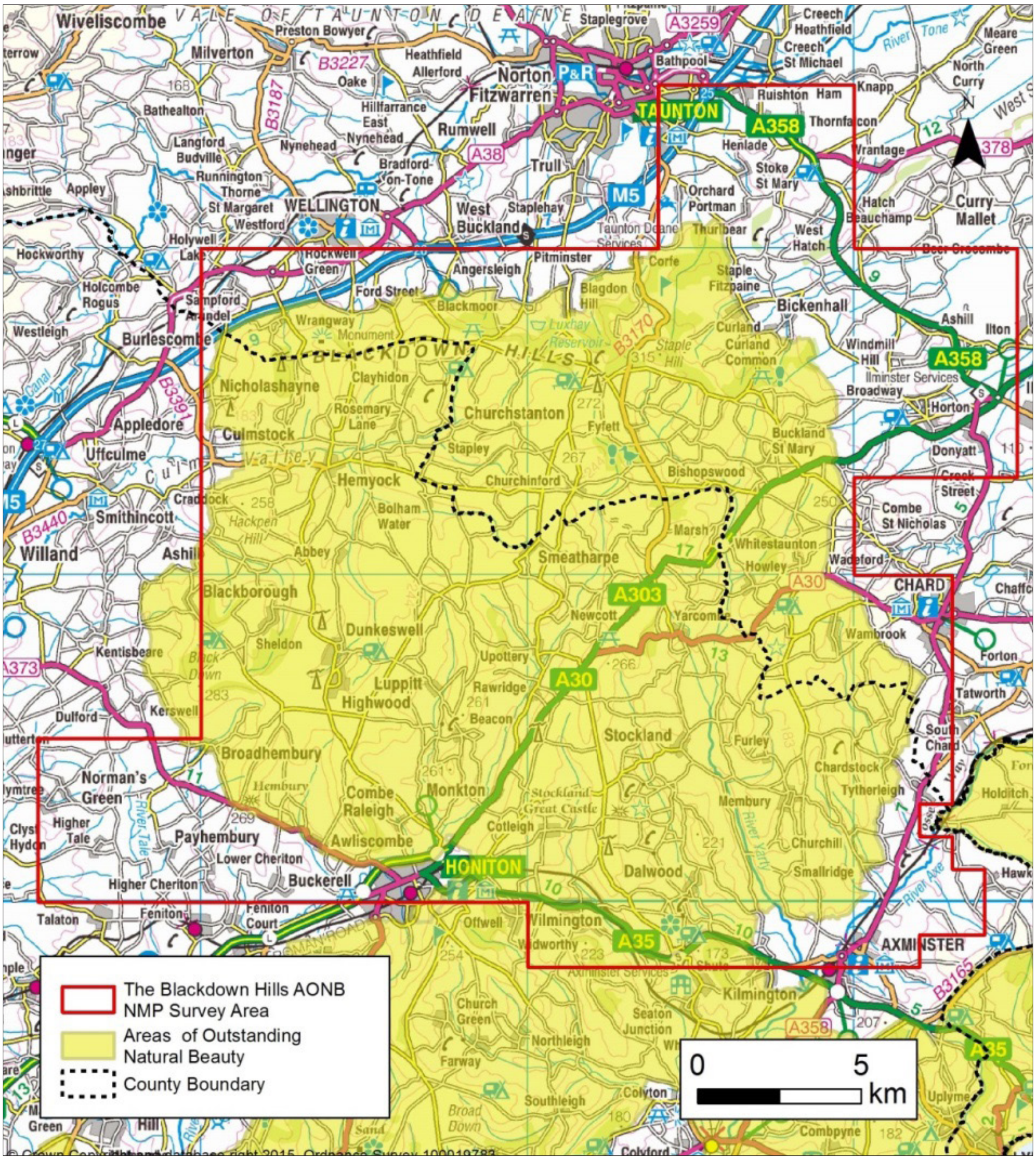


Fig 1: The Blackdown Hills AONB and AI&M survey area.

The historic environment of the AONB is vulnerable to threats arising from resource protection initiatives, notably water quality and flood risk amelioration options under Countryside Stewardship (CS) schemes and related programmes arising from the Water Frameworks Directive.

In 2014 small scale improvements to the A30/A303 were announced as part of the Government's Road Investment Strategy (RIS) 2015-2020. Widening of the A358 corridor between the A303 and M5 south east of Taunton was also proposed. The RIS 2015-2020 acknowledged that any larger works on the A30/A303 would have an impact as this major route to the South West passes directly through the heart of the AONB. Such improvement works were subsequently proposed for the Monkton area by Devon County Council (DCC). Several controversial 'route options' were presented at public consultation, each with the potential for significant impact on both natural and historic environment assets. The proposed 'route option' corridors were prioritised by the AI&M survey, with survey data subsequently informing the Environmental Assessment Report (Devon County Council 2016). The public consultation closed in September 2016 and the preferred option for the improvements around Monkton was approved by DCC in December 2016.

The survey was carried out by AC archaeology on behalf of Devon County Council Historic Environment Team (DCCHET) between January 2016 and May 2018.

2. AIMS AND OBJECTIVES

Aims

The general aim of the survey can be summarised as:
"to enhance the understanding of past human settlement, by providing primary information and synthesis for all archaeological sites and landscapes visible on aerial photographs or other airborne remote sensed data. This comprehensive synthesis of the archaeological data available on aerial photography is intended to assist research, planning, and protection of the historic environment" (Horne 2009).

The specific aims of this survey were to:

- Extend the research aims first applied by the East and Mid-Devon River Catchments AI&M survey, i.e. to define, characterise and analyse the historic environment of the catchments of the rivers Axe, Culm and Otter, thereby:

- Identify and improve the management of historic environment assets threatened by resource protection initiatives as part of CSF and EA River Basin District Management Plans in the catchments of the rivers Axe, Culm and Otter.

- Facilitate the implementation of the Blackdown Hills AONB Management Plan to define, characterise and analyse the historic environment of the under-researched landscape of the Blackdown Hills AONB. The survey also included a small area of the East Devon AONB.

- Identify and improve the management of historic environment assets potentially threatened by proposed improvements to the transport infrastructure within and immediately to the north east of the Blackdown Hills AONB.

- Identify and improve the management of historic environment assets within wooded areas of the Blackdown Hills AONB, specifically on the densely wooded scarps and plateaux, particularly those areas of plantation affected by the current round of Forest Design Plans.

- Identify and improve the management of historic environment assets under the Countryside Stewardship scheme.

- Identify and improve the inclusion of historic environment assets in Neighbourhood and Parish Plans and the Greater Exeter Strategic Plan (for Honiton and Feniton) to guide development allocations and identification of sites for positive management.

Objectives

These aims have been achieved or facilitated through meeting the following objectives:

- Digital transcription of archaeological landscape features within the survey area into a Geographic Information System (GIS) to Aerial Investigation and Mapping (AI&M) standards.

- The incorporation of the data generated by the survey into County Historic Environment Records as baseline environmental data, to inform future strategic, agri-environment and development management decisions.

- Publication and dissemination of the survey results in this Project Report and the dissemination of information based on the project results via other appropriate media, such as websites, seminars or conferences and publication.

- Provision of the project archive to Historic England for integration of the project data into the Historic England Archive.

3. SCOPE OF THE SURVEY

Methodology

The project followed current AI&M standards and methodology with minor variations arising from transcription in a GIS rather than AutoCAD based environment (Winton 2016; Hegarty 2015).

The methodology involves the systematic examination of all readily available aerial photographs and remote sensing data such as lidar (also known as Airborne Laser Scanning or ALS), to compile a synthesis of all archaeological information visible on these resources. This data was incorporated directly into the Devon and Somerset Historic Environment Records (HER) ensuring it was available for research, consideration in planning and environmental management matters and accessible by the public via Heritage Gateway, Devon County Council's Environment Viewer and the Somerset HER online. All monument record numbers referred to throughout this report can be searched via these websites. DCCHER monument numbers are prefixed MDV. Somerset HER numbers do not use a prefix within the HER but are prefixed SOM in this report to distinguish them from DCCHER monument records.

The archaeological and chronological scope of AI&M surveys is generally accepted as including archaeological sites and landscapes visible as cropmarks, earthwork banks and ditches and buildings or structures, interpreted as dating from the Neolithic period onwards, up to and including the 20th century. The most recent sites and landscapes recorded under the AI&M methodology are usually associated with the major conflicts of the 20th century, including the Cold War. The archaeological scope of the project is outlined in detail in the Project Design (Hegarty 2015) and will not be repeated here.

This project did not include a systematic field element but provides baseline historic environment data on which additional research or follow-up field investigations can be based.

Further background to the AI&M methodology and best-practice is available in the Strategy for the National Mapping Programme (Horne 2009) and the Management of Research in the Historic Environment (MoRPHE) Project Planning Note 7: Interpretation and mapping from aerial photographs and other aerial remote sensed data (Historic England 2012).

Geology, Soils and Landuse

Bedrock (formerly solid) geological information has been derived from the British Geological Survey and Environment Agency National Character Area summaries (Figure 2).

The bedrock of the survey area is varied. From west to east, the study area comprises Permian Mudstone, Siltstone and Sandstones, which gives way to mid-cretaceous Upper Greensands and occasional Gault formation on the Blackdowns

plateaux and ridges, incised through to the underlying red Triassic Mercia Mudstone by river valleys. To the east and south of the survey area, the Greensands are capped by small areas of Cenomanian or Upper Cretaceous chalk, of the same group as seen towards the coast. Jurassic Lias mudstones dominate the very eastern edge of the survey area.

Basic soil information for the project area is derived from Cranfield University's Soilscapes website (http://www.landis.org.uk/soilscapes). On the Blackdowns plateaux and ridges soil cover derives largely from clay-with-flints and Upper Greensand and is generally poor, acidic and loamy, with some areas of peat. Soil drainage characteristics are highly variable. The Jurassic mudstones of the incised valleys have largely degraded into poorly and slowly draining, but more fertile brown

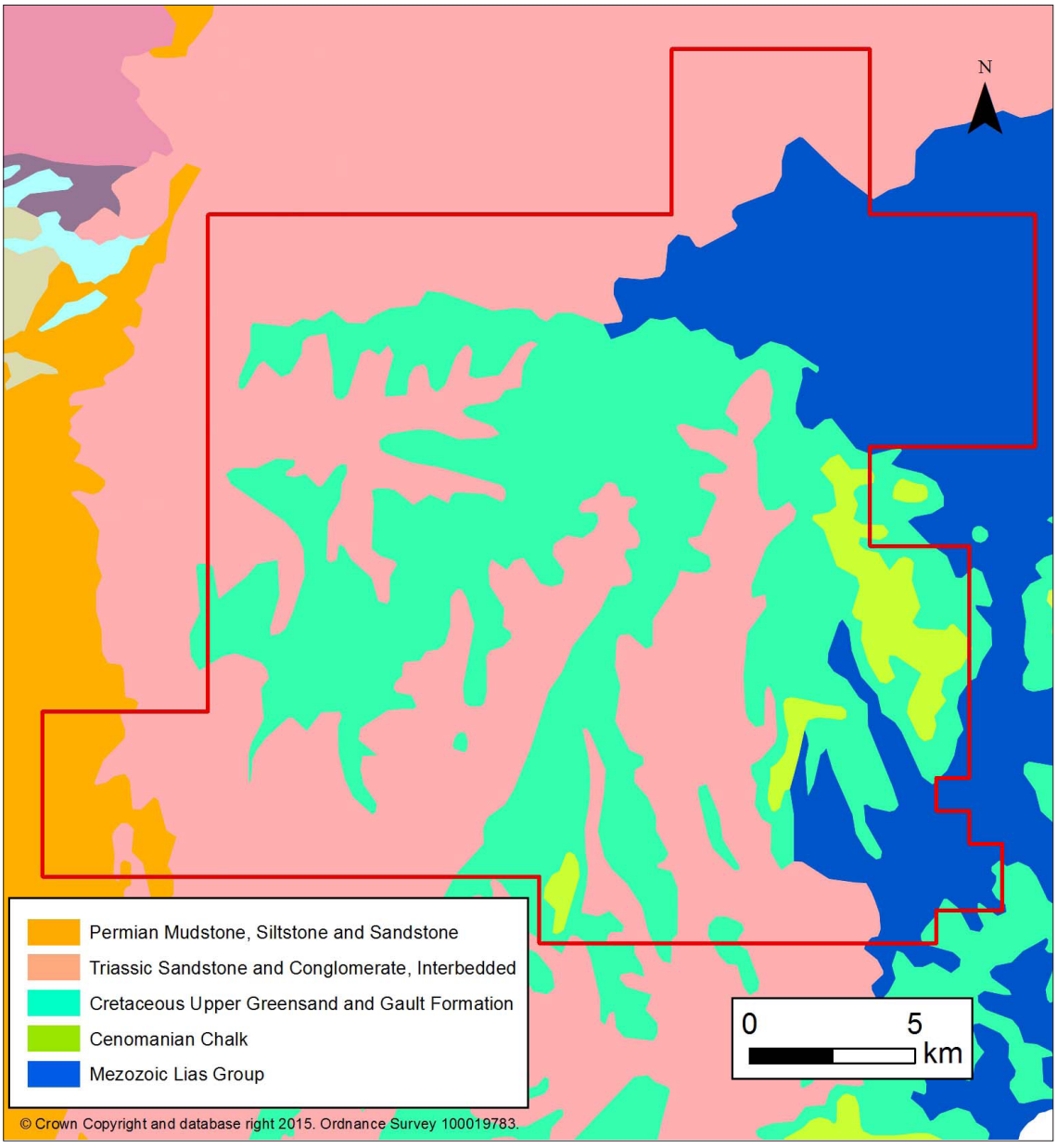


Fig 2: The simplified geology of the survey area. © British Geological Survey.

earth and brown clay soils, with the most fertile soils being found to the south, east and north east. Land cover varies from a few remaining areas of unenclosed and unimproved land dominated by grass and heather moorland vegetation to grassland, woodland and arable, with land-use predominantly characterised by livestock grazing (Natural England 2014, 25).

Consequently, the project area is dominated by Grade 3 and Grade 4 agricultural land (Natural England 2014: see Figure 3). The soil and land-use conditions have played a major role in the character and form of archaeological monuments identified from aerial reconnaissance and historic aerial photography. Most significantly, the poor soils and low-intensity pastoral economy have resulted in good survival of earthworks associated with, and derived from, the essentially medieval and post-medieval agricultural landscape, obscuring evidence of preceding periods. This

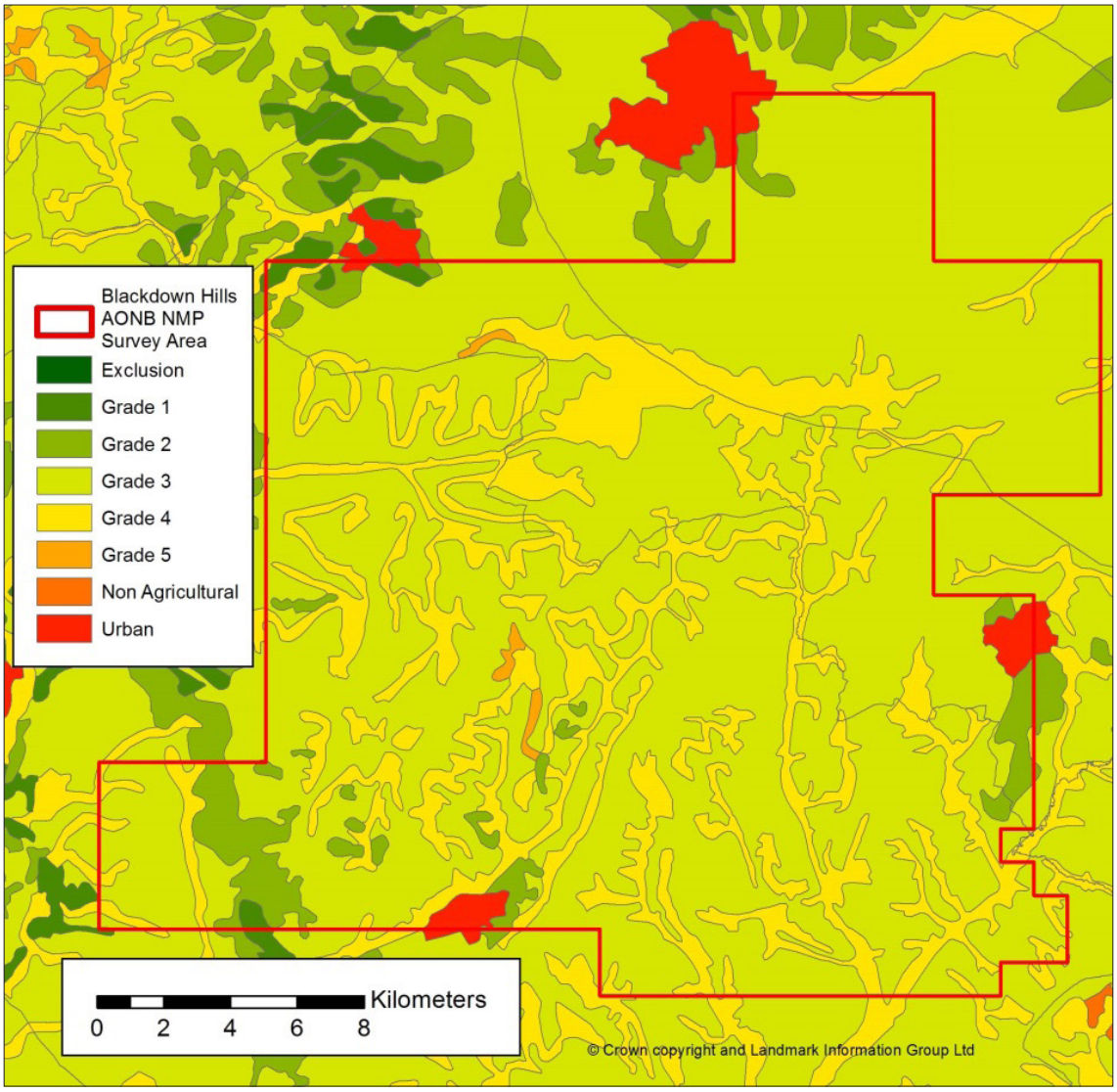


Fig 3: Agricultural Land Classification (ALC) within the survey area. Assessment criteria used for the classification of agricultural land includes climate (temperature, rainfall, aspect, exposure, frost risk), site (gradient, micro-relief, flood risk) and soil (depth, structure, texture, chemicals, stoniness). Grade one is the best quality with grade five being the poorest.

is a significant factor in the low number of prehistoric monuments recorded from cropmark evidence (see Section 4).

Topography and Landscape Character

The project area falls almost completely within National Character Area (NCA) 147: Blackdowns (see Figure 4) but extends a short way to the north into NCA 143 Mid Somerset Hills and NCA 146, Vale of Taunton and Quantock Fringes, east into NCA 140, Yeovil Scarplands and west into NCA 148, Devon Redlands. NCA 147 extends towards the coast beyond the southern limit of the survey area. The following information is taken largely from the Natural England leaflet, NCA 147: Blackdowns Key Facts & Data V1.0. The most relevant aspects of this are summarised below.

The landscape of this area is dominated by a marked north to south trend of rivers, valleys and ridges, a product of its geology. Varying in width, the ridges are the source of three main rivers on the Blackdown Hills, the Yarty, Culm and Otter, plus smaller tributaries including those that feed the River Axe which rises in the neighbouring Yeovil Scarplands NCA. The flat-topped and steeply-sided ridges provide the landscape setting for much of the AONB and its environs, with a steep scarp dropping to the north.

The open moors and regular enclosure landscapes that dominate the ridges or plateaux engender a sense of openness, whilst the ridge and scarp slopes are dominated by woodland. Most is broadleaved of semi-natural origin, with a significant proportion being ancient semi-natural origin or planted ancient woodland. The densely wooded appearance is further enhanced by shelterbelts and avenues, and coniferous and deciduous plantations of beech, oak and pine, some of which extend onto the plateaux, willow-dominated carr woodland on valley spring lines, and hedgerow trees and copses (Natural England 2014, 24).

The Blackdowns NCA is largely rural in character. Chard, Axminster and Honiton are the only settlements of any size in the survey area. The wealth and expansion of Axminster and Honiton derived from the carpet, cloth and lace industries respectively and both were substantially rebuilt in the 18th and 19th centuries. Beyond NCA 147, where the survey area extends north into NCAs 143 and 146 it encompasses the south eastedge of Taunton where the A358 road meets the M5 motorway. On the Blackdown Hills the settlement pattern is divided between the high ridges and the valleys. On the former the dispersed settlement pattern is dominated by farmsteads arising from 19th century enclosure. In the valleys, farmsteads and hamlets follow the spring lines, nestled within a more irregular historic field pattern, with larger villages sited closer to the rivers. Historic settlements are characterised by buildings of local sandstone, chert and cob, roofed with thatch, tile or slate. The use of cob as a building material is probably reflected in the number of extractive pits recorded by the survey (see Section 5: Industrial, Extractive).

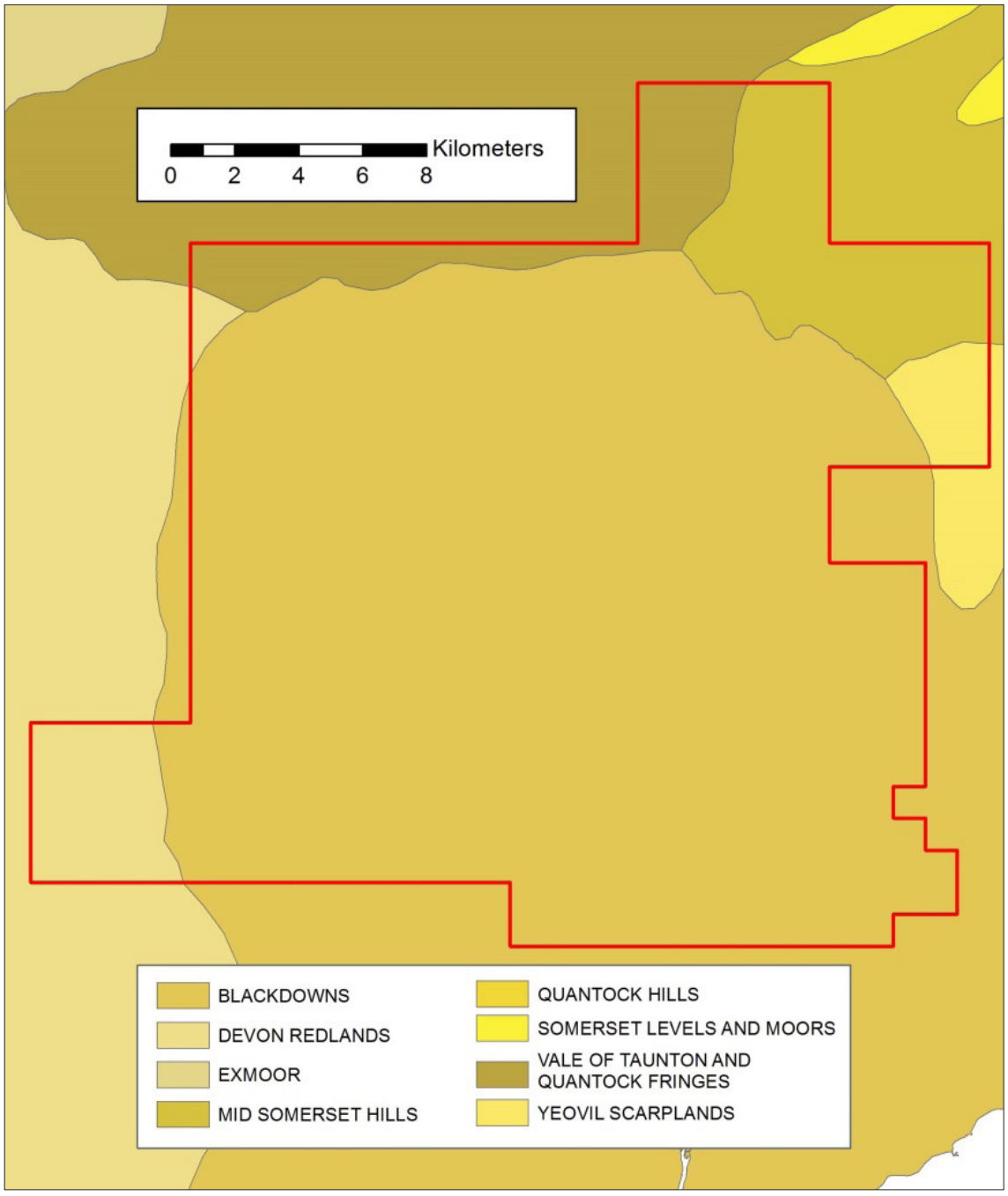


Fig 4: National Character Areas that fall within the Blackdown Hills survey area.

Few major roads cross the NCA, the main exceptions being the A30/A303 that runs south west to north east through the AONB and NCA, and the A35 which runs south east to Dorset. The M5 motorway passes to the north of the NCA and through the north west edge of the survey area. The creation of the motorway would certainly have disrupted historic field pattern, as will forthcoming improvement works to the A30/A303 and A358, albeit to a lesser degree.

Historic Landscape Character

Historic Landscape Characterisation (HLC) has been carried out for both Devon and Somerset. Differing methodologies were used in each county, making direct comparisons and analyses using this data difficult. Nonetheless, the results can be summarised as follows.

The HLC mapping for Devon has recorded the survey area as comprising a heavily intermixed pattern of 29 landscape elements. The HLC mapping for the Somerset component of the survey area has recorded the landscape as comprising a heavily intermixed pattern of 54 landscape elements. Thirty-nine of these were subdivisions of anciently and recently enclosed land based on field size and percentages of boundary loss since 1905.

Despite the different methods used, broadly similar patterns can be identified. In both characterisations, enclosure based on medieval and post-medieval field patterns are the most dominant landscape elements, accounting for over 78% of landscape elements in both counties. Forestry, including ancient woodland and modern coniferous plantations, made up approximately 8% of the landscape. In both counties land parcels of current or former military use totalled less than 1.5%. The Somerset HLC did not distinguish current or former orchards from other types of woodland but in Devon orchards accounted for 2.5%. Recent AI&M surveys in Devon might indicate that the influence of former orchards on the landscape is underrepresented by HLC in both Devon and west Somerset (Hegarty, Knight and Sims, 2016; see Section 5, Farming, Forestry).

4. THE SURVEY RESULTS: OVERVIEW

Quantification

In total, 4374 monument records were created by the project and 678 amendments were made to existing records. Prior to the survey 6967 monuments were recorded in the project area; approximately 10% of these have therefore been enhanced by the survey. The total number of monuments has been increased by over 60% and records with an AI&M input now comprise 45% of the total. Nearly 70% of all records with an AI&M input are in the DCCHER, and 31% are in the Somerset HER.

Sources

Of the 134 different sources (sorties or digital datasets) used for transcription, lidar was by far the most frequently used at nearly 60% (Table 1). The second most commonly used broad category of source was the hard copy RAF aerial photographs at just over a quarter of all transcriptions. This is unsurprising given the presence of Second World War airfields and military remains associated with the Taunton Stop Line, as well as the relatively early date of most of these photographs, predating the intensification of agricultural practice in the second part of the 20th century and consequent levelling of earthwork remains.

Table 1: General category of source used for transcription

Broad source category	Proportion of transcriptions
LIDAR	59%
RAF	27%
OS	6%
Next Perspectives	4%
EARTH.GOOGLE.COM	2%
US	1%
NMR	<1%
GetMapping	<1%
SOM	<1%
HSL	<1%
DAP	<1%
DCC	<1%
BKS	<1%
MAL	<1%
CAP	<1%
AFL	<1%
Geonex	<1%

Of the lidar imagery used, the DTM visualisations proved to be more useful than DSM visualisations (Table 2), which may be expected given the wooded nature of many parts of this landscape and the good preservation of many earthwork features (see below). Whilst the Environment Agency lidar dominated, bespoke lidar survey of two priority transects, commissioned from Bluesky, proved its worth despite the more restricted extent of the survey. The higher resolution of the Bluesky dataset is reflected in the number of resulting transcriptions, at over a fifth of the total. Despite a focus on the northern scarp, plus limitations in quality and flexibility, the Neroche Landscape Partnership Scheme (NLPS) lidar visualisations proved a valuable source in some areas.

Table 2: Sources most frequently used for transcription (top 25)

Source	Proportion of transcriptions
LIDAR Environment Agency DTM	32.8%
LIDAR Bluesky DTM	21.2%
RAF/CPE/UK/1974 11-APR-1947	12.9%
RAF/CPE/UK/2491 11-MAR-1948	5.5%
LIDAR Neroche Landscape Partnership Scheme DTM	3.0%
LIDAR Environment Agency DSM	2.1%
RAF/CPE/UK/2431 22-JAN-1948	1.2%
RAF/39/3829 11-NOV-1971	1.1%
OS/82218 28-AUG-1982	1.0%
Next Perspectives Elevation 08-SEP-2014	1.0%
RAF/39/3800 06-OCT-1971	1.0%
RAF/39/3821 29-OCT-1971	0.9%
RAF/CPE/UK/1975 11-APR-1947	0.8%
RAF/CPE/UK/1823 04-NOV-1946	0.8%
Next Perspectives Imagery 08-SEP-2014	0.8%
OS/82219 03-SEP-1982	0.8%
OS/00973 19-MAR-2000	0.7%
Next Perspectives Imagery 23-MAY-2010	0.7%
OS/96570 08-MAY-1996	0.7%
RAF/541/534 30-MAY-1950	0.6%
Next Perspectives Imagery 04-MAY-2010	0.6%
EARTH.GOOGLE.COM XX-XXX-2002	0.5%
US/7GR/LOC390 13-AUG-1944	0.5%

Of the hard copy aerial photographs, several sorties were particularly productive despite relatively small numbers of frames, including the RAF 1971 sorties which were particularly clear. More predictably, the sortie with the greatest number of frames (RAF/CPE/UK/1974 11-APR-1947) had been used for a large number

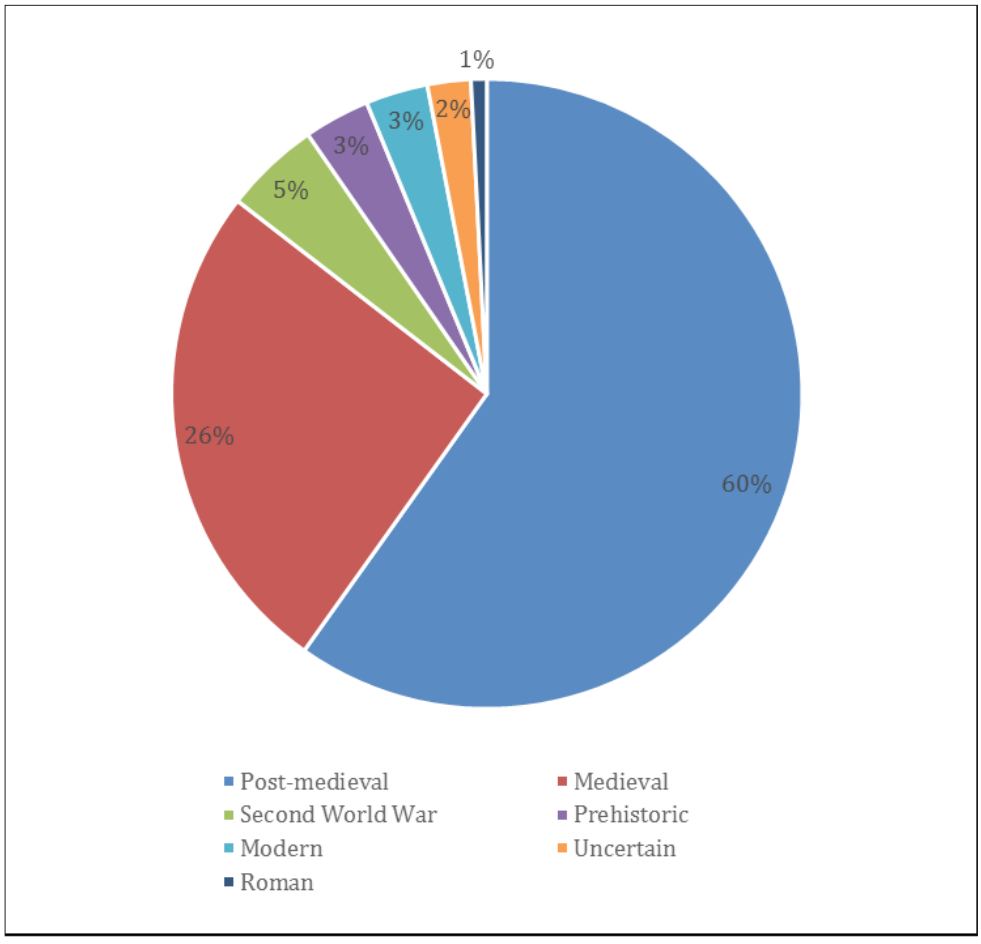
(almost 1000) of transcriptions. However, in relative terms, the 1948 sorties were used more frequently than those flown in 1946 or 1947, with 3.7 to 5 transcriptions per frame. This could be because they were often exceptionally clear with good contrast.

Period

The majority of monuments recorded during the survey were assigned a probable post-medieval origin (Chart 1), reflecting the dominance of remains of agricultural and industrial character (see Table 3 below). Monuments interpreted as of probable medieval origin, roughly a quarter of the total, include a large proportion of the field boundaries identified during the survey, reflecting the character of much of the extant field pattern.

Remains of Second World War date were relatively common, consisting of nearly 5% of all records; a clear focus is notable along the Taunton Stop Line (see Figure 36). Many records of modern date are again agricultural or industrial in character. Features interpreted as prehistoric in date comprised only 3% of monuments recorded, and those interpreted as Roman less than 1%.

Chart 1: Proportion of monuments by period, derived from 'date from'



Survival

An extremely high proportion (90%) of the features recorded during the survey were visible on the aerial imagery as earthworks and only circa 8% of these could be confidently described as now levelled. This ties in well with the perception of the Blackdown Hills AONB as a well-preserved historic landscape, less impacted by intensive agriculture than many other parts of Devon and Somerset.

Fewer than 7% of monuments were visible only as cropmarks, parch marks or soil marks and only one was recorded as a destroyed monument.

A small number of features were recorded as structures or buildings (just over 3%). Where further definition was possible, a roughly equal proportion had been recorded as extant and demolished.

In common with the adjacent East and Mid Devon Rivers survey project (Hegarty, Knight & Sims 2016, 18), orchard banks, one of the most frequently observed monument types, were seldom noted as cropmarks (1%) but 21% were recorded as levelled earthworks (21%). This was attributed to many remaining in use, or at least extant, into the 1940s with a period of deliberate grubbing out and levelling in the second part of the 20th century. This pattern was even more pronounced with catch meadows, a type of water meadow popular in the 19th century, characterised by narrow water channels or gutters following the contours of valley slopes, with 27% recorded as levelled earthworks.

Of those not recorded as earthworks, field boundaries were most frequently recorded as cropmarks (13%), with only 6% as levelled earthworks. This perhaps reflects the post-medieval removal of medieval boundaries.

In contrast, 94% of extractive pits were recorded as earthworks, although the considerable scale of many of these features may have precluded complete levelling after disuse, instead encouraging alternative uses (see Section 5, Orchards other Woodland and Landscape Character, and Industrial, Extractive).

Monument types

By far the most frequently observed monument type was the small-scale extractive pit, comprising over a third of all monuments recorded during the project (Table 3). A fifth of all monuments were recorded as former field boundaries. Third and fourth most numerous are orchard banks (13%) and catch meadows / water meadows (at 3-4%); the latter comprise a much lower proportion of the total than in the adjacent East and Mid Devon Rivers survey area, and are much less prevalent than on the neighbouring uplands of Exmoor.

All other monument types make up a small proportion of the total at around or below 1%. Enclosures, pillboxes and barrows stand out amongst more everyday features.

Table 3: Top 25 monument types

Monument type	Proportion of monument type
Extractive Pit	33.9%
Field Boundary	19.6%
Orchard	13.1%
Catch Meadow	3.1%
Marl Pit	1.6%
Natural Feature	1.2%
Trackway	1.2%
Clay Pit	1.2%
Gravel Pit	1.0%
Enclosure	1.0%
Pillbox	1.0%
Quarry	0.8%
Narrow Ridge and Furrow	0.8%
Barrow	0.7%
Field System	0.7%
Building Platform	0.6%
Water Meadow	0.6%
Chalk Pit	0.6%

Several earthworks tentatively interpreted as extractive features during the early phase of the project were later reinterpreted as having resulted from natural slumping processes, partly accounting for the 1.2% monuments recorded or double-indexed as natural features.

Themes

All recorded monument types were grouped into broad themes that reflect the character of features observed during the survey. The themes are adapted from the monument classes that forms the basis of HER monument recording. Roughly equal proportions of extractive and agricultural features were recorded, and between them they make up over 80% of the survey total.

Much smaller proportions were recorded in other categories (Table 4), the most numerous of which are sites interpreted as military or defensive at 5%, and those broadly defined as evidence of settlement at 4%. Smaller numbers of monuments relating to transport, religion or ritual, water management, recreation and communications were observed. The themes are summarised in greater detail in Section 5.

Table 4: General categories of monument type, rounded to nearest whole number

Theme	Proportion of monument types
Industrial, Extractive	42%
Farming, Forestry	40%
Military, Defence	5%
Settlement	4%
Uncertain and Non-Archaeological	3%
Transport	2%
Religious, Ceremonial, Funerary	2%
Water Management	2%
Recreation	1%
Communications	1%

5. THE SURVEY RESULTS: THEMATIC SUMMARY

Introduction to the Results

This section takes a thematic approach to summarise the survey results. The themes are adapted from the Forum on Information Standards in Heritage (FISH) monument classes. These classes are used to group thematically linked monument types in the monument thesaurus that forms the basis of most HER monument recording.

This structure provides a logical format to the report, makes a direct link to the data as recorded by the survey, whilst also providing a representative and rounded overview of the survey results.

The sequence in which the themes are summarised reflects, in ascending order, the proportion of the total number of monuments recorded by the survey under each theme (the percentage of the survey total indicated at each sub-heading).

This sequence does not necessarily reflect the archaeological significance of sites recorded under each theme, as individual monuments of significance have been recorded under most themes. Important links and connections are also made between many of the themes.

The thematic sequence does, however, reflect the degree to which the features recorded under each theme might have cumulatively influenced the landscape character of the Blackdown Hills.

However, the summary begins with a theme which, at circa 1% of the total, is probably of interest largely in relation to other themes; monuments relating to recreational activity.

Recreation (1%)

Fewer than 70 monument records were created or amended for features that can be described as recreational in character. Of these, over 60, or 90%, were related to parks, gardens or designed landscapes, closely associated with the broader theme of parkland discussed in Section 5: Settlement.

The remainder consisted of records associated with modern sporting activities. However, the variation in setting may be worthy of illustration.

For instance, at the Second World War airfield at Dunkeswell a baseball diamond was recorded as a transient cropmark, part of the temporary dispersed accommodation site for the use of US troops stationed there from 1943 (Figure 5; MDV45094; see Section 5: Military, Defence).

Less distinctive was a square platform, visible on aerial photographs of 1947 onwards, terraced into the steep, south west facing slopes west of Ten Acre Copse,

Stoke St Mary (Figure 5). The earthwork, and small structure associated with it, correspond with a tennis lawn and pavilion depicted on the Ordnance Survey 25inch First Edition map of 1888 (SOM44360), probably associated with Stoke House to the north (SOM40841).

Statistically insignificant, these sites nonetheless illustrate the value ascribed to sport for recreation and relaxation, in sometimes unlikely contexts; the former raise morale in wartime, the latter an expression of wealth and status imposed onto an impractical landscape setting.

Fig 5: Left: Baseball diamond visible as cropmarks at a Second World War camp for Dunkeswell airfield (MDV45094). RAF/CPE/UK/1974 RS 429711-APR-1947, Historic England (RAF Photography); Right: 19th century tennis lawn terraced into the valley slope, Stoke St Mary (Devon County Council DAP/WI 7 27-JUN-1994 © Devon County Council).

Religious, Ceremonial, Funerary (2%)

Neolithic

Arguably the most significant monuments recorded under this theme, and possibly of the wider survey, are those interpreted as potentially of Neolithic date. Cropmarks of an elongated rectilinear ditched enclosure with rounded corners, approximately 50 by 8 metres in size, were visible on aerial photographs of 1989 near Luton village, Broadhembury, located at the confluence of the River Tale and a stream from the east (MDV118372; Figure 6). The cropmarks resemble those of a levelled pillow mounds, a type of earthwork associated with rabbit warrens. Similarly proportioned, if smaller pillow mounds surviving as earthworks are recorded at warrens on Dartmoor, such as Ditsworthy (e.g. MDV55428-9) and were identified by the survey in Somerset at Hawk's Moor, Otterford (SOM29887; see below). A mound of comparable length

and even greater width was also newly identified at Trickey Warren Churchstanton (SOM37064; see below). However, the setting of the Broadhembury site, within the strip fields of a lowland hamlet, is not typical of a Warren, which were characteristically located either in parkland settings or on marginal land such as unenclosed wastes or commons, with later, larger commercial activity focusing on marginal forest landscapes, such as Dartmoor (Williamson 2007). The association of rabbit warrens with deer parks is discussed below in Section 5: Settlement.

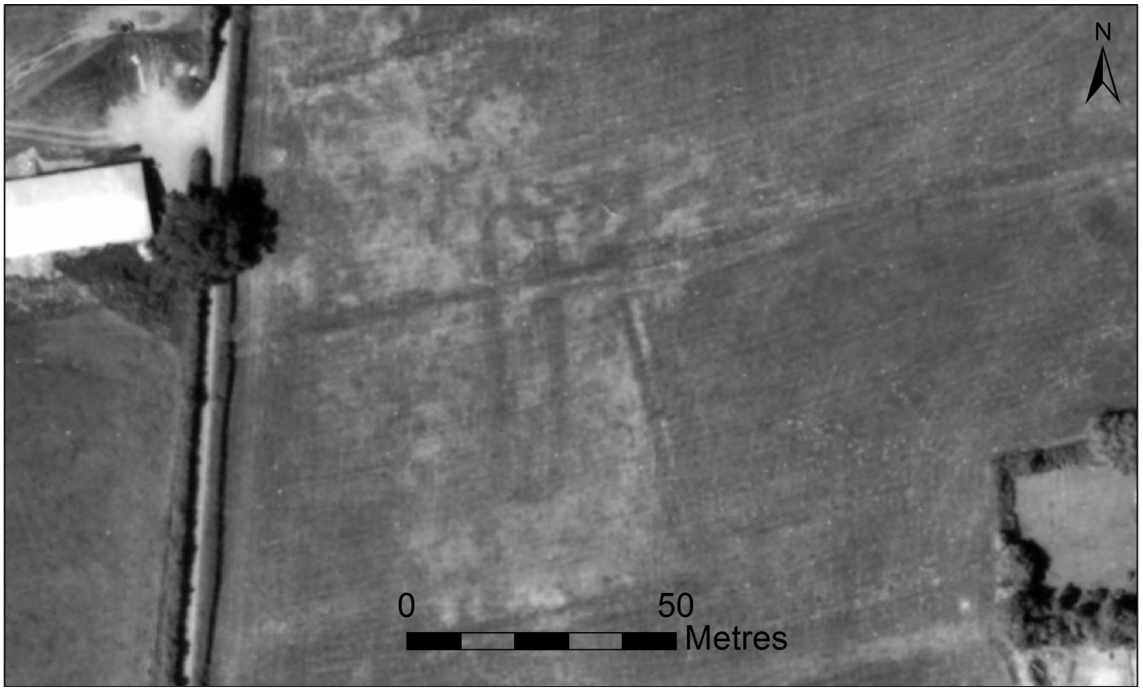


Fig 6: Cropmarks of a ditch enclosing a possible levelled long barrow or mortuary enclosure of Neolithic date near Luton village, Broadhembury (MDV118372). OS/89276 V 325 14-JUL-1989 © Crown copyright. Ordnance Survey.

The enclosure is interpreted as evidence of a levelled ceremonial or funerary monument of Neolithic date, possibly a long barrow or mortuary. Eight comparable sites are recorded in Devon and five in Somerset. The visible cropmark is closely comparable, both in morphology and setting, to an example at Broadnymett, North Tawton, (MDV17627). It is also similar to a site near Nether Exe Barton (MDV57143). Other possible examples in Devon are significantly longer (e.g. MDV111027) whilst in Somerset they tend to be broader at circa 20 to 25 metres wide (e.g. SOM12040; SOM28392; SOM54823). Finds of a Neolithic polished axe (MDV1448) and a worked flint scatter (MDV29593) are recorded within circa 1 of the Broadhembury site, but the significance of these finds is debateable; they may place the cropmark within a Neolithic landscape but more work is required to contextualise this monument.

The characteristic interrupted ditches of a Neolithic causewayed enclosure had been identified at the southern tip of the multivallate earthworks of Hembury Fort during

excavations in the early 20th century (MDV112692: Liddell 1935). The Hembury causewayed enclosure is one of four known in Devon.

A search of Historic England's Pastscape returned 127 records that feature 'causewayed enclosure' as an index term, although this total includes a number of tentatively identified and unlikely candidates (accessed 30/07/2018). Oswald et al (2001) list 66 nationally. The true count is likely to fall between the two, but causewayed enclosures remain a rare monument type nationally.

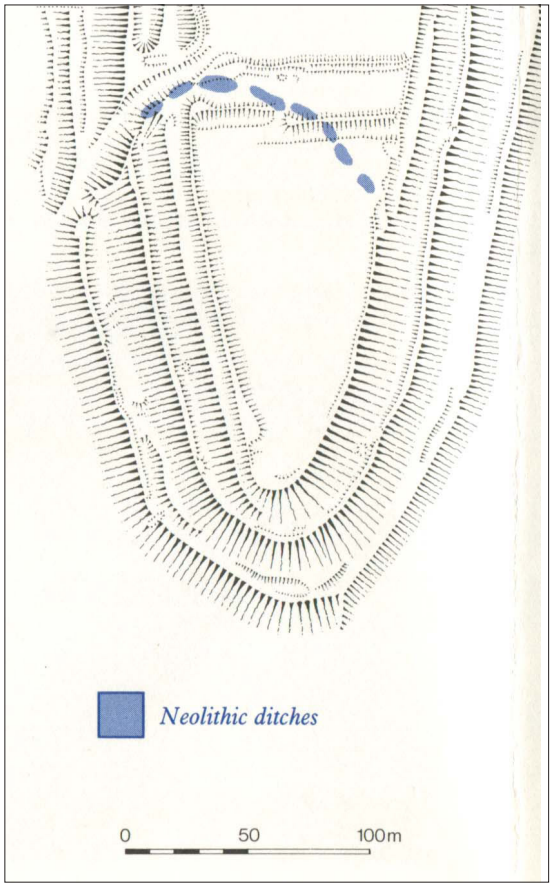
It is likely that these monuments had complex functions that evolved over time, and as Oswald, Dyer and Barber state, "While evidence [for function] is not plentiful, theories based upon it can be diametrically opposed" (131-132). However, the available evidence does support the interpretation that a ceremonial or symbolic role was probably integral to their function (ibid., 120-132).

At Hembury the interrupted ditches previously identified by excavation were not recorded during the AI&M survey. Approximately 50m to the south, however, a broad but shallow curvilinear ditch was noted as an earthwork on images derived from lidar data (Figure 7). Although not precisely on the same alignment, and more continuous in form than the previously identified interrupted ditches, this subtle earthwork ditch is interpreted as possible evidence of central or internal components of the causewayed enclosure complex.

A report summarising the results of recent geophysical work undertaken at Hembury in 2015 and 2016 as part of a new survey of the site reveals the survival of two previously unrecorded sub-surface parallel ditches approximately 30 and 40 metres south of the previously excavated interrupted ditches (Figure 8; Wilkes and Griffith 2016, anomalies H and Y).

The appearance of the 'new' ditch on the lidar data coincides with the northernmost of those identified in the geophysical work. The scale of the feature as shown by the lidar, and indeed on the ground is broader than the ditch shown by magnetometry, which may be due to ground conditions at the time of the survey, or to the existence of a change in relief of the natural ground surface which the ditch follows (FM Griffith pers. comm.). It may be that this will be further elucidated by additional geophysical survey, proposed now that vegetation clearance of this part of the monument is complete.

However, neither geophysical or aerial survey methods can determine the phasing of sub-surface features. It is possible that the inner ditches may belong to an entirely separate phase of activity. A similar inner ditch identified within the causewayed enclosure at Dallington, Northamptonshire, has been interpreted as a possible henge enclosure of Late Neolithic date and might provide a parallel for the inner features at Hembury causewayed enclosure (Oswald, Dyer and Barber 2001, 135 and Figure 3.4.).



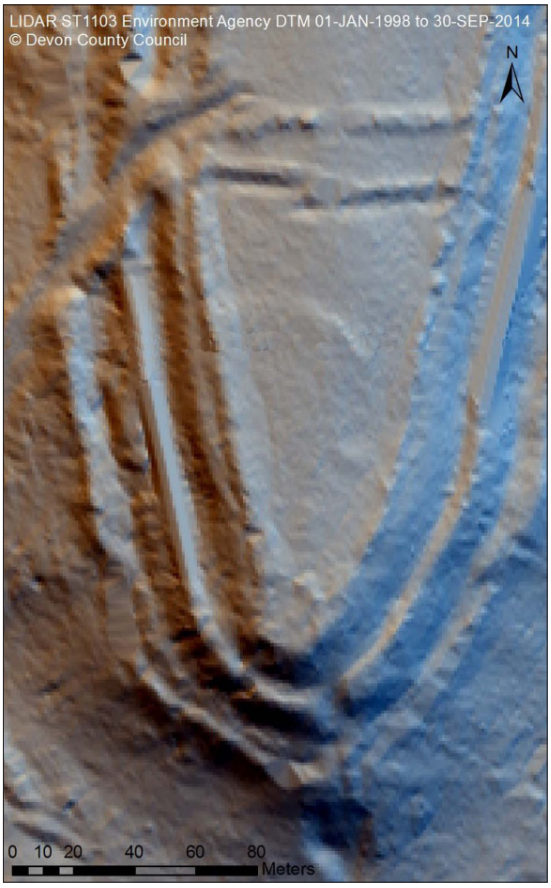


Fig 7: Left: Location of the Neolithic causewayed enclosure ditches at Hembury Hillfort (MDV112692). © Devon Archaeological Society. Right: Lidar-derived hillshade image illustrating shallow curvilinear ditch within the circuit of the causewayed enclosure. Note the linear parallel hollows on the south west tip of the hillfort ramparts, earthwork evidence of whetstone mining of modern date. LIDAR ST1102 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

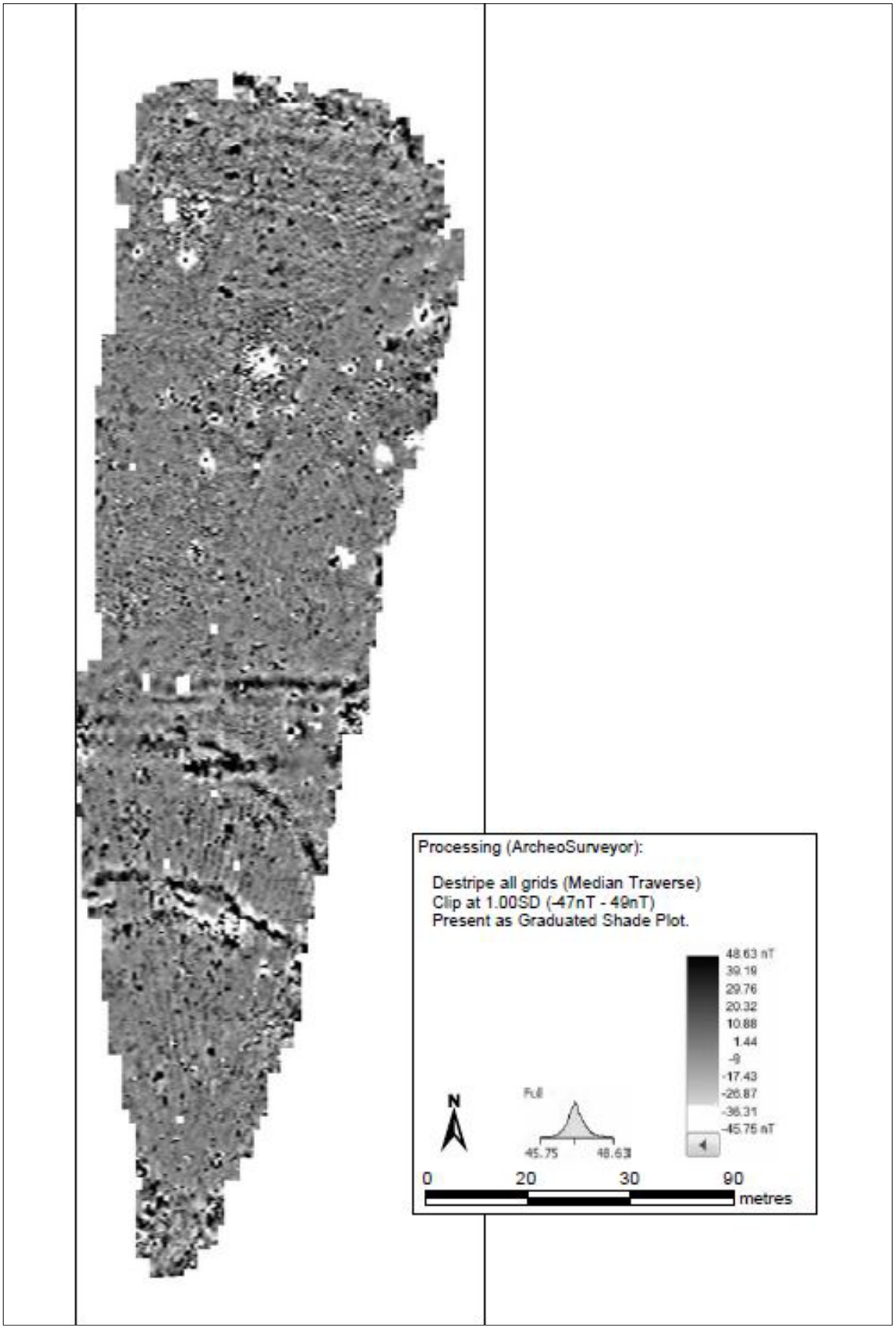


Fig 8: Geophysical survey plot of Hembury Fort, reproduced from Griffith and Wilkes, 2016. Note the almost parallel ditches of the causewayed enclosure.

Bronze Age

Eighty-two monument records for barrows or monuments of related type (Round Barrow, Bowl Barrow, Bell Barrow) were created or amended by the survey, accounting for just over 1% of the total count.

Round barrows are often seen as the archetypal Bronze Age monument type.

The earliest recorded round barrows are in fact contemporary with the linear monuments of the Early to Middle Neolithic (Grinsell 1979, 10-11; Woodward 2000, 36). The construction of larger round barrows from the later Neolithic may have represented a shift from communal to more individualistic ways of life and death (Smith and Brickley 2009, 138), although this interpretation has been much debated.

Some monuments have been interpreted as memorials with no burial evidence, whilst others seem to have been intended for the successive internment of multiple individuals, perhaps over several generations, possibly expressing levels of individuality and personal wealth or status through grave goods within a wider framework of communal monumentality (Woodward 2000, 23-28, 36-7; Smith and Brickley 2009, 138).

Most of the examples excavated under modern conditions in Devon and Somerset are dated to the Beaker period and Early Bronze Age (Griffith and Quinnell 1999). However, Middle Bronze Age reuse of Early Bronze Age round barrows is well known, as demonstrated for instance at Beacon Hill, Mendip (Leach 2013) and the creation of smaller barrows also continued into this period; in Devon some examples are known to extend to the Middle/Late Bronze Age (Griffith and Quinnell 1999). Typically, South Western barrows range in size from 3 to 30 metres in diameter, with or without evidence for outer banks and ditches.

The known distribution of barrows in Devon and Somerset, including Dartmoor and Exmoor, was greatly enhanced in the later 20th century by Grinsell (1969, 1970, 1971, 1978 and 1983). From 1989 aerial survey extended the known distribution of probable round barrows into lowland areas of both counties, where previously no barrows were thought to exist, largely through the identification of ring ditches as cropmarks, complementing the previously recorded round barrow distribution (Quinnell 1988; Horner and Griffith 1996; Griffith and Quinnell 1999).

Excluding the uplands of Dartmoor and Exmoor, approximately 1000 barrows of probable Bronze Age date are currently recorded on the DCCHER; (1326 if ring ditches are included). As many as 550 barrows of Bronze Age date were recorded in Somerset in 2007 (Webster and Mayberry), with at least 730 round barrow variants currently recorded on the Somerset HER. Almost 150 ring ditches, potentially evidence of round barrows, are also recorded.

However, this resource remains poorly understood in the South-West. By the end of the 20th century few barrows had been excavated under modern conditions and only 25 had been securely dated, concentrated in the early Bronze Age, with limited

evidence towards monuments of late second millennium date (Grinsell 1987; Griffith and Quinnell 1999).

Recent research at the previously known barrow on Beacon Hill, Mendip, has provided an exceptional sequence, radiocarbon dating placing the construction of the barrow in the Early Bronze Age, and a cremation urn dating a secondary cremation burial to the Middle Bronze Age (Leach 2013). Development-led work in the region has resulted in the identification of several previously unknown ring ditches, often initially by geophysical survey, although subsequent excavation often provides little evidence to support interpretation as the remains of Bronze Age barrows.

Exceptions include a ring ditch at Silverton, Devon, where a Bronze Age base sherd was recovered from the primary ditch fill (Pears and Hughes 2014) and a ring ditch overlooking the Alphin Brook Valley in Exeter, again located by geophysical survey, that produced datable material of Neolithic, Beaker and Early Bronze Age date (Caine and Valentin, 2011). A synthetic study is required to ascertain the precise number of dated barrow monuments in Devon and Somerset.

Complex barrows and highly visible cemeteries, such as those near the Priddy Circles, are rare in Devon and Somerset, relatively simple bowl barrows being the most common form recorded. However, simple forms can conceal complex developmental histories, and it is increasingly apparent that South Western barrows are local expressions of widely held beliefs (Quinnell 1988; Griffith and Quinnell 1999; Leach 2013).

Almost 140 possible barrows of Bronze Age date are now recorded within the survey area, nearly 7% of the combined county totals. Of these, 82 monument records, or 4% of the combined county totals, were amended or created by the survey. Fifty-two were newly recorded, (see Section 4: Quantification), typically as earthwork evidence from lidar-derived imagery (see Figure 9).

However, this figure conceals a high degree of uncertainty. In Somerset twenty monuments were recorded as barrows with a degree of confidence, the interpretation derived partly from the visible evidence and partly from association with the known barrow cemetery at Robin Hood's Butts (see below). However, this figure also reflects the inability of the Somerset HER's to express uncertainty through indexing additional monument types. Over twenty possible barrows recorded by the survey on the DCCHER are indexed with one or more monument types, most reflecting alternative interpretations related to industrial or extractive activity of historic date. When a range of factors are considered, including the visible evidence, topographical setting and associations with previously recorded monuments, only ten sites in Devon were confidently interpreted as barrows.

As can be seen in Figure 10, the survey data nonetheless extends the known pattern of both isolated monuments and monuments associated with barrow cemeteries, the distribution largely concentrated on the Upper Greensand plateaux.

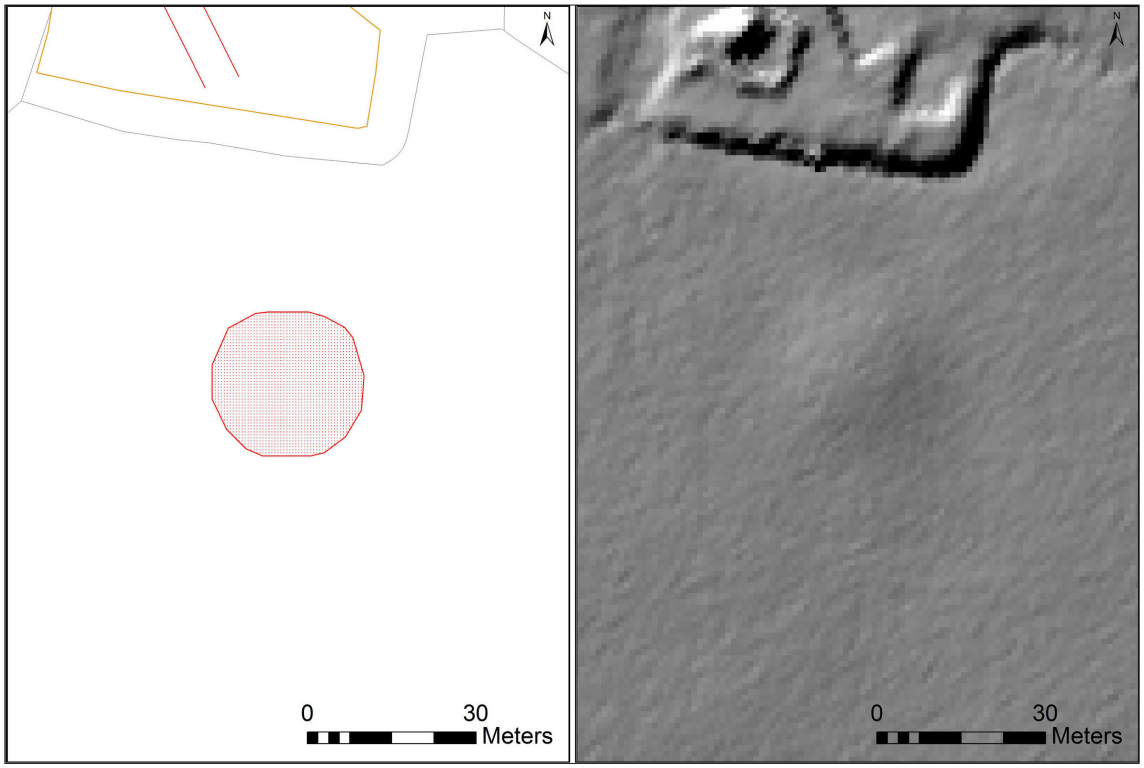


Fig 9: A possible barrow visible on lidar-derived images as a mound south of Porch Farm, All Saints (MDV119469). The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England. LIDAR ST3000 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014

Some variation is apparent with groups that might be considered cemeteries, such as at Robin Hood's Butts (see Figure 10 and 11), clustered on the highest ground, following ridges across the plateaux. More isolated monuments and smaller groups appear to be focussed on, or close to, the interface with mudstone geologies, topographically situated close to the steep scarp edge.

Notable concentrations of previously unrecorded barrows were identified near previously recorded monuments. This might reflect differential monument survival on the plateaux, largely unenclosed until the Enclosure Acts of the 19th century. Although a small number in absolute terms, the significance of the potential increase in the known resource is high.

This can be demonstrated at Robin Hood's Butts barrow cemetery (SOM43470; Figure 11), one of the better-known groups in Somerset, certainly on the Blackdown Hills. Recorded as nine low mounds in a partly linear, partly dispersed configuration along a ridge at Brown Down, Otterford, this group attracted antiquarian attention and developed a rich folkloric heritage, variously described as created by giants or as graves for Cromwellian troops, and deriving its name from use by Robin Hood and Little John in a games of quoits (Grinsell 1969; Webster and Mayberry 2007, 8).

The survey identified seven previously unknown possible barrows at Robin Hood's Butts, hinting at ritual landscapes of previously unappreciated complexity.

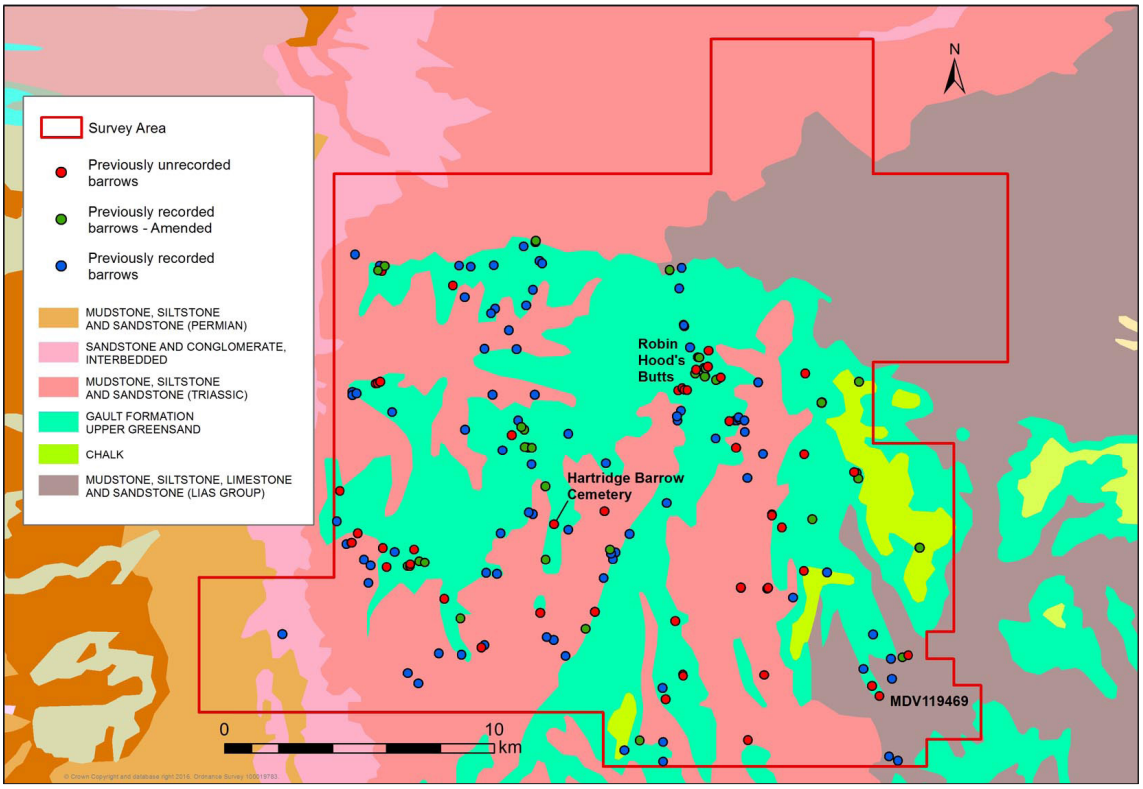


Fig 10: Distribution of all possible barrows recorded within the survey area, overlain onto BGS simplified bedrock geology. Reproduced with the permission of the British Geological Survey © NERC. All rights reserved.

Three were identified within the core of this group (SOM37046, SOM37047 and SOM37054), and a fourth possible levelled mound is visible on the north east facing slopes of the ridge (SOM37055). Atypically for this survey, they were identified from cropmark evidence, two as levelled mounds and two as cropmarks of possible ring ditches. The survey data changes the orientation and internal organisation of the cemetery, with a low mound and three cropmarks of levelled mounds forming an outlying group on a spur a kilometre to the south west of the core (MDV118620, MDV118643-5). The group might fall into a class of 'row cemetery', incorporating linear elements on different alignments (Woodward 2000, 85-8), the south western extension perhaps indicating the orientation of the primary route along the spur and ridge through the cemetery.

A smaller previously unidentified group in a similar topographic position was interpreted from a row of roughly circular pale cropmarks in Luppitt parish (see Figure 12). Interpreted as evidence of six former mounds between 5 and 10 metres in diameter, the cropmarks are spaced between 18 and 40 metres apart over a distance of approximately 200 metres, defining a possible linear barrow cemetery along Hartridge (MDV116576). Recorded from a single sortie taken in September 1982, the interpretation is necessarily tentative, and geophysical survey is recommended to clarify the character of this site, which is potentially of high significance.

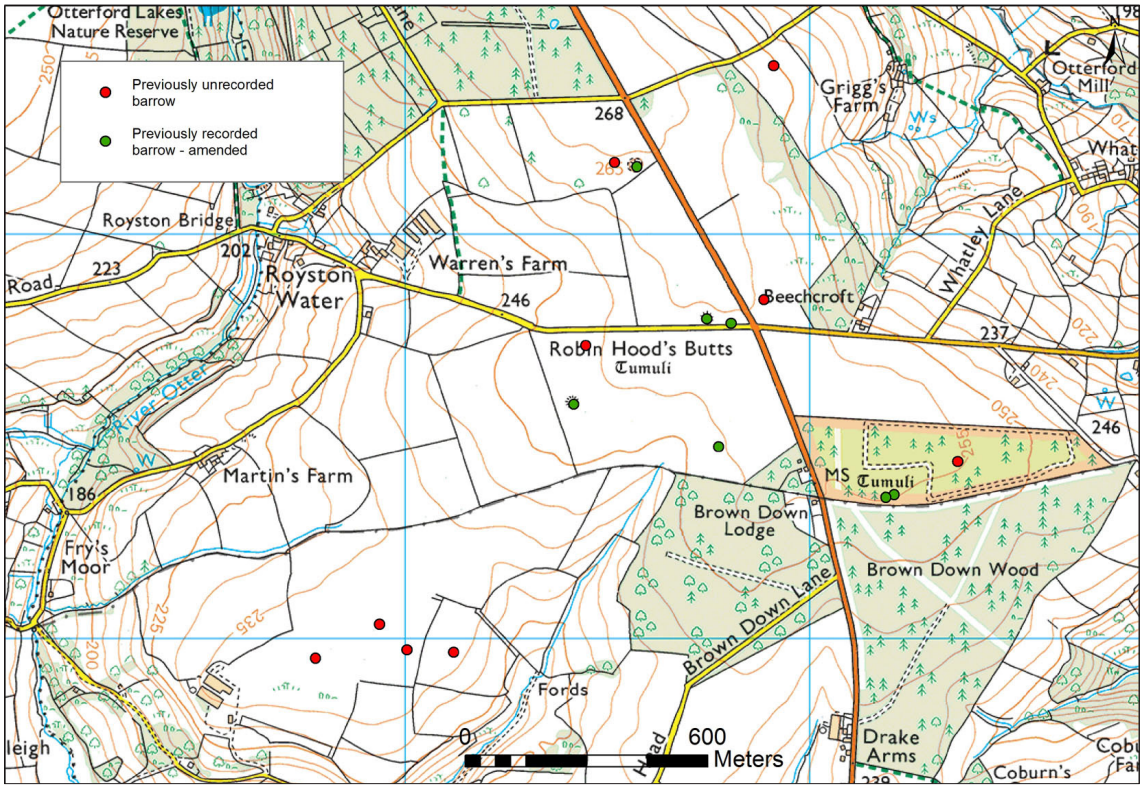


Fig 11: Distribution of previously unrecorded and amended barrows at Robin Hood's Butts, Brown Down, Otterford (SOM43470). The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783.

Fig 12: Possible linear barrow cemetery along Hartridge (MDV116576), visible as cropmarks of levelled mounds. The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England. OS/82219 V 1653 03-SEP-1982 © Crown copyright. Ordnance Survey.

Medieval

Sited on the west bank of the isolated valley of the Madford River, a tributary of the Culm, the location of Dunkeswell Abbey (MDV1890) is typical for a house of the Cistercian order, 'far from the concourse of men'. Three kilometres north of the village of Dunkeswell, the Abbey was founded in 1201 by William Brewere, who retired here in 1224, as a colony from the mother house of Forde Abbey in Dorset. Although modest on the national scale, further grants from Brewere's son endowed it with a substantial estate, and at its dissolution in 1539 it was counted among the major monastic houses and ranked as the 8th wealthiest house in the Diocese of Exeter (Holdsworth 1999).

The Abbey suffered typical post-dissolution degradations; valuable fabric such as roof lead sold by the crown and building materials salvaged under licence by local landowners. Late-18th and mid-19th century sketches illustrate the then ruinous condition of the Abbey complex (Gray 1998, 97-9).

The visible remains survive in the traditional monastic plan of a church and ranges grouped around a central cloister. The remains of the Abbey church are incorporated into the current Victorian church, constructed in 1841-2 by the Simcoe family from the Abbey ruins. The west range and gatehouse are incorporated into farm buildings and a cottage. Two hundred metres west of the church, the Abbey fishponds are arguably the most significant earthwork remains associated with the monastic complex, although intriguing platforms and hollows identified by the survey to the south of the conventual complex may form a previously unrecognised part of the ancillary settlement (see Section 5: Settlement and Figure 27).

The east range is now located in permanent pasture to the east of the church. The outline of a range of rooms visible as parch marks in the pasture have been occasionally recorded during dry summers since the late 19th century, informing early, if unreliable plans of the complex (Brooking-Rowe 1877). Aerial photography of 1989 clearly captured these parch marks from which it was possible to accurately plot the plan of the buried structures for the first time (see Figure 13 and 14).

Further earthworks were surveyed by Hunt (2000), the most notable being a slight terrace or scarp, extending in an arc from the north to south, east of the church, roughly parallel to the river. Hunt interpreted this as evidence of an eastern precinct boundary, separating domestic and ecclesiastical areas from more secular and agricultural holdings of the outer precinct, coinciding with the floodplain of the river.

Earthworks visible on lidar-derived images agree with Hunt's findings, but previously unrecognised subtle earthwork banks, hollows and platforms identified from the lidar-derived images might reveal more evidence of how the space within this inner precinct was organised (Figure 14). A terrace corresponding with the parch mark evidence for the east range is clear, but between this and the precinct boundary are a cluster of broadly rectilinear earthwork platforms from 6m to 15m in length, which potentially mark the locations of an additional range of ancillary domestic structures. Set amongst these platforms is a well-defined circular pit,

Fig 13: The east range of Dunkeswell Abbey visible as parch marks over buried structures, on aerial photographs of 1989, looking south (part of MDV1890). Note the 19th century causeway, left of frame DAP 6786/10 25-JUL-1989 (OZ) © Devon County Council.

approximately 5m in diameter with a slight outer bank. The location of this hollow might indicate it was integral to the daily life of the Abbey but not part of the main complex, perhaps the location of a dovecote or even a small stewpond close to the ancillary kitchens.

The earthworks forming part of the eastern precinct boundary are also clearly visible, utilising a natural scarp bounding the river floodplain. They are more complex than suggested by the earlier earthwork survey, comprising a series of linear and curvilinear earthwork ditches flanked by earthwork banks, extending west into the Abbey precinct, sub-dividing it into two or three smaller compounds, possibly defining paths or watercourses. Hunt's work helpfully clarifies the function of a regular bank projecting to the east across the river floodplain; aligned on a footbridge, it was constructed by a vicar in the 19th century to keep his feet dry as he travelled to the church from his home on the eastern side of the valley (Hunt 2000, 219).

The establishment of grange farms was typical of Cistercian houses, allowing the monks to support the monastic community through exploiting the agricultural and industrial resources of the surrounding landscape. Initially manned by lay-brothers, in the later-medieval period they were typically leased to lay tenants or farmed by keepers. Beyond the home farm at Dunkeswell, the Abbey established granges at Broadhembury, Bywood, Bowerhayes, Sheldon and Shapcombe (Sparks 1978). See

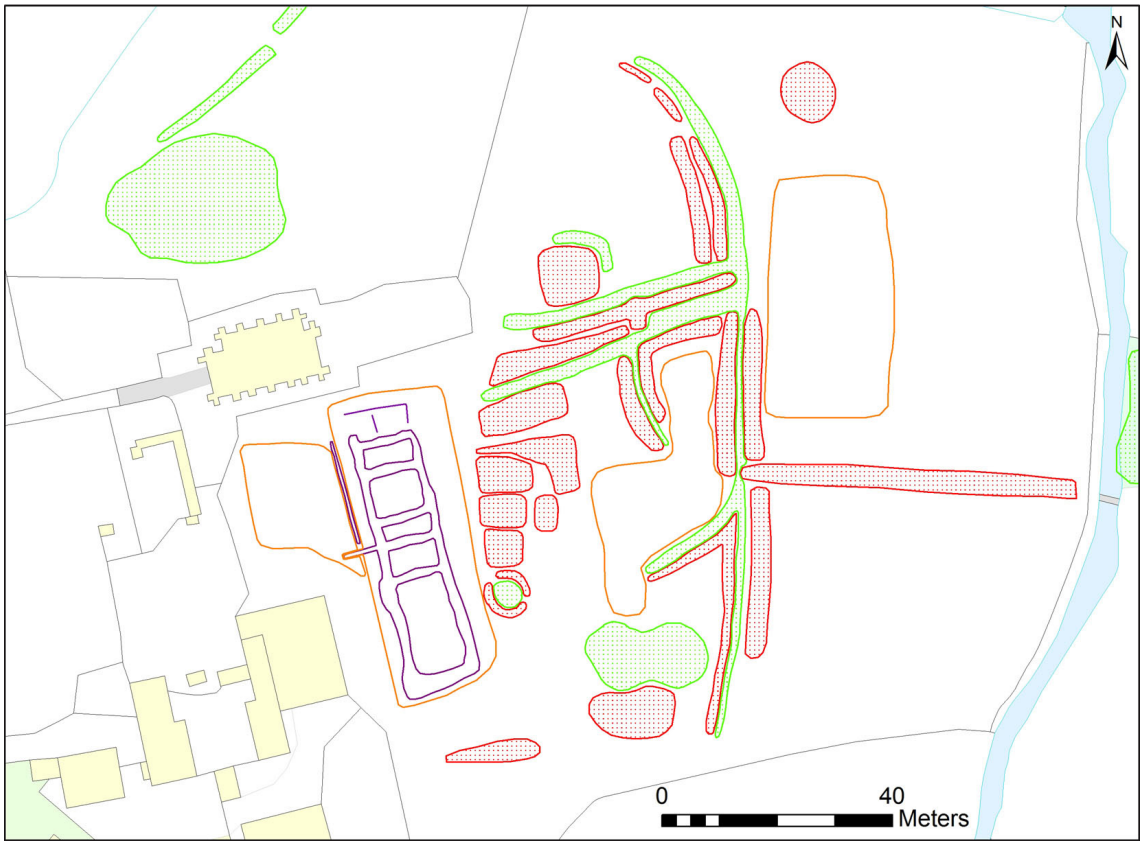


Fig 14: Transcription of complex subtle earthworks to the east of Dunkeswell Abbey. The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

Section 5: Settlement, for discussion of possible evidence associated with the grange at Bowerhayes.

Transport (<1%) & Communications (<1%)

Communications

Archaeological evidence for monuments relating to communications was scarce, subtle or transient. This reflects the character of monuments closely allied to other themes, mostly transport, but also themes not relevant to this survey, such as maritime (e.g. coastal lookouts, lighthouses or ship-to-shore signalling) aviation (bombing range markers), or the wider developments in modern communications from 17th century postal infrastructure, 19th century telegraphy to the rapid 20th century development of civil communications infrastructure (Bone and Dawson 2007).

Four monuments, comprising two beacons and two radio stations, are identified as part of this theme. All are closely linked to military activity and the summary in Section 5. However, they form a group distinct enough in character to warrant a summary here.

Beacons were the primary method of attracting attention or raising an alarm from the 16th to the 18th century and are an understudied monument type in the South West (ibid., 228). A beacon is recorded at the summit of Castle Neroche (SOM43844) and although no conclusive field evidence for it has been identified, it is possible that the irregular earthwork mounds recorded by the survey in this location might include the remains of such a feature (see Figure 42).

Culmstock Beacon (MDV1880) is the name given to a circular structure on the southernmost tip of Black Down Common. Named as 'Black Down Beacon' on Donn's map of 1765, the structure was reportedly rebuilt, using original materials, in the early 20th century following a collapse circa 1870. It is possible that the rebuild was not in the original location; a bank and ditch defined circular platform recorded approximately 20 metres to the north is a good candidate for this (MDV11532: see Figure 15).

Two sites that can be broadly categorised as radio stations of Second World War date were recorded prior to the AI&M survey, at Southey Moor, Churchstanton (SOM44505) and roughly 3 kilometres south of Dunkeswell village (MDV56541). Both were associated with wartime airfields, respectively Upottery (Smeatharpe, MDV47202) and Dunkeswell (MDV45090).

Francis records the site south of Dunkeswell as a high frequency radio station, comprising two brick-built structures, one of which was built as a small garage, and a third, asbestos universal handcraft hut (Francis 1995, 62). Detail regarding the disposition and organisation of the site was recorded from 1947 vertical aerial photography, including the identification of' 7 masts enclosing the position of a large brick-built structure, presumably the transmitter building. The smaller structures survived to 2006 but have since been demolished.

The site at Southey Moor, located on the northern edge of the Upottery airfield domestic site, is listed by Francis as a wireless telegraphy block (Francis 1995, Figure 28, Site No. 13). Smaller than the Dunkeswell station, the block is visible with three adjacent masts on 1940s vertical photography. Francis described a concrete base as the only visible remains in 1995. A modern dwelling depicted on current digital mapping may have reused the footings of the original wartime structure.

Transport

Over 50 monument records relating to routeways have been created or amended by the survey, excluding the 19th century Chard Canal, the relict earthworks of which fall within the survey area. These include sections of trackways, hollow ways and roads. Broadly the same number of monument records again incorporate a route or part of a route, such field systems enclosing field boundary defined trackways. The distribution and simplified interpreted date of these monuments are illustrated on Figure 16. The majority are interpreted as probably of medieval to post-medieval in origin, but a small number may be earlier in date.

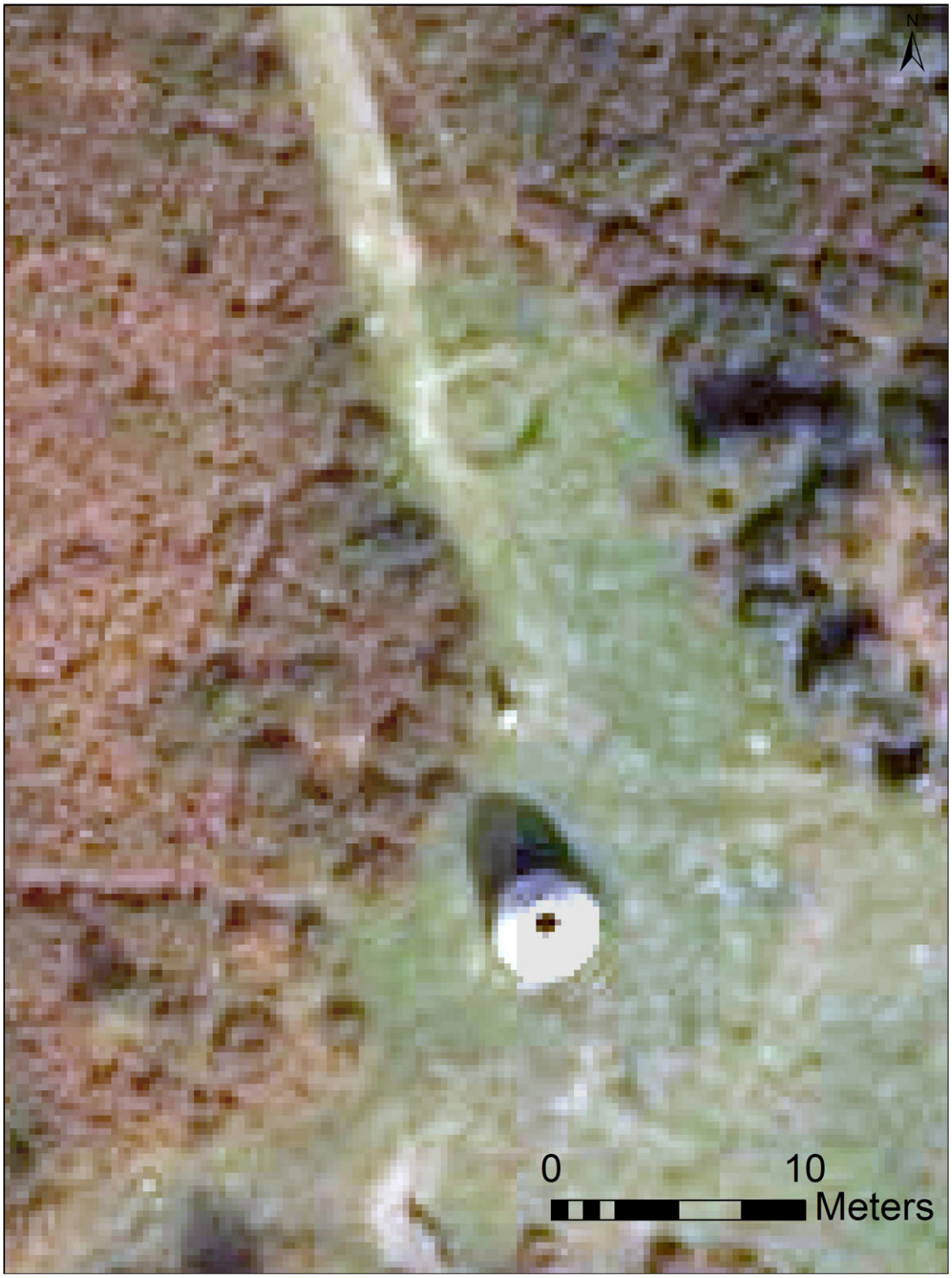


Fig 15: The current Culmstock Beacon structure (MDV1880) and possible original beacon to the north (MDV11532). Next Perspectives APGB Imagery ST1015; ST1115 29-SEP-2015. © Bluesky International/ Getmapping PLC.

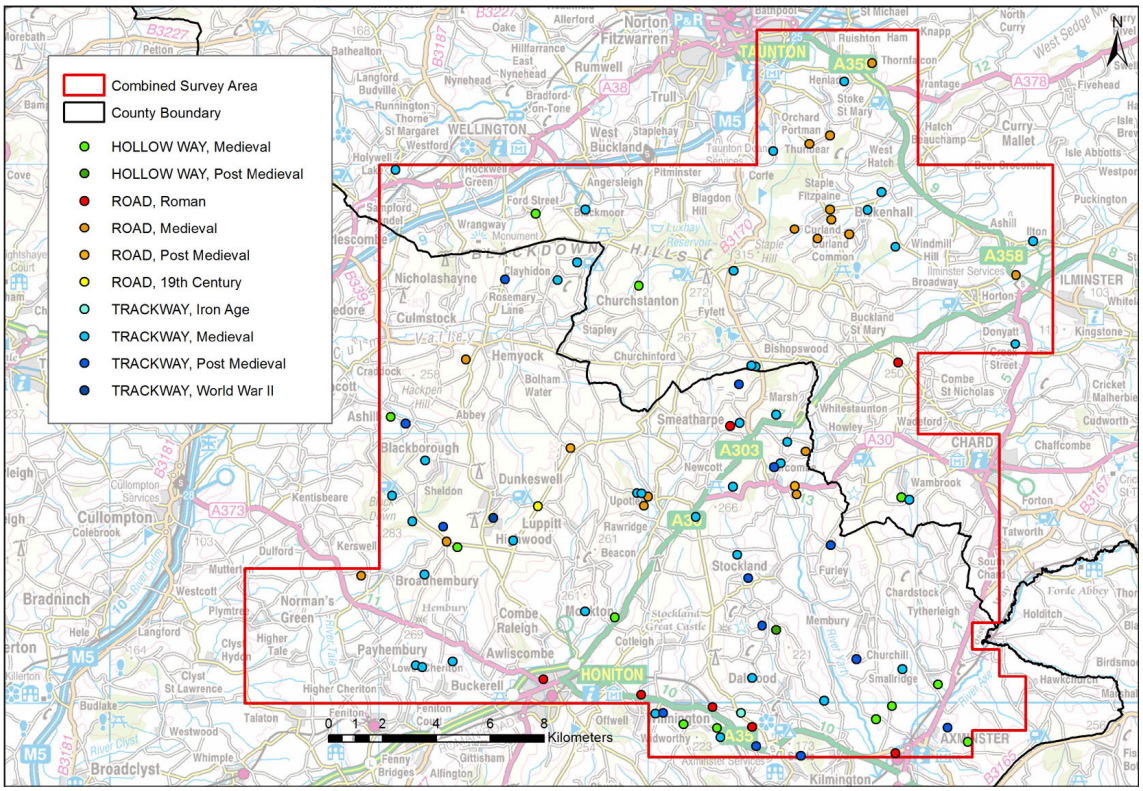


Fig 16: Distribution and simplified interpretation of all land routes recorded by the survey. The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783.

Roman Roads

The Fosse Way, the only major Roman road in England not to lead to London, is thought to have connected the legionary base at Exeter with that at Lincoln, passing through the survey area. Over 20 sections of Roman road have been recorded in Devon from Margary's work (1973), with over 200 further records for this class of monument currently recorded on the DCCHER. Approximately 50 Roman road monument records are contained within the Somerset HER, including the Fosse Way which survives as upstanding earthworks at several locations, such as at Beacon Hill in the Mendips (SOM15879) or Oakhill, north of Shepton Mallet (SOM25542: see also Croft and Aston 1993, 51). However, as in Devon, few have been confirmed in the field (for exceptions see MDV1875 and associated monuments).

Expectations were low for identifying further monuments of this type during the survey and eight monument records for possible Roman roads were created or amended during the survey, the only example in Somerset being a negative comment as to the visibility of a previously recorded monument (MDV14190, MDV18559, MDV18847, MDV114779, MDV115994, MDV117328, MDV118420, SOM 53194; Figure 17).

The validity of these interpretations must await further investigation, but it may be significant that most positive interpretations are distributed between Honiton and Axminster, closely aligned along the suggested route of the Fosse Way (see Figure 16).

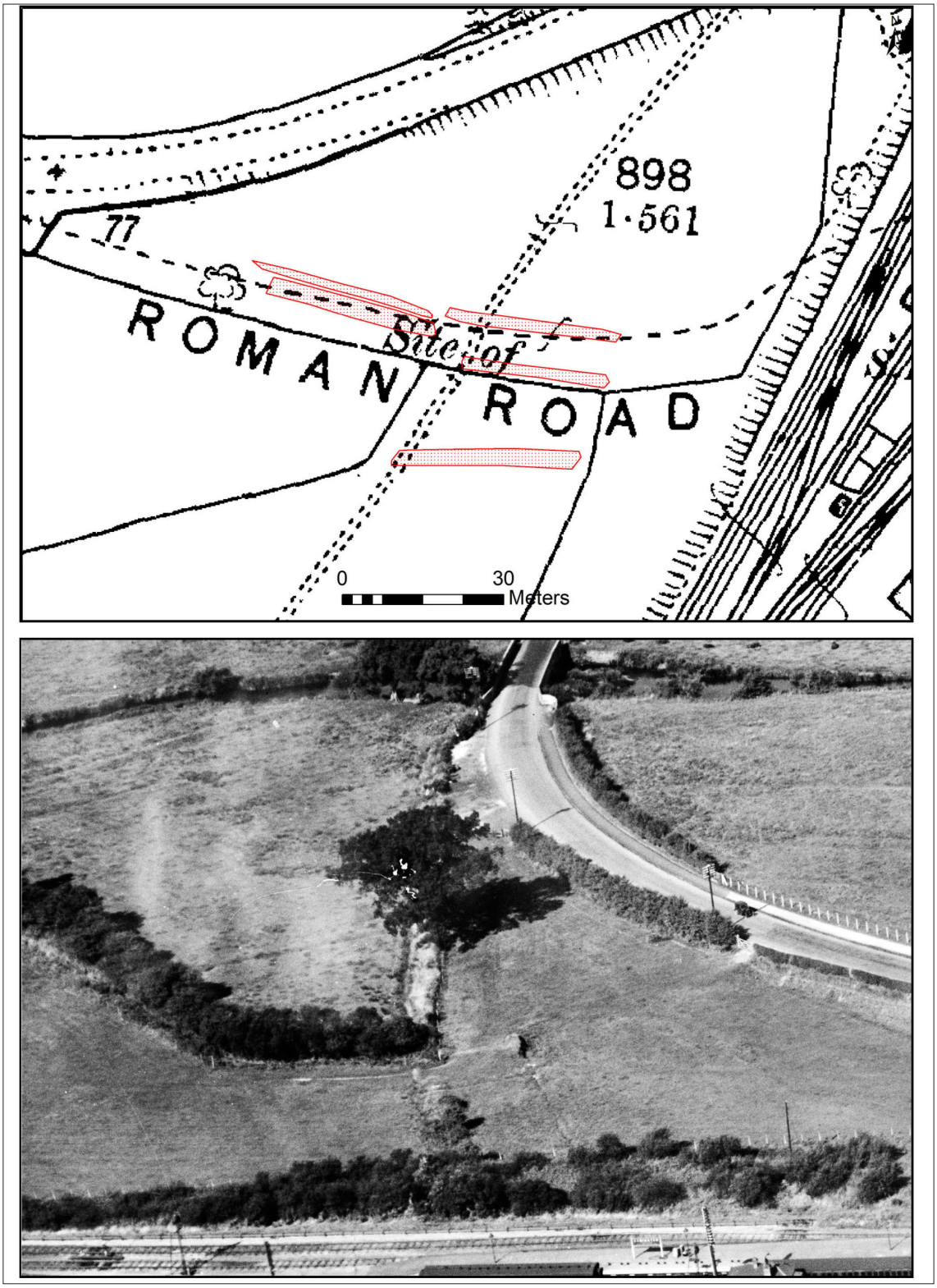


Fig 17: Top: The 'Site of Roman Road' is annotated on the Ordnance Survey First Edition 25-inch map south east of Bow Bridge, Axminster. Earthworks visible on lidar-derived images might be the remains of boundaries established either side of the former roadway (MDV117328). AI&M transcriptions © Historic England. First edition Ordnance Survey 25inch map © Crown copyright and Landmark Information Group Ltd. Bottom: A pale cropmark of a possible metalled surface is visible on aerial photographs of 1928, looking west. AFL 60516/EPW023972 XX-JAN-1920 © Historic England (Aerofilms Collection)

Roads and Enclosure

From the post-Roman to the mid-18th century, most roads in the South West were little more than heavily used trackways. Metalled roads were reserved for town streets, bridge approaches and causeways. Rural trackways would have been used variously as drove ways, pilgrimage routes, as well as connecting military and industrial sites. Where possible, trade was carried out by water, land-based routes used only for onward shipment and local delivery. Travel was by foot or by horse, with few roads passable by wheeled vehicles (Kanefsky 1999).

Prior to 18th and 19th century enclosure of the commons, which affected a high proportion of the Blackdown Hills Plateaux, roads were not constricted by field boundaries. It has been suggested that the distinctive banked lanes of the South West, and Devon in particular, were formed in part out of *trinodas necessitas*, the responsibility of landowners to maintain roads adjacent to their land; mud scraped from the roads was cast up forming a progressively deeper hollow and higher banks (Hawkins 1988, 14). In more open, upland areas routes often comprised a series of wide, braided and parallel hollows following natural contours.

A new era of road construction followed enclosure, with new straighter routes accommodating those areas divided up into regular land parcels, while existing routes were either diverted or became redundant (Smith 2011, 5). Turnpike Trusts were set up in the South West from 1750, initially turnpiking the pre-existing roads around towns for local trade in the later 18th century (Kanefsky 1999). In the early 19th century new turnpike trusts, including the Honiton and Ilminster Turnpike Trust, filled in many gaps in the network and roads were built across the Devon-Somerset border to by-pass inconvenient sections and to better follow the contours (Rosevear 2009, Kanefsky 1999).

Extensive and previously unrecorded examples of pre-enclosure routes were recorded at two sites centred at Devonshire Inn Farm (MDV116413 & MDV116812) and at Westerhope Farm (MDV112229, MDV117619 & MDV117191), both in Devon. Visible on aerial imagery of 1943 onwards as a series of sinuous and linear cropmarks and earthworks flanked in places by banks, these trackways remain visible as incised gullies on recent lidar-derived digital images.

The trackways at Devonshire Inn Farm (Figure 18) extend for approximately 3.2 kilometres between Cotleigh Crossing to the south west and Red Scrip plantation to the north east, intersecting with an extant track at, and passing through, Collyforches Farm. The trackway's alignment clearly predates the layout of the adjacent 19th century field systems and probably formed part of a more extensive pre-enclosure route network probably of medieval date, although an earlier origin may be possible if the track is aligned on Viney Lane to the south, for which a Roman date has been suggested (MDV46455).

At enclosure, this section of route became redundant, the road seemingly, or in part, diverted from Cotleigh Crossing to Devonshire Inn Farm and north east towards Collyforches Farm, the current route of the A30. This re-routing was possibly carried

out in conjunction with the Honiton to Ilminster Turnpike Trust after 1807, which established new sections of road between the two towns, passing Devonshire Inn Farm, itself believed to be a 19th century coaching inn. Stretches of this new road as shown on historic maps are evidenced by their more regular appearance and their concordance with the post-medieval enclosures.

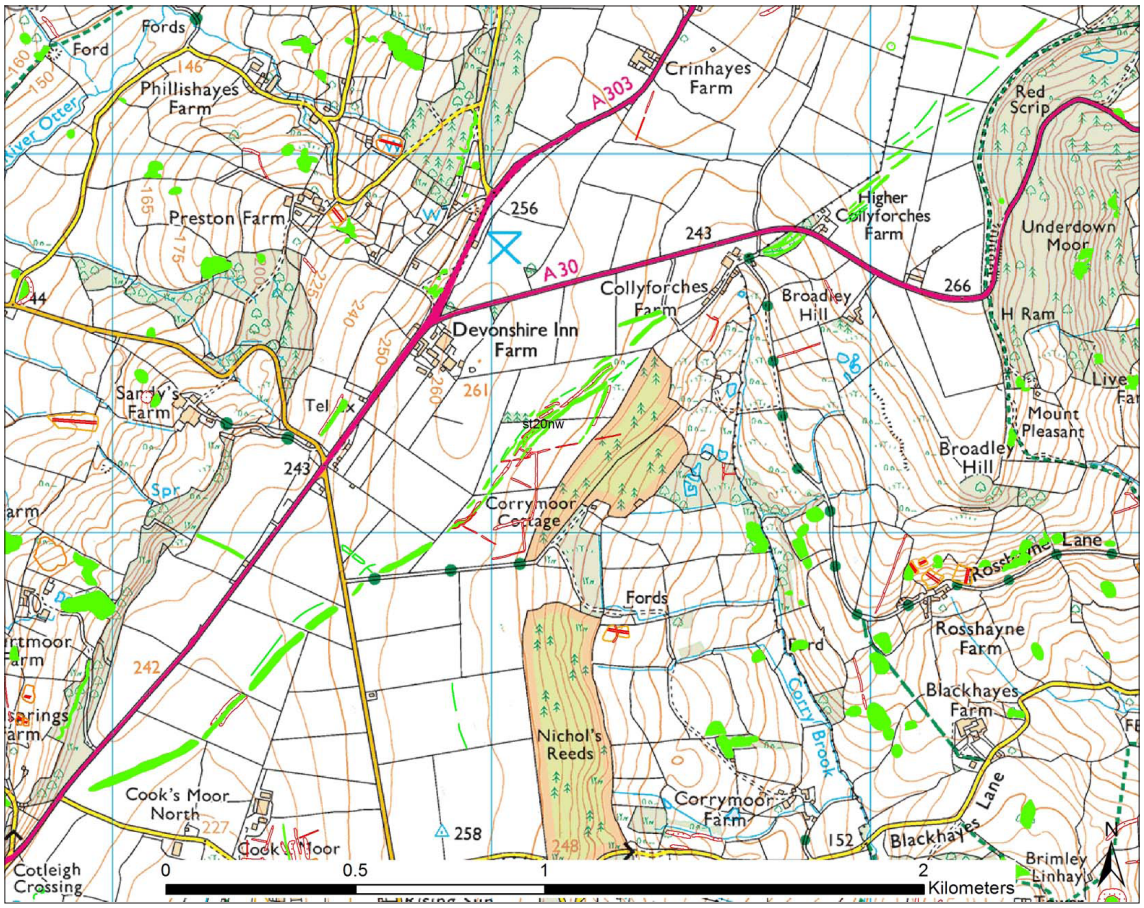


Fig 18: Pre-enclosure trackways visible as cropmarks and earthwork hollows (MDV116413 and MDV116812), flanked in places by banks, from Cotleigh Crossing (bottom left) to Red Scrip plantation (top right). The route of the Honiton to Ilminster turnpike road, what is now the A30 and A303 passes Cotleigh Crossing and Crinhayes Farm (top of map). The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

Trackways are visible along two alignments at Westerhope Farm (Figure 19). The longer, at approximately 2.7 kilometres in length, is aligned broadly north east to south west and extends from an existing track at its south west extent, just south of Hollies pit, skirting a prominent ridge and passing Westerhope Farm where it terminates. This is intersected by a shorter trackway of approximately 1 kilometre which extends from the corner of an existing road at Turbury Cross to the south east, to where it crosses and terminates at Dunkeswell Turbury. These trackways are not shown on the parish Tithe Map which shows much of this area as unenclosed common, although they clearly correspond with other routes on this map, suggesting they also were part of a more extensive network of interconnecting routes, possibly

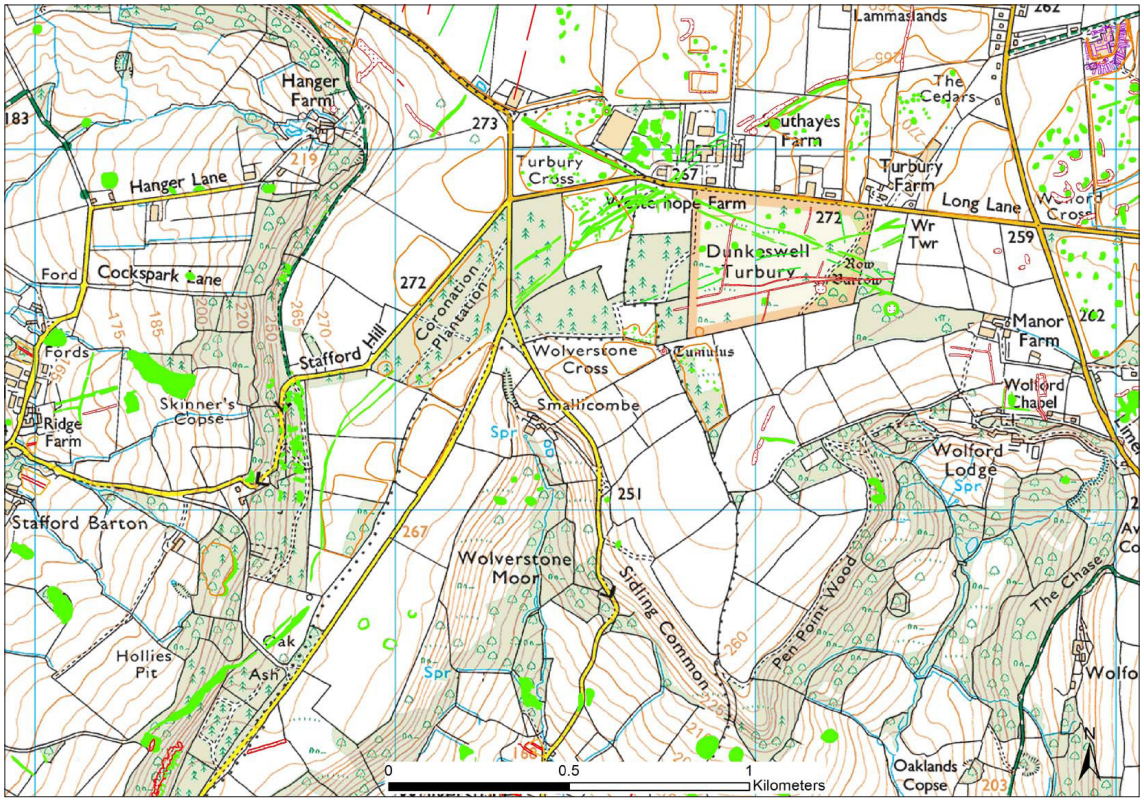


Fig 19: Extensive pre-enclosure trackways at Westerhope Farm (MDV112229, MDV117619 & MDV117191). The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

associated with the turbaries. For example, the longer of the two routes clearly connects an extant track shown south of Hollies Pit to a track shown at The Cedars to the north east. Following enclosure, these trackways were clearly also redundant.

The formalisation of this early road network is evident at Turbury Cross, as shown on historic maps (Figure 20). By the late 19th century a stretch of the former track has been made redundant, the formalised route introducing a prominent dog-leg which intersects with another new stretch of road along the newly established Coronation Plantation.

Roads and Settlement Change

A concentration of former routes recorded by the survey to the north east of the AONB share characteristics that might reflect changes in the historic settlement, off the Blackdown Hills proper. This section is closely related to, and complements, the theme summarised in Section 5: Settlement. Two examples (SOM43358/SOM38614, and SOM38388) illustrate different influences in the evolution of medieval routes in the environs of the Blackdown Hills.

The relict earthworks of a former road and adjacent field boundaries are clearly visible as hollows within the parkland at Jordans House, Ashill (SOM38388; see Figure 34 and Section 5 for a discussion of the associated designed landscape).

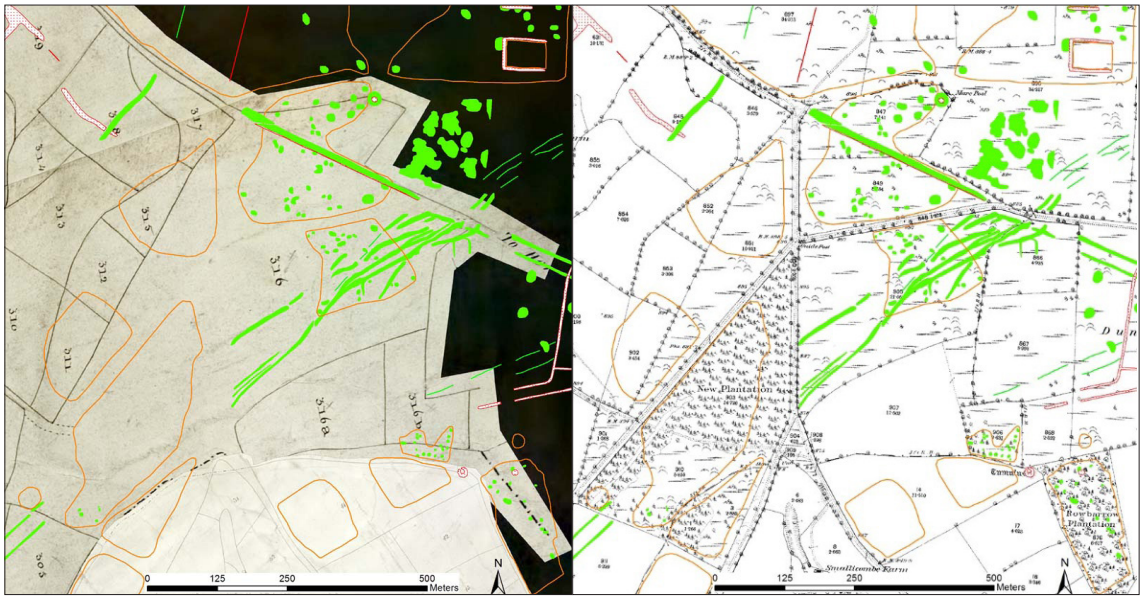


Fig 20: Turbury Cross, trackways shown on the Tithe Map of the mid-19th century (left) have become redundant by the late 19th century with existing routeways remodelled and new ones created (right). Tithe Map: Devon County Council. First edition Ordnance Survey 25-inch map © Crown copyright and Landmark Information Group Ltd. AI&M transcriptions © Historic England.

Evidence of a medieval village (SOM55322) revealed within the park during the construction of the modern A358 (Hollinrake and Hollinrake 1992) might support the interpretation that the former road was part of a wider medieval rural settlement pattern, perhaps displaced by emparkment at Jordans, with the earlier road superseded by a turnpike in the mid-18th century (SOM24648).

Depicted on the Tithe Map for Bickenhall, former road earthworks are the most striking evidence of Playstreet deserted medieval village (SOM43358; see Figure 21). Identified from the air in the late 1970s, the site was excavated in 2008 to 2009 as part of a community history element of the Neroche Landscape Partnership Scheme (Aston 1977; James 2011). The curvilinear boundaries of a former deerpark to the north (SOM 43546) probably defined the course of local routes west of Bickenhall into the late 19th century, including the two sections of relict road that respected the southern extent of the deerpark. By the mid-19th century, the village of Playstreet had contracted to a single farmstead and the significance of the parkland was clearly outweighed by the inconvenience of the circuitous local roads, resulting in the cutting of the imaginatively named New Road between Bickenhall and Staple Fitzpaine, 2 kilometres to the west, where a similarly irregular section of former road had also been superseded (SOM38426).

Within a radius of a few kilometres of Bickenall, several further examples of significant change to the local road network have been recorded, all potentially associated with evidence of settlement contraction or desertion.

The presence of a possible former settlement might be indicated by the relict earthworks of previously complex field patterns and interconnected lanes at

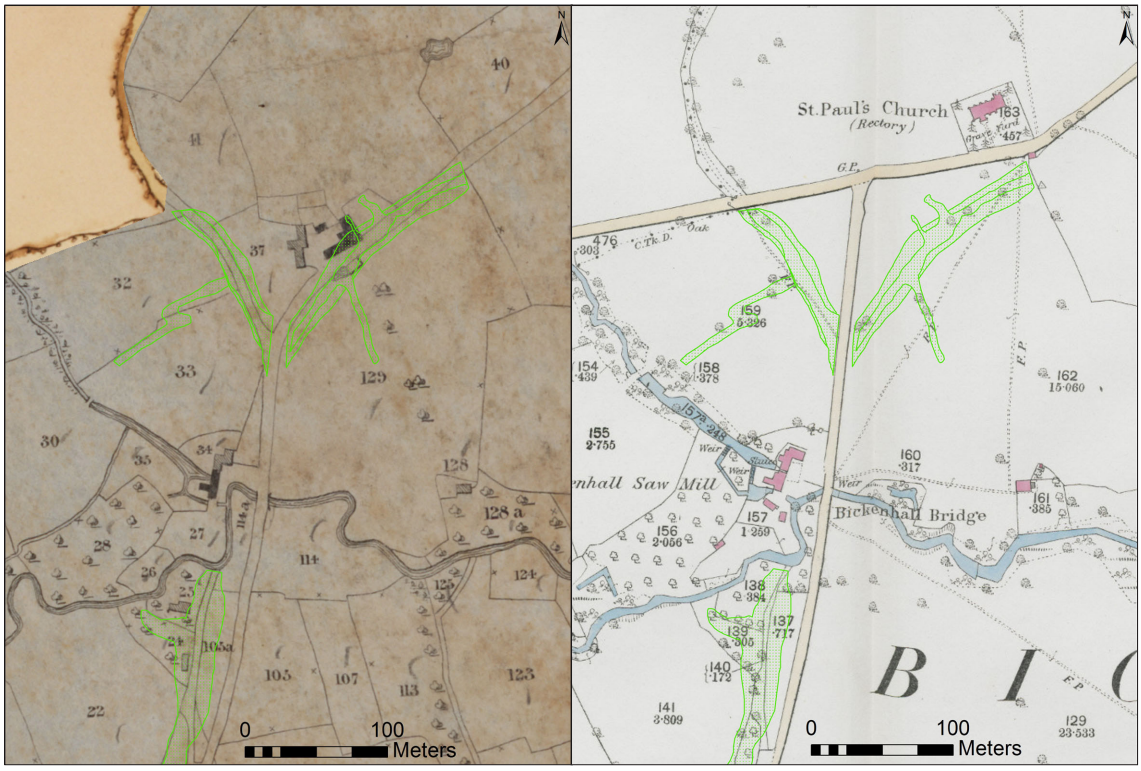


Fig 21: Former roads at Playstreet deserted medieval village, Bickenhall. Tithe Map and First Edition Ordnance Survey 25-inch map Somerset HER. AI&M transcriptions © Historic England.

Netherclay (SOM38627) and Thurlbear (SOM38724), rationalised by a turnpike of the mid-18th century (SOM26226). The removal of a former road south of Church Lane at Thornfalcon village (SOM39014) in the late 19th century might also be indicative of a decreasing population and subsequent consolidation of landholdings. Similarly, a former road and associated earthworks on the eastern edge of Thurlbear village (SOM38709) are perhaps suggestive of pre -19th century settlement contraction.

That deserted and shrunken farms, rather than deserted villages might be the typical, and subtle, evidence for settlement loss in west Somerset was demonstrated by Aston (1983, 2000). Fox (1983) also illustrated how a single settlement in Hartland, Devon, could comprise varying numbers of tenements over time. The evidence of relict roads and lanes might therefore provide a way into further investigation of significant post-medieval settlement contraction in the environs of the Blackdown Hills.

Settlement (4%)

Prehistoric

The archaeology of later prehistoric settlement in the region has been distorted by a focus on the Bronze Age settlement of Dartmoor, and to a lesser extent Exmoor, and the developed hillforts of the later Iron Age (Fitzpatrick 2008).

The presence of barrow cemeteries and hillforts within the survey area would, however, suggest that this landscape supported a significant population in the later prehistoric periods. The generally poor-quality soils, relative isolation and predominantly pastoral and low intensity character of modern agriculture within the AONB might presuppose that prehistoric settlement sites would survive well as earthworks on the Blackdowns Hills. It has been suggested that a clear break is identifiable between the later prehistoric to Roman settlement pattern and that of subsequent historic periods, although this may be part of a wider disruption to the fabric of the rural landscape in Devon in the 7th-8th century (Rippon, Smart and Pears 2015, 239-240; Turner 2007). As such, later settlement on the Blackdowns Hills would not necessarily obscure the earlier pattern.

To date, however, the identification of prehistoric settlement sites on the Blackdown Hills has proved problematical. Several sites previously interpreted from lidar-derived images or aerial photographs as evidence of possible prehistoric settlement within the extant field pattern are probably evidence of historic settlement, such as a putative double-ditched enclosure at Staple Fitzpaine (Membury 2011, 225; SOM44197) or 'Celtic' fields at Orchard Wood, Orchard Portman (ibid.; SOM38597). Others are probably of non-archaeological origin (SOM55507).

Fewer than 40 sites relating to prehistoric settlement have been recorded within the survey area, of which less than half comprised newly created records. Of these, 90% were recorded from cropmark evidence, often fragmentary and relatively poorly-defined (see Figure 22) with a very small proportion recorded visible from earthwork evidence. The majority have been interpreted as small isolated hillslope enclosures, with no evidence of associated field systems (see Figure 23).

The low number and fragmentary nature of many of the cropmarks might support the interpretation that later prehistoric settlement on the Blackdowns Hills was scattered and unenclosed, remaining obscured by the persistent and predominantly pastoral medieval and post-medieval agricultural landscape (Membury 2011, 225). This has implications both for the preservation of prehistoric settlement sites, which is potentially good, and for the analysis of the prehistoric settlement pattern on the Blackdown Hills, which becomes problematical.

The role of hillforts in the Blackdown Hills settlement pattern is a case in point. Interpretation of hillfort function has been derived largely from their morphology and setting, but limited excavation evidence suggests that the function of hillforts varied as much as their location and form. Some South Western sites demonstrate evidence of agricultural activity, such as the possible promontory fort at Embury Beacon (Sims et al 2014), others such as Raddon Hill indicate seasonal domestic occupation (Gent and Quinnell 1999), while several phases of long term or permanent occupation is probable at Berry Ball, Crediton Hamlets (Manning and Quinnell 2009).

However, whilst hillforts are known to have developed alongside enclosed and unenclosed farmsteads and field systems (Bowden 2011), the sparsity of later prehistoric settlement evidence on the Blackdown Hills and the lack of any

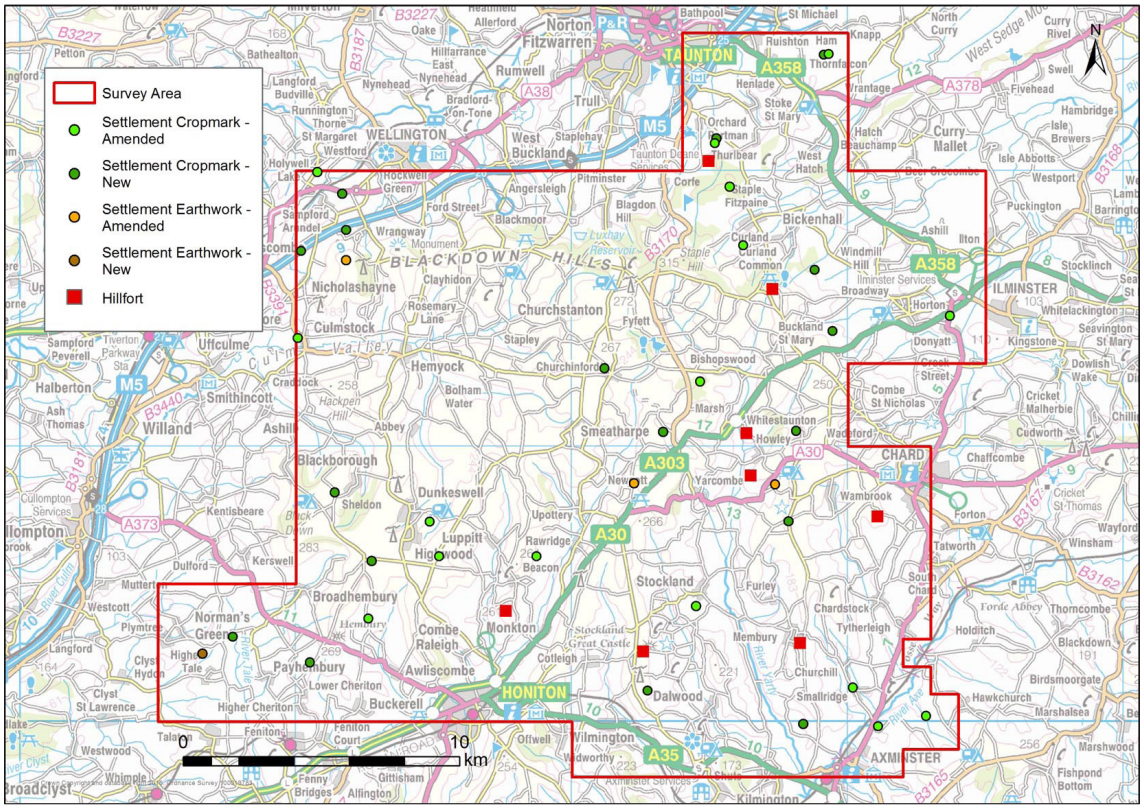


Fig 22: Distribution of possible settlement sites of probable later prehistoric date. The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783.

demonstrable association with the known hillforts makes a meaningful assessment of their place within the wider settlement pattern difficult. This survey has added to our knowledge of several hillforts within the study area, but this is limited largely to an improved understanding of their earthwork defences, and this is summarised in Section 5: Military, Defence.

Whilst recent development-led fieldwork has built upon the results of aerial reconnaissance to greatly enhance the understanding of the range and diversity of lowland settlement and their associated field systems in the region (see Hegarty, Knight and Sims 2016), such work has not penetrated the uplands of the Blackdown Hills.

At Ruishton, near the northern limit of the survey area, recent fieldwork in advance of a park and ride development on the M5 recorded an enduring unenclosed settlement of Bronze Age to Roman date (SOM28214; Mason 2009; Membury 2011). Whilst more characteristic of lowland settlement, no evidence of this site was identified by the survey. This may hint at the character and survival of settlement sites further into the Blackdown Hills, and continued reconnaissance may yet identify both open and enclosed settlement.

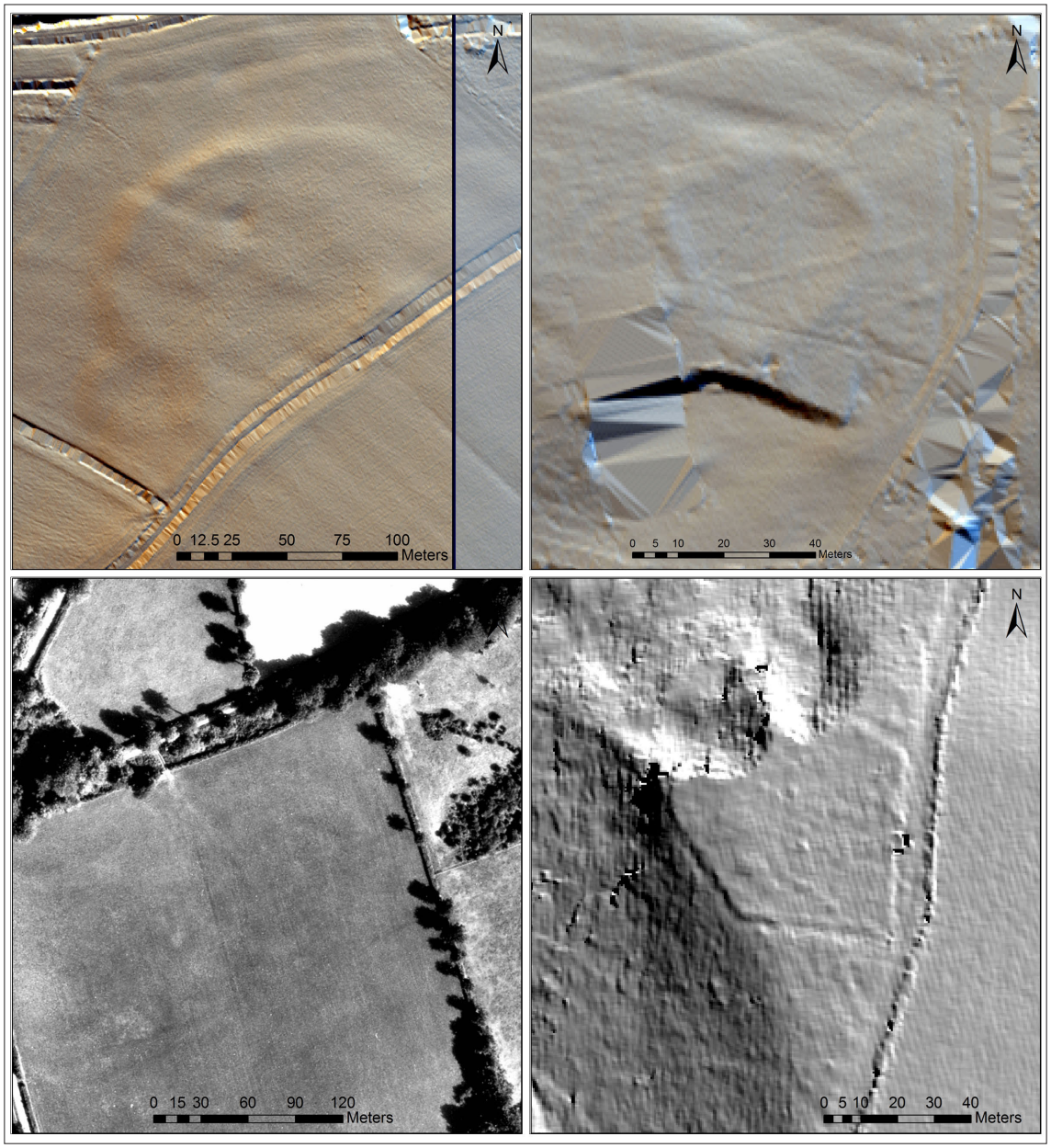


Fig 23: Previously unrecorded possible enclosed settlement sites of later prehistoric date. Clockwise from top-left: MDV114908, earthwork banks north west of Twistgates Farm, Upottery (LIDAR ST2009 Bluesky International DTM 30-APR-2016 & 04-MAY-2016. © Devon County Council); MDV117572, earthwork enclosure at Devon and Somerset Gliding Club, Broadhembury (LIDAR ST1006 Bluesky International DTM 27-JUN-2016. © Devon County Council); SOM 38528, ditched enclosure under Castle Plantation, Curland (LIDAR NLPS DTM E XX-XXX-2008. © Forest Research); SOM37830, poorly defined cropmarks of a possible banked enclosure west of Mounters Hill Farm, Wambrook (OS/82219 V 1615 03-SEP-1982 © Crown copyright. Ordnance Survey).

Medieval to Post-medieval

Historically, the rural landscape and settlement pattern south west of the Blackdown Hills has been contrasted with that of the Central Zone, characterisation of the historic landscape typically informed by agricultural regimes and topography (Ryder 2013, 6-7). Settlement models typically focussing on dispersed versus nucleated settlement paradigms have placed rural Devon firmly within the dispersed settlement group, with authors such as Rackham placing much of Devon in the 'Highland Zone' and the remainder, largely in East Devon and into Somerset, characterised as 'Ancient Countryside', consisting of hamlets and small towns, rather than villages (Rackham 1986; Ryder 2013).

Of course, the picture is more complex and variations in the trajectory of settlement patterns on an intra-county level have been identified by numerous studies (summarised in Ryder 2013). The Blackdown Hills have been identified as a distinctive landscape, one of several possible *pays* in the South West, its character influenced by a degree of topographically induced isolation. The Blackdown Hills have also been identified as possibly *forming* the boundary between a more dispersed settlement tradition to the west and a more nucleated pattern to the east (Ryder 2013, 7; Roberts and Wrathmell 2000, 7; Rippon 2012).

It is unsurprising, therefore, that recent work has identified high levels of variation in the settlement pattern within the area of the Blackdown Hills, with nucleated and dispersed settlements intermixed to varying degrees on a parish by parish basis (Ryder 2013, 102-110).

Nonetheless, excepting a low number of deserted settlements, such as the post-enclosure squatter villages of Jacobs City (MDV45372) and the City of Ford (MDV11591), the enduring medieval settlement pattern meant that prior to the AI&M survey, evidence for settlement desertion was scarce.

Figure 25 illustrates the distribution of sites interpreted by the survey as evidence of medieval or post-medieval shrunken or deserted settlement.

The most numerous group comprises features interpreted as evidence for deserted settlements, 60% of which were previously unrecorded. Although a small sample, a clear bias towards to the central and southern portions of the survey area is apparent. Significantly, the survey has extended the distribution of this class of monument towards the west and north west of the survey area with the identification of six previously unrecorded possible deserted settlements (see Figure 24).

Previously unrecorded deserted and shrunken settlements are concentrated to the south east of the A30/A303, complementing the distribution previously recorded on the county HERs.

Further work is needed to analyse this data, but some initial conclusions can be drawn from these results. Those former settlements identified to the north and

west of the A30/A303 are largely isolated sites, not associated with or adjacent to an extant settlement. In contrast, a higher proportion of sites interpreted as shrunken settlements have been recorded to the south and east of the A30/A303. Almost two-thirds of this group is newly recorded. Although a much smaller sub-set of data, it is demonstrably associated with small (or former) hamlets, as at Wolverstone and Heathstock and Thurlbear (see Section 5: Transport & Communication). This pattern might correspond with that identified by Ryder in relation to Clayhidon and Hemyock parishes, that dispersed settlement becomes the predominant pattern towards the north of the Blackdown Hills (Ryder 2013, 109-110).

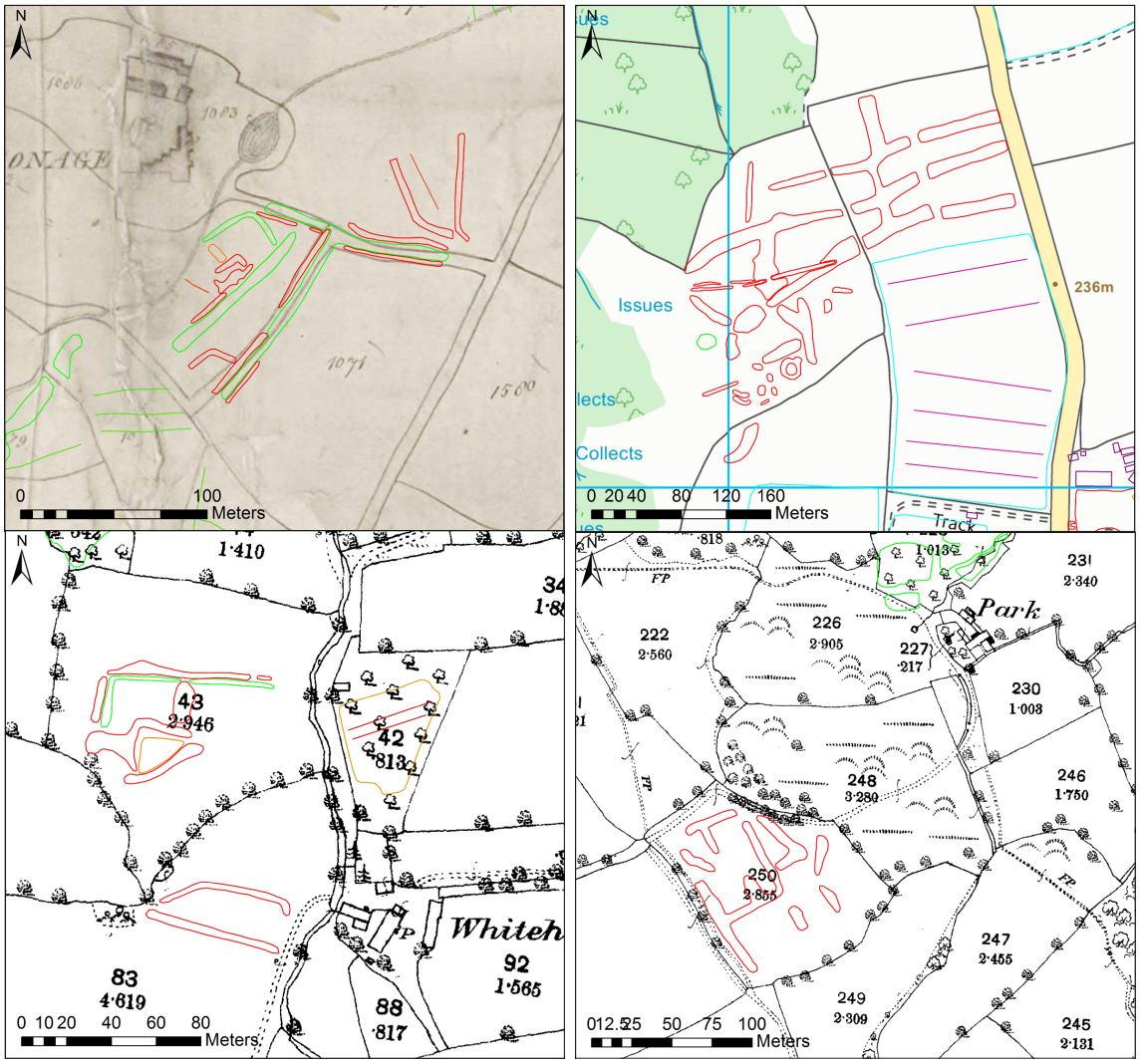


Fig 24: Previously unrecorded deserted settlements of possible medieval date. Top left: MDV115865; Top right: MDV118113; Bottom left: MDV118947; Bottom right: MDV118130. © Crown Copyright and database right 2018. Ordnance Survey 100019783. First edition Ordnance Survey 25-inch map © Crown copyright and Landmark Information Group Ltd. AI&M transcriptions © Historic England.

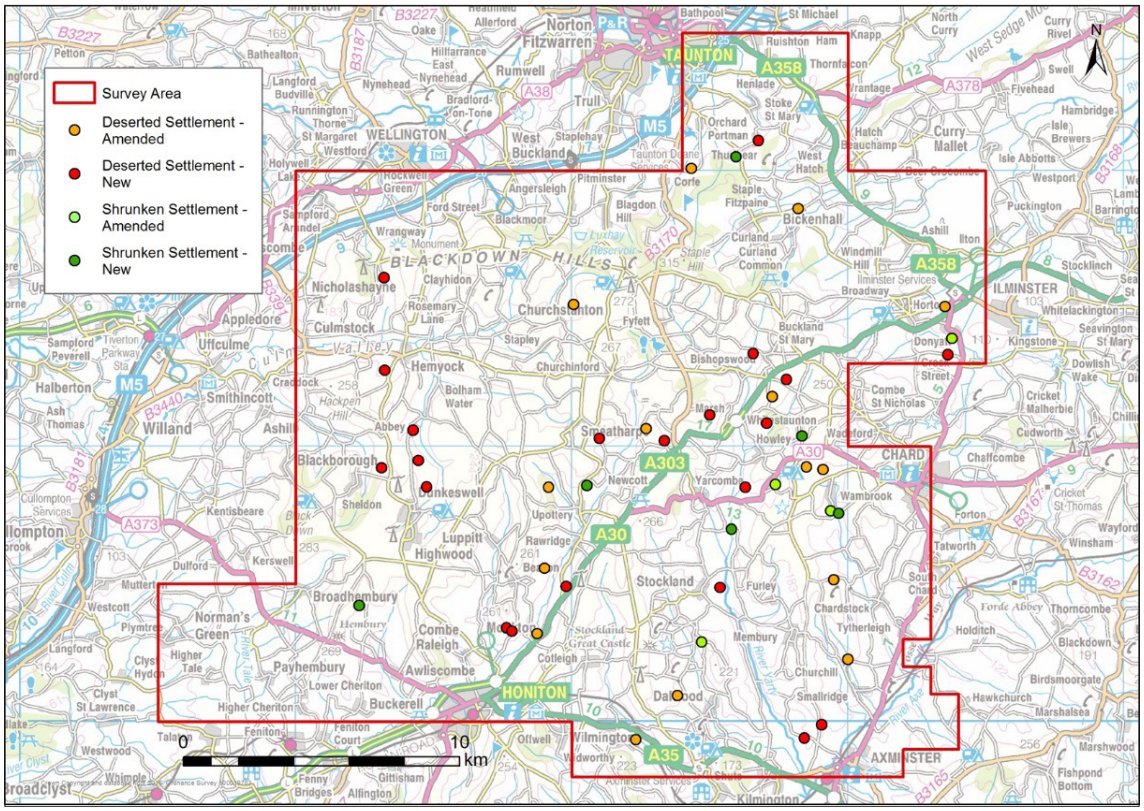


Fig 25: The distribution of sites interpreted as evidence for medieval to post-medieval settlement desertion or shrinkage. © Crown Copyright and database right 2018. Ordnance Survey 100019783.

Two previously unrecorded desertions in the west of the survey area are noteworthy in that they may be associated with the former Cistercian Abbey at Dunkeswell (MDV118008; see Section 5: Religious, Ceremonial, Funerary). Spread earthwork banks defining rectilinear enclosures south of Bowerhayes Farm, Dunkeswell, have been interpreted as the possible 'undivided closes' and possible former building plots of an Abbey Grange at Bowerhayes, noted by Fox (1972, 79; see Figure 26). Granges have been described as analogous to castles in the medieval landscape; they were working farms that also acted as hubs through which the abbeys both controlled and exploited the resources available in the landscape, albeit in an agricultural and industrial rather than military and political context (The University of Sheffield nd; Burton 2011). Initially occupied by lay-brothers, in the later medieval period granges were more frequently leased to lay tenants or farmed by keepers, thereby supplying the monastery's food, clothing, utensils and building materials, essential to the self-sufficiency of the community.

Immediately to the south of the former Abbey precinct, north of Dunkeswell village, substantial rectilinear terraces separated by possible sunken paths or tracks were visible as earthworks on lidar-derived images (see Figure 27). The terraces have been tentatively interpreted as former building plots, possibly previously part of the Abbey's estate (MDV116043).

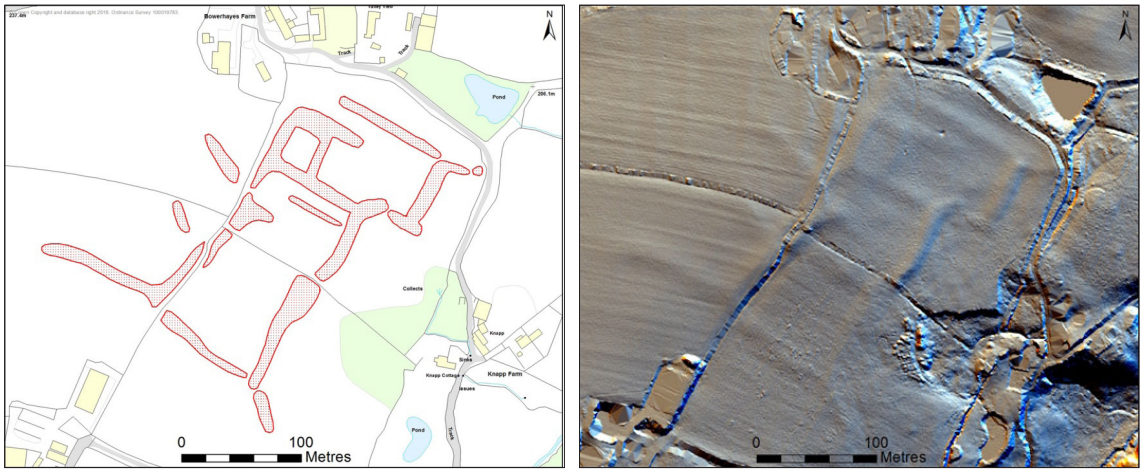


Fig 26: Rectilinear enclosures south of Bowerhayes Farm, Dunkeswell, possible site of a Grange of Dunkeswell Abbey (MDV118008). LIDAR ST1408 Bluesky International DTM 05-MAY-2016 © Devon County Council. The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783.

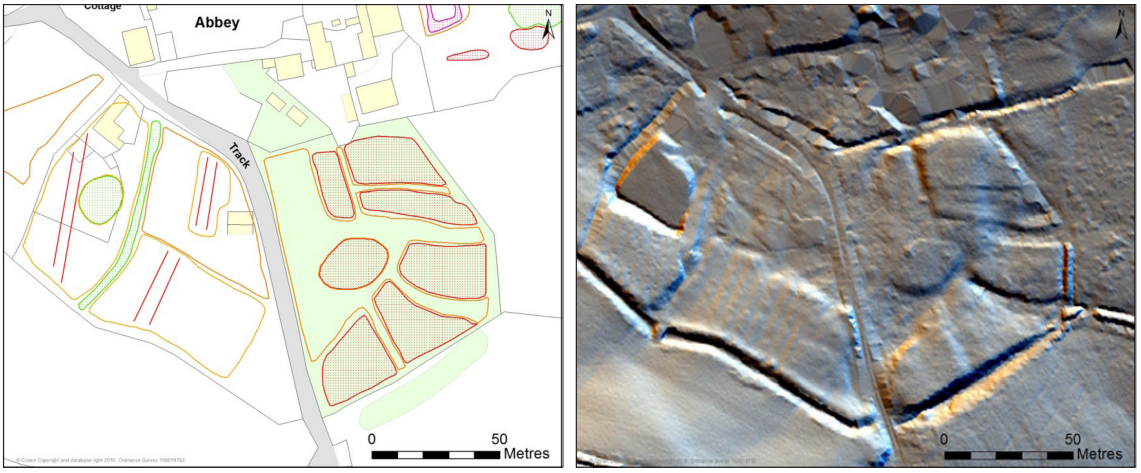


Fig 27: Earthwork platforms or terraces immediately south of Dunkeswell Abbey (MDV116043). The plots either side of the track were depicted as orchards on the First Edition Ordnance Survey map, the banks of which can be seen to the west of the track. An orchard would be an appropriate re-use of a former settlement site. LIDAR ST1410 Bluesky International DTM 05-MAY-2016. © Devon County Council. The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783.

One newly identified monument visible as earthworks on aerial photographs of 1948 onwards, is worthy of note. West of the village of Buckland St Mary, the site (SOM38113) comprises a mound or platform up to 30m diameter at the western end of a rectilinear ditched enclosure, situated near the tip of a west-facing spur (see Figure 28). A second possible platform or terrace was visible in the north west corner of the adjacent field to the east.

The visible earthworks do not correspond with any features depicted on the historic maps available to the survey, supporting the interpretation that they had passed out of use by the mid -19th century. However, as shown on the Tithe Map for Buckland St. Mary, the 19th century field pattern continued to respect the ditched enclosure.

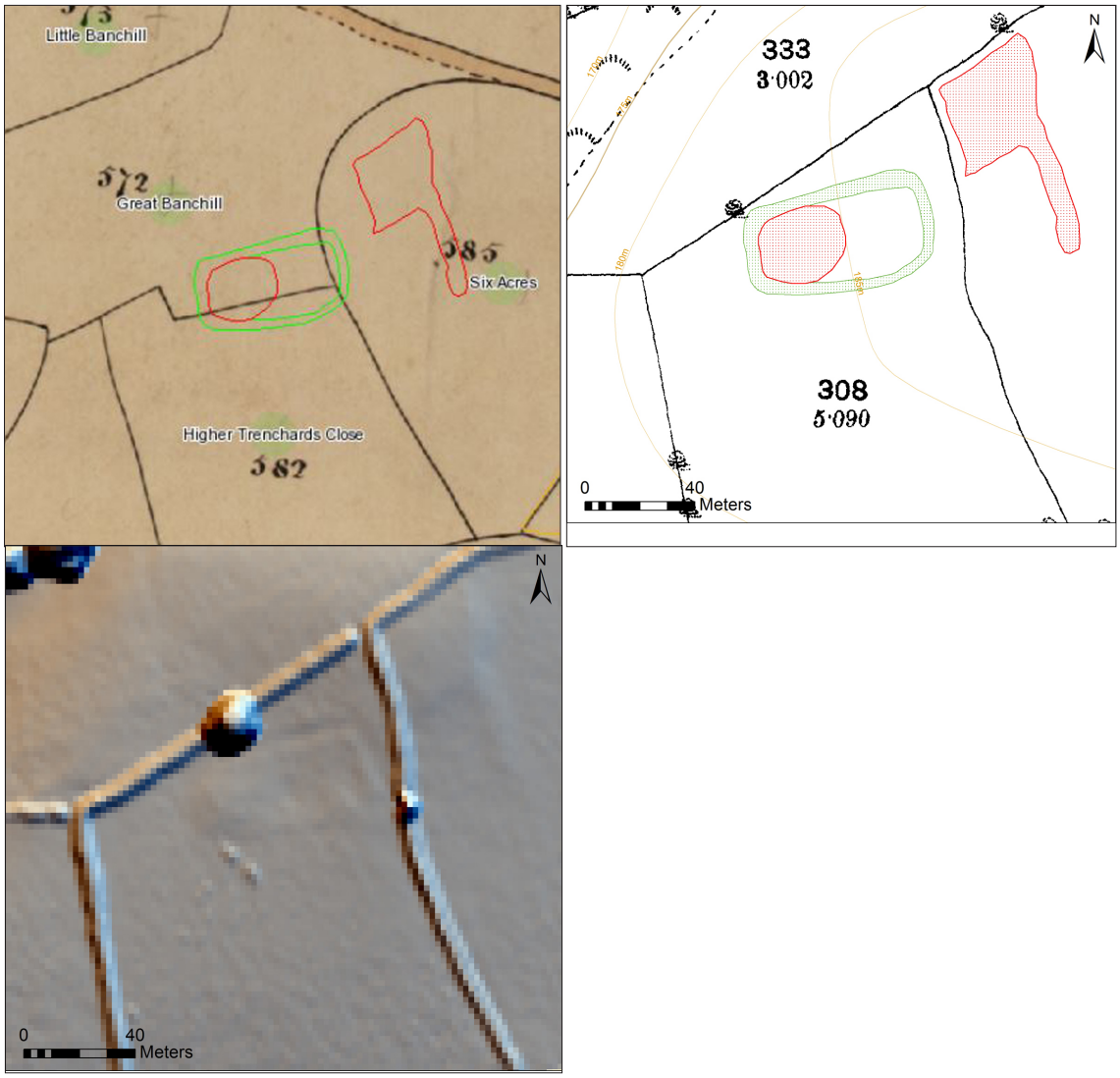


Fig 28: Possible moated site west of Buckland St. Mary village (SOM38113). Top left: Tithe Map. Top Right: First Edition Ordnance Survey. Bottom Left: Visualised APGB elevation data. Tithe Map and First Edition Ordnance Survey 25-inch map Somerset HER. AI&M transcriptions © Historic England.

The Ordnance Survey First Edition map might indicate that the medieval field pattern skirted the eastern extent of the earthwork, whilst it also survived as a significant landscape feature frustrating 19th century later rationalisation of adjacent field boundaries. Cautiously interpreted as a possible deserted settlement, the earthworks also share characteristics with defended sites which, as described in Section 5: Military, Defence, are rare locally.

A probable farmstead, possibly the settlement of Higher Corry, Stockland, deserted in the second half of the nineteenth, was identified as a rectilinear earthwork enclosure on lidar-derived imagery. This site (MDV115454) has the potential to yield important information regarding the development and desertion of a West Country settlement, perhaps from the medieval period to the 19th century.

However, this site was initially interpreted as a possible Roman military camp (see Figure 39). A greater significance may therefore be found in an assessment of the methodological approach to the interpretation of this monument. As such, this site is summarised from the perspective of its initial interpretation, in Section 5: Military, Defence.

Designed Landscapes and Parkland Features

The English country house and associated designed landscape originated in Henry VIII's reign and remained a means to express status and power into the last quarter of the 19th century. Country houses of relatively humble scale are typical of Devon and Somerset, often commissioned by successful industrialists from the 16th century onwards, sited more with an eye for location, display and prestige than practicality. The late 18th century house at Buckerell (MDV11510) for instance, was built on the site of medieval barton, and is typical of the more modest country house, located on an exposed south west facing spur overlooking the Otter Valley. In contrast, Castle Drogo (MDV8470), the 'last castle to be built in England' is anything but modest in scale, but it's location at the south west end of a rocky spur high above the Teign gorge, with dramatic views of Dartmoor, is pure theatre.

The creation of parkland reached its peak by the 18th century, emparkment becoming more extensive as competition within the landed-classes mounted.

The Portmans were one of the most influential families of the Blackdown Hills, with influence across the South West to London. Their residence, Orchard House, Orchard Portman (Figure 29), to the north east of the project area, was one of the finest examples of a country house with landscaped grounds, formal gardens and parkland. Only the church and rectory survive, much of the site now under Taunton Racecourse with only slight earthworks indicating the plan of the park (Bond 2000, 108-109).

Few features associated with parkland and designed landscapes were identified within the project area. Two were recorded at Poundisford Park (SOM43502) and Jordans (SOM15666). Many more examples are evidenced by their depiction on the First Edition Ordnance Survey map and from fieldname evidence and have not been recorded during this survey.

Parkland: Poundisford Park

The medieval deer park at Poundisford was in effect an enclosed hunting ground. Typically comprising a mixture of woodland and grassland (Stamper nd) such parks were often established in marginal areas away from prime agricultural land (James 2011, 298).

This perhaps explains the relatively high density of parks recorded on the Blackdown Hills, with at least seven being recorded in the Neroche area of the northern Blackdown Hills (Neroche Scheme nd).

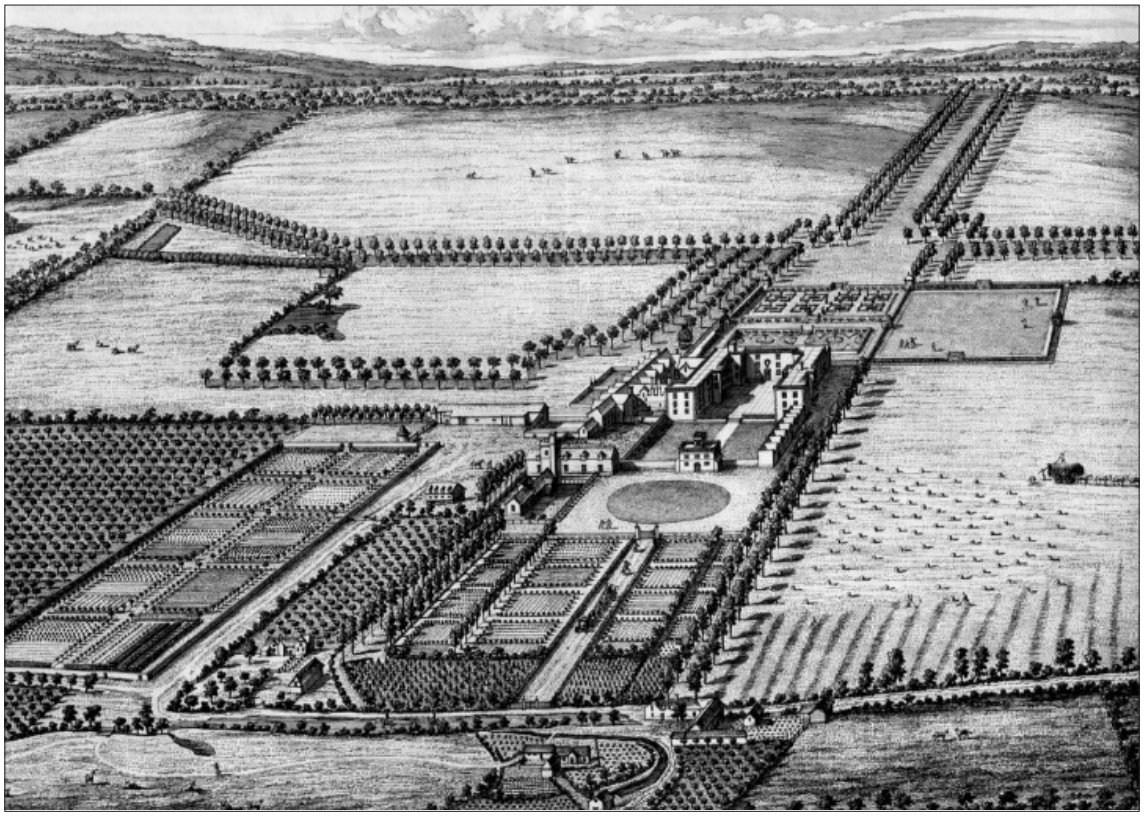


Fig 29: Orchard House, as depicted by Kip and Knyff, 1707. One of the finest country houses and formal gardens of the South West, built as a visible expression of the wealth and influence exerted by the Portmans across the Blackdown Hills. The Portmans did much to shape the present-day landscape of the area, creating new farmhouses and labourers' cottages, as well as new roads and woodland (Mayberry 2011, 241-249). Reproduced from Webster & Mayberry 2007, 76.

Deer parks functioned not only as lordly hunting grounds but also formed part of a highly managed outdoor larder, often comprising fish ponds and warrens, including the construction of pillow mounds (see section 5: Farming, Forestry; James 2011, 298).

Evidence of former medieval deer parks is visible across the project area as curvilinear enclosures fossilised within extant field boundaries. Often difficult to differentiate from the substantial hedgebanks characteristic of much enclosure in the region on aerial photographs and lidar-derived images, such boundaries have however been recorded at Staple Park (SOM43551) and Park Farm (SOM43546), both in Staple Fitzpaine, Park Farm, Wellington Without (SOM43737), Prior's Park Wood (SOM43505) and Poundisford Park (SOM43502; Figure 30).

Poundisford Park, to the north of Pitminster is, however, the only example within the project area that has been entered onto the Register of Historic Parks and Gardens. The park, which was in the possession of the Bishops of Winchester, was enclosed during the 1150s, with the park pale added between 1225 and 1232, enclosing an area of approximately 180 hectares. Two 16th century buildings, Poundisford Park and Poundisford Lodge, both survive within the park, as well as traces of formal gardens and pleasure grounds (Clark 2011, 240). Only the southern extent of the

park, however, extended into the project area. Here, the substantial earthwork banks of the park pale (SOM43502), which forms an almost continuous circuit, was readily identifiable from lidar-derived images (Figure 31).

Fig 30: The extent of former medieval deer parks is clearly visible across the project area fossilised in the present-day landscape, at Park Farm, Staple Fitzpaine (left; SOM43551) and Poundisford (right; SOM43502). Next Perspectives APGB Imagery ST2718 08-SEP-2014. © Bluesky International/Getmapping PLC. EARTH.GOOGLE.COM XX-XXX-2010 ACCESSED 12-FEB-2018.

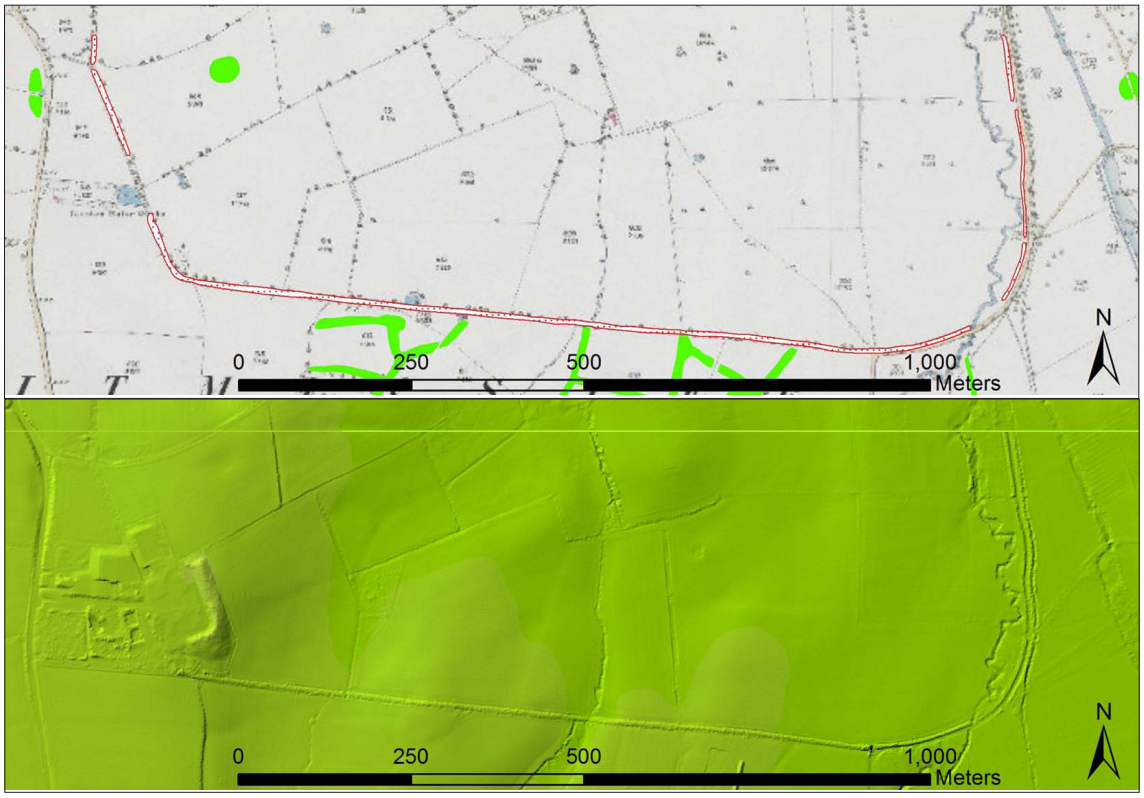


Fig 31: AI&M transcriptions of Poundisford Park pale (SOM43502) which survive as a substantial bank, circa 8m in width (top) and earthworks visible on lidar data (bottom). Only the southern edge of the park pale earthworks fell within the project area and were recorded during the survey. LIDAR WMS Environment Agency DTM viewed 13-FEB-2018. Environment Agency copyright 2015. All rights reserved.

Designed landscapes: Jordans House

Jordans House, Ashill, Somerset is a two-storey stone and brick country house built for the Speke family in the late 18th century and was the ancestral home of the Victorian explorer John Hanning Speke, rival of Richard Burton in the discovery of the source of the Nile (Howgego 2006).

The Ashill Tithe Map of the mid-19th century shows Jordans as L-shaped in plan, although by the late 19th century an additional north range had been added. A further range of buildings and a possible walled garden are shown to the north of the house, a grotto and ornamental lake to the east (Figure 32), as well as an ornamental plantation to the south west at the main entrance into the estate.

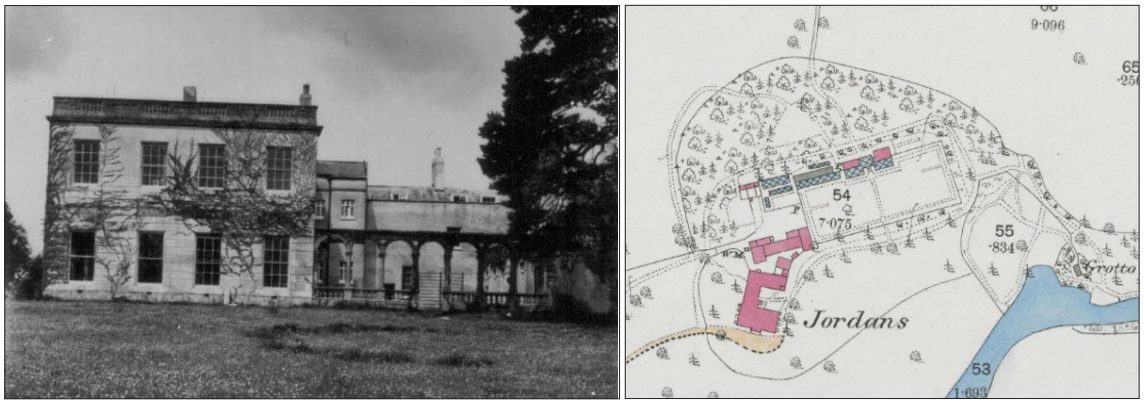


Fig 32: Photograph of Jordans House (Left), with a possible circular garden feature, or possibly a fungus ring in the foreground, and as depicted on the First Edition Ordnance Survey map, showing house, outbuildings, walled garden, grotto and fish pond (right). Somerset HER image 43707. © Somerset County Council.

Demolished in 1964, evidence of this former house is visible as narrow linear parch marks on aerial imagery taken during the summers of 2006 and 2016 (Figure 33). The grotto (SOM53515; Figure 34), located to the south east of the house does, however, survive and is 'a fine example of early 19th century architecture constructed in the Gothic Revival Style' (Pevsner 1958, 201).

Parkland features recorded within the grounds of Jordans include a number of sub-circular earthwork banks that correspond with trees shown on historic maps, interpreted as ornamental tree rings, for example SOM38383 (Figure 35). Two circular earthwork mounds to the south west of the house (SOM38389 & SOM38390) previously interpreted as possible mill sites could also represent ornamental mounds.

Aerial photographs and lidar-derived images reveal that the grotto was also constructed on a mound, in fact a sub-circular island projecting into an ornamental lake, the material used to raise this mound probably derived from the excavation of a large pit visible immediately to the north or from the lake itself.

Fig 33: Pale parch marks showing the outline, with internal divisions, of Jordans (SOM15666), visible on aerial imagery of 2016 (left, EARTH.GOOGLE.COM 15-AUG-2016 ACCESSED 06-FEB-2018) and AI&M transcriptions (right). The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

Fig 34: Grotto at Jordans House. Somerset HER image 6554. © Somerset County Council.

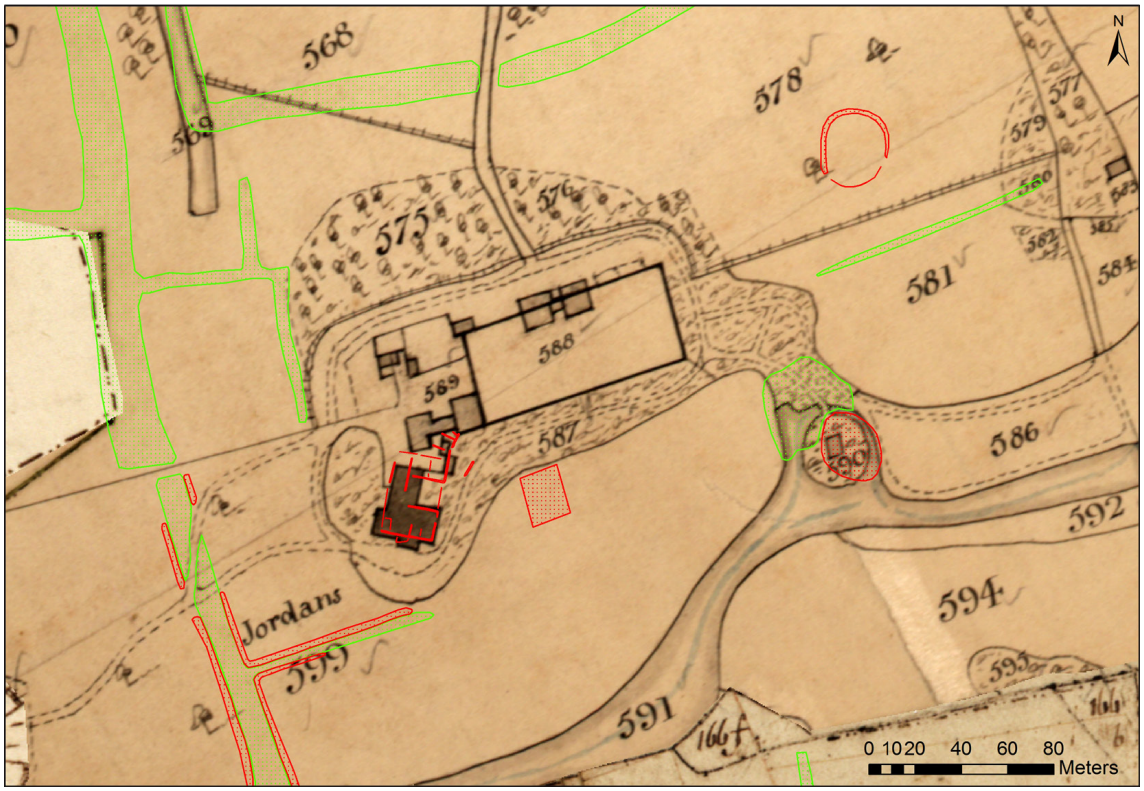


Fig 35: AI&M transcriptions overlain onto the Tithe Map for Ashill. The earthwork mound onto which the grotto was constructed is depicted as an island in the ornamental lake (SOM53515). A sub-circular ornamental earthwork tree ring is also visible (MDV38383). Note former field boundaries and possible road within the parkland, south west of the house. Tithe Map Somerset HER.

Military, Defence (5%)

Defence and Fortification: Prehistoric

Prehistoric hillforts are perhaps the most impressive and recognisable archaeological features on the Blackdown Hills, with six examples recorded in the project area. Within Devon these include Hembury (MDV1853), Dumpdon (MDV1877), Stockland Great Castle (MDV1913) and Membury Castle (MDV1930), and Orchard Wood (SOM11685) and Castle Neroche in Somerset (SOM43844).

The hillforts of the Blackdown Hills exhibit a variety of size, form and type, reflecting the unique landscape and topography that characterise the area. The function of hillforts may be as varied as their form, and a martial aspect is just one of many that must be considered. However, the construction of often massive ramparts does imply a defensive role of some form, albeit a potentially symbolic one as part of a wider settlement pattern.

However, in the absence of any identifiable relationship with the wider later-prehistoric settlement pattern (see Section 5: Settlement), a summary of the survey's results must be constrained to evidence of individual sites, with a focus on the most recognisable, and arguably defensive element of many hillforts, the earthwork ramparts.

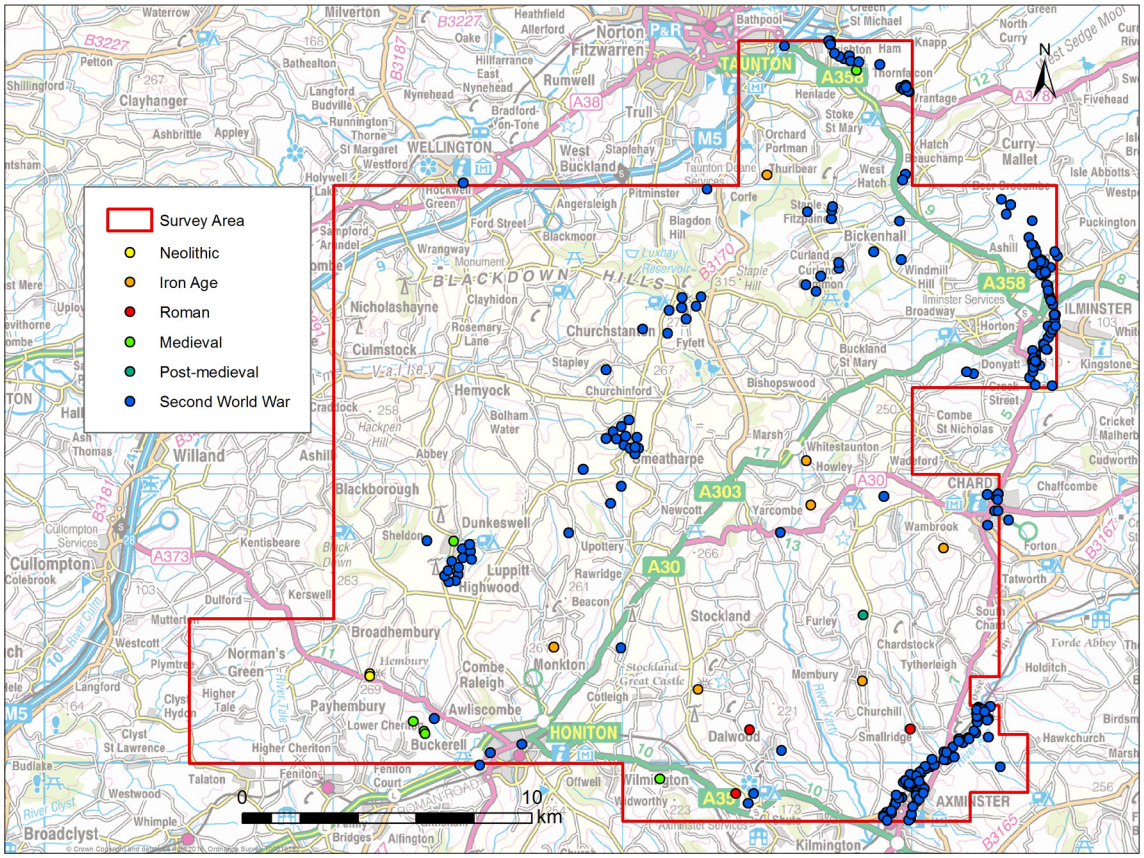


Fig 36: Distribution plot of all monument records for sites of military or defensive character, for all periods, created or amended by the survey.

The hillforts on the Blackdown Hills define the eastern territory of the Dumnonii and possibly formed a boundary protecting this territory and trade routes across the area (James 2011, 275-77). Given the general absence of large-scale excavations carried out on these hillforts, and across in the South West in general, comparatively little is known about their date, extent of occupation, layout and organisation, particularly when considered against the better studied examples of southern England. They do, however, fit into broad classification types recorded elsewhere across the country.

Hembury and Dumpdon in Devon (Figure 37), located approximately 6 kilometres apart, are typical of small multivallate hillforts characterised by close-set, multiple ramparts and prominent hilltop settings, and are considered as centres of permanent, high status settlement. Examples of small multivallate hillforts are rare nationally, with most located in the Welsh Marches and the South West. In character, both Hembury and Dumpdon have been likened to the larger 'Wessex', or 'developed' type hillforts more commonly found in central southern and eastern England (Bowden 2011; Griffith 1988, 24; Griffith and Wilkes 2015).

Larger than both Hembury and Dumpdon, the irregularly shaped Stockland Great Castle (Figure 38) is an example of a large univallate hillfort. Such monuments are rare, with between 50-100 examples being recorded nationally. Most commonly found in southern England, a scattering of examples is known in Somerset and East

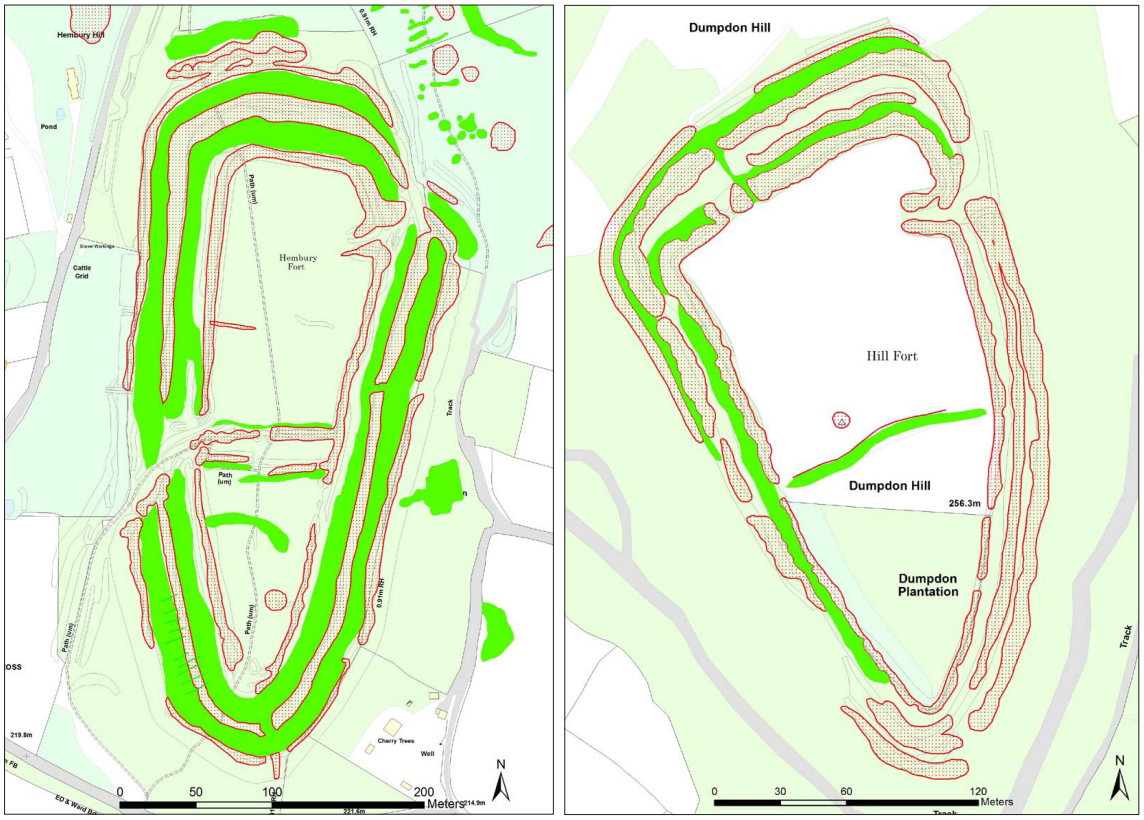


Fig 37: 'Wessex' type hillforts of Hembury (left; MDV1853) and Dumpdon (right; MDV1877) within the Blackdown Hills, examples of which are more typically found across central southern England. The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

Devon (Historic England nd). They are often seen as centres of redistribution, with substantial defences as much for display as protection. Stockland Great Castle's topographical situation, on an east facing slope below the crest of the Greensand ridge, contrasts with the prominent hilltop positions occupied by Hembury and Dumpdon. The exceptional scale of the earthworks at Stockland Great Castle has been considered by some to reflect this poorly defensible situation (e.g. Fox 1996, 52-53).

Orchard Wood and Membury hillforts (Figure 38) are of less substantial construction and, at approximately 1.5 hectares in area, are notably smaller in size, possibly constructed with less concern for the display of status than the above monuments. They are examples of slight univallate hillforts defined by comparatively modest earthworks and have been variously interpreted as stock enclosures, redistribution centres or permanent settlements. Also rare nationally, with only around 150 examples recorded, these comprise one of the most common classes of hillfort found in Devon. The hillforts are situated in commanding hilltop positions with their oval and elongated shapes closely respecting the contours. Orchard Wood hillfort, despite its well-preserved earthworks, is the only example of the Blackdown Hills hillforts not designated as a Scheduled Monument.

Castle Neroche is thought to have originated as an Iron Age Hillfort, refortified following the Norman Conquest, although interpretation of the earlier phase is complicated by the medieval earthworks (see below; James 2011, 276; Newman 2003).

A broad progression of hillfort development has been discerned from better studied examples elsewhere in the South West. It has been argued that early hillfort construction (6th-5th century) was characterised by simple single ditch and rampart construction, as seen at Orchard Wood, Membury and Stockland Great Castle. By the 4th -3rd centuries BC, however, many of these hillforts appear to have passed out of use, with those that remained in use enlarged and remodelled to include additional and more complex ramparts. Such hillforts have been termed 'developed' and would include Membury and Dumpdon (Brunning et al 2008).

The survey has helped to enhance the existing records of the Blackdown Hills hillforts by providing additional detail and clarity to their layout, extent and organisation, most noticeably at Orchard Wood and Stockland Great Castle. For instance, at Orchard Wood measured survey had previously identified an earthwork bank following approximately 50% of inner edge of the hillfort ditch (Riley 2002), whereas lidar-derived images have enable the bank to be identified as a subtle earthwork for almost the complete inner circuit. Similarly, cropmarks and subtle earthworks have provided greater clarity for the almost completely levelled and little understood defences within the southern half of Stockland Great Castle (Figure 38).

Roman

In terms of local significance, the most significant monuments of defensive character recorded by the survey were recorded initially as dating to the Roman period, although subsequent work has cast some doubt on this interpretation.

Almost 100 monuments of possible Roman date (i.e. AD43-AD409) are recorded on the Devon and Somerset HERs within the survey area. The distribution and broad character of the monuments (based on broad theme) is illustrated in Figure 41.

Prior to the survey, a single monument of Roman date had been ascribed a military or defensive character within the survey area, the mid-1st century Roman military occupation of the Iron Age Hembury Hillfort (MDV1854: Todd 2007). Several substantial post-built timber structures were identified at Hembury, including a probable *fabrica*, at which iron ore excavated from the Blackdown Hills was worked.

Approximately 10% of the potentially Roman monuments within the survey area are newly recorded. Three, or approximately 5% of the total, had initially been tentatively interpreted as possible forts or camps of Roman date.

Two of the possible camp sites, at Burrow Corner, Shute, (MDV118446) and Smallridge, All Saints, (MDV115825) are situated on elevated ridges with commanding views over the panorama to the south, the former in close proximity to the probable course of a Roman road (see Figure 41 and Section 5: Transport &

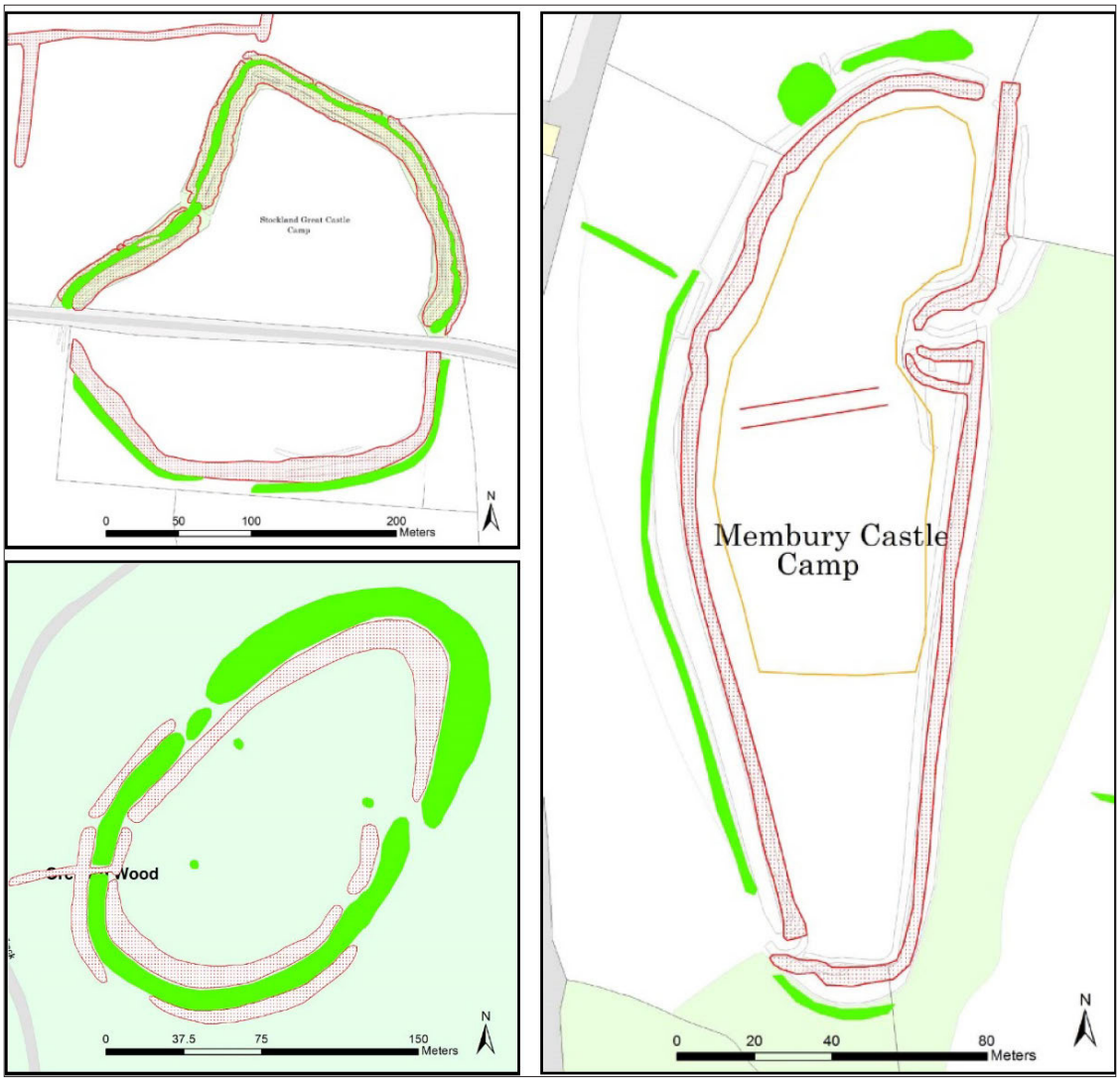


Fig 38: Hillforts of Stockland Great Castle (top left; MDV1913), Orchard Wood (bottom left; SOM11685) and Membury (right; MDV1930). The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

Communication). Each was identified on a single run of aerial photographs, from fragmentary cropmark evidence of possible buried narrow banks and ditches, the dimensions and morphology of the potential enclosures appropriate for Roman camps.

The third monument (MDV115454) survives as a rectilinear enclosure defined by a low bank and a shallow ditch, visible as earthworks on aerial photographs of the 1940s onwards. At approximately 115 by 80 metres in size, it falls comfortably within the range of smaller Roman camps.

Despite the clear upstanding remains, several factors raised questions about the viability of a Roman military interpretation. The situation of the enclosure, located on the lower slopes of a combe approximately 200 metres from a watercourse is atypical of a monument of this type (C. Smart pers.comm). Also, the south-eastern corner of

the enclosure was possibly overlapped by the western edge of a former farmstead, as depicted on the Tithe Map for Stockland parish. This accounted for the disturbed ground surface visible in this area on the lidar-derived images (see Figure 39). It was therefore considered possible that the visible earthworks were the remains of an earlier, medieval or post-medieval farmstead.

However, the relict earthworks have very little demonstrable relationship with the surrounding historic field pattern, characterised by HLC as Barton Fields of 15th-18th century date, with possible medieval origins (Figure 40). They are also of very different character to other farmsteads in the vicinity.

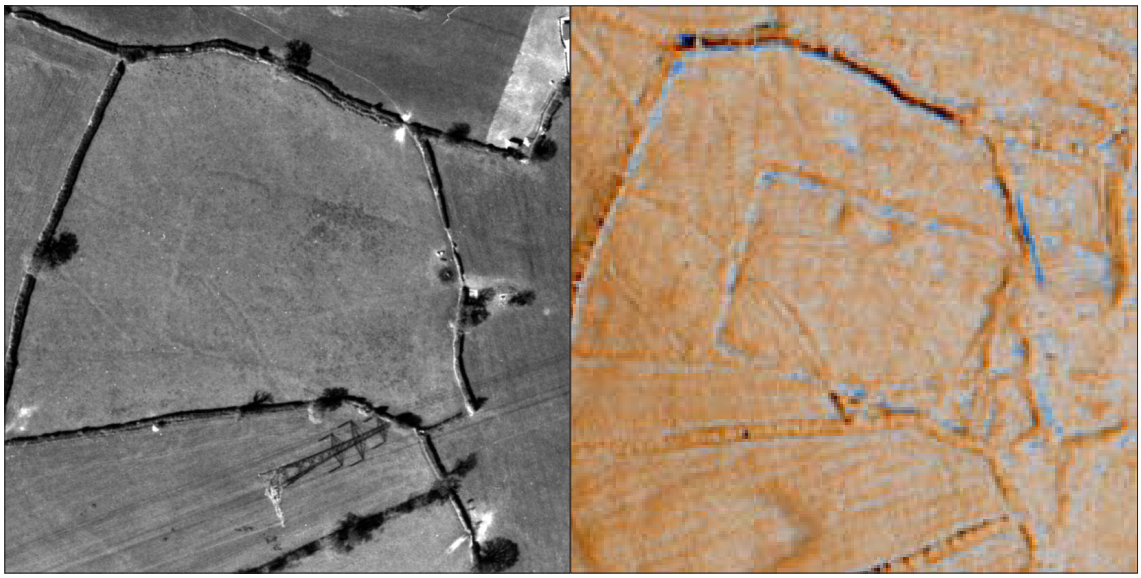


Fig 39: A bank and ditch defined rectangular enclosure in Dalwood parish, interpreted as the remains of a possible small fort or camp of Roman date (MDV115454, ST244012). Left: OS/96569 V 98 08-MAY-1996 © Crown copyright. Ordnance Survey. Right LIDAR ST2401 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014, visualisation © João Fonte.

The possible camps are located to the south east of the survey area, on the gentler, lower slopes of the Blackdown Hills, north and west of Axminster, close to or overlooking tributaries of the River Axe. They are also within 3.5 kilometres of the suggested course of the Axminster to Honiton Roman road (MDV118468: Toller 2014). Camps in such locations would be advantageously positioned for accessing the transport network and controlling access to the iron resources of the Blackdown Hills.

In early 2017 Devon County Council commissioned geophysical (magnetometer) surveys at Higher Corrie Farm and Smallridge to better define the extent, character and significance of the buried archaeological resource at these locations. Any evidence of occupation by a Roman camp would provide significant new insight into character of military movement through the South West of Britain in the middle decades of the first century AD (Smart 2017a and b).

Fig 40: The AI&M survey transcription overlain onto the Tithe Map for Dalwood. The enclosure earthworks are not in keeping with the surrounding historic field pattern, characterised as post-medieval Barton Fields. Tithe Map: Devon County Council.

At Smallridge, geophysical survey identified discontinuous linear anomalies that appear to form a coherent rectilinear pattern of gullies or ditches, the arrangement of which suggests at least one phase of enclosure on the ridgetop (Smart 2017a). The survey also identified positive anomalies interpreted as pits, possible hearths, and two circular anomalies which may represent structural ring gullies. The linear anomalies do not however, correspond with the cropmarks recorded by the AI&M survey and there is little within the geophysical survey results to support the interpretation of a possible Roman camp, with an interpretation as a hitherto unknown settlement and enclosure complex of prehistoric, Roman or early medieval date and domestic character more probable (ibid.).

In contrast, the geophysical survey at Higher Corrie Farm, Dalwood, revealed magnetic anomalies corresponding closely with the micro-topography recorded from both aerial photographic and lidar-derived sources. Despite the clarity of the upstanding earthworks, these magnetic anomalies have been interpreted as not consistent with those of a Roman camp, where clear traces of a rectangular ditch and bank would be expected (Smart 2017b).

The anomalies may instead represent an enclosure defined either by a wall, or bank with a rubble core, with no corresponding outer ditch, within which a series of smaller buildings were arranged around a central courtyard. An extensive spread of thermoremnant material in and around this possible range of structures suggests that it contained buildings of brick or tile.

Despite the site's problematic relationship with the surrounding historic field character, a post-Roman interpretation of the site seems probable. When considered together, the clarity of the earthworks, the historical and cartographic context and the geophysical survey results support the interpretation that the earthworks are

more likely to be related to the settlement of Higher Corry, deserted in the second half of the nineteenth century. Of lesser significance than a Roman camp, the site does have potential to yield important information regarding the development and desertion of a West Country settlement, perhaps from the medieval period to the 19th century.

In summary, based on the evidence of geophysical survey it is probable that two of the three sites interpreted by the survey as possible camps of Roman date are unlikely to be so. However, they have been included here as a valuable interpretive and methodological case studies, demonstrating the value of an integrated and flexible approach to landscape survey. It must also be considered that the geophysical survey relied solely on magnetometer survey and it is possible, if not probable, that earth resistance techniques might yet reveal significant aspects of these sites.

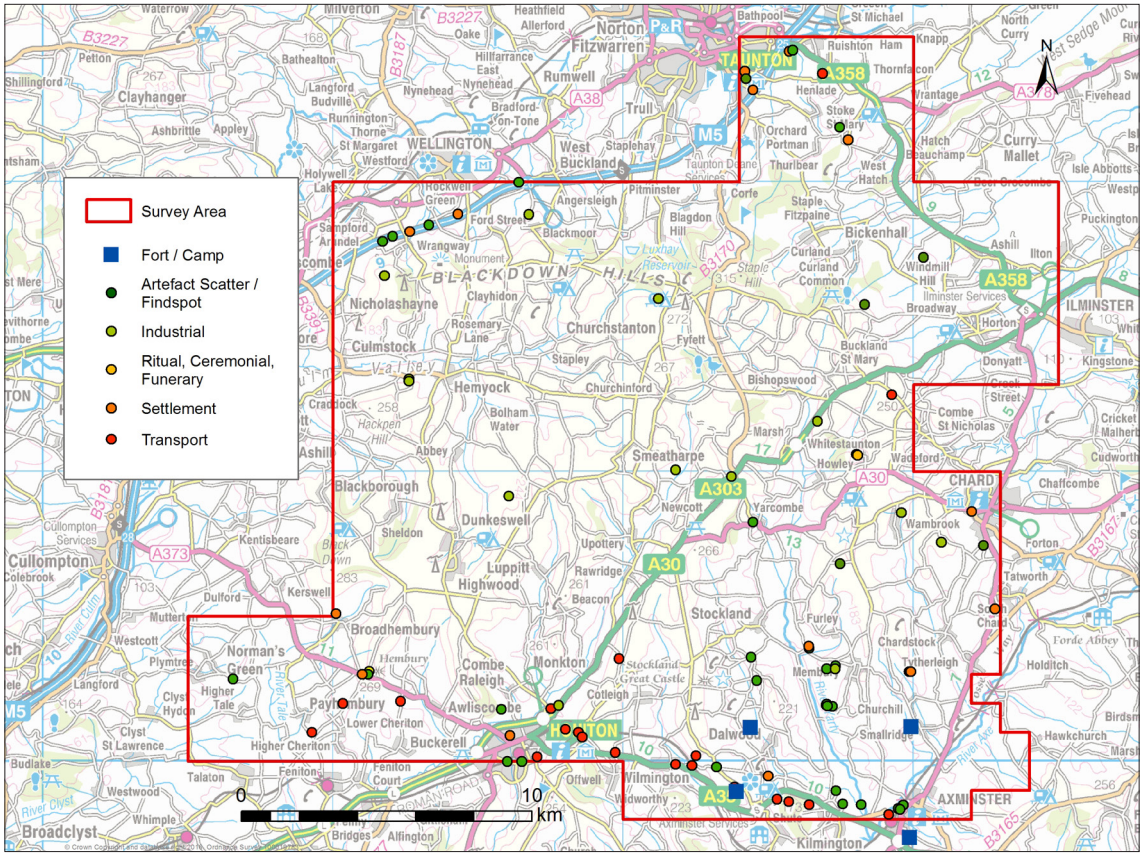


Fig 41: The distribution and broad character of monuments recorded as being of Roman date within the survey area, including initial AI&M survey interpretations. The Roman Fort at Woodbury Farm, Axminster is shown immediately south east of the survey area (MDV14185). © Crown Copyright and database right 2018. Ordnance Survey 100019783.

Medieval

Small defended sites of post-conquest medieval date are uncommon in Devon and Somerset. To illustrate, only 10 moated sites (excluding castle sites) are currently recorded on the DCCHER. Over 70 are recorded in Somerset but probably little more than half have been confidently identified (Aston 1982). As in Devon, some are in isolated locations, but the higher number probably reflects the greater degree of settlement nucleation seen east of the Blackdown Hills, and the concomitant number of moated manors associated with them.

This contrasts strongly with eastern counties such as Suffolk and Essex, where moated sites, from manorial settlements to defended stock enclosures, are common. In 1978 Aberg listed over 500 in each county (Aberg 1978). The county HERs now list roughly double that number.

Consequently, small medieval defended sites are rare in the survey area. The monument records of only two such sites, both previously recorded, were enhanced by the survey; a small possible moated site at Thornfalcon (SOM 43688) and a defended oval enclosure at Dunkeswell (MDV1525). The latter site is of interest here due to its morphological similarity to enclosures typically presumed to be of later prehistoric date, an assumption disproved in this instance by excavation (Silvester 1980).

Fewer than 40 post-conquest castle sites are known in Somerset, with a similar number recorded in Devon. Apart from royal sites (such as Exeter) the siting of castles in the medieval landscape was often dictated more by social, economic and symbolic drivers than military considerations; as 'nodes of power' in manorial networks rather than physical expressions of military might (Creighton and Freeman 2006; Rippon and Croft 2008, 206). The historic settlement pattern therefore influenced the choice of location. Consequently, throughout Somerset castles are found in association with nucleated villages and in isolated locations. In contrast, Devon's rural castles characteristically reflect the county's more dispersed settlement pattern.

It has been recognised that the settlement pattern within the Blackdown Hills reflects elements of both nucleated and dispersed settlement (Rippon, Smart and Pears 2015). The situation of castle sites might therefore be expected to reflect the dominant patterns from Somerset and Devon. However, within the survey area this pattern is reversed. Seven possible castle sites are located within the survey area, two of which are located within Devon towns; the putative seat of William Brewer (the endower of Dunkeswell Abbey, see Section 5, Religious, Ceremonial and Funerary), at Axminster (MDV16840), and the ruinous fortified manor at Hemyock (MDV1894).

Five further possible medieval castles are distributed across the survey area. Of these the best-known, and the only example in Somerset, is Castle Neroche (SOM43844) overlooking the Vale of Taunton Deane on the northern edge of the AONB. The extant earthworks incorporate two phases of medieval fortification superimposed

onto an Iron Age promontory fort. This complexity is further compounded by later use of the earthworks as a warren, complete with pillow mounds, plus 18th century sand and gravel extraction, possibly for turnpiking the roads to Wellington and Taunton, and even unfilled trenches of early 20th century archaeological excavations (James and Riley, 2011). An English Heritage analytical survey provided valuable interpretation, but lidar-derived images illustrate the difficulty in interpreting such complex remains (Newman 2003; see Figure 42).

The most significant contributions to the understanding of medieval castles in the survey area have resulted from the assessment of lidar-derived images for three monuments, at Widworthy Park in the East Devon AONB (MDV15339), and Bushy and Buckerell Knap, Buckerell (MDV117867 and MDV1848), in the catchment of the River Otter.

Focused on the apex of a natural knoll, landscaped and terraced to provide a level platform about 35 metres across, the earthworks at Widworthy have been known by the name 'Castle Hill' since at least the late 18th century.

Interpreted variously as a windmill mound, Iron Age enclosure and Saxon Burh, interpretation of the earthworks is complicated further by the suggestion of early 19th century landscaping on this site, although there is no historical evidence for this and some evidence of tree planting that predates this by a century or more (Ramsden 1947; Higham 1979; Haydon 1989).

Higham (1979) interpreted the site as a medieval fortification and, despite Ramsden's earlier identification of defensive 'terraces' to the north west of the site, identified no evidence of an outer enclosure to support the interpretation as a motte and bailey. Nonetheless, Higham suggested the fortifications may date from the second major period of motte construction, during the civil wars of King Stephen's reign in the 1130s and 1140s, a military function possibly supported by the field-name Barberry adjacent to the monument, possibly a corruption of 'barbican'.

Through the visualisation of bespoke lidar survey data, the AI&M survey has recorded a wide linear bank and a ditch, as subtle earthworks to the north east and north west of the hilltop platform (see Figure 43). With less distinct and substantial linear banks to the south and south-west, these have been interpreted as evidence of ploughed-out external defences, supporting Ramsdens earlier identification of a bailey-type enclosure at Castle Hill.

The enigmatic earthworks at Bushy and Buckerell Knap were, in contrast, rejected by Higham as medieval fortifications, in favour of an interpretation as natural formations (Higham 1979; 1988, 146). The earthwork mounds situated at either end of a prominent natural ridge (or Knap), had been subject to various interpretations, including as prehistoric fortifications, outliers of Hembury Fort or a series of tumuli, but not as castles (Hawken 2007). Obscured by trees and situated as they are little more than 300 metres apart, this conclusion is perhaps understandable.

Fig 42: Lidar visualisation of Castle Neroche (SOM43844). © Neroche Landscape Partnership Scheme.

Fig 43: Lidar visualisation of possible Motte and Bailey at Castle Hill, Widworthy Park (MDV15339). LIDAR SY2199 Bluesky International DTM 24 & 30-APR-2016. © Devon County Council.

However, measured survey and historical research undertaken as part of a community archaeology project from 2002-2007 raised the possibility that one, if not both sites were small motte and bailey castles (Hawken 2005; 2007; Creighton and Freeman 2006).

The AI&M survey, through the visualisation and interpretation of existing Environment Agency lidar data, strongly supports Hawken's suggestion of the earthworks at both Buckerell and Bushy Knap as motte and bailey castles. Although the relationship and relative chronology between fortifications remains uncertain, the close spacing is not in itself an obstacle to this interpretation, with similarly juxtaposed castles known in Devon at Winkleigh, and Eggesford and Heywood (Creighton and Freeman 2006). These may include 'counter castles' built by separate lordships in neighbouring manors whereas Bushy and Buckerell Knap fall alongside, and probably predate, the same parish boundary. However, the close association of the earthworks with the parish boundary and historic evidence of a deer park in the landscape to the south (Hawken 2005; 2007) might support the interpretation of an evolution from an early, post-conquest defensive function (Buckerell Knap) to later role more concerned with symbolic status and comfort (Bushy Knap) (Hawken 2005).

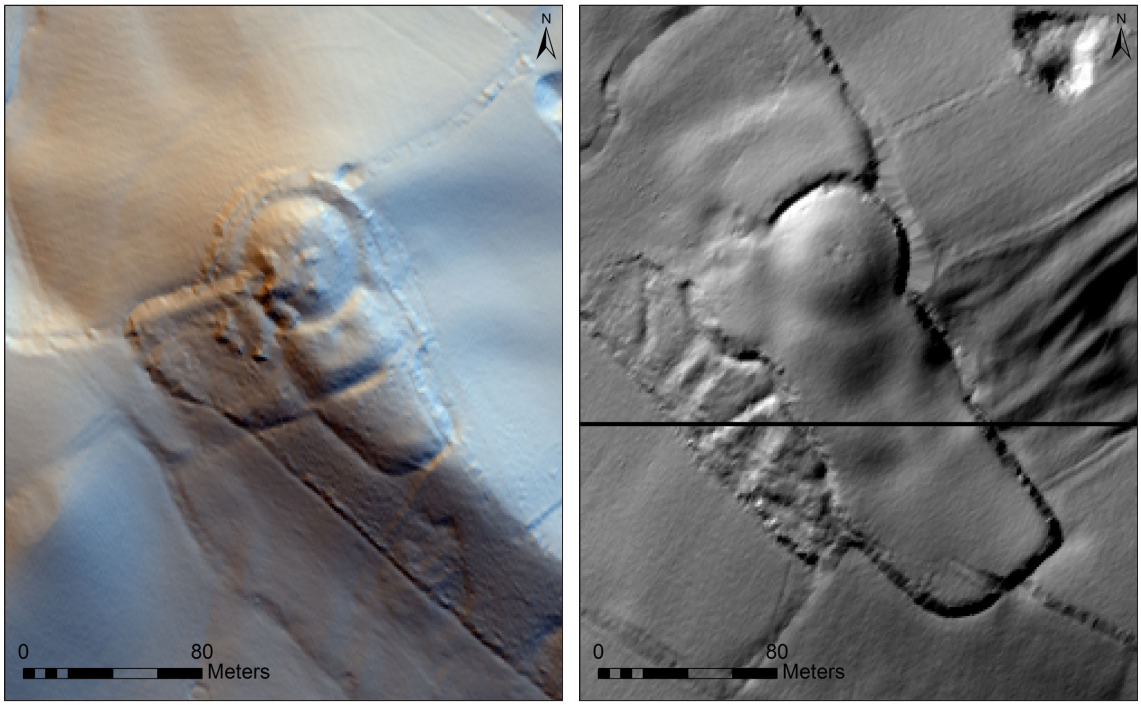


Fig 44: Lidar visualisation of possible motte and bailey castles at Buckerell Knap (right) and Bushy Knap (left) (MDV117867 and MDV1848). LIDAR SY2199 Bluesky International DTM 24 & 30-APR-2016. © Devon County Council. LIDAR ST1301 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014 © Devon County Council.

Second World War – The Taunton Stop Line

The very east of the project area is dominated by a concentration of defensive structures and earthworks of 20th century date (see Figure 36). These are largely associated with the Taunton Stop Line, which is probably the most complete inland defence line in the country. Intended to slow enemy advance in the event of a successful landing that had penetrated the 'coastal crust' (Osborne 2011, 45), it was

constructed across the narrowest part of the South West peninsula during the early years of the Second World War when the threat of invasion was greatest.

The basic line was completed in autumn 1940 and consisted of west-facing anti-tank and anti-infantry obstacles, pillboxes and gun emplacements (Dawson, Hunt and Webster 2011, 22). Following both natural and artificial barriers, within the survey area it runs along the disused Chard canal at Ilton, the line of the railway past Ilminster and Donyatt, and the River Axe from Wadbrook to Axminster, via Weycroft. Described by Foot as a 'prepared battlefield' (Foot 2005, 2), the defensive line was augmented by ditches, barbed-wire entanglements and anti-tank obstacles, and defended by gun emplacements and pillboxes. It was further protected from incursion by anti-tank mines, road and railway blocks and bridges prepared for demolition (Figure 45). By April 1941 the emphasis had changed in favour of anti-tank islands and centres of resistance that could be defended by the limited personnel available, and the in-depth defences were never fully completed (Dawson, Hunt and Webster 2011, 22).

Fig 45: Anti-tank gun emplacement and concrete post forming an anti-tank obstacle on a railway embankment of Second World War date, part of the Taunton Stop Line, just beyond the survey area south of Bow Bridge, Axminster (MDV50876 and MDV50885, circa SY 290 980). Photographs: S. Knight 2017.

Foot (2005) discusses specific defence areas at Weycroft, Wadbrook and Ilton, but these are by no means the only places within the survey area where significant remains survive. Although many of the features visible on aerial imagery were previously recorded in some form on the Devon and Somerset HERs, some additional features were observed.

For instance, extensive stretches of earthwork embankments recorded along the Rivers Axe and Isle (Axe, MDV119767; MDV117217; MDV117218; MDV117274; Isle SOM38671) had previously been identified as fragmentary remains around Axminster, and several explanations including routine dredging and flood defence were proposed. However, when considered alongside more extensive embankments identified by this survey around Wadbrook (MDV119767; see Figure 46), it becomes more plausible that they resulted from defensive works associated with the Taunton Stop Line.

Corroborative evidence comes from a recent oral history project based in Axminster. Participants Norma and Delphine stated that the Yarty and Axe were dredged as

part of the anti-invasion preparations, the silt having been used to bank up the sides (Axminster Remembers 2017). This activity has also been recorded in other nearby areas; around Ilminster 'efforts were made to deepen the River Isle, but the river silted up as fast as it was excavated' (Hawkins 1996, 97), 'the banks [of the River Axe] were cut back and steepened', and earth banks just south of Axe Bridge supported a line of anti-tank cubes (Foot 2005: Wadbrook, 2).

The survey has, possibly for the first time, indicated how army methods for 'improving' a shallow river or stream into an effective anti-tank obstacle were used in practice in the early years of the war (D. Hunt, pers.comm.).

Although erosion has destroyed much evidence of this type of defence, some remnants persist. At Wadbrook for example, the remains of an anti-tank ditch are identifiable as an earthwork on lidar-derived images across the loop of the river, despite records of it being infilled by 1950 (Figure 47).

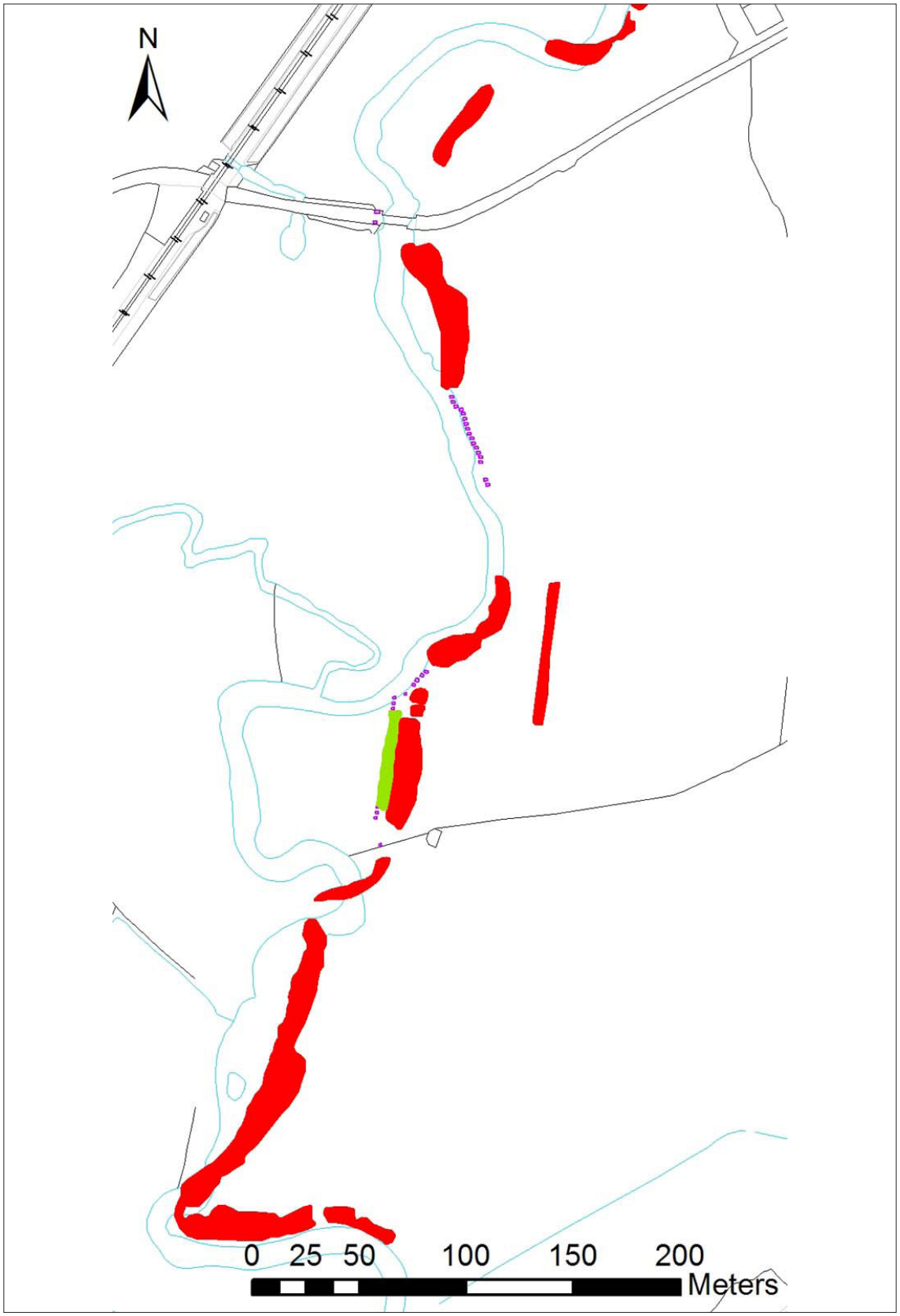


Fig 46: Earthwork embankments along the eastern bank of the Axe at Wadbrook (MDV119767). Base mapping © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

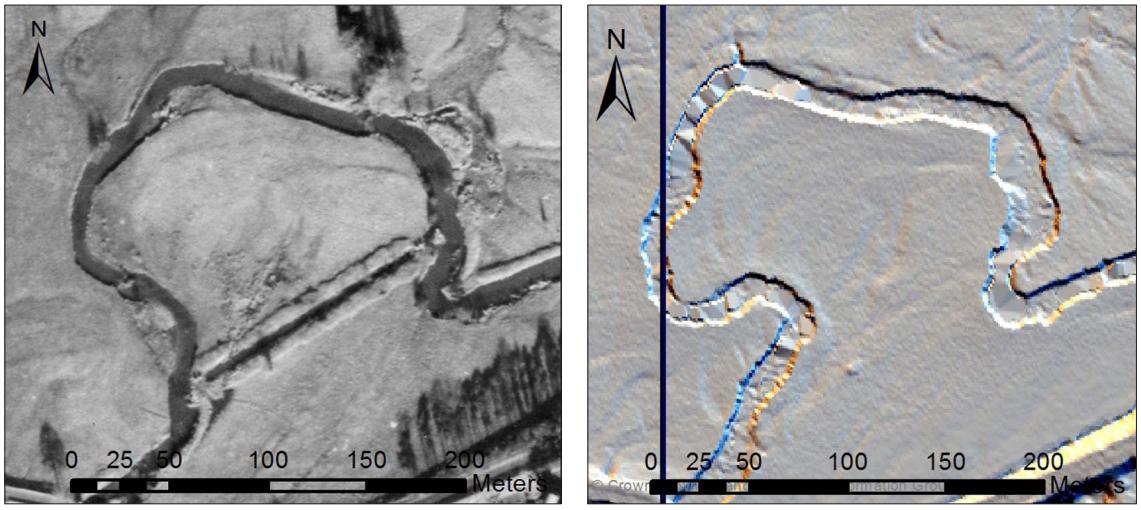


Fig 47: Anti-tank obstacle across a loop of the River Axe consisting of substantial earthwork ditch with bank either side, and anti-tank cubes at its southern end (MDV48158); very clearly visible on aerial photographs taken in 1948, with slight earthwork remains visible on recent lidar-derived images. RAF/CPE/UK/2431 RP 3198 22-JAN-1948 Historic England (RAF Photography). LIDAR SY2998 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014 © Devon County Council.

Such anti-tank obstacles were substantial earthworks and had an unintended function as recreational amenities; according to two interviewees, the anti-tank ditches became water-filled and locals took advantage of them to swim in during summer months, particularly near Cloakham at Burnthouse Bridge (Axminster Remembers 2017).

'Dry' components of the Stop Line also appear to have been enhanced in a similar fashion. Aerial photographs of July 1940 support the interpretation that the profile of a short section of the disused Chard Canal north of Solomon's Hollow, east of Creech St Michael, had been deepened to accompany and complement newly cut anti-tank ditches to the south (SOM15424; see Figure 48).

Important nodal points along the inland defence line were defended during the summer of 1940, incorporating road blocks and existing buildings into anti-tank obstacles (Dawson, Hunt and Webster 2011, 22). However, when efforts shifted to area defence in spring 1941, major crossing points on the Taunton Stop Line gained extensive encircling fortifications.

The anti-tank ditches illustrated in Figure 48 were to the east of one such Anti-Tank Island at Creech St Michael, which falls just north of the survey area. Within the project area anti-tank islands were recorded at Axminster (MDV45243; Figure 49) and Ilton (SOM16383; Figure 50-51).

Some elements of these defences, such as the substantial ditch and banks between the town, railway and river to the north east of Axminster (MDV48160) were not recorded on Royal Engineers plans.

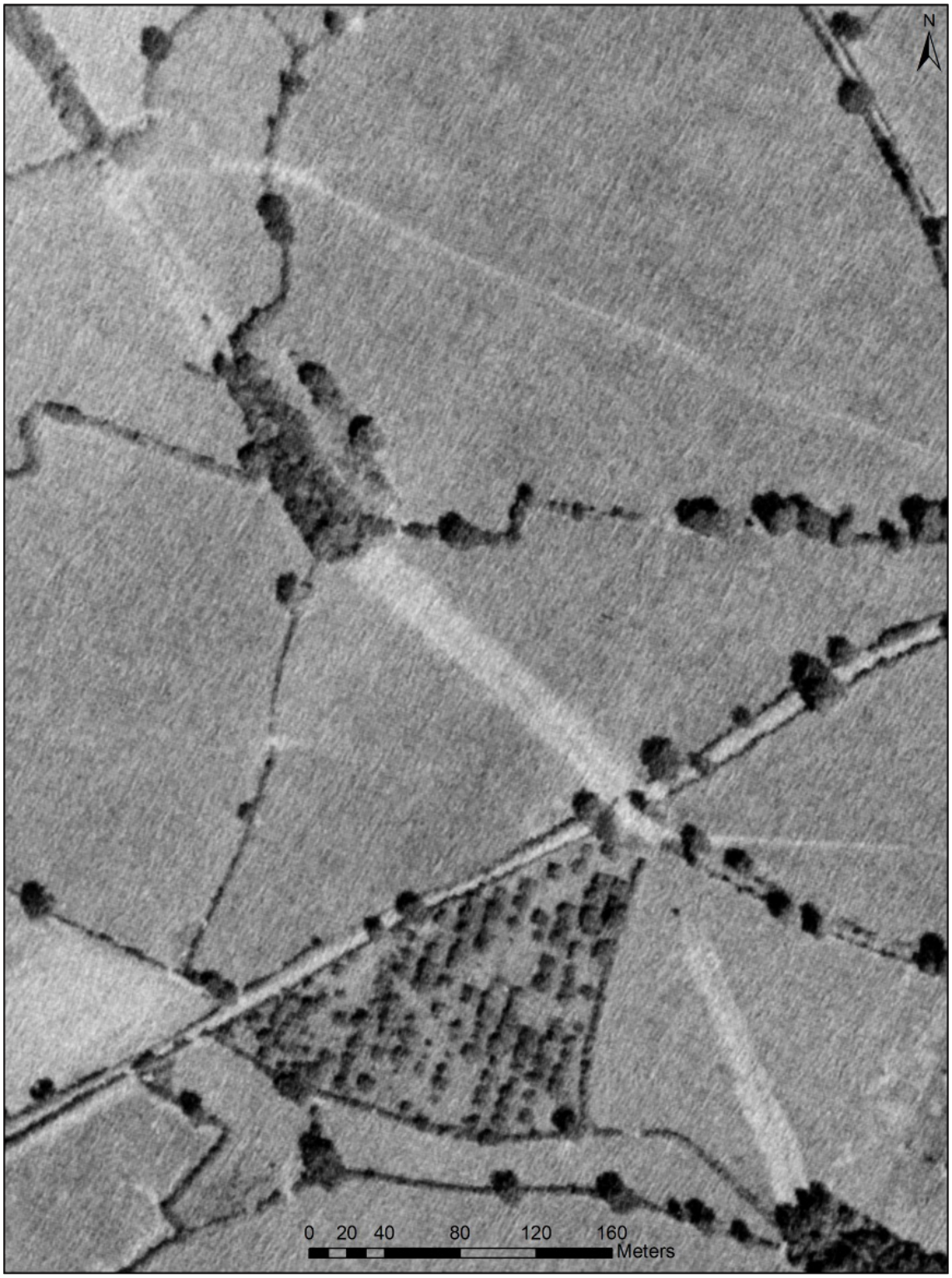


Fig 48: Newly cut anti-tank ditches flank the road and a short length of the Chard Canal is similarly enhanced. SOM15424; RAF/225B/UK854/2 VP 1 28-JUL-1940 Historic England (RAF Photography).

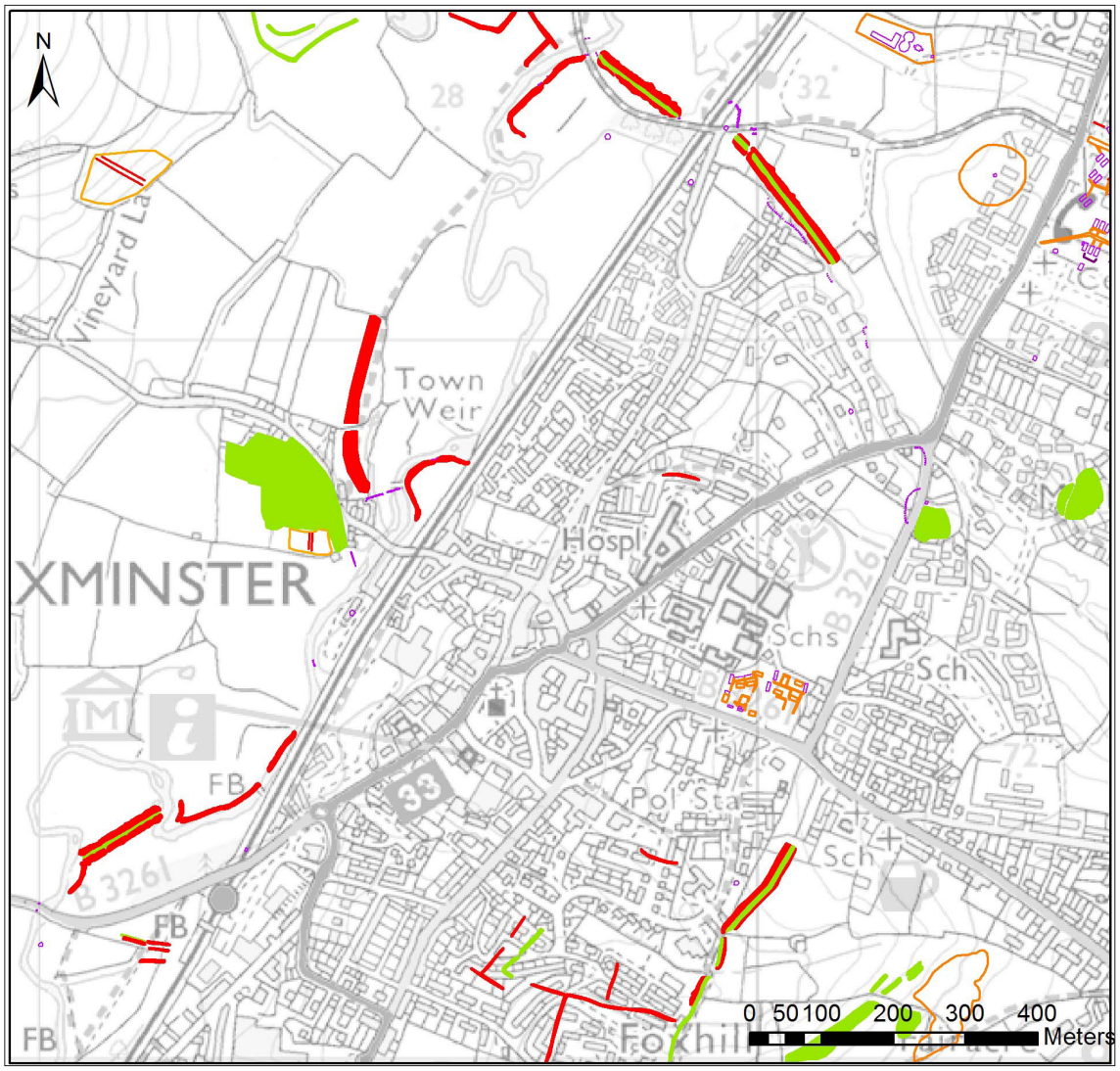


Fig 49: Axminster anti-tank island; transcriptions show the extent of the banked and ditched defences (red and green) and lines of anti-tank cubes and individual pillboxes (in purple). The camp at Millwey Rise (see below) is just visible top right, with a smaller and probably unrelated camp sited within the town (MDV117295). The previously mentioned tank trap (MDV48148) is visible bottom left. The larger pits (irregular green polygons) are not related to the Stop Line. Base mapping © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

On occasion, additional details such as the orientation of anti-tank cubes that are no longer visible from the air (SOM55365), or the presence of pillbox blast walls (MDV48673 and MDV48674), could be mapped or recorded. For those features that survive, useful information on their original form and current condition has been recorded; for example, as it appears on the aerial imagery the plan of the pillbox at Bagley Hill (MDV39374) differs from that shown on modern mapping, and on recent images it appears to have lost its roof.

Previous AI&M surveys have demonstrated that the implementation of defences can vary from those depicted on contemporary plans (Hegarty and Newsome 2005, 129-131), often due to unforeseen conditions encountered in the field. In addition,

site locations provided in military Cassini Grid when converted to British National Grid can also introduce errors of up to 200m. These uncertainties may be more pronounced when recording 'coastal crust' defences or mobile installations, but a degree of uncertainty remains, when interpreting modern landscapes from historic aerial photography even in apparently well documented situations, such as the Taunton Stop Line. For instance, a number of small structures visible on the aerial photographs resemble pillboxes in their size, shape and disposition, but could be agricultural or industrial in origin. Many are not visible on recent aerial imagery (MDV119012, MDV119031, MDV119034, MDV119765, MDV119768, MDV119769), but some remains survive *in situ* (MDV119169, MDV119709, MDV119749, MDV119750). Further investigation is required to ascertain whether any of these features are military structures not recorded in the contemporary documentation.

Unlike at Axminster and Ilminster, Ilton was one of several 'greenfield' anti-tank islands, constructed as an isolated strongpoint where important routes crossed the Stop Line, some 500m from the village. Here, the earthworks of the Chard Canal and Taunton and Chard Branch railway line converge, the incorporation of these existing features into the Stop Line perhaps fulfilling a dual role of enhancement and concealment. A Royal Engineers map of 1941 shows the layout of this Island (Figure 50). The perimeter defences were defined by sections of anti-tank ditch flanking roads to the north and south, the railway line to the west, and existing field boundaries to the east and north west. These were reinforced at strategic points with pillboxes, road and rail blocks, concrete posts, and barbed-wire entanglements, with the former canal, forming part of the Stop Line, bisecting the Island (Foot 2005). An interesting attempt at camouflage is also evident with one pillbox (SOM55201) which was constructed to look like a bus shelter, complete with a clock-face on the wall and timetables of buses that never ran (Hawkins 1996, 99). This façade has now been removed, but the pillbox remains *in situ*.

'Soft' elements of the anti-tank island, such as barbed-wire entanglements, had been removed by 1944 and were not visible on the aerial photographs available to the survey. Nonetheless, the value of examining the aerial sources in parallel with contemporary plans is demonstrated by the accurate location of components only approximately indicated on the engineer's plan, including road blocks (SOM38467 and SOM38464) and obstacles (SOM38468 and SOM38469; see Figure 51). Previously unrecorded hardened features have also been identified in the environs of the anti-tank island, including an extensive length of anti-tank cubes along Chard Canal on the north side of Merryfield airfield (SOM55403) and a section of anti-tank ditch and obstacles to the south (SOM38466, SOM38465; Figure 51).

Post-war development has destroyed large areas of the Stop Line defences, for instance at Chard/Forton, whilst in other places preservation remains remarkably good. Foot (2005) recognised the importance of the surviving defences, judging the defence areas at Wadbrook, Weycroft and Ilton to be of national significance. The completeness of the extant defences in these locations allows the relationships between the components to be identified and the defensive function of the Stop Line to be better interpreted and understood (Foot 2005; Wadbrook, 6), enhanced both by

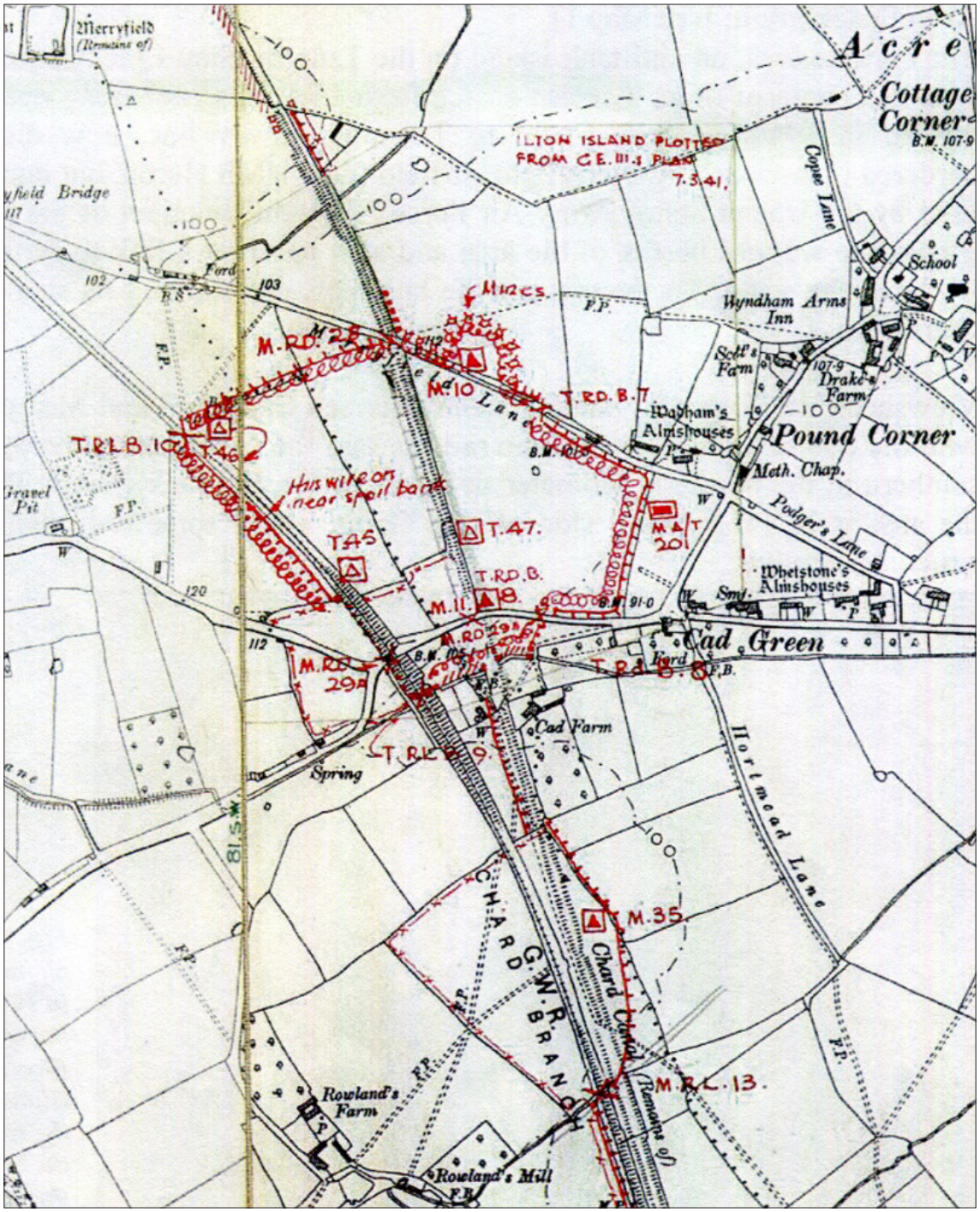


Fig 50: 1941 Royal Engineer's map of Ilton anti-tank island (SOM16383) and section of the Taunton Stop Line following the course of the former Chard Canal and Taunton and Chard Branch railway line. Reproduced from Foot 2005.

Fig 51: Ilton anti-tank island visible on aerial photographs of 1944 (left), showing the central anti-tank ditch flanked by prominent earthwork banks. Newly recorded structures (top-right) to the north of the island include a road block (SOM38464) across Merryfield Lane and to the south (bottom-right) a road block across Cad Road (SOM38467) and two sets of obstacles along a stream (SOM38468 and SOM38469). US/7GR/LOC390 RP 3034 13-AUG-1944 Historic England (USAAF Photography). Base mapping © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

extant contemporary documentary evidence, and additional detail provided by the aerial photographic resource.

Whilst sections of Stop Line infrastructure have been Listed at Grade II (for instance List entry Numbers 1430527 and 1435451), the landscape features of the Stop Line fulfil many of the criteria for further statutory protection, with good examples of pillbox types, rare components ('double-decker' pillbox and bridge roadblock plinths), extensive rows of anti-tank tetrahedra and concrete posts *in situ*, as well as survival of anti-tank ditch earthworks and rail blocks.

Evidence recorded by the AI&M survey at Axminster also indicate that elements of the anti-tank island survive in a form appropriate for designation consideration; earthwork defences are still readable in the landscape and several structural components are accessible by virtue of their location in the town. Some features may be vulnerable to loss, particularly given Axminster's location within the Greater Exeter Strategic Plan area. In light of the AI&M survey results summarised here and previously for the South Devon Coast (Hegarty, Knight & Sims 2014), a refresh of the work undertaken by Foot may be beneficial (see Appendix A).

Second World War – Airfields

The airfields of the Blackdown Hills are an enduring feature of the modern landscape and an important reminder of the contribution the area made during the Second World War.

Despite an urgent need for airfields across the South West, the Somerset Levels and Devon's characteristic rolling hills and steep, wooded valleys made finding suitable locations problematic. The Blackdown Hills high, flat plateaux and proximity to the Atlantic and English Channel, made it an ideal location (Figure 52). Four airfields are located within the project area. These include RAF Upottery (MDV47202) and RAF Dunkeswell (MDV45090) in Devon, and RAF Culmhead (SOM44340) and RAF Merryfield (SOM55403) in Somerset.

Fig 52: RAF Dunkeswell (MDV45090). The high flat plateaux which characterise the Blackdown Hills made it an ideal location for the construction of airfields in the South West during the war. NMR 24672/03 08-AUG-2007 © Historic England Archive.

The intended roles of these airfields varied and evolved throughout the course of war as threats developed and priorities changed. During the early stages of the war, the airfields in the South West, located away from front line defence in the south east, largely fulfilled a role of training, support, and coastal reconnaissance. As the war progressed, however, these airfields played an increasingly central role, both during the Battle of the Atlantic and in the preparations for, during and after, the invasion of Normandy.

The role of RAF Culmhead, opened in 1941 as RAF Church Stanton, was as an emergency landing ground and satellite airfield for RAF Exeter within 10 Group Fighter Command, although was later declared to be self-accounting and no longer a satellite station (Riley 2015, 8). The airfield was occupied by Polish and Czech Squadrons variously engaged in the defence of Exeter and Bristol, convoy patrols, Channel sweeps and bomber escorts. It was also home to the O2 Detachment of the Royal Aircraft Establishment, Farnborough, carrying out trials such as testing barrage balloon cutting devices (Berryman 2006, 52-53). Renamed by December 1943, it also played an active role in operations up to and following D-Day (Figure 53).

RAF Dunkeswell (Figure 52) was also originally conceived as a fighter station, although during its construction was allocated to RAF Coastal Command to address the lack of airfields in the South West needed to combat the growing threat from U-boats operating in the Atlantic, from bases in Western France. Construction was started in 1942, with Squadrons of the American 479th Anti-Submarine Group first operating from the airfield in August 1943. By October the base was handed over to the US Navy making Dunkeswell the only Second World War US naval air base in the UK (South West Airfields Heritage Trust 2017).

Fig 53: RAF Culmhead (SOM44340) demonstrating its role as a fighter station (left), with parked fighter planes (top right) and fighter pens (bottom right). These fighter pens are designated as a Scheduled Monument. Left and top right, US/7PH/GP/LOC14 RV 6044 09-AUG-1943 Historic England (USAAF Photography); Bottom right, RAF aerial photo digital mosaic courtesy of Somerset County Council.

Both RAF Upottery and RAF Merryfield were constructed relatively late in the war as standard bomber bases, allocated to the United States Army Air Force under the Bolero scheme, an agreement between the British and American governments to build and provide airfields for the USAAF to enable military troop build-up in preparation for the invasion of Europe. During 1944, these airfields, housing a large force of medium bombers and gliders, became engaged in intensive training exercises for D-Day airborne operations (Figure 54; South West Airfields Heritage Trust 2017).

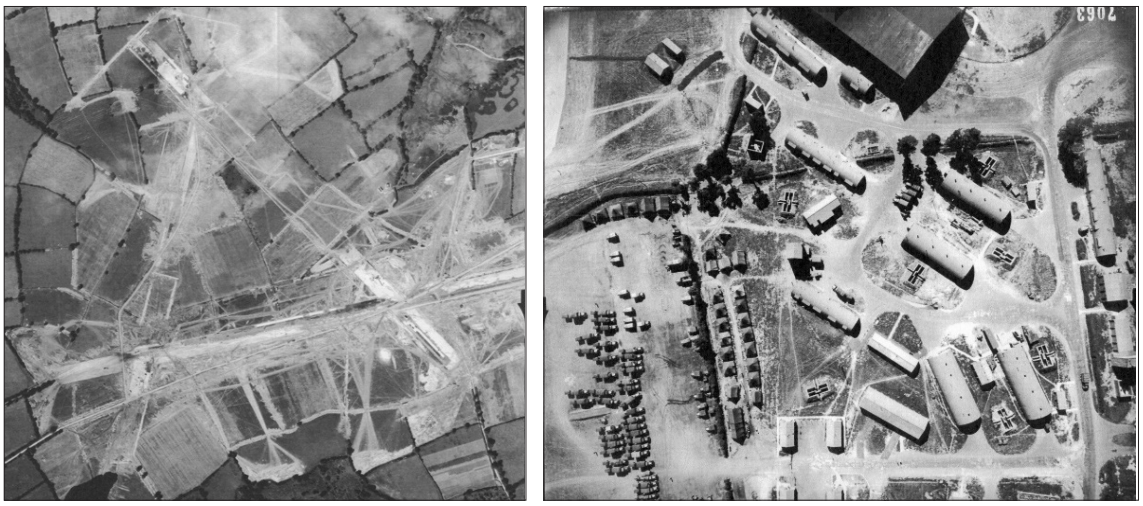


Fig 54: RAF Upottery (MDV47202) and Merryfield (SOM55403) were constructed in preparation for the invasion of Europe. RAF Upottery under construction in 1943 (left) and signs of military troop build-up in August 1944 at Merryfield, with bell tents and trucks to the left of the Nissen huts and embanked shelters (right). US/7PH/GP/LOC14 6028 09-AUG-1943 Historic England (USAAF Photography); US/7GR/LOC390 FV 7063 13-AUG-1944 Historic England (USAAF Photography).

During the post-war period the airfields have had various functions. RAF Culmhead, for example played an important role during the Cold War when a radio listening station was constructed as part of the Composite Signal Organisation of GCHQ. This closed in 1999 and is now partly occupied by a business park and a solar farm. RAF Merryfield, although virtually abandoned by 1960, was later reopened and remains in use as a training facility by the commando helicopter squadrons (Berryman 2006; Figure 56). RAF Dunkeswell, closed in 1949, is today operated as a private airfield by Air Westward Ltd (Riley 2015, 6) and is also occupied by a solar farm and light industrial units. RAF Upottery closed in 1948 and has largely reverted to agricultural use, although is still used by a flying club and houses Smeartharpe Stadium, used for stock car racing (Smith 2000, 242; Figure 56).

Despite such varied post-war roles, much original wartime fabric survives. Comprehensive surveys have been carried out at Upottery, Dunkeswell and Culmhead (Francis 1995, 1997, 2001; Riley 2015) to assess the extent and quality of buildings and structural survival, with recommendations for conservation and future management. No such survey has been carried out at Merryfield, probably due to its continued use as a Royal Navy operational airfield.

Fig 55: Casualties arrive at Merryfield following the Normandy Landings. Reproduced from Berryman (2006, 115).

Fig 56: Post-war uses of the airfields. Stock car racing on the former runway at Upottery (left) and a Merlin helicopter prepares to land at Merryfield airfield (right).

As part of a study commissioned by English Heritage to assess the relative significance of airfields in England (Francis et al 2013), each site is ranked from 1-10 (10 being of highest significance) according to factors as how much of the original buildings and structures survive, their state of repair, surviving artwork

and historical significance. According to this classification, Dunkeswell is scored 6, Culmhead and Upottery 4 and Merryfield 3 (Riley 2015, 41).

Statutory protection of these airfields is varied. In 2001 the most important surviving structures and buildings at RAF Culmhead were designated as Scheduled Monuments, including the fighter pens (Figure 53) and associated structures and buildings on the south west side of the airfield, two groups of pillboxes on the north side of the airfield and the two control towers. Dunkeswell, which is the best preserved and most complete of all airfields in the west of Britain associated with the Battle of the Atlantic and only airbase for the US Navy, has had arguably lesser protection. Several structures including the Watch Office, Fire Tender Shelter, Floodlight trailer and tractor, Operations Block and Crew Briefing room were listed in 2002. The discrepancy between listed or scheduled structures is a legacy of former designation policy. Despite a large number of surviving buildings at Upottery, some of which have been deemed of special interest, such as the Operation Block, Radar Workshop and the buildings that make up the air traffic control group, there are currently no examples currently designated; Upottery represents a largely complete and rare example of an airfield used by the Ninth Air Force Troop Carrier Command during the D-Day operations (Francis 1995, 134), and its comparable score of significance with Culmhead may present a valid case for designation. A survey and assessment of the surviving features at Merryfield is recommended.

Detailed wartime plans exist for each of the airfields and consequently little previously unknown detail has been recorded during the survey. Exceptions at Dunkeswell include substantial earthwork banks used to landscape the site during modifications to the airfield design to compensate for local topography, with specially constructed loops to the north west and south west.

At Upottery, a previously unrecorded structure and crescent shaped earthwork bank was recorded to the east of the airfield, the bank possibly derived from landscaping or designed as a variant aircraft pen.

Other newly recorded elements include enclosures defined by barbed-wire entanglements along the northern perimeter of Culmhead (Figure 57). The AI&M transcriptions have also provided much better definition and accuracy of features shown on the wartime airfield plans and have greatly enhanced the Devon and Somerset HER records.

Second World War – Millwey Rise US Military Hospital

Another legacy of Axminster's wartime experience is embodied by the Millwey Rise estate. Around D-Day, a military hospital was established here by the US authorities to treat returning wounded soldiers. Known locally as 'The Camp', the 315th Station Hospital is clearly visible on the 1940s RAF aerial photographs as an extensive complex of structures, trackways and earthworks covering over 20 hectares.

Recordings taken for an oral history project have enhanced the aerial photographic interpretation of the camp. Two sisters, Norma and Delphine, recall how temporary

Fig 57: Newly recorded features include substantial earthwork levelling works at Dunkeswell (top left), structure and crescent shaped bank at Upottery (top right) and fenced compounds at Culmhead (bottom). RAF/CPE/UK/2491 RP 3204 11-MAR-1948 Historic England (RAF Photography). The base map is © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England. RAF/CPE/UK/2491 RP 3192 11-MAR-1948 Historic England (RAF Photography).

huts, probably the curved-roofed Nissen or Quonsett hut type structures visible on the western side of the camp, were used for accommodation, whilst brick structures functioned as operating theatres; these are likely to be the pitched roofed structures linked by covered walkways recorded in the east of the camp (Axminster Remembers 2017). The sisters also reminisce about James Cagney visiting and dances held in the camp, providing detail and colour that the aerial imagery cannot; the toilets were housed at the end of the wards. Further reminiscences include contemporary ground photographs capturing pitched roofed structures with bell tents in the distance, in what appears to be the south-eastern part of the complex (Carson 2018).

Additional information can be gleaned from the aerial photographs though, and the camp's probable water treatment works was identified 300 metres to the west (MDV119032), whilst a smaller military base of ten huts (MDV117295) was recognised within the town. The latter was visible on aerial photographs taken from 1940; this earlier date, together with its siting within the Axminster anti-tank island, could suggest an association with the Taunton Stop Line rather than the hospital, although this has been described as unlikely (D. Hunt pers. comm.).

What is also clear from the aerial photographic resource is that much of the hospital layout has been fossilised in the post-war street plan (Figure 58). This corresponds well with local memories of demobbed soldiers squatting in the disused huts (Axminster Remembers 2017) and families occupying the wartime structures until the council replaced them with prefabricated homes in a gradual process during the 1950s (Carson 2018).

Although most of this transformation was complete by the early seventies, a few military structures endured amongst the new accommodation, and the last hut was removed between 2010 and 2014 (Figure 59). Although no extant structures can now be seen, below-ground remains are very likely to survive, with some elements noted during a recent community project (Carson 2017).

Fig 58: Millwey Rise (MDV49431) in the immediate post-war years (left) and now (right); note the transcriptions partially corresponding to the current road layout. RAF/CPE/UK/2431 RP 3201 22-JAN-1948 Historic England (RAF Photography). Base mapping © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

Fig 59: The sole surviving military structure at Millwey Rise in 2010 (right) and with its pair in 1948 (left); this too has now been demolished (MDV49431). RAF/CPE/UK/2431 RP 3201 22-JAN-1948 Historic England (RAF Photography). Next Perspectives APGB Imagery SY3099 23-MAY-2010. RGB Aerial Photography © Bluesky International/Getmapping PLC.

Farming, Forestry (40%)

An Agricultural Landscape

Monuments under the 'Farming and Forestry' theme form the second largest group identified by the survey after 'Industrial' features (see Table 4). Field boundaries are the second most numerous monument type recorded after extractive pits, earthworks associated with orchards the third. Catch meadows were the fourth most numerous, but at only 3-4% of the total do not form such a significant group as seen in previous surveys in the region. As such, these water management features will not be discussed in detail in this report. For a detailed account of catch meadow development and function see Cook and Williamson 2007. For a local perspective on the significance of catch meadows to the agricultural landscape of Exmoor see Hegarty and Wilson-North 2014.

The case studies below will examine the evidence for other aspects of the agricultural landscape, including pillow mounds, field boundaries and orchards, and their significance in the historic landscape of the Blackdown Hills.

Pillow mounds

Rabbit farming was a common feature of the British countryside during the medieval and post-medieval periods. Evidence of such activity is frequently noted in place and field name evidence on mid-19th to early 20th century historic maps. Despite a high incidence of warren features recorded on Dartmoor, which include warren houses, pillow mounds, stone vermin traps and fodder enclosures (Williamson 2007, 109-117), comparatively few surviving examples have been recorded elsewhere across Devon and Somerset, no doubt a consequence of 19th-20th century agricultural improvement. The most common surviving feature associated with this industry is the pillow mound, an elongated, low earthwork bank constructed to provide accommodation and protection for rabbits. Two such earthworks were recorded in close proximity, at Hawk's Moor (SOM29887) and Trickey Warren (SOM37064).

The presence of a warren at Hawk's Moor is suggested by field name evidence on the Otterford Tithe Apportionment, including 'Broad Warren' (plots 64 and 65), 'Warren Plot' (plot 66), 'Warren Breach' (plot 68) and a house recorded as 'Warren House' (plot 67). The parish Tithe map also shows this area as largely unenclosed land. Such land and its marginal location within Hawks Moor are typical settings for warrens across the country (Williamson 2007, 25; 36). This location possibly also falls within the southern extent of Prior's Park Wood deer park (SOM43505) which belonged to Taunton Priory (Riley 2011, 132). The association of rabbit warrens with deer parks is discussed above in Section 5: Settlement.

Earthworks of ten pillow mounds, including four newly identified examples, are located on the steep north west facing slope at Hawk's Moor. Such a sheltered valley setting is a characteristic seen in Dartmoor warrens (Williamson 2007, 109-117). The elongated mounds measure between 20-30m in length by approximately 8m in width, also commensurate with known Dartmoor examples, as is the shallow

outer drainage ditch, visible enclosing the better preserved southern-most mound (Figure 60). Intriguingly, the long axes of the Hawk's Moor mounds are parallel to the contours of the combe slope, unlike the Dartmoor examples, and many recorded nationally, which are constructed perpendicular to the slope, probably to aid drainage. Further investigation to clarify the character of these mounds would be beneficial, but dense tree and vegetation cover prevented their location during a recent site visit.

Fig 60: Three of the more visible pillow mounds at Hawk's Moor on aerial photographs taken in 1947, with an outer ditch visible surrounding the southern-most mound. The remaining pillow mounds are not as clearly defined. RAF/CPE/UK/1974 RS 4091 11-APR-1947. Historic England (RAF Photography).

Previously unrecorded earthworks of a more substantial mound were recorded approximately 2.8 kilometres to the south west of Hawks Moor, at Trickey Warren (Figure 61). At 50m in length by 15m in width, it was approximately double the length of those recorded at Hawks Moor, and approaching the top of the typical width range for recorded pillow mounds (Williamson 2007, 32). It was however similarly aligned parallel to the slope and located in open common land, enclosed

from the 18th century onwards. It was visible on aerial photographs of 1942 and 1943 but levelled by 1948.

Apart from the 'warren' place name, other evidence supporting the existence of a warren in this location includes the presence of 'Hunter's Lodge', located to the immediate north east. Lodges, or warren houses, were a common feature of larger warrens, which not only provided a home and store for the warrener but could be used by the warren's owner as a base for hunting (Williamson 2007, 82). The name Hunters Lodge perhaps belies its more fundamental role as a warrener's lodge.

The survival of this pillow mound to the early 1940s is perhaps explained by the creation of woodland in this area during the 19th century, by which time the warren had evidently been abandoned. The clearance of these trees for farming during the

Fig 61: The earthworks of a possible pillow mound (SOM37064) were visible on aerial photographs of 1942 and 1943, although have been levelled in this photograph taken in 1948, a pale cropmark is clearly visible surrounding the former bank. RAF Culmhead is visible within the top left of the image. RAF aerial photo digital mosaic courtesy of Somerset County Council.

first half of the 20th century ultimately resulted in its levelling through ploughing in the immediate post-war period.

Field Boundaries and Field Systems

At nearly 20% of the total record count, field boundaries are the second most numerous class of monument recorded by the survey. Only those former boundaries not depicted on the historic maps available to the survey (Tithe Maps, Ordnance Survey First and Second Edition 25-inch maps) were recorded by the survey. As such, this total does not include boundaries removed in the 20th century and therefore under-represents the number of relict boundaries visible in the landscape.

This figure includes only individual boundaries or small groups of boundaries visible as spatially associated features within, but functionally removed from the agricultural landscape they were previously part of; i.e. evidence of piecemeal landscape change and gradual field enlargement.

Field systems, interpreted as more coherent arrangements of former boundaries, are not included this figure, but are discussed below.

As summarised in Section 4, over 80% of recorded relict field boundaries were identified from earthwork evidence, with fewer than 6% identified as levelled earthworks. Most were transcribed as earthwork banks, which appears to support the expectations for the survey that the Blackdown Hills would demonstrate good earthwork survival. However, a significant proportion of the earthworks interpreted as field boundaries were identified as broad and shallow earthwork ditches or hollows, often exceeding 15m in width. This characteristic form was identified in a previous AI&M survey in Devon, immediately to the west (Hegarty, Knight and Sims 2016), and is possibly most frequently, but not exclusively associated with boundaries of probable medieval origin. The reason for this characteristic form remains unclear but may be associated with a need for greater drainage on poorly draining soils.

The distribution of field boundary monument records created or amended by the survey is illustrated in Figure 62. Overlain onto the BGS simplified bedrock geology mapping, the distribution appears to demonstrate a greater density of relict boundaries on mudstone, siltstone and sandstone geologies (Permian and Triassic), corresponding closely with valley slopes. A correspondingly lower density is apparent on the Greensand plateaux. Interrogation of the data demonstrates that the Permian and Triassic mudstone, siltstone and sandstone geologies in fact contain the second highest density of relict field boundaries, topped fractionally by Lias group mudstone, siltstone, limestone and sandstone geologies towards the east and north east parts of the survey area. The highest density of relict field boundaries is therefore recorded on the poorest draining soils, suggesting that these have also probably experienced the least erosion from intensive agricultural regimes.

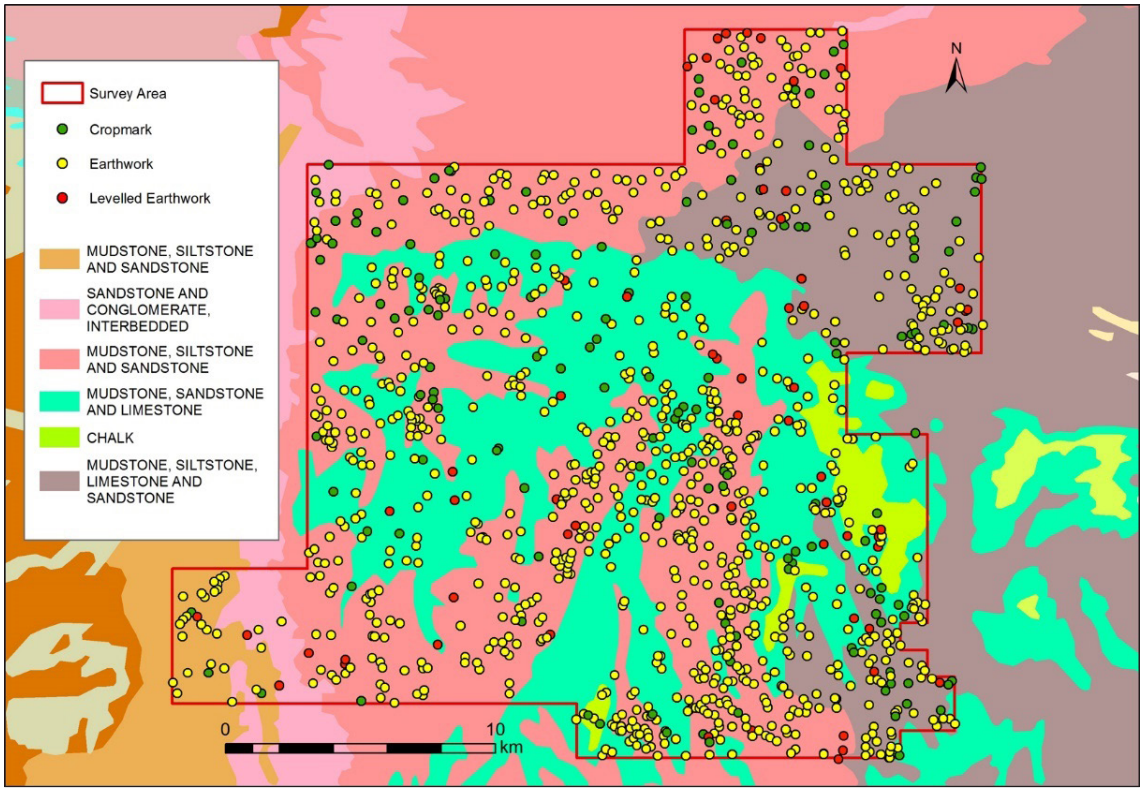
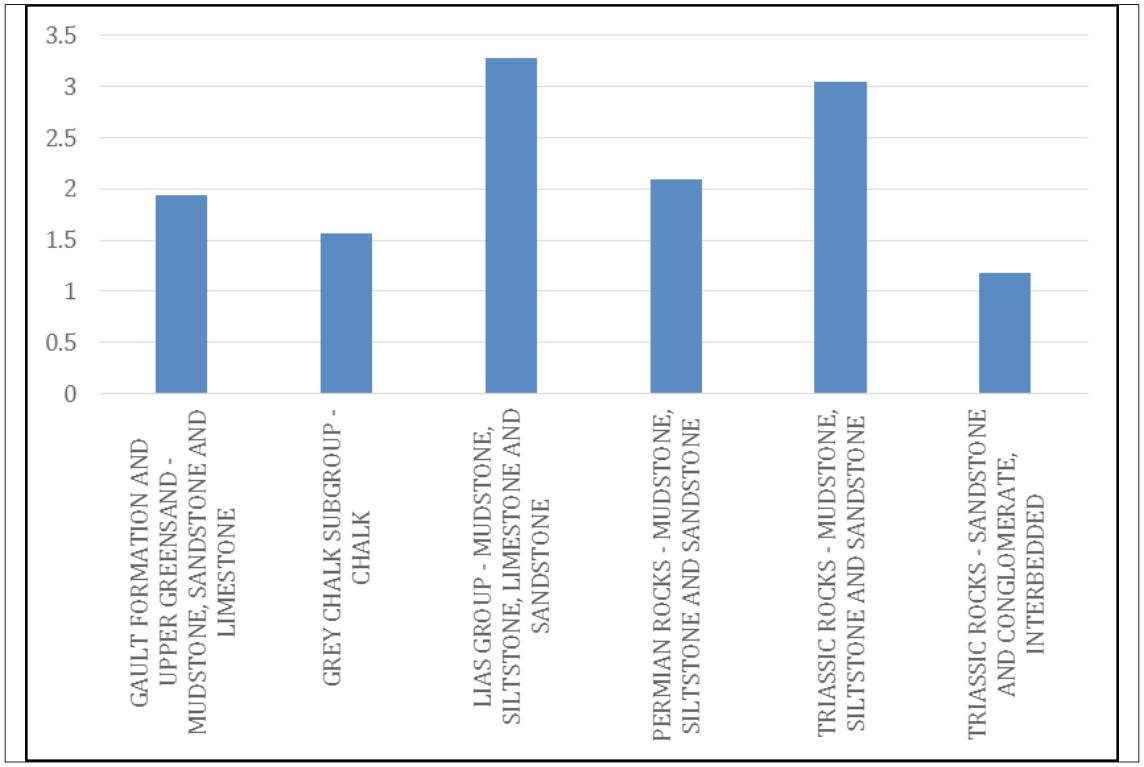


Fig 62: The distribution of field boundary monument records created or amended by the survey overlain onto BGS simplified bedrock geology. Reproduced with the permission of the British Geological Survey © NERC. All rights reserved.

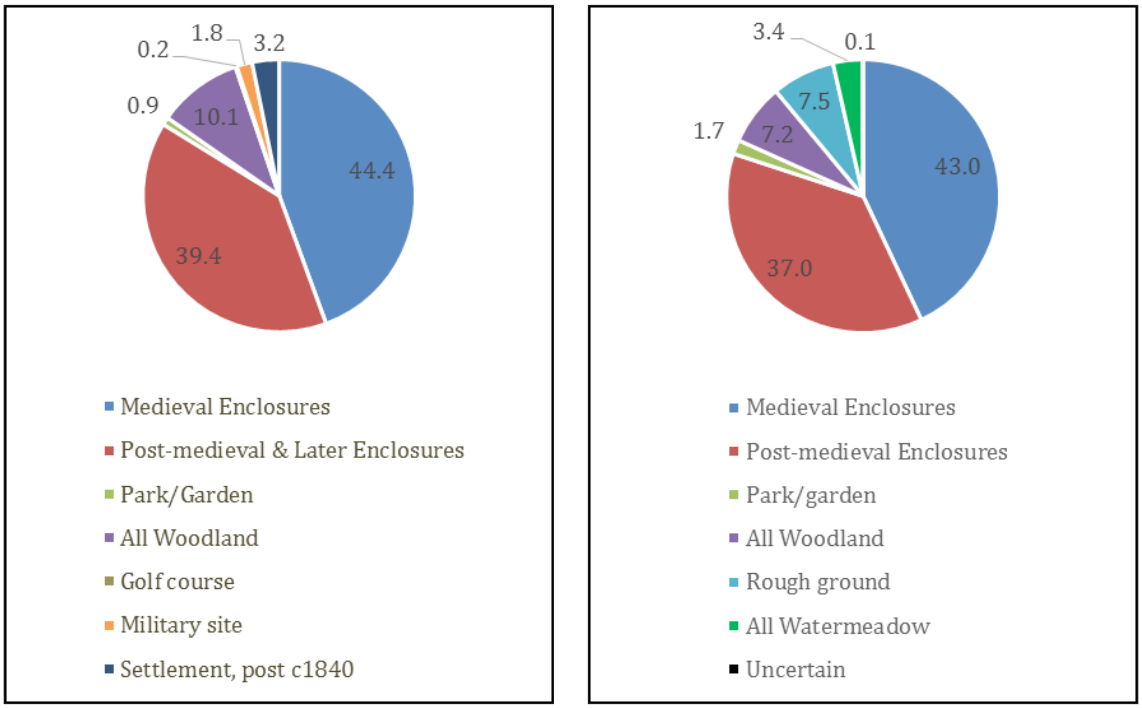
Chart 2: Density of relict field boundaries, per square kilometre, by simplified bedrock geology



The Historic Landscape Character data for Devon and Somerset was collated using different methodologies. As such, direct comparison between the datasets is problematic. However, by simplifying the data through combining specific sub-classes, in particular by conflating all medieval and post-medieval enclosure subgroups into just two (Medieval Enclosures, Post-medieval Enclosures) it is possible to make some broad generalisations as to the relationship between HLC and field boundary loss.

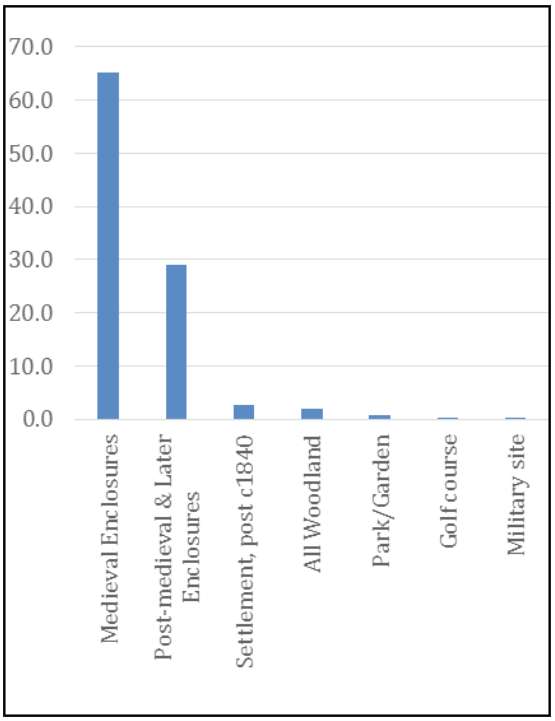
Despite minor differences in categorisation, the simplified data indicates roughly equivalent proportions of medieval and post-medieval enclosure in Devon and Somerset (see Chart 3).

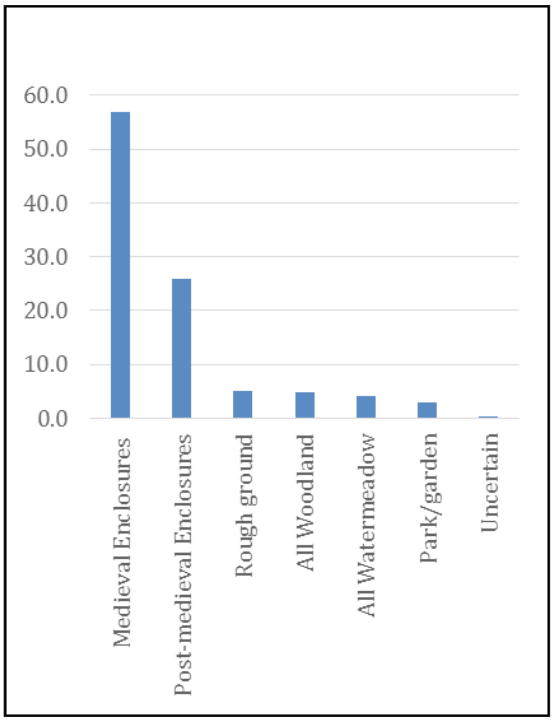
Chart 3: Broad HLC categories by area in Somerset (left) and Devon (right)



In both counties enclosure of medieval origin makes up the largest area, with post-medieval and later enclosure a slightly smaller group. It is perhaps unsurprising, therefore, that the greatest proportion of relict field boundaries should be located within the medieval category, corresponding as this does largely with enclosure off the plateaux. However, the difference between the medieval and post-medieval groups is striking; in both datasets the proportion of relict boundaries in medieval enclosure is more than double that recorded in areas of post-medieval enclosure (see Chart 4).

Chart 4: Percentage of former field boundaries in broad simplified HLC categories; Somerset (left) Devon (right)





It is probable that this data reflects a pattern seen across the region from the later-medieval period onward. Parallels may be drawn with Exmoor, another upland landscape to straddle the border between Devon and Somerset, with a persistent dispersed medieval settlement pattern. Factors including climatic deterioration and disease resulted in changes in population density and subsequently patterns of land-use and landholding shifted, with arable infields converted to pastoral use and settlements contracting from hamlets to single farms as land ownership became concentrated in fewer and fewer hands. Improvements in agricultural practice and difficult economic conditions in the 19th century may have made smaller holdings less viable, resulting in further settlement contraction, farm engrossment and additional boundary loss as historic holdings amalgamated (Hegarty with Wilson-North 2014, 103-105).

Within the survey area the predominantly medieval to post-medieval character of the extant enclosure field pattern left little scope for the identification of larger-scale relict field systems. However, several were identified, the scale of evidence varying from fragmentary boundaries to small but coherent superseded field systems, identified largely within fieldscapes characterised by HLC as derived from medieval strip fields (Figure 63-66).

The identification of more extensive field systems was limited to unenclosed areas, rough ground or land cleared for recreational, non-intensive agricultural purposes, such as parks and gardens.

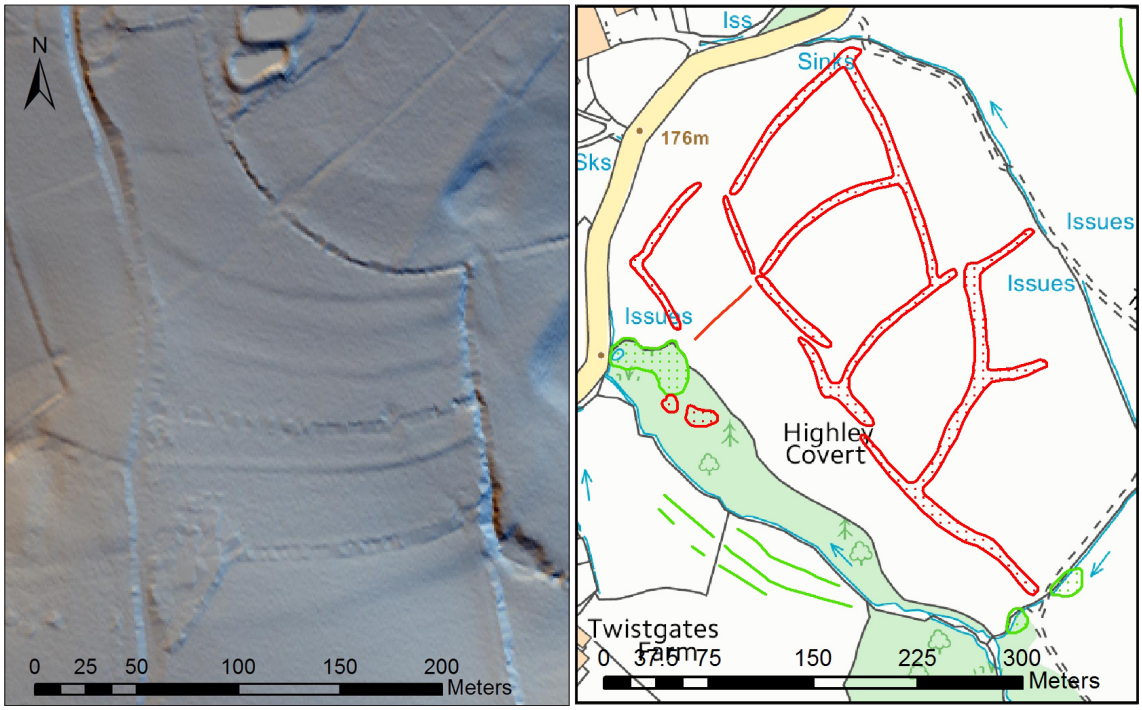


Fig 63: Relict field systems visible as earthwork banks; Left: west of Uphay Farm (MDV112039) LIDAR SY2899 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council. Right: South east of Highley Farm, Upottery (MDV114912). © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

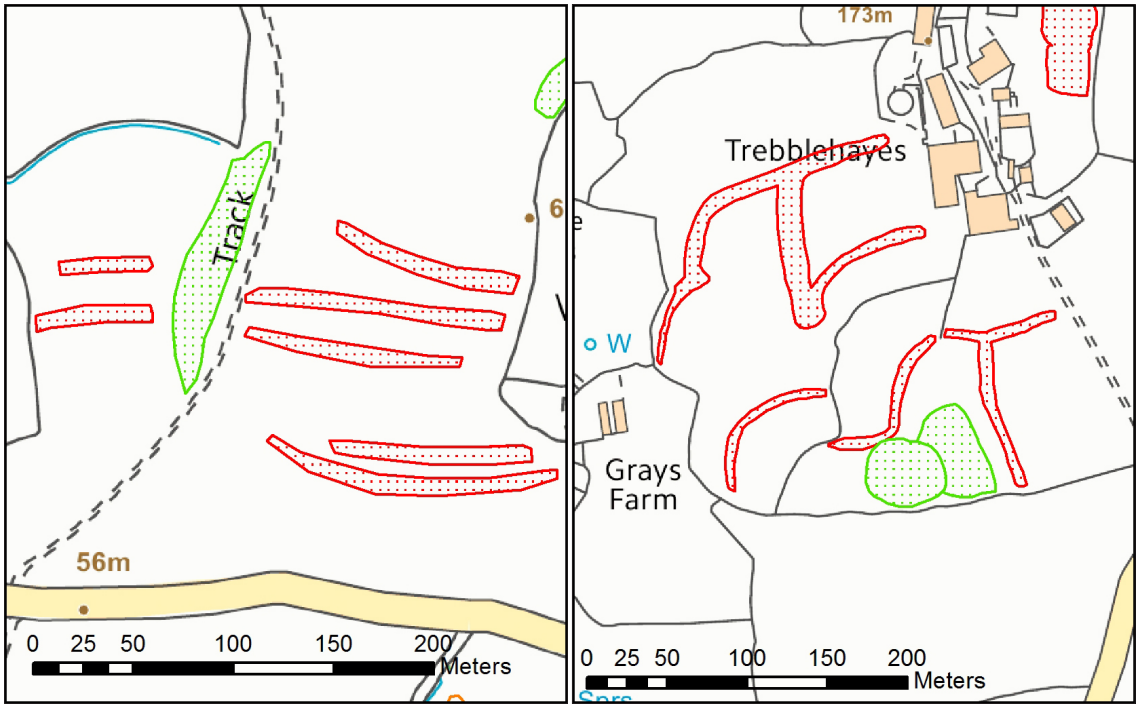


Fig 64: Relict field systems visible as earthwork banks; Left: West of Woodhouse Farm (MDV117485). Right: South and west of Trebblehayes Farm, Membury parish (MDV119380). © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

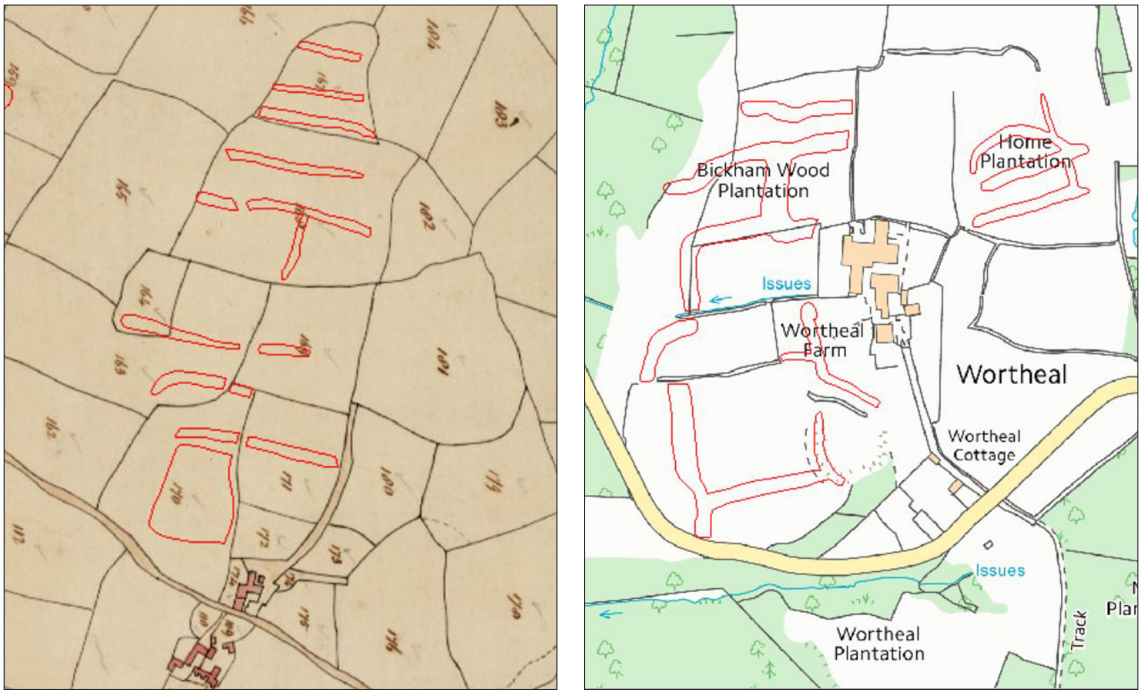


Fig 65: Relict field systems visible as earthwork banks. Left: West of Woodhouse Farm, overlain onto Tithe Map (SOM38243). Right: At Wortheal Farm (SOM53224). © Crown Copyright and database right 2018. Ordnance Survey 100019783. Tithe Map Somerset HER. AI&M transcriptions © Historic England.

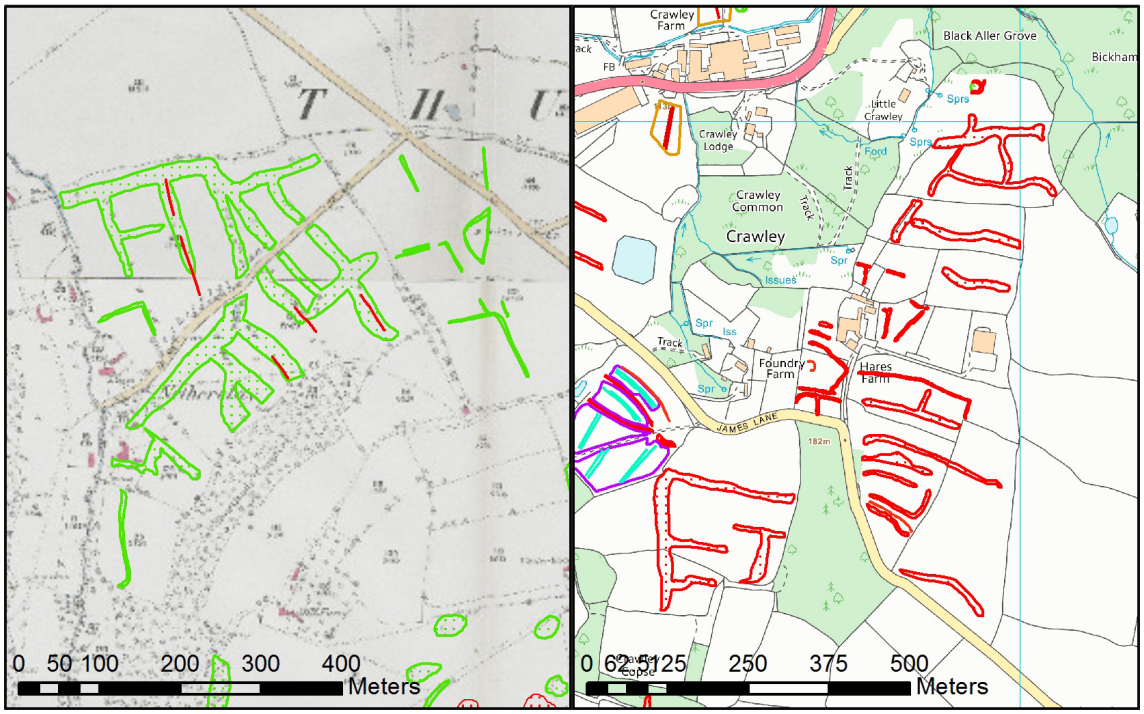


Fig 66: Left: Relict field systems visible as earthwork ditches at Netherclay, Orchard Portman (SOM38627), shown against the First Edition Ordnance Survey map for clarity. Right: Relict field systems visible as earthwork ditches at Crawley, Membury (MDV63229, MDV63231, MDV119192). National Library of Scotland via Bristol City Council. © Crown Copyright and database right 2018. Ordnance Survey 100019783. AI&M transcriptions © Historic England.

Unenclosed, rough ground accounts for less than 25 square kilometres, or circa 8% of the survey area. Hense Moor, in Luppit parish, is one of many areas of rough ground situated on the steep valley sides below the plateau of Luppit Common. The contrast between the largely 19th century enclosure on the former common and the irregular piecemeal enclosure on the slopes is striking. The Tithe survey identified at least eight dwellings on Hense Moor, interpreted as possible 'squatter' camps; small settlements comprising single houses encroaching onto the common land (Figure 68; Ryder 2013). Place names such as 'White's Plot', 'Turf's House' and 'Ferndale' are suggestive of intake from moorland (Ryder 2013, 106). Whether or not this collection of former dwellings comprise a deserted hamlet is debatable, and it is arguable whether the relict boundaries associated with such piecemeal encroachment can be described as a coherent field system. Nonetheless, the survey has extended the record for relict boundaries and routes across the moorland, hinting at more extensive and long-lived enclosure and settlement than previously appreciated (MDV116640-1, MDV49867-8; see Figure 67).

Relict field systems within enclosed land are also rare on the Blackdown Hills but were recorded more frequently than on unenclosed land. Approximately eight square kilometres, or less than 3% of the survey area, has been characterised as parkland by HLC. Much of this characterisation is derived from field name evidence, and in some parishes 'park' is a frequent element in Tithe survey field names. In Buckerell parish for instance, 10% of field names contain a 'park' element. This proportion of 'park' place names cannot correspond with 'pleasure parks' or other 'artificial landscapes', and indeed, in Devonian and Cornish field-names, 'park' more commonly derives from the Old English *pearroc*, and relates to an enclosed piece of land (Ryder 2013, 101; Field 1993, 25).

In areas such as Luppit parish, 'park' has been identified as indicative of later enclosure and although not associated with 'pleasure parks', such extensive late enclosure in areas of otherwise predominantly medieval enclosure nonetheless has a comparable effect in providing a window into earlier landscapes (Ryder 2013).

Ryder identifies large fields on the southern slopes of Dumpdon Hill in Luppitt as a good example (ibid. 101), and within the fields named on the Tithe Apportionment as Higher Park (1467) and Lower Park (1530), extensive curvilinear earthwork banks and ditches define a number superseded land parcels, enclosing three areas of possible ridge and furrow (see Figure 69). A trackway may also link Dumpdon Lane to a sub-rectangular enclosure near the centre of the relict field pattern, which is tentatively interpreted as the site of a former settlement.

Relict field systems have also been recorded within formal parkland, i.e. land enclosed specifically as private pleasure grounds, where a probable direct connection between field clearance and emparkment can be suggested.

Fig 67: Piecemeal enclosure on Hense Moor, Luppit, beyond that recorded by the Tithe Survey. Devon County Council. AI&M transcriptions © Historic England.

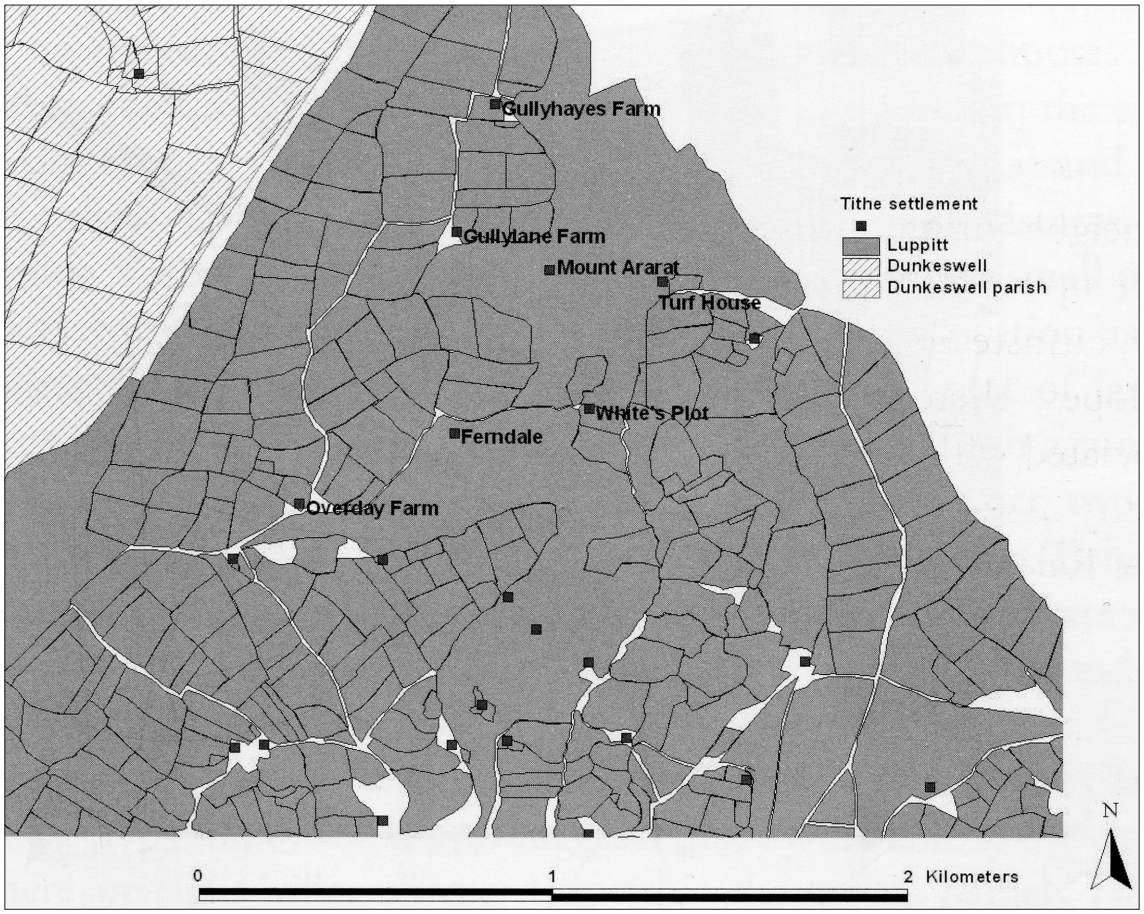


Fig 68: Distribution of 'squatter settlements' Hense Moor, Luppit (taken from Ryder 2013, 106).

At Widworthy Park near Honiton (MDV15991) a relict field system of probable medieval origin is visible on aerial photographs taken from 1976 onwards (Figure 70). These are depicted on a document of 1780 and a survey of 1805-6 lists them as being held by several tenants. They are not depicted on the Tithe Map of 1839 and the field is named 'North Park' on the late-19th century Ordnance Survey First Edition (Figure 71). The period within which this field system was cleared corresponds to the architect George Repton's redesign of the house and creation of parkland in 1830. Although distinctive plough marks demonstrate active erosion of the remains, lidar data captured between 1998 and 2014 indicates the survival of earthwork banks which can still be distinguished at ground level (Figure 72).

Similarly, previously unrecognised medieval field patterns were identified near Axminster at Coryton Park (MDV117100 and MDV117124) and Cloakham (MDV117364; Figures 73 and 74). Their curvilinear layout and occasional convergence with boundaries depicted in the historic mapping indicate a medieval origin, and the settlements of Coryton and Claucombe are mentioned in 14th century sources. They are certainly likely to predate 1754 and the 1820-30s respectively when the two parklands were established and only one of those transcribed was depicted (with a dashed line) on the mid-19th century Tithe map. Although the boundaries probably went out of use when the land was emparked, some hedgerow

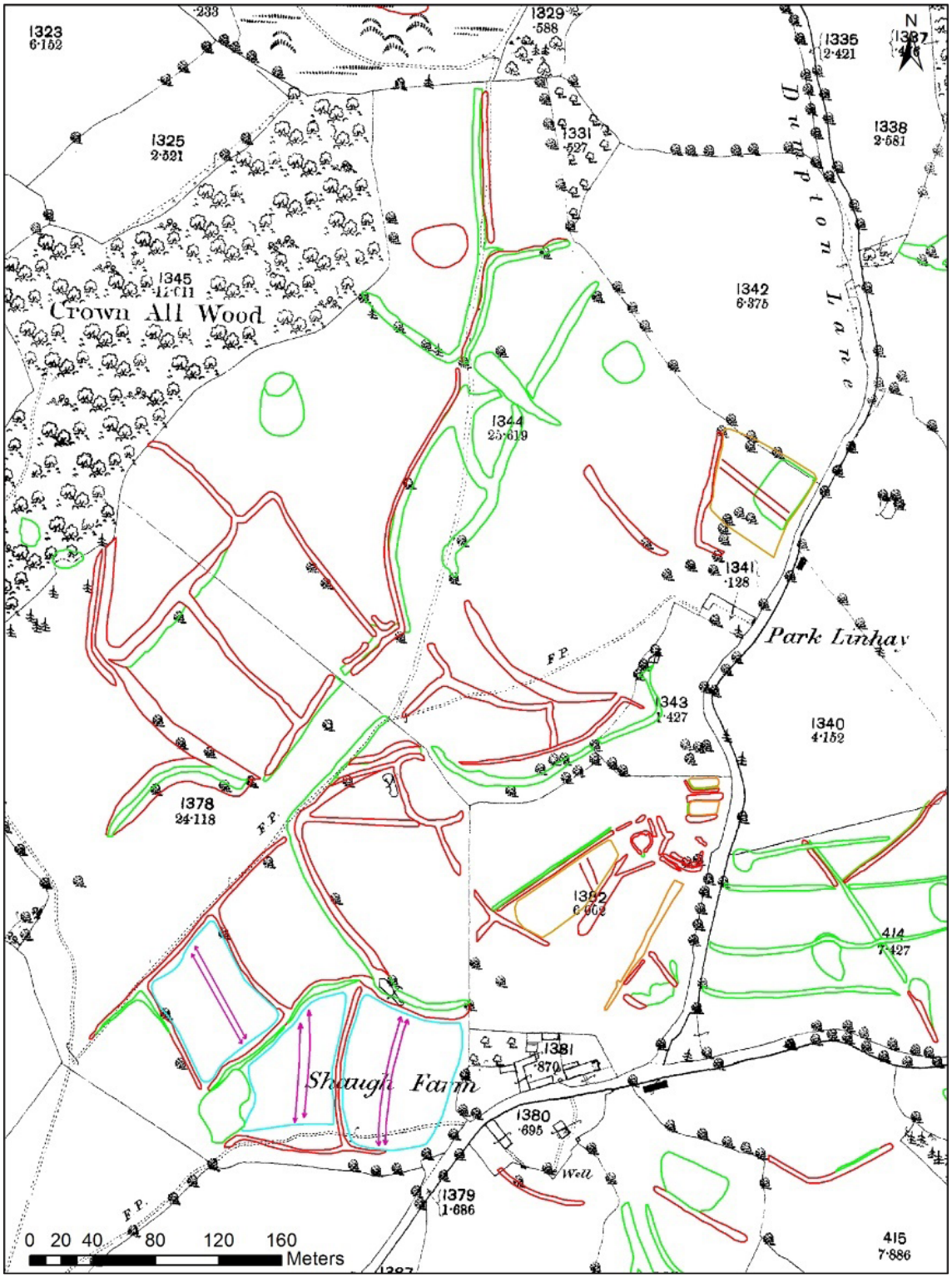


Fig 69: Medieval field system, and possibly former settlement, at Dumpdon Hill, Luppit (MDV115139). AI&M transcription overlain onto First Edition Ordnance Survey mapping for clarity. © Crown copyright and Landmark Information Group Ltd. AI&M transcriptions © Historic England.

trees appear to have been retained as parkland features and can be picked out as rows of mature trees on the late-19th century Ordnance Survey maps.

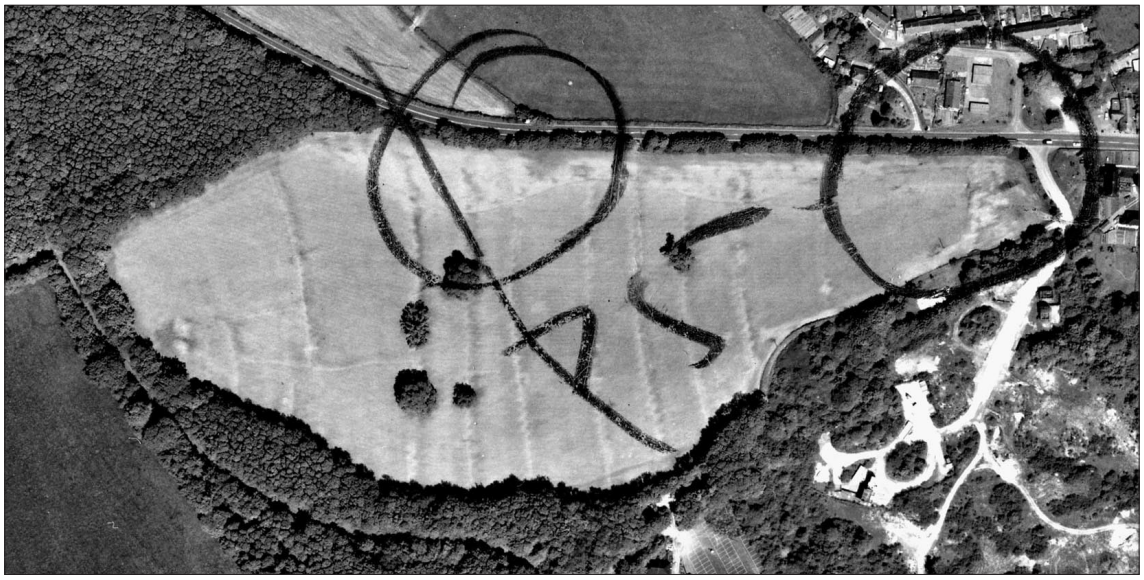


Fig 70: Plough-damaged remains of former field boundaries at North Park, Widworthy (MDV15991), showing as cropmarks with distinctive 'zig-zag' drag lines on aerial photographs taken in 1996. OS/96602 V 003-004 06-JUN-1996 © Crown copyright. Ordnance Survey.

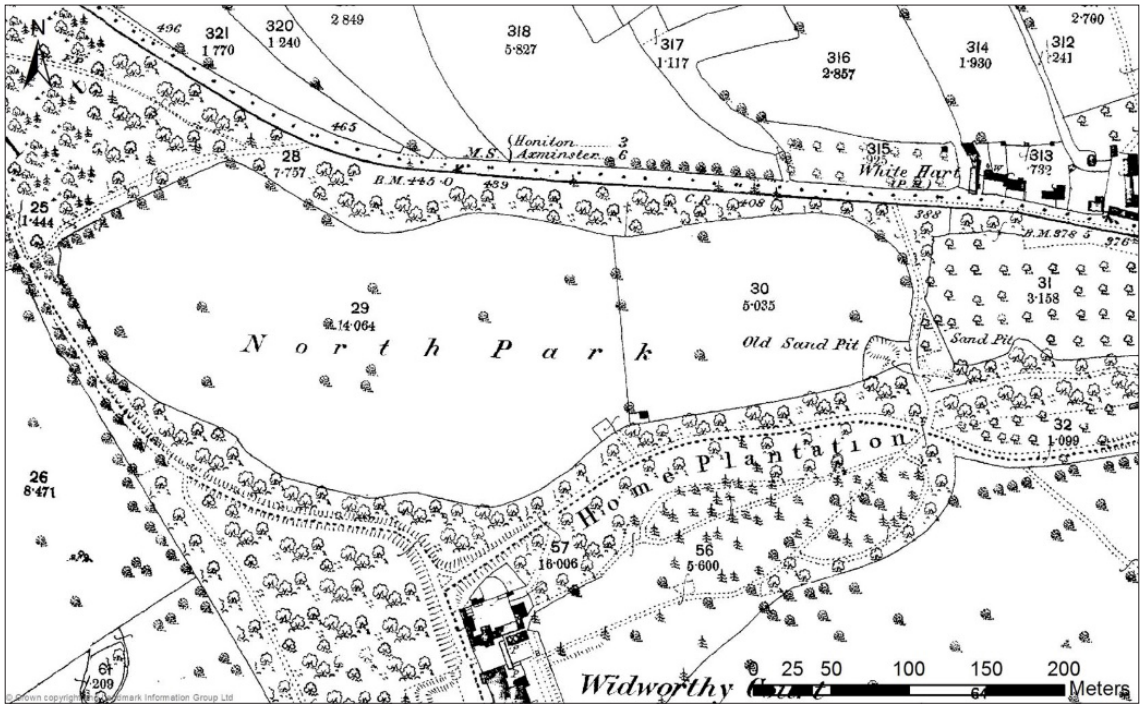


Fig 71: 'North Park' depicted on the late-19th century OS map, with a single straight field boundary and a number of mature trees along the lines of the former field boundaries. First Edition Ordnance Survey 25-inch map © Crown copyright and Landmark Information Group Ltd.

Fig 72: Plough-damaged remains of former field boundaries at North Park, Widworthy (MDV15991), visible as slight earthwork banks and pale linear soil marks crossing the image from left to right, parallel to the shadows in February 2018. Devon County Council 2018 (looking west).

Fig 73: Transcriptions of relict field boundaries, overlying the 1840 Kilmington Tithe map of recently emparked land at Coryton (MDV117100 and MDV117124). Tithe Map: Devon County Council. AI&M transcriptions © Historic England.

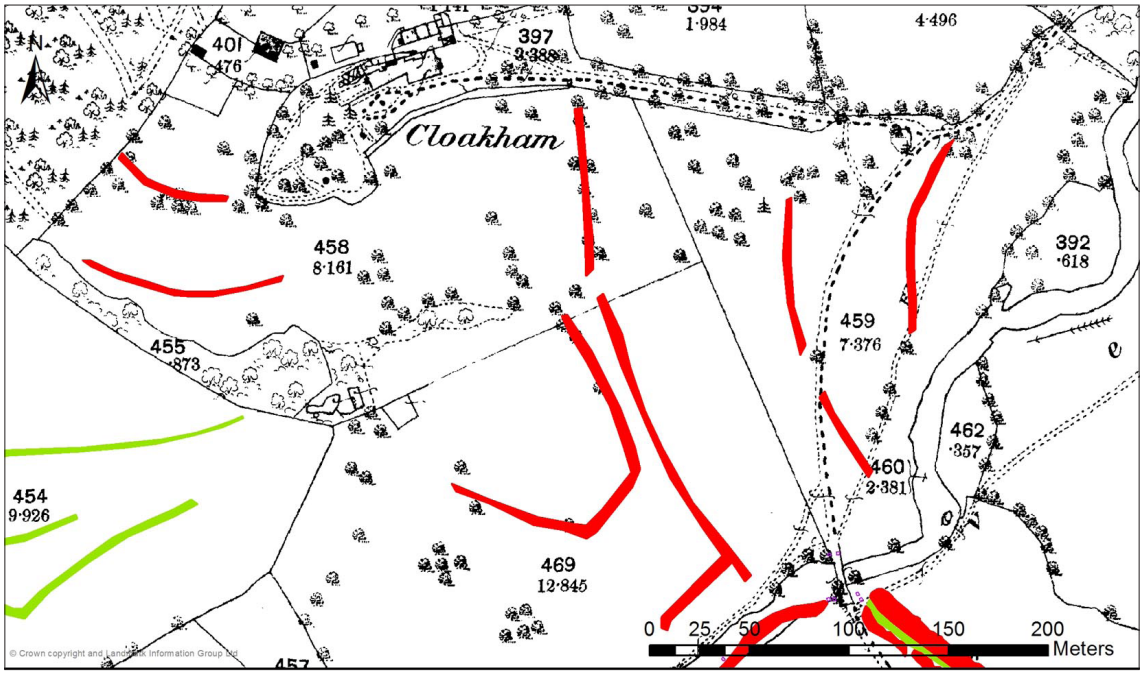


Fig 74: The designed landscape around Cloackham, Axminster in the late-19th century, with rows of mature trees along the lines of some former field boundaries (MDV117364). First Edition Ordnance Survey 25-inch map © Crown copyright and Landmark Information Group Ltd. AI&M transcriptions © Historic England.

More coherent broad earthwork ditches or hollows (SOM38749) in the former parkland to the west and south of Henlade House, Ruishton (SOM43529) are clearly in keeping with the historic character of the medieval field pattern beyond the designed landscape (SOM43530; see Figure 75). As at Widworthy Park, it is possible that the clearance of this field system was effected to create the parkland for Henlade House (SOM40812) in the early 19th century. The medieval field system visible as ditches or hollows between Henlade House and the walled garden to the north, however, are of different character. Whilst some may fit into the earlier field pattern most do not and are more reminiscent of ornamental parkland walks and trackways than relict field boundaries.

Earthwork mounds and platforms in this area are not typical of 19th century landscape design, and local tradition holds that an Elizabethan mansion was previously located this area (SOM43529). Stone-built drains located to the north of Henlade House might support this belief (Aston 1976, 85), and the atypical earthworks recorded by the survey might therefore relate to the earlier manor house on this site. By extension, it is possible that the relict field boundaries to the south and west are evidence of 16th century emparkment, although 19th century parkland expansion may be more probable.

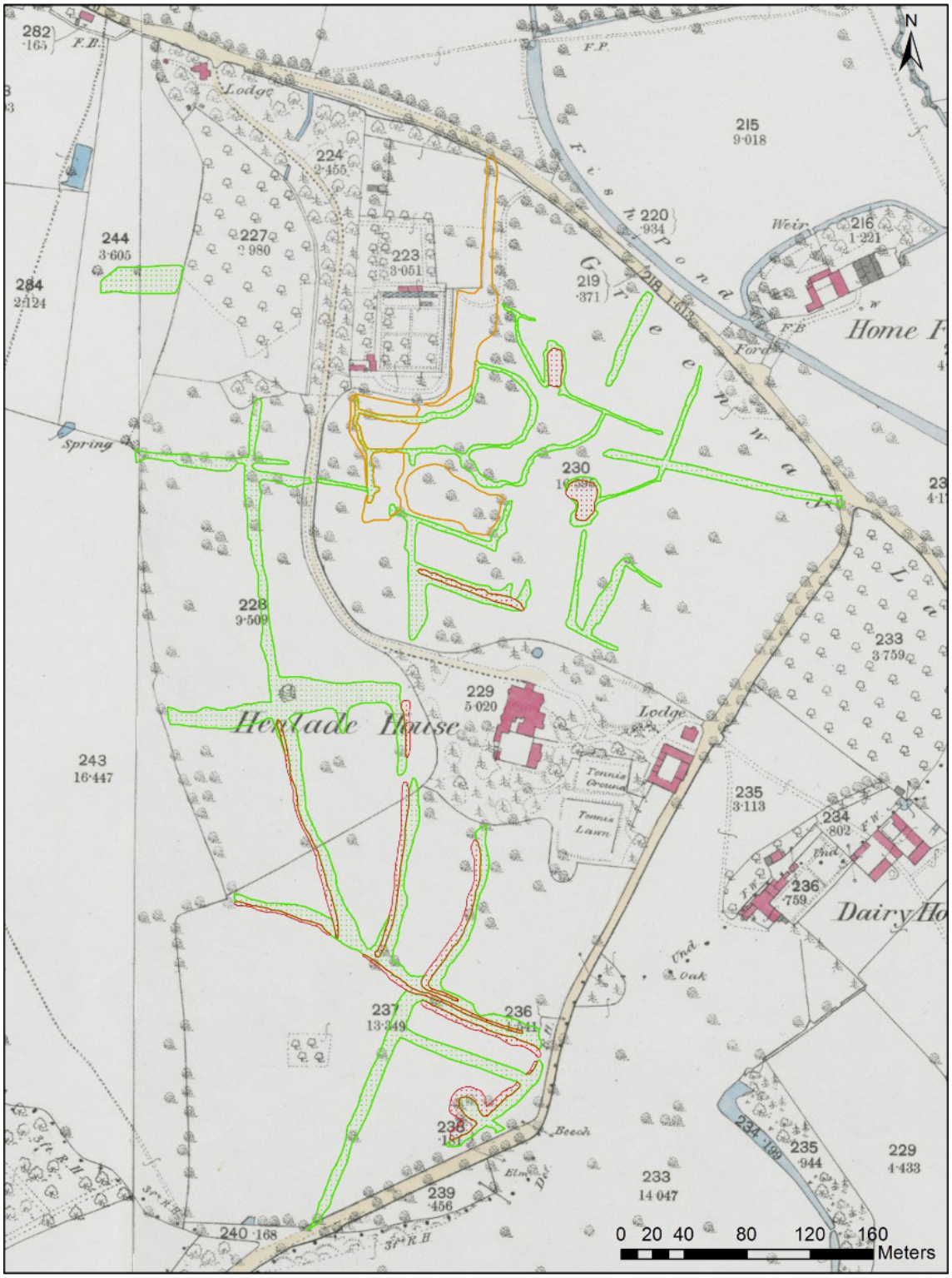


Fig 75: Relict medieval field system (SOM38749) at Henlade House, Ruishton (SOM40812) overlain onto the Ordnance Survey First Edition map. National Library of Scotland via Bristol City Council. AI&M transcriptions © Historic England.

Orchards, other Woodland and Landscape Character

In a continuation from the East and Mid-Devon River Catchments AI&M Survey to the west (Hegarty et al 2016), the number and scale of earthwork banks associated with historic orchards is a major agricultural, or perhaps more accurately arboricultural, theme to emerge from the survey.

Orchards were almost ubiquitous across the survey area, listed in the parish Tithe Apportionments and depicted on the First Edition Ordnance Survey 25-inch map at almost every farm. However, the historic map data and earthwork evidence did not always correspond.

Linear earthwork banks, on which fruit trees predominantly of cider apple varieties were planted, have been recognised as characteristic landscape archaeological evidence for former orchards across large areas of the South West (Crowther, Dickson and Truscoe, 2008, 121; Hegarty, Knight and Sims, 2016). Generally aligned cross-contour, probably to aid drainage, the earthworks also increased the depth of soil for planting, particularly on poorer soils. Often visible as earthworks on 1940s aerial photography, frequently within extant, sometimes reduced orchard planting, a high proportion remained identifiable as earthworks on recent lidar-derived images.

The geological distribution of the visible banks has not been analysed in detail for this report, although a simple distribution plot reveals concentrations of visible earthworks to be densest on the poorly-draining mudstone soils, as might be expected if drainage is a major consideration (see Figure 76).

However, improved drainage cannot be the only reason for the creation of orchard banks. As seen in Figure 76, these earthworks were also recorded on the more freely draining Greensand derived soils, albeit in lesser numbers. Here, perhaps, increased soil depth for planting was equally important. Marshall believed that the 'richest deepest soils' were chosen for west Devon orchards because the shallower soils were 'unfit for fruit trees' and described the 18th century method of banking up using 'fresh earth and sea sand' before planting (1796, 217-218). Within living memory, scrapings from roads and trackways, called 'waydrift' in parts of Devon, were piled onto the banks (Colin Pady pers. comm.). This mixture of manure, silt and sand served the same function as mulching, using vegetation with application of river sand to correct over-nourishment, also described by Marshall (1796, 220-221). Inclusion of road gravel would have had the added benefit of improving drainage. Pady's research using farm diaries from Shute Barton, west of Axminster, details how during 1912-1916 the week before Christmas was dedicated to the collection of waydrift (and concomitant clearance of roads) during this less pressured period in the farming calendar. The redistribution of these road scrapings might also partly account for the spread of wildflower seeds from roadside verges across many Devonian orchards.

Orchards remained a significant part of the rural economy of Devon into the late 18th and early 19th centuries and were incorporated into regional assessments by

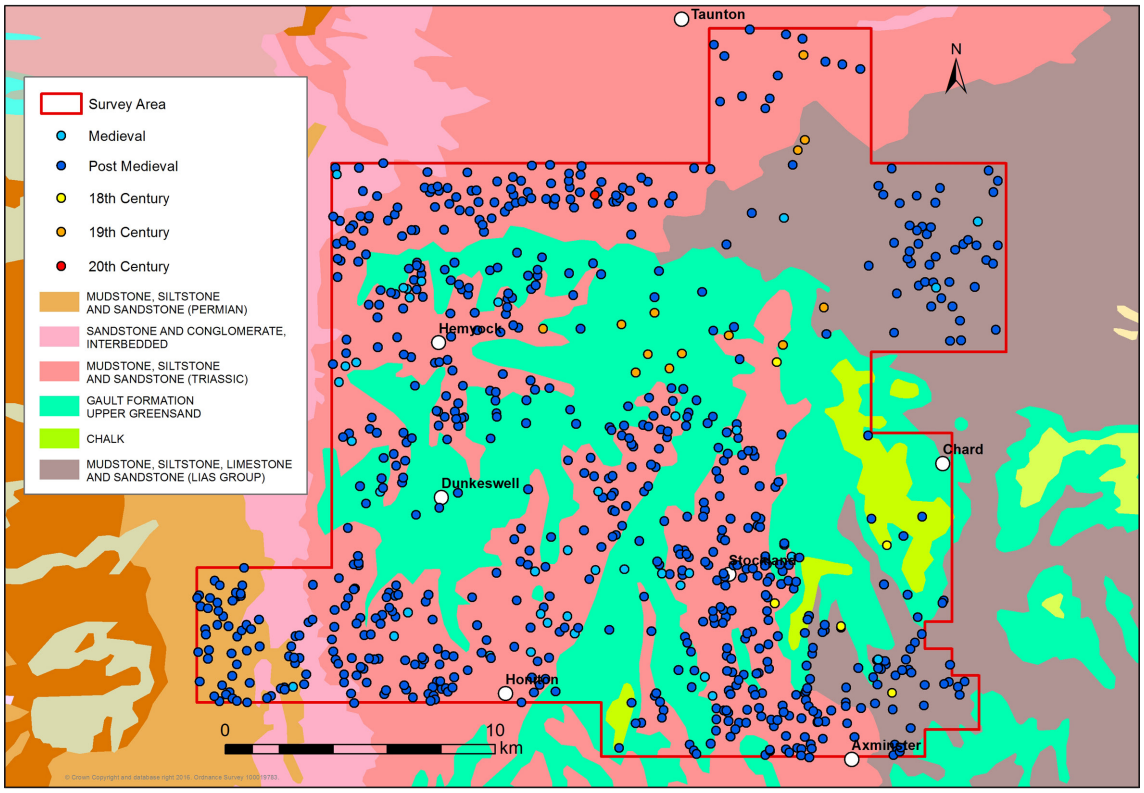


Fig 76: Distribution of orchard banks recorded as earthworks, overlying bedrock geology. Interpreted primarily as drainage features, the banks may have been less necessary on Greensand geology, although this relationship is not exclusive. Reproduced with the permission of the British Geological Survey © NERC. All rights reserved.

agricultural improvers, such as the aforementioned Marshall's late 18th century 'Rural Economy of the west of England', and Vancouver's subsequent 'General View of the Agriculture of the County of Devon' for the Board of Agriculture (1808).

Marshall (1796) observed the use of banks in orchard planting, with measurements of between 4 and 6 yards between the earthworks and Vancouver stated "A statute rod, namely five yards and a half may be taken as the ordinary distance between the plants!" (Vancouver 1808, 219). These observations fit broadly with the survey results, with bank width of circa 3.5 to 4m typical, although some significantly wider and narrower banks have been recorded.

Although a high proportion of the orchard bank monument records created by the survey are indexed with earthwork evidence, the surviving earthworks often represent only a vestige of their former extent. Farm subsidies contributed to extremely high levels of orchard loss in the second part of the 20th century, with many former orchards also encroached upon by or entirely lost to farmyard expansion or housing development in village locations (see Figure 82). In a small number of cases though, modern orchards have recently been (re)planted in the same location (MDV115545), suggesting the potential for AI&M survey data to inform the reinstatement of historic orchards utilising original orchard banks.

At the time of the Tithe survey most orchards in Axminster parish are thought to have been roughly an acre and a quarter in area (circa 0.5ha) with a few up to 5 acres (circa 2ha) in size (Axminster Heritage 2018). Across the survey area the original area of former orchards varied more dramatically, with earthworks recorded by the survey ranging in area from plots of less than 500 square metres (e.g. MDV116764) to over 4 hectares (e.g. MDV114974), although the latter probably comprised contiguous orchard plots.

In modern commercial arboriculture, planting rotation for fruit production is considered good practice to avoid specific apple replant disease. Whilst rotation may have been practiced in the past, historic map evidence demonstrates some orchards were very long-lived in Devon. At Buckland Priory in West Devon one orchard was 'said to be the oldest in the country...about two hundred years old' (Marshall 1796, 214). The continuing success of these enduring orchards has been credited to the Devonshire practise of planting replacements between the (widely spaced) older failing trees, thus 'keeping the same ground in a state of orchard, in perpetuity' (Marshall 1796, 218).

However, Marshall might have been writing about a declining industry; cider production may have peaked in the earlier 18th century, as Vancouver wrote in 1808, *"...from the frequency of planting young trees where the old ones have failed, a barrenness in many of the orchards has ensued."* (Vancouver 1808, 243). Vancouver may have encountered examples of bad practice; as many orchards depicted on the Tithe Maps survived into the 20th century, the degree of decline is debatable.

Significantly, in light of the underrepresented extractive activities touched upon below in Section 5: Industrial, Extractive, he continues "*It is usual in the marly parts of this country to appropriate for orchards the large excavations formerly made in digging marl: here the apple trees are protected from most winds, and continue to flourish and bear longer than in less secure situations*" (ibid.). This passage is noteworthy in that it provides a relative sequence of land-use in the Blackdown Hills and confirms the observations of this and previous AI&M surveys in Devon. As suggested in Hegarty, Knight and Sims (2016) and demonstrated below, the relict earthworks of former extractive pits were utilised as orchards in the 19th century, the plots depicted as such on the First Edition Ordnance Survey 25-inch map.

This pattern had been previously noted by Ryder on a small scale, within a study of six parishes in the western Blackdowns, in which she noted that "*by the time of the Tithe Survey many marl pits were redundant with several former quarries utilised as orchards or copses*" (2013, 59). However, assessment of lidar data as part of this survey has necessitated a reconsideration of the scale of the 'landscape recycling' process, and its potential impact on landscape character.

The lidar data demonstrated that not only did the remains of tree planting banks – evidence of traditional orchard planting - survive often as very subtle earthworks around and within relict pits, but that many extant orchards and other small woods had been established within, and obscured from view, the remains of disused pits (see Figures 77 to 83 below), although place name evidence sometimes provided a

hint of this former incarnation (see Figures 80 to 81). Many were much larger than the partially levelled disused pits described below, supporting Vancouver's statement that '*large excavations formerly made in digging marl'* were preferentially utilised for woodland (Vancouver 1808, 243). In addition, Smart et al (forthcoming, 84) references a 1566 survey of the manor of Clayhidon which includes one holding with a 'pitt... planted with appultrees', evidence that relict extractive earthworks on the Blackdown Hills were deliberately planted as orchards from at least the 16th century.

It is probable, therefore, that many of the small woods, copses and orchards that are so characteristic of the AONB landscape have their origins in the decline of marling, and possibly the pottery industry, in the 18th and 19th centuries. It is probable, however, that this is evidence of an even earlier tradition, dating at least from the 16th century.

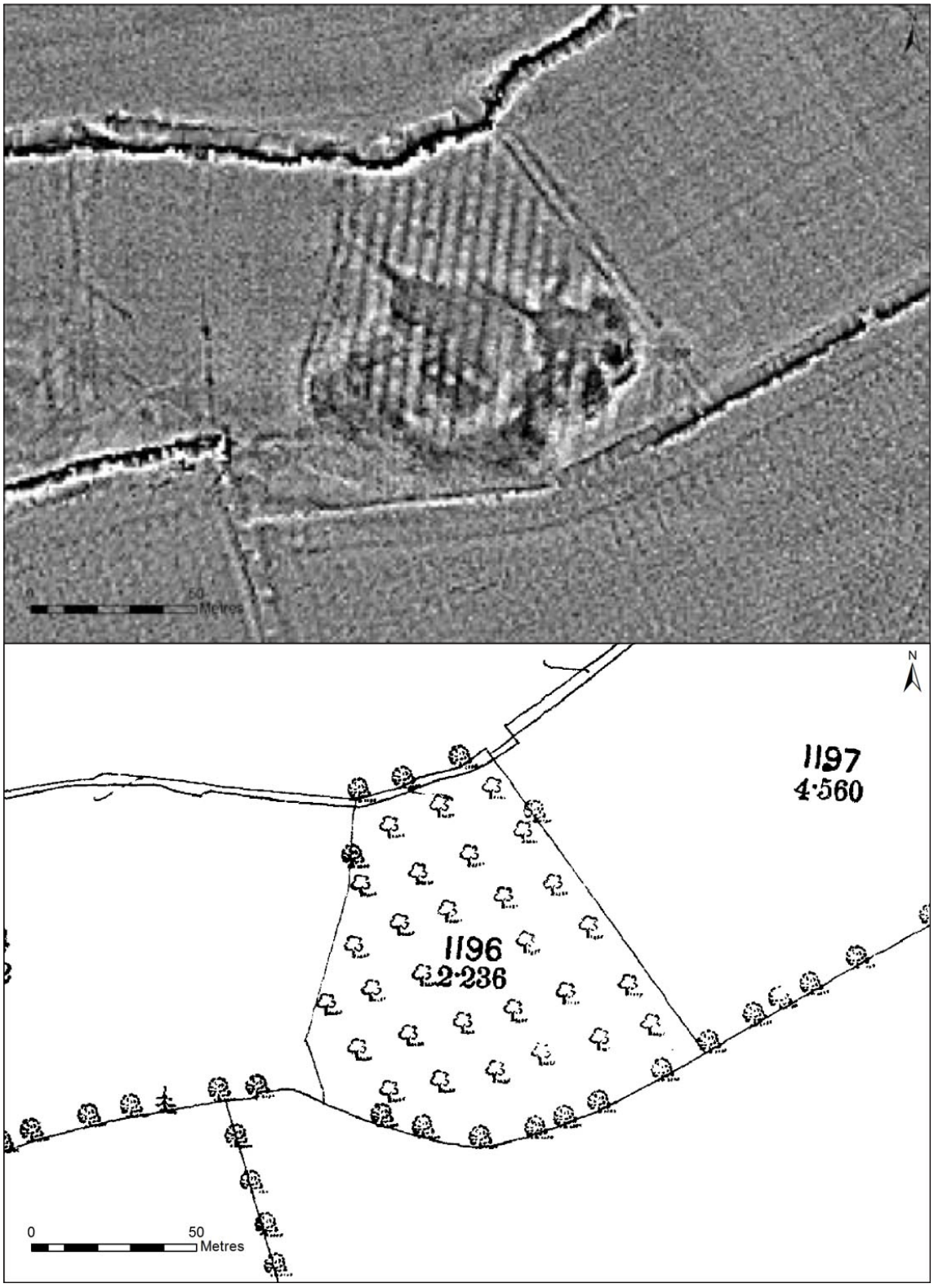


Fig 77: The characteristic tree planting banks of a traditional Devonian orchard were visible as earthworks overlying a former extractive pit, east of Shore Bottom, Stockland parish. (Pit, MDV115464; Orchard MDV115430). Next Perspectives APGB Imagery ST2302-ST2303 22-MAY-2010. RGB Aerial Photography – © Bluesky International/Getmapping PLC. LIDAR ST2302-ST2303 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council. First Edition Ordnance Survey 25-inch map © Crown copyright and Landmark Information Group Ltd.

Fig 78: Woodland established within pits north of Little Snodwell Farm, Stockwell parish (MDV115790). The Tithe Apportionment lists the plot as 'brake', indicating cultivation might have previously been attempted, i.e. the ground 'broken'. Next Perspectives APGB Imagery ST2103 22-MAY-2010. RGB Aerial Photography – ©Bluesky International/Getmapping PLC. LIDAR ST2103 Bluesky International DTM 30-APR-2016. © Devon County Council.

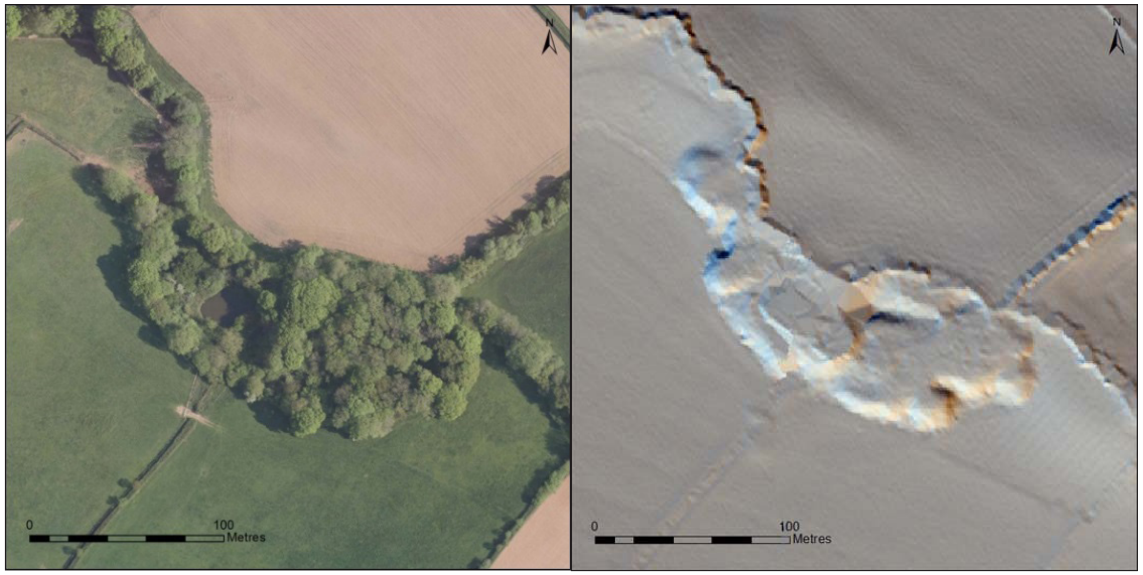


Fig 79: Coppice and orchards within former pits at Broadleaze Copse, Payhembury Parish (MDV117414). Next Perspectives APGB Imagery ST1003 22-MAY-2010. RGB Aerial Photography – © Bluesky International/Getmapping PLC. LIDAR ST1003 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

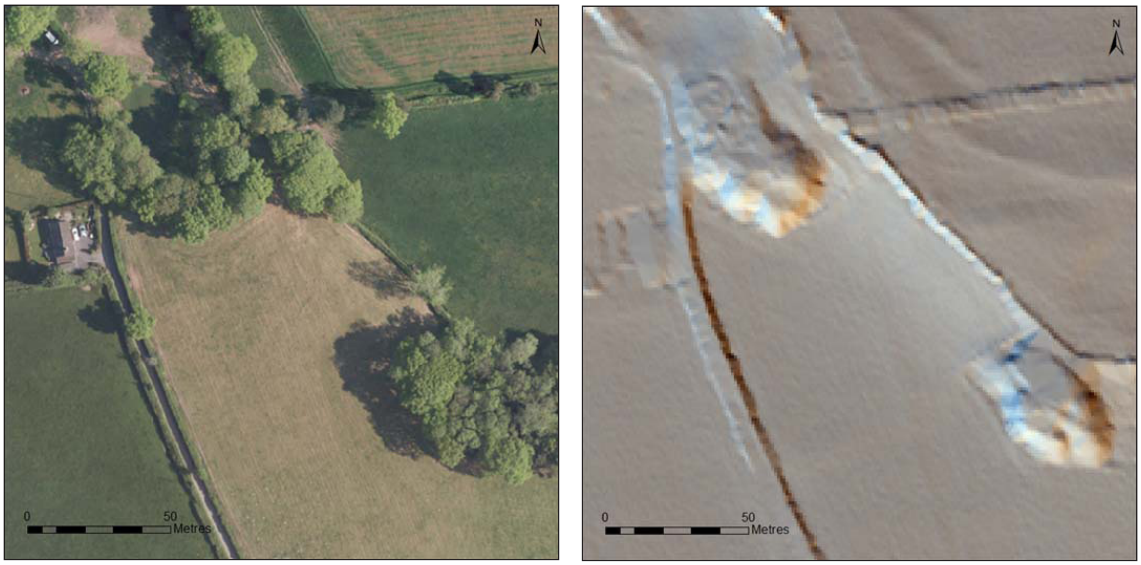


Fig 80: Orchard and plantation established in former pits. The Tithe Apportionment names the plantation plot as 'Pitt' and the orchard as Pit Orchard (MDV117412) Next Perspectives APGB Imagery ST1003 22-MAY-2010. RGB Aerial Photography – © Bluesky International/Getmapping PLC. LIDAR ST1003 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

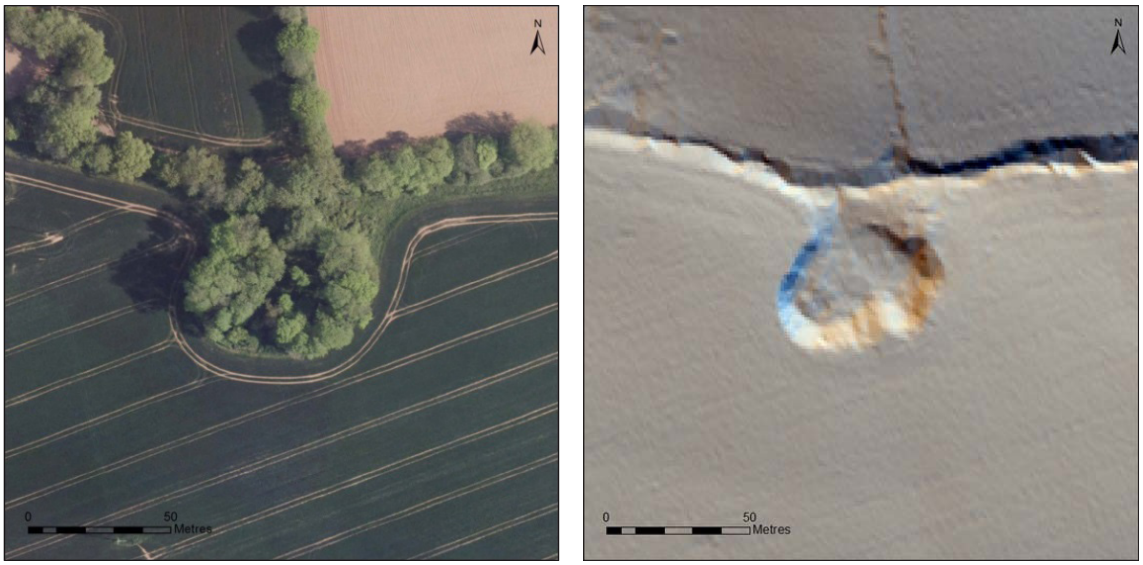


Fig 81: Named as 'Weeks's Pit' on the First Edition Ordnance Survey map, the pit plot was listed as a Plantation on the Tithe Apportionment for Broadhembury. The plots west and south of the plot were named 'Pit Close' (MDV117099). Next Perspectives APGB Imagery ST104 22-MAY-2010. RGB Aerial Photography – © Bluesky International/Getmapping PLC. LIDAR ST1004 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

Fig 82: Plot 287 was listed as an orchard on the Tithe map for Awliscombe and symbolised as an orchard and ponds on the First Edition Ordnance Survey map. The pit in which it was established is clearly visible on lidar-derived images. Pit and orchard now form a domestic garden (MDV117921). Next Perspectives APGB Imagery ST1102 22-MAY-2010. RGB Aerial Photography – © Bluesky International/Getmapping PLC. LIDAR ST1102 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

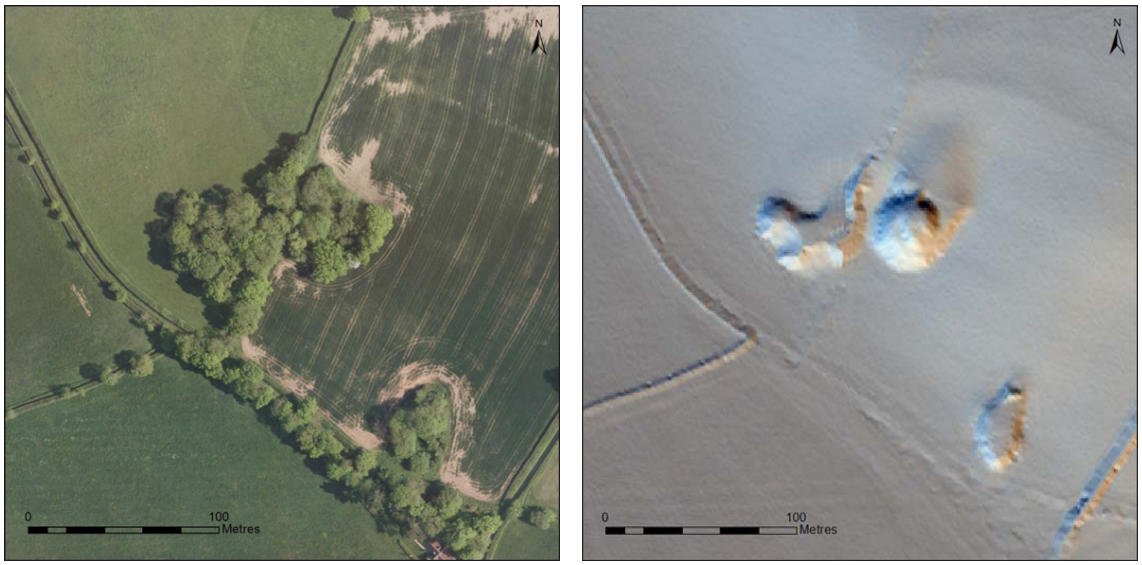


Fig 83: Only the presence of the central of the three visible pits to the north east of Combehayes Farm, Awliscombe parish, was indicated on the Tithe Map. Copses are depicted within all three on the OS First Edition Ordnance Survey map (MDV117892). Next Perspectives APGB Imagery ST1201 22-MAY-2010. RGB Aerial Photography – © Bluesky International/Getmapping PLC. LIDAR ST1101-ST1201 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

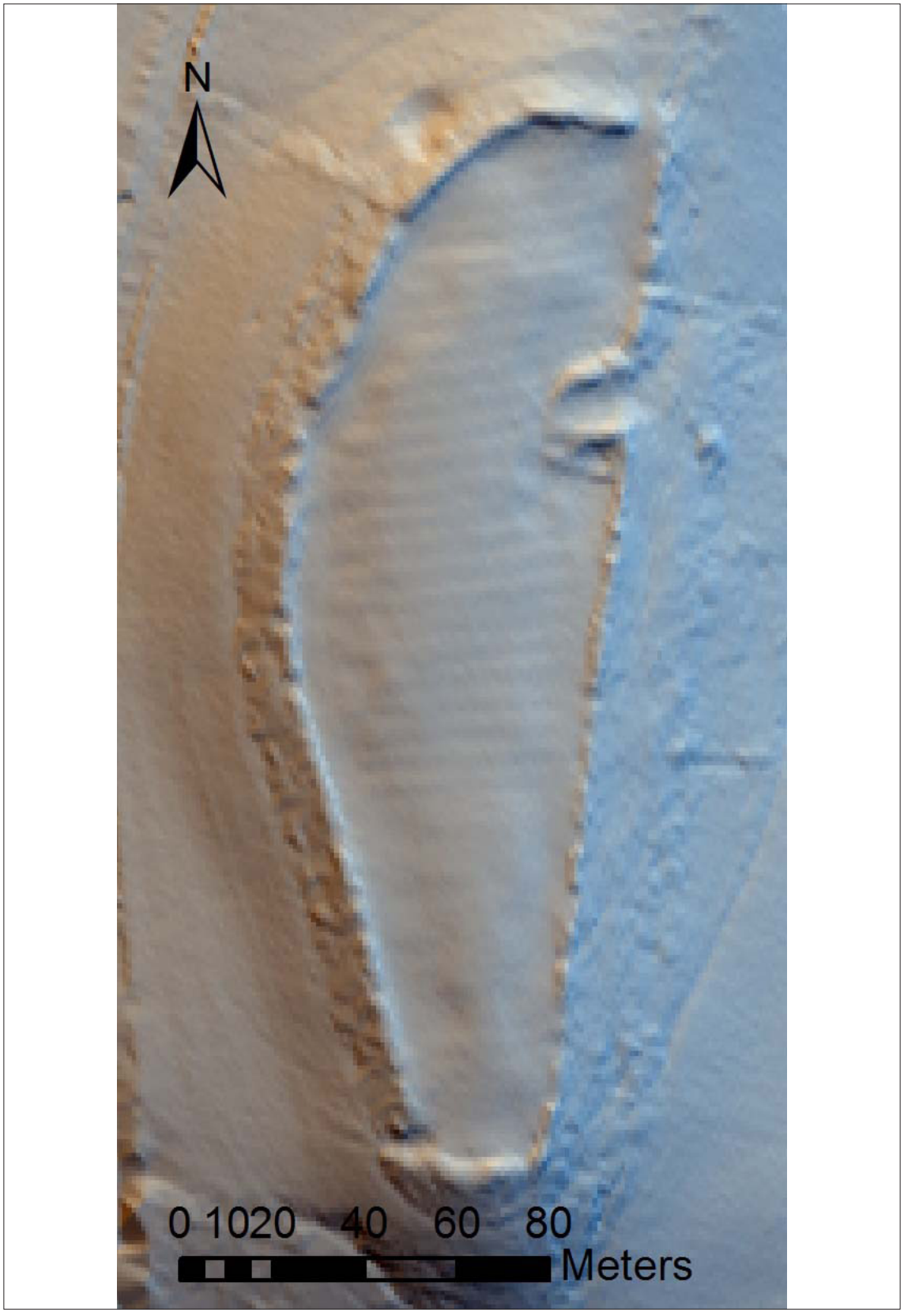


Fig 84: Parallel linear ridges visible on images derived from lidar data within Membury Castle (MDV1930) might indicate post-medieval or early-19th century orcharding within the hillfort ramparts. LIDAR ST1003 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

Other evidence of the use of difficult-to-cultivate areas for fruit trees might be expressed by the ridges visible on lidar within Membury hillfort (Figure 84). In form and width these are consistent with orchard banks recorded throughout this part of Devon, but there is no supporting evidence from the available historic maps. Any orchard established here is therefore likely to have fallen out of use by the time of the Tithe survey in the 1840s.

Industrial, Extractive (42%)

Large Scale Extractive Industries

Studies of extractive activity on the Blackdown Hills have conventionally focussed on two mining industries; whetstone mining focused on Blackborough to the west of the Blackdowns, in particular the large scale 18th to 20th century activity, and iron ore extraction of Roman to later-medieval date, with a similar concentration towards the western scarp.

The importance and impact of the whetstone industry on its immediate landscape and local community may be illustrated by the naming of the area the '*Scythestone hills'* by Snell in 1904 (Snell reference by Edwards, 2011); the industry has more recently been summarised by Stanes (1993). The Blackdowns Environmentally Sensitive Area (ESA) Aerial Photograph Survey derived partial plots of whetstone and iron extraction earthwork remains from 1940s RAF vertical photography, but this rapid survey was hindered by dense tree cover (Horner, pers. comm.).

The effectiveness of the AI&M methodology in recording the physical remains of this industry was demonstrated in the Blackborough area as part of the East and Mid Devon River Catchments survey, which took in the western edge of the Blackdown Hills AONB (Hegarty, Knight and Sims 2016). This has been continued as part of this survey. Four existing whetstone mine monument records have been amended and six previously unrecorded extractive sites identified; each record comprised evidence for numerous individual mine galleries (see Figure 7). For a more detailed discussion of the whetstone industry see Hegarty, Knight and Sims (2016). The distribution of this site type is illustrated in Figure 88.

Prior to the East and Mid Devon River Catchments AI&M survey, periodic investigations had built up a picture, albeit somewhat incomplete, of iron ore extraction on the Blackdown Hills. Partially levelled and possibly truncated pits on North Hill had been dated to the Roman or post-Roman/early medieval period (Griffith and Weddell 1996). The truncation of similar pits at several sites on Dunkeswell airfield has been revealed by more recent fieldwork to be much more varied (Smart et al forthcoming, 166). Similar open cast pits form a strong component of the historic industrial character of the Roman High Weald in Sussex, Kent and Surrey (Cleere and Crossley 1985; Stapleton 1986; High Weald AONB, nd). The earlier AI&M survey proved effective at identifying these industrial remains and consolidating the previously fragmentary records into more coherent landscape scale units, as far as the limited ingress to the Blackdown Hills permitted (Hegarty, Knight and Sims, 2016).

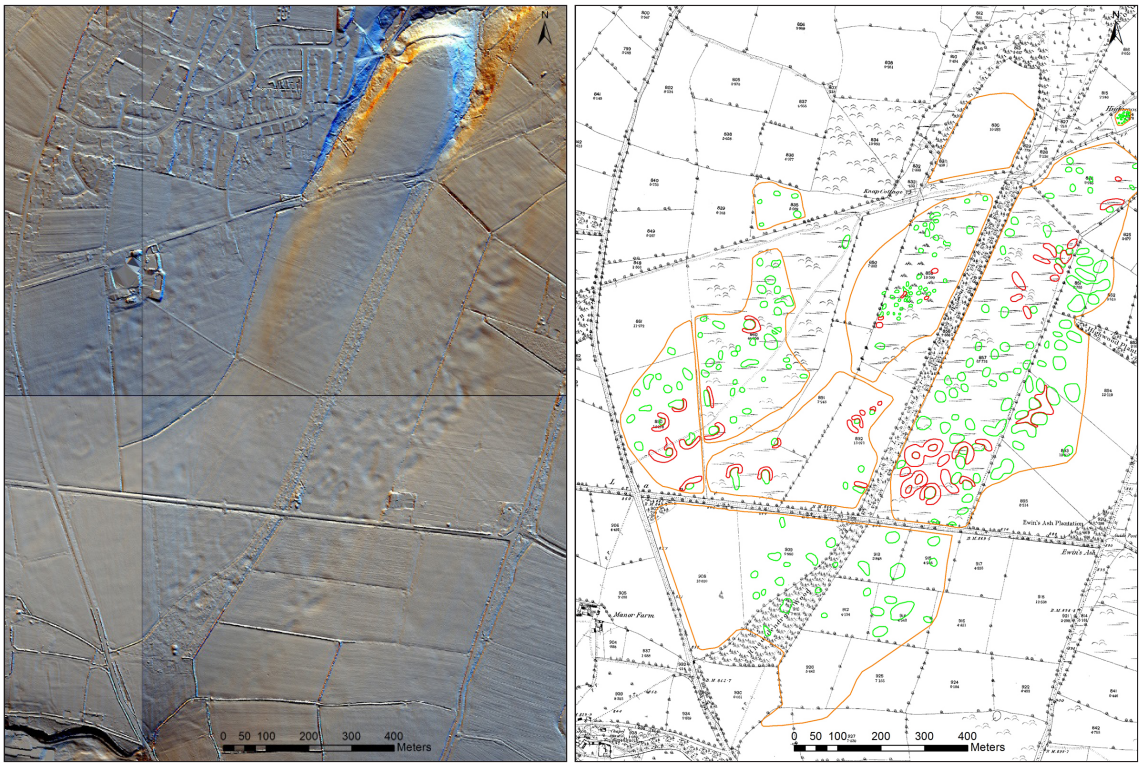


Fig 85: Iron ore extraction pits and associated spoil to the south east of Dunkeswell airfield (MDV110229). LIDAR ST0906 Environment Agency JPEG DSM 05-MAR-2010 © Devon County Council. First Edition Ordnance Survey 25-inch map © Crown copyright and Landmark Information Group Ltd. AI&M transcriptions © Historic England.

Through the assessment of bespoke lidar data acquired for the Blackdown Hills survey, including the western scarp, it has been recognised that this monument type can survive as very subtle earthwork remains not identifiable on aerial photography. Nearly 20 new discoveries have been added to the HER and existing records enhanced and consolidated. Figure 85 illustrates an area of such extensive extraction south of Dunkeswell airfield (MDV110229). The distribution of this site type is illustrated in Figure 88. For a more detailed discussion of this industry see Hegarty, Knight and Sims (2016).

Farm-Scale extraction: Chalk, Clay, Sand, Gravel and Marl

Farm-scale extractive features are typically visible on aerial photographs or lidar-derived images as earthwork pits under pasture or tree cover. Under pasture, typically the relict pits are subtle earthworks, profiles smoothed by repeated ploughing. Less frequently levelled pits are visible as cropmarks.

Such features have typically been perceived as of little archaeological interest. However, smaller scale extraction, such as for marl, sand and gravel potentially had a greater effect on the evolution of the AONB's landscape character than the larger-scale industrial extraction described above.

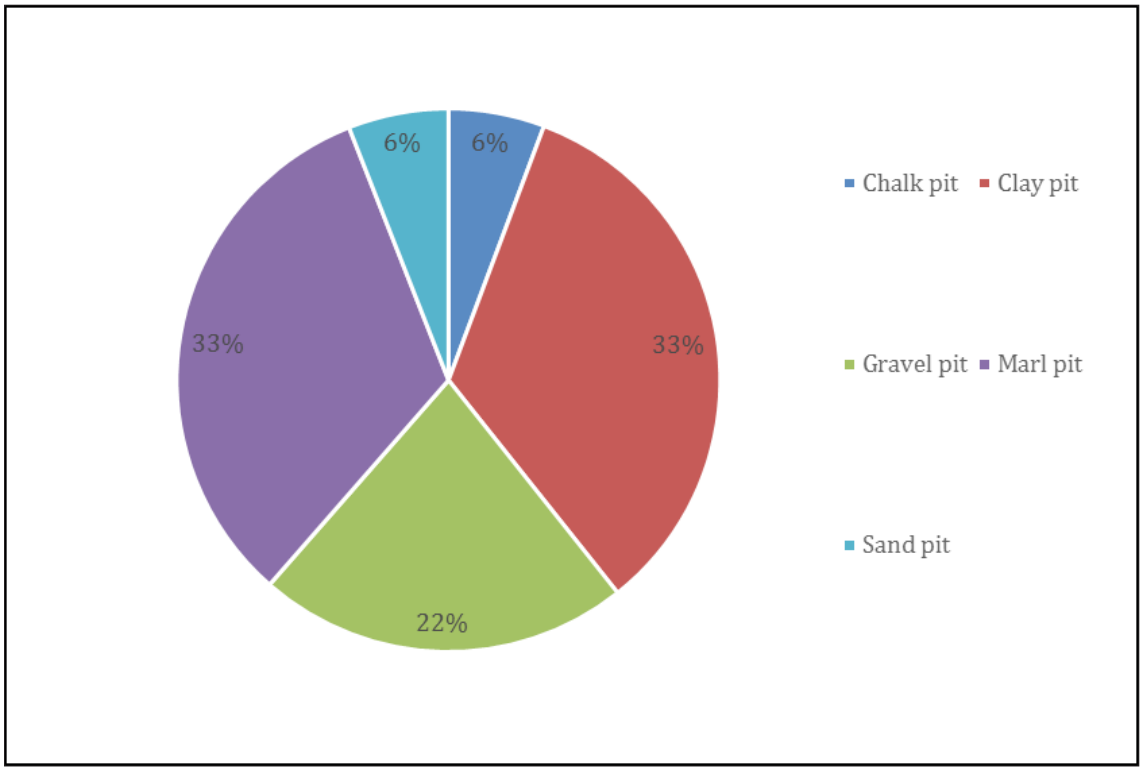
Relict extractive features were frequently depicted on historic maps, such as the Ordnance Survey First Edition 25-inch map, labelled as 'Old Gravel Pit' etc. Such labels may be taken as indicators of status and probable former function. In line with AI&M standards any pits so depicted were not recorded as part of the survey unless additional data was identified (Hegarty 2016).

Prior to the survey over 360 extractive pits of identified type were recorded within the survey area on the DCCHER. Fewer than 50 were identified on the Somerset HER. It is probable that this reflects differing HER recording strategies, not variations in the resource. The most frequently named types of extractive pit were clay, gravel and marl pits, with chalk and sand pits less frequently identified (see Chart 5).

Pits of different function were often depicted in close proximity on historic maps, sand pits adjacent to marl pits, illustrating the complexity of the local geology and the difficulty of ascribing a function to pits from earthwork evidence alone.

It is also likely that only the largest pits, those that most disrupted agricultural activity and therefore endured in the landscape, were recorded by the OS in this way. Subtler relict earthworks remained unrecorded. Nonetheless, some simple patterns can be identified, and basic associations made between extractive pits, bedrock geology and allied industries.

Chart 5: The proportion of named extractive pits recorded on the HERs prior to the survey



Chalk

The distribution of chalk pits is constrained by the bedrock found within the survey area (see Figure 88); 23 were previously identified on the county HERs from historic map evidence, with only 16 further pits interpreted by the survey. In total these constitute less than 2% of the identified extractive pits within the survey area. Limekilns were previously recorded on the HER in close proximity to the densest concentration of chalk pits, supporting the interpretation that the chalk was excavated and processed locally for agricultural lime.

Several earthwork pits were previously recorded from historic map evidence as 'Old Chalk Pit' on mudstone geologies (for instance MDV35111, MDV35332-MDV35333). It was previously suggested that this might indicate historic mis-recording of relict earthworks or reflect local chalk or lime-rich marl deposits (Hegarty, Knight and Sims 2017). However, further groups of lime kilns were previously recorded on the Somerset HER to the north and south east of the survey area, on similarly mudstone geologies (see Figure 88). These lime kilns correspond closely with dense groups of previously unrecorded extractive pits, supporting the interpretation that many of these pits might also be interpreted functionally as 'chalk pits'.

Gravel

Whilst almost a quarter of the extractive pit earthworks recorded on the HER from historic map evidence was identified as 'Old Gravel Pits', very little information exists regarding the historic extraction of this resource on the Blackdown Hills (Prudden, 2003). The recorded pits appear to cluster at the interface of the Triassic mudstone and pebblebed deposits and the overlying Cretaceous sandstones and gravels, both potentially rich gravel resources (Laming and Roche, nd; Roche, nd). This distribution was perhaps in part influenced by access to this resource facilitated by geological 'mass movement' landslip events. However, exploitation appears to have remained small-scale with most gravel pits depicted on the Ordnance Survey First Edition map identified as 'Old', i.e. disused; it is probable that use remained at the local scale, perhaps bolstered in the 18th and 19th centuries by improvements to the turnpike road network (Kanefsky 1999) and the laying out of new roads associated with the Inclosure Acts that enclosed many former commons/turbaries on the Blackdown Hills plateaux. This is a subject that could warrant further study.

Clay Pits

Clay pits were the largest class of extractive pit previously recorded on the HERs from historic map evidence. Several concentrations were previously noted. Significant groups in Devon were identified south of Hemyock along the combes of Madford River, Bolham River and a tributary to River Culm. A smaller group was noted south of Donyatt in Somerset. The densest grouping was noted in the Otter valley near Upottery (see Figure 88).

The former group was situated on the clays of Mercia Mudstone groups and the latter largely on the Branscombe Mudstone formations. The Donyatt group was on

Lias Group mudstones. These concentrations must reflect the exploitation of specific resources for specific industries. In particular, medieval to post-medieval pottery production is recorded at Honiton, Hemyock and Donyatt.

Field names provide indirect evidence of the role of pits with pottery production in some areas. A 1566 survey of Hemyock lists the detailed holdings of 45 out of 48 tenants. Of the 45 holdings, a third included one or more closes called *Pitland* (or in one case *Pitfurlong*), and other plots names *Cleyland* and *Puttescroft* (Tompkins forthcoming). The earliest record of clay digging in the neighbouring manor of Clayhidon dates to the late 14th, but probably began earlier (ibid.), and a similar pattern of field names is recorded here. The place-name Clayhidon, first recorded in 1485, may indicate the point that pottery production became an economically significant activity in the parish, and perhaps across the Blackdown Hills. Manorial records of high clay rents in medieval Clayhidon, indicate that significant kiln sites remain to be discovered in this area (ibid.). Whilst the nineteenth century Tithe survey records 'pit' elements in field names, fewer specific functions are recorded, with no clay pits identified in Hemyock, and the OS survey records only 13 out of more than 30 as clay pits, others being sand and gravel (Collings forthcoming). It is unclear whether this information was gathered from living memory or local assumptions regarding available resources but does support the interpretation that such historic mapping is not a reliable indicator of the function of relict pits (ibid.; Young forthcoming).

As at Hemyock, the Donyatt potteries were active from the medieval period. Probably operated alongside pastoral farming on a seasonal basis by a small number of families, production also increased here between the 14th and 17th centuries (Cherry 1988, xvi) and, cumulatively the total quantity of brick and ceramics produced must have been substantial. Numerous references document local clay extraction; in 1807, potters from seven families including Norris, Dinham and Trott were given a rent allowance for 'digin his clay in a proper mannor and leaving the pit with even bottom and sides without chasms' (Morley 1988, 28). More reliable clay seams were targeted in the late 19th century by the Arlidges (Coleman-Smith and Pearson 1988b, 50), and Street in 1904 mentions 'works of this kind ... set up in different fields at Crock Street, and have passed hence as the clay was worked out' (Coleman-Smith and Pearson 1988d, 40).

The liassic clays of the Donyatt area are not as reliable as other sources but are suitable for a small-scale industry where materials can be carefully selected (Dineley 1988, 2). Given the high numbers of pits elsewhere in the project area, it had seemed reasonable to anticipate an even greater concentration of pits here. Surprisingly however, despite some newly recorded examples, the absolute number in the vicinity of the Donyatt potteries is low (2.9 per square kilometre). This does not reflect a high number of pits depicted on the historic mapping and therefore excluded from transcriptions; there are also relatively few on the 19th century maps. Even more unexpectedly, the number of pits recorded between Witney Bottom and Donyatt is even lower (2.25 per square kilometre).

However, the low density probably partly reflects the absence of lidar coverage over much of the potteries; the APGB elevation data imagery is of a poorer resolution and much of the ground surface is obscured by vegetation cover.

It is notable though that some large pits are clearly visible on the aerial imagery. In later periods of production, between 1890 and 1945, industrialised methods were introduced (Coleman-Smith, R. and Pearson, T., 1988c: 94). At this time the Arlidges favoured the more reliable fossil-free clay from Shave Lane, which could account for the large scale of the pits here; Donyatt excavations Site 19 (SOM18225) and a newly recorded pit circa 500 metres west of it (SOM38328) have a combined area of 1.5 hectares (Figure 86). At least one of these more substantial features is relatively recent in date, being depicted and marked on the late-19th century OS mapping, with a well-defined extension to the south visible on the 1940s aerial photographs and has therefore been subject to fewer years of cultivation. The other is closer to Site 5 (SOM53337), which was itself purchased by the Arlidges by 1890 and used until the Second World War (Coleman-Smith and Pearson 1988a, 71).

Other indicators of industrial activity, such as the dark soils of kiln sites that have been recorded at Donyatt Excavations Site 3 in 1962 and 1963 (Coleman-Smith and Pearson, 1988a: 63), were not observed. Again, this could be a consequence of limited available imagery; the aerial photographs for this area included only one sortie taken between 1960 and 1989, and this covered only a proportion of the documented pottery production area.

The low density of extractive pits recorded by the survey in the environs of two of the better understood medieval and later pottery production sites on the Blackdown Hills raises questions of the relationship between the evidence of relict pits and scale of production. At the production sites themselves it is probable that the deliberate infilling of clay pits with kiln or other waste and subsequent plough levelling provides one explanation for low visibility (Collings forthcoming 87; Coleman-Smith and Pearson 1988a, 51, 56; Coleman-Smith and Pearson 1988b, 50). However, the relatively low incidence of additional extractive pit earthworks in the immediate vicinity is intriguing.

It is unlikely that the distribution of extractive pits recorded by the survey represent the activities of potters across the wider survey area; many must represent other activities as described above and below. Nevertheless, in conjunction with the map evidence, the distribution of newly recorded extractive pits may offer a guide to areas in the landscape where clay resources were perhaps more intensively exploited. For instance, whilst the density of previously recorded clay pits in the Otter valley may simply indicate supply to the Honiton potteries, they might be indicative of as-yet unidentified production centres north of Honiton, and this density has been significantly enhanced by the survey (see Figure 88). Many of the ceramics from Hemyock also indicate mineral content derived from the Upper Greensand geologies typical of the Blackdowns plateaux (Smart et al forthcoming, 124-5). Whilst the Hemyock inclusions were probably derived from stream-borne material, the upper Otter Valley also contains a concentration of recorded sand pits (the aptly named

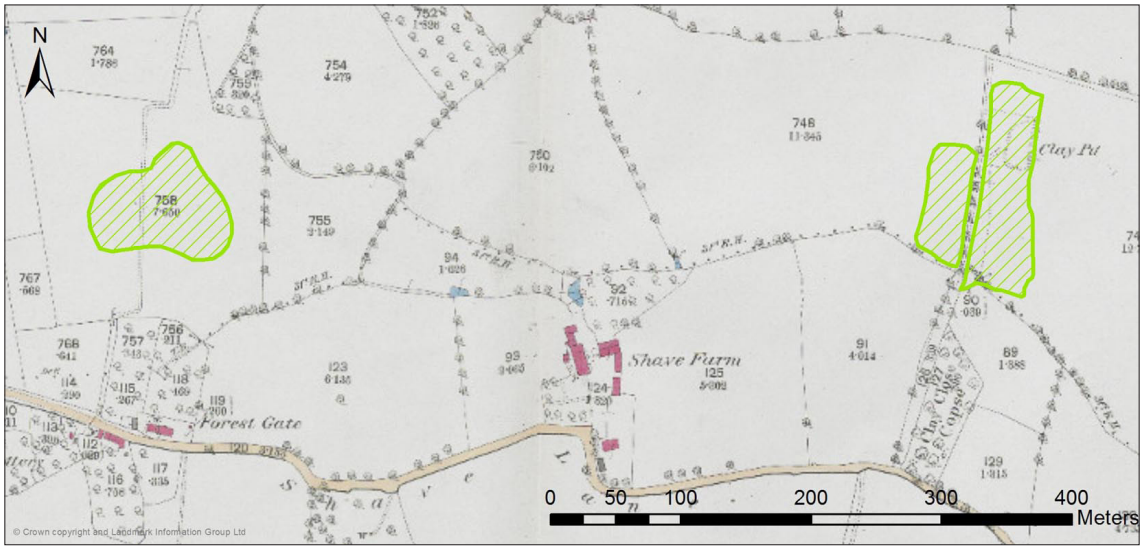


Fig 86: Clay pits north of Shave Lane, the easternmost (SOM18225) of which seems to have been in active use at the time of the 1888 Ordnance Survey map. National Library of Scotland via Bristol City Council. AI&M transcriptions © Historic England.

Sandpit Hill in Upottery for instance), which could support the interpretation of this area as a pottery production site.

Marl Pits

Earthworks identified as marl pits comprise the second largest group of extractive pit recorded on the HER from historic map evidence, but this is probably an underrepresentation of their true distribution.

'Marl' is the name given to a mix of clay and calcium carbonate formed by the erosion of bedrock, typically limestone, although the quantities of these component parts can vary. This has probably led to the term being applied to a range of soils that have historically been used as a form of soil improver, and possibly misapplied to pits made for other purposes.

Marling mixed the heavy alkaline clays with lighter, more acidic and less fertile sandy soils, with the aim of reducing acidity and improving moisture retention; it was both a chemical and hydrological soil improver. It has been suggested that Pliny indicates marling was practised in parts of Britain and Gaul in the first century AD, reflecting an earlier prehistoric tradition (Ambrosoli 1997, 242). However, marling probably began in earnest in Britain in the medieval period, perhaps under monastic influence, the term deriving from the Old French *marle*, itself maybe from Pliny's *marga* (Grigson 2009). In the post-medieval period the cutting of marl pits was probably stimulated by increasing food prices, and in other regions reached a peak between the 16th and 18th centuries (Upton-by-Chester Local History Group).

It is likely that the use of marl pits followed a similar trajectory on the Blackdown Hills. In relation to arable cultivation in the eastern heaths Williamson (2002, 69) suggested that marl pits might correspond with land enclosed in the 18th century.

There does not appear to be a corresponding close association between marling and late inclosure on the Blackdown Hills plateaux; as Ryder points out in a study of 6 parishes in the western Blackdown Hills, much enclosure on the Blackdowns was late and piecemeal in character and many marl pits in her study area had probably been disused for some time by the time the Tithe survey took place in the mid-19th century (Ryder 2013, 58-59). Neither is there a direct link on the valley sides; clay extraction predominantly coincided with the Triassic mudstones, within areas mainly characterised by semi-irregular field patterns, which Smart suggests might have origins from the eighth/ninth centuries onwards (Smart et al forthcoming, 158-9). As such, to extract clay suitable for marling it was necessary to dig extraction pits within the farmed parts of the countryside.

Indeed, the distribution of extractive pit earthworks recorded from historic map evidence as 'Old Marl Pits' on the HER corresponds closely with the extent of Mudstone groups recorded by the British Geological Survey (see Figure 88). Mudstones are solid geological layers that often weather to clay; the Mercia Mudstone groups that dominate the slopes below the plateau in the western Blackdown Hills were previously known as Keuper Marl (Laming and Roche nd).

The clay content of mudstones also makes it suitable for the distinctive west-country construction technique known as cob building. Cob mix ideally contains approximately equal proportions of clay and silt, sand and fine gravel, which is mixed with water and straw to form a malleable building material. This mix is then built up in courses, typically sitting on a masonry plinth (Devon Earth Building Association nd). Laming and Roche (nd) state that "where harder rocks were not available, mudstone was dug from numerous marl pits and used for traditional Devon cob construction in houses and farm buildings". If this reflects locally common usage, the term marl might have been applied more widely than to pits dug only for agricultural improvement.

Extractive Pits

A bespoke lidar survey was commissioned for the survey targeting both areas of high archaeological potential and the strategic objectives of the survey, i.e. the A30-A303 corridor. Appropriately visualised, this data allowed the identification of very subtle earthwork features that were often not visible on traditional aerial photographs. This greatly increased the visibility of shallow or small pits and pits otherwise obscured, for instance by tree cover, and consequently the number recorded by the survey (see Figure 88).

Interpretation as extractive pits was supported by comparison with the earthwork remains of those pits depicted on, and recorded from, historic map data. As stated above, identifying a function for pits recorded from earthwork evidence alone is problematic, often based on the underlying geological conditions or proximity to pits identified on the available historic map sources. Where supporting data was scarce the earthworks pits identified were indexed simply as 'extractive pit', a non-specific descriptive term but one that allows for identification and further clarification.

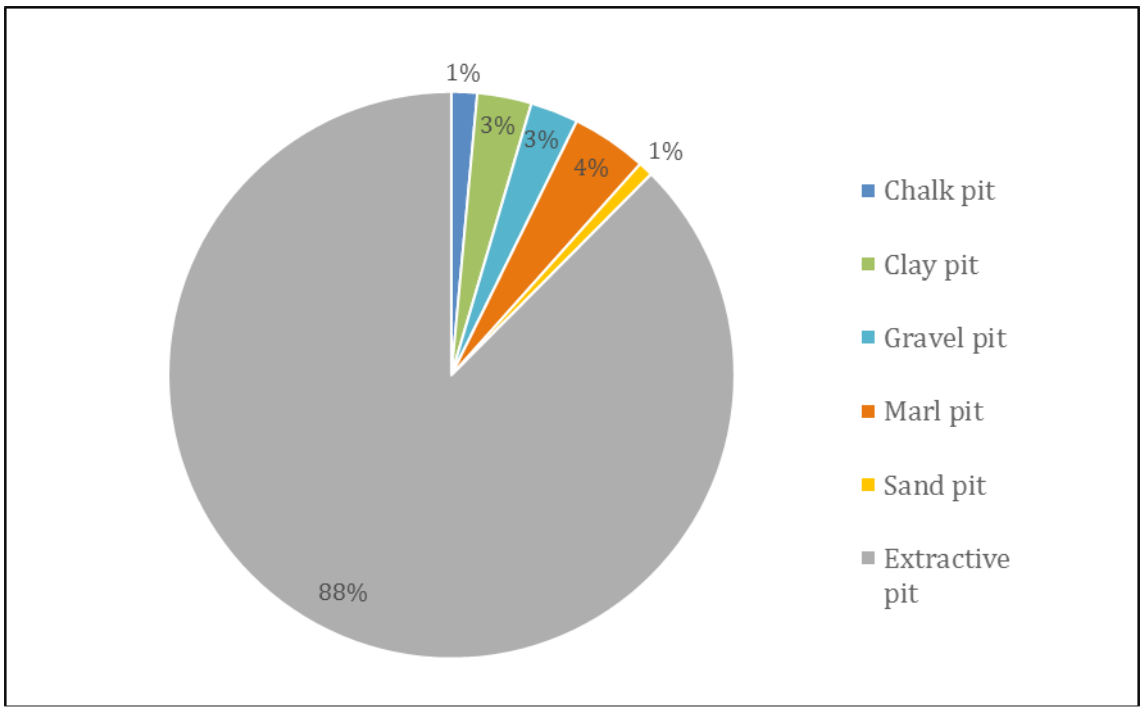
Pits recorded in this way were the most frequently identified feature type in this survey (see Section 4); almost 2200 previously unrecorded pits have been added to the county HERs, the majority of which were not depicted in any way on the 19th century maps available to the survey. The proportion of extractive pits to other identified pits recorded on the HER is illustrated in Chart 6.

As can be seen from Figure 88, the distribution of the functionally un-ascribed extractive pits complements that of all previously identified types of pit, (chalk, clay, gravel, sand and marl pits). It therefore seems probable that the 'extractive pit' group does indeed include pits of all types. However, some distinctions may be made; many are situated close to the centre of fields or away from road access points, which might argue against the extraction of a product that would require subsequent transport for use, i.e. clay or sand for pottery production or gravel for roadbuilding, but instead for a product for immediate topical application, such as marl.

A recent study of the ancient landscape of the Blackdown Hills describes numerous old pits recorded in the parishes of Luppitt and Yarcombe as 'a few sand and clay pits and large numbers of marl pits' (Rippon et al 2006, 6), which might support the functional predominance of this type. It is possible that many previously unrecorded and unnamed relict pits were known by those who made them as 'marl' pits even if the 'product' was used in a variety of ways. Alternatively, as suggested above, this may simply reflect the terminology used by 19th century cartographers.

That such pits have not been considered as industrial in the traditional sense might account for their absence from 19th century maps, but their ubiquity implies a high degree of significance to local agricultural, and potentially industrial practice.

Chart 6: The proportion of functionally defined pits compared to previously unrecorded extractive pits identified by the survey



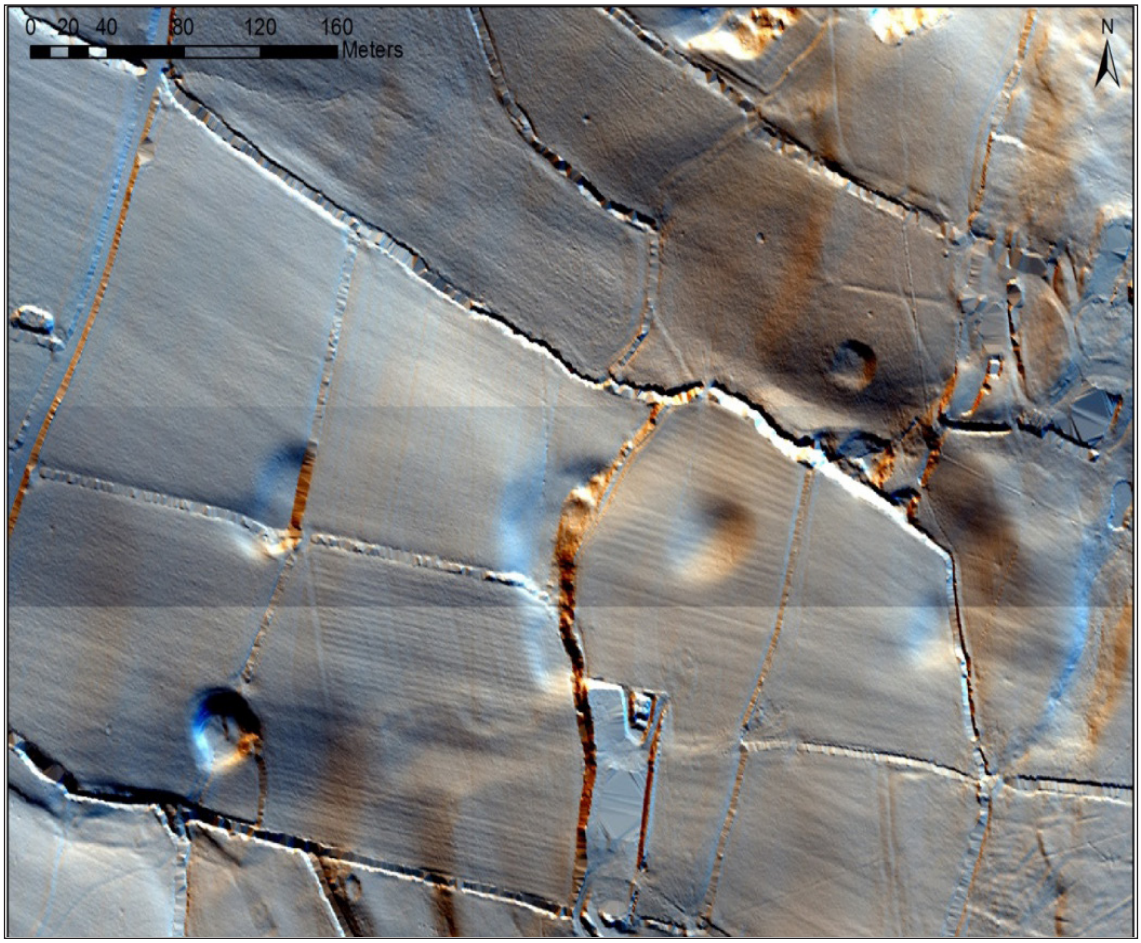


Fig 87: A lidar-derived image demonstrating the clarity, subtlety and number of extractive pit earthworks visible on lidar data that have no explicit historic map evidence, in this instance in the landscape to the east of Rawridge, Upottery. LIDAR ST2006 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014. © Devon County Council.

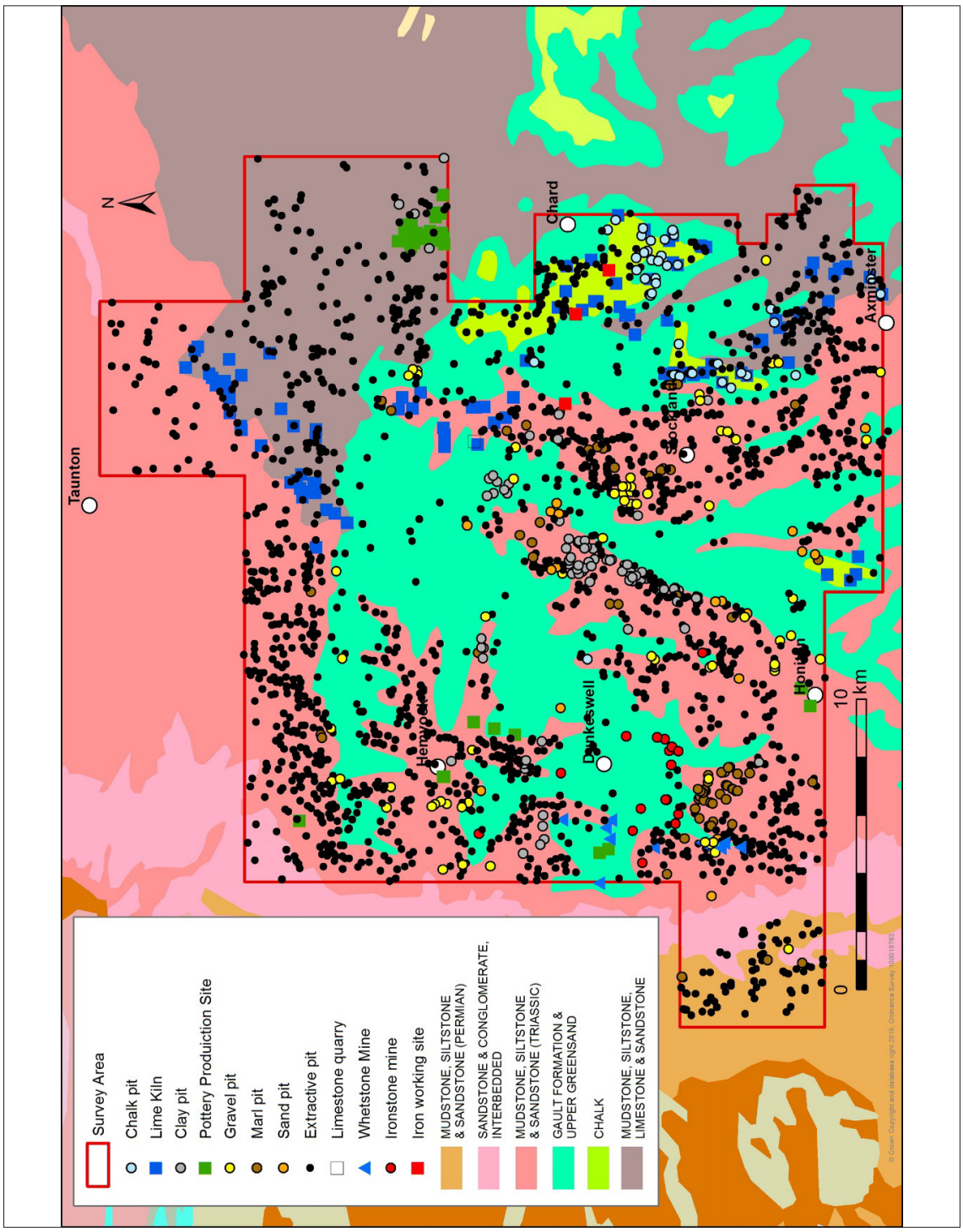


Fig 88: All extractive pits and associated industrial sites recorded within the survey area. Reproduced with the permission of the British Geological Survey © NERC. All rights reserved.

Dating Evidence

In most cases, the visible earthworks did not correspond with any pit depicted or named on the Ordnance Survey First Edition 25-inch map or parish Tithe Map, providing (unless early 20th century in origin) a mid- to late-19th century *terminus ante quem* for the pit's disuse. Less frequently, but often enough to be significant, the visible earthwork fell within a plot for which the Tithe Apportionment would list a 'Pit' element in the field name. A pastoral or arable land use for a 'pit' plot might indicate that the pit had been substantially levelled to a degree prior to the Tithe survey, thereby enabling agricultural activity to be resumed across the whole plot (for instance, MDV11824, an arable plot named Pitt Close).

In the absence of field name evidence, where possible a date range was interpreted from associations or relationships to historic field boundaries. In most cases this was an indirect or inferred relationship. A small number of examples allowed a more direct, if still relative, interpretation to be made. For instance, an oval extractive pit to the west of Dalwood Village (MDV115397) has possibly influenced the course of the field boundary immediately to the east, formerly the boundary with an orchard (see Figure 89). A less regularly shaped pit south west of Rose Farm, Stockland parish (MDV115382) had also influenced the course of the field boundary immediately to its west, diverting around the earthwork. Perhaps more significantly, the east end of the pit is overlain by the curvilinear earthwork bank of a relict former field boundary, probably of later medieval origin (see Figure 90). Although these examples fall within a wider field pattern of curvilinear boundaries characterised by HLC as of medieval origin, the exaggerated deviation of the boundaries is not typical of the surrounding field pattern. In such cases a medieval origin for the initiation of extractive activity seems feasible, with subsequent enclosure accommodating the pits, or their expansion.

In other instances, a date range can be inferred. Large earthworks within Roundball Wood, south of Honiton and beyond the survey area (SY15819913), have been identified locally as marl pits. Assessment of tree growth within the pits has supported an interpretation that marl was "last dug here at least two or three centuries ago" (Honiton Town Council 2009).

The frequency of marling may also provide an indication of the longevity of an individual earthwork. Marling is regarded in much 19th century 'improving' literature as a long term – if not 'once and for all' - soil improver, often contrasted against the quick but short-term results of liming. Concomitantly infrequent application is recommended, with periods varying between 12 to 50 years advised between marling, i.e. once a generation or less (Jeffery 2008).

It is difficult to ascribe a period of origin from such information, particularly as some sources state that marling after the medieval period was inconsistent, 'limited and revivalist' (Upton Local History Group; Matthew 1993, 103). Nonetheless, some simple conclusions can be drawn, i.e. that subtle, small pits with much softened profiles, such as make up the majority of those identified by the survey, might be evidence of single marling events in plots that rapidly were returned to

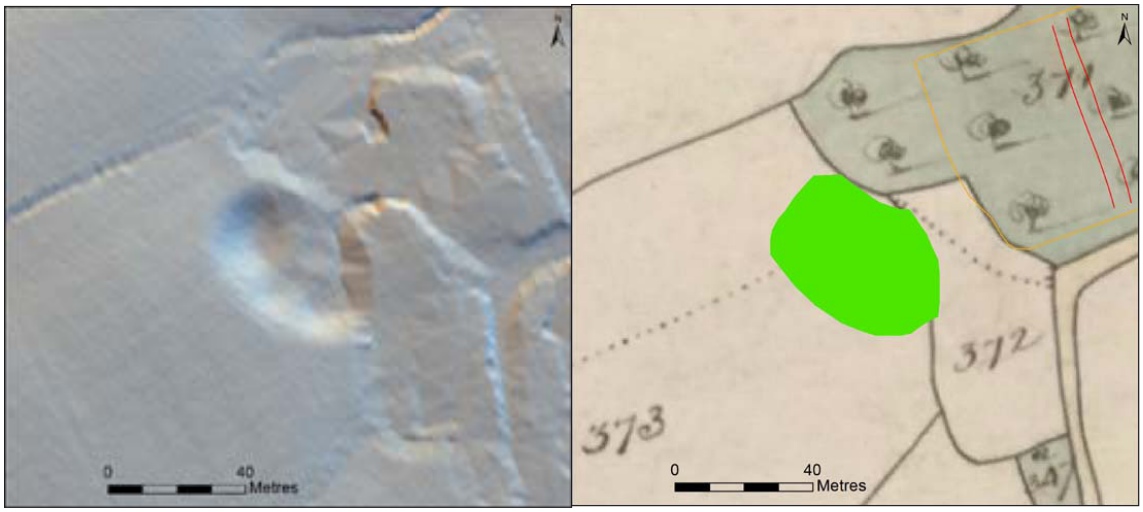


Fig 89: An extractive pit west of Dalwood Village (MDV115397). Left, hillshade image derived from DTM lidar data. LIDAR ST2400 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014, © Devon County Council. Right: extract from the Tithe Map for Dalwood. Tithe Map Devon County Council.

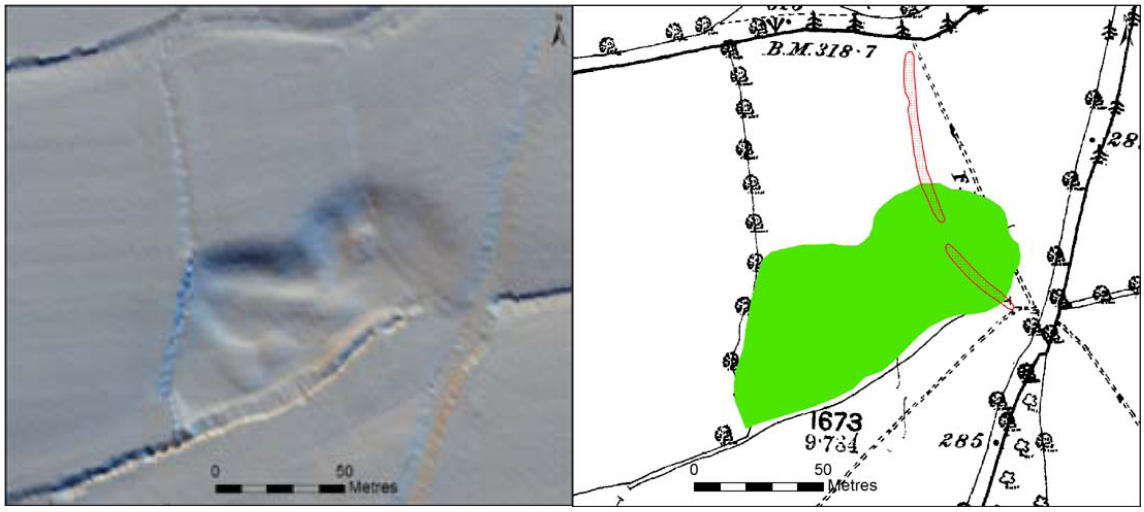
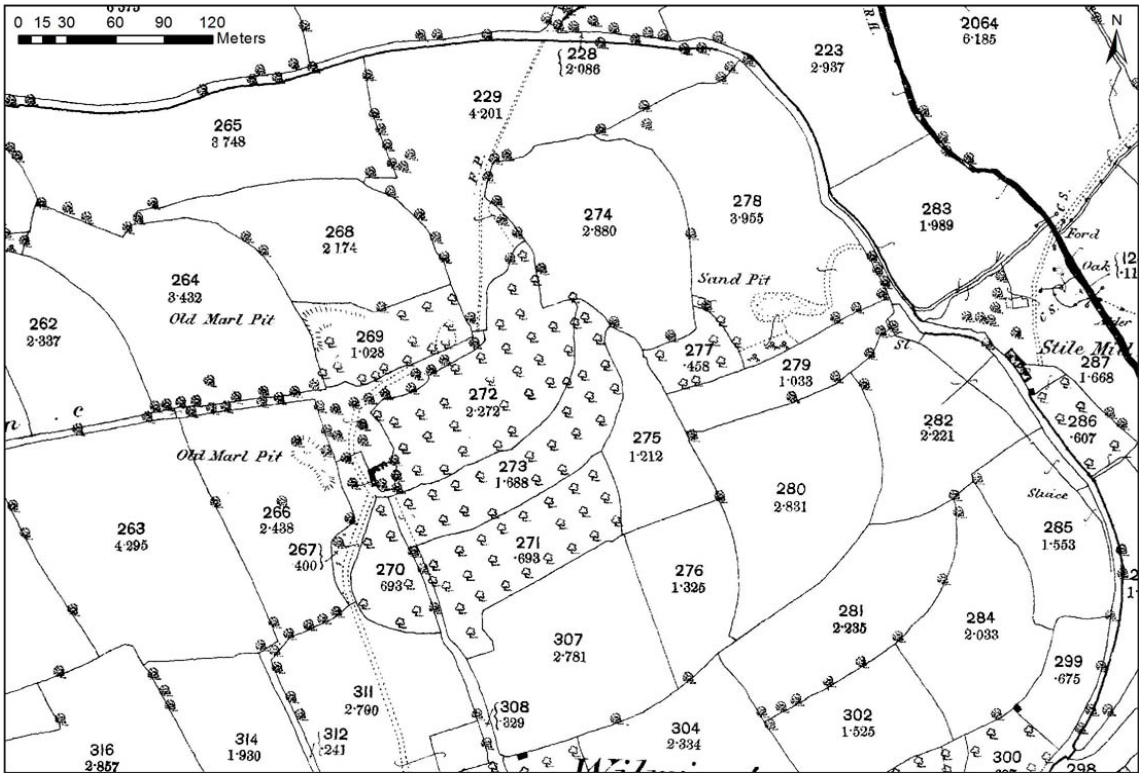


Fig 90: An extractive pit west of Rose Farm, Stockland parish (MDV115382). Left, hillshade image derived from DTM lidar data. LIDAR ST2402 Environment Agency DTM 01-JAN-1998 to 30-SEP-2014, © Devon County Council. Right: extract from the Ordnance Survey First Edition map. (© Crown copyright and Landmark Information Group Ltd).

total cultivation. Larger pits probably indicate a longer period of productivity, with multiple episodes of use and greater disruption to agriculture. Such pits are more likely to have subsequently been reused as orchards or other woodland (see Section 5: Orchards and other woodland above).

Accounts of marling in Cheshire describe it as a very intensive activity undertaken by 5 or 6 men as a regular part of the agricultural year, usually taking a fortnight (Upton Local History Group). For the very largest pits recorded by the survey, such as those identified north of Wilmington, Widworthy parish (MDV115678), extending over nearly 4 hectares, a fortnight's work every 12 to 50 years might indicate a very long period of use (see Figure 91).



First Edition Ordnance Survey 25-inch map © Crown copyright and Landmark Information Group Ltd.

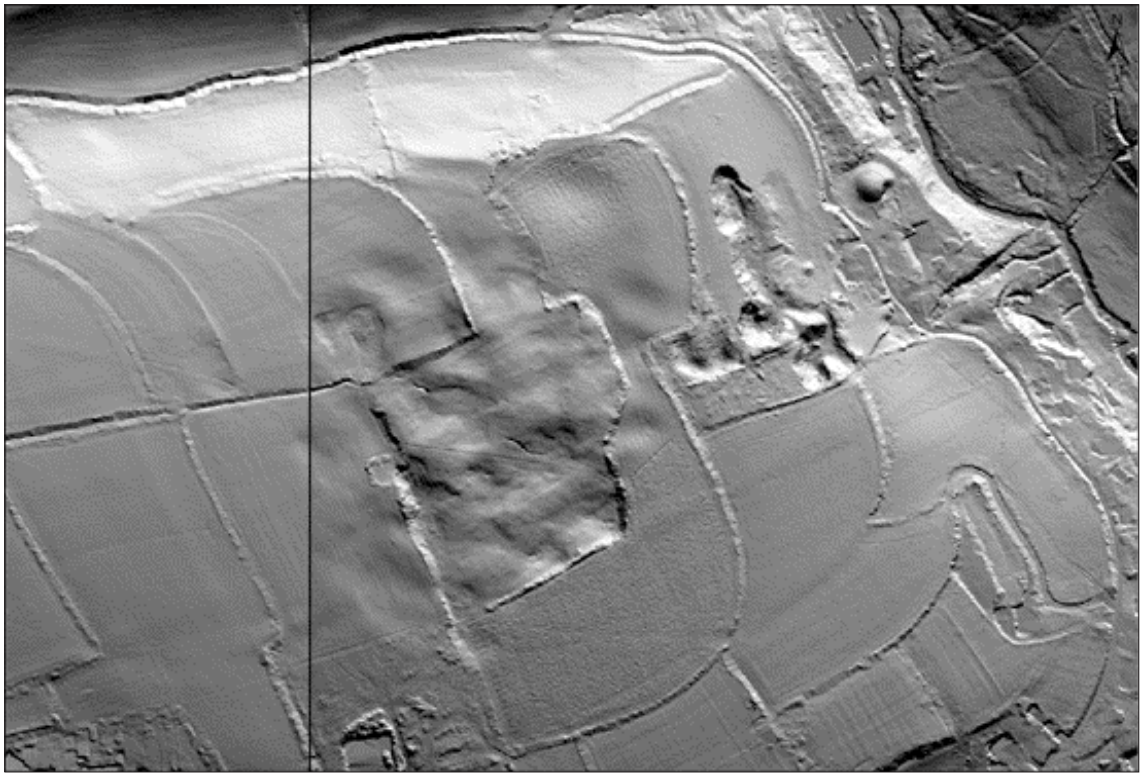

LIDAR ST2103 Bluesky International DTM 30-APR-2016. © Devon County Council.

Fig 91: Former extractive pits north of Wilmington, Widworthy parish, possibly incorporating both marl pits and sand pits (MDV115678 and 115680). Note the proximity of Old Marl Pits and Sand pits on the Ordnance Survey First Edition Map and subsequent, almost complete use as orchards.

6. LISTING

As the survey progressed a list was maintained of previously unrecorded sites of potential national significance and previously designated monuments that might benefit from re-evaluation. The list, with interpreters' comments, is included as a table in Appendix A. It includes:

- Previously unrecorded sites that warrant assessment for heritage protection consideration, either individually or due to group value.

- Previously recorded sites enhanced by the AI&M survey and considered be of potentially national significance and worthy of assessment for heritage protection consideration.

- Scheduled monuments where the AI&M survey results warrant reassessment and possible amendment of the scheduled area.

The list is included here for information only. The list, with supporting information for each monument in the form of aerial photographic or lidar-derived images noted during the survey, has been supplied to Historic England for the consideration of the Listing Team.

7. CONCLUSIONS

The Blackdown Hills AONB and East Devon River Catchments Aerial Investigation and Mapping survey has created almost 4400 and amended roughly 700 monument records on the Devon and Somerset HERs. This equates to an increase in the HER record count for the survey area of over 60%.

The survey has enhanced our understanding of the historic environment in this under-researched designated landscape, with a focus on areas subject to infrastructure development, environmental conservation and agricultural pressures, as outlined in the project design (Hegarty 2015).

As anticipated, monument preservation was good, with 90% of the features recorded during the survey visible on the aerial imagery as earthworks. Less than 10% of these could be confidently identified as having subsequently been levelled.

Almost 90% of monument records arising from the survey have been assigned a probable medieval or post-medieval origin. Earlier periods remain under-represented, with less than 4% of monument records ascribed a later-prehistoric to Roman date. It is significant that most monuments interpreted as prehistoric in date were visible from cropmark evidence. It is concluded that the Blackdown Hills landscape changed dramatically in the post-Roman period, the character of much of the modern landscape originating in the medieval or post-medieval periods, obscuring evidence of earlier periods.

The survey results have been summarised under seven main themes. In proportion to the number of monument records created, these are:

1. Recreation (1%)

2. Religious, Ceremonial, Funerary (2%)

3. Transport & Communications (2%)

4. Settlement (4%)

5. Military, Defence (5%)

6. Farming, Forestry (40%)

7. Industrial, Extractive (42%)

It must be emphasised that volume of records does not equate to significance; noteworthy discoveries and enhancements to the HER have been made under most themes. The themes are also not exclusive, with overlap apparent across several themes, notably between 'Transport & communications' and 'Settlement', 'Settlement' and 'Farming, Forestry', and 'Farming, Forestry' and 'Industrial, Extractive".

In terms of rarity, arguably some of the more significant impacts have been achieved under Theme 2, Religious, ceremonial, funerary, with the discovery of a possible long barrow or mortuary enclosure of Neolithic date near Luton village, Broadhembury (MDV118372), and the identification of a possible inner circuit to the Neolithic causewayed enclosure at Hembury Fort (MDV112692).

However, the more populous themes, particularly Theme 6, Farming, Forestry, and Theme 7, Industrial, Extractive, have arguably had the greatest impact on our understanding of the evolution of the AONB's landscape.

For instance, under Theme 6, by identifying a notable degree of field boundary loss within enclosure characterised by HLC as of medieval origin, the survey can demonstrate a previously unrecognised degree of landscape change, predating the 19th century. Historic aerial photography and lidar derived imagery have also extended the known distribution of former orchards far beyond that indicated by HLC, emphasising the longevity of many orchards and their significance as part of the rural economy of Devon and Somerset from at least the late 18th century to the mid-20th century.

Studies of extractive activity on the Blackdown Hills have often focussed on iron ore extraction of Roman to later-medieval date and 18th to 20th century whetstone mining, focused on the western Blackdown Hills. Under Theme 7, the survey has enhanced our understanding of the scale of these industries. It has also illustrated the near ubiquitous distribution, yet varied character, of previously unrecorded smaller scale extractive features, from farm-scale marl pits to clay pits potentially associated with regionally significant pottery industries.

However, the identification of links between Theme 6 and Theme 7 has proved to be one of the more significant outcomes of the survey. It is clear that many such extractive pits, some of industrial character but most probably of agricultural origin, were subsequently utilised in agricultural or arboricultural contexts once their original role had ceased, as evidenced by orchard banks within or surrounding many relict extractive pits. Research by the University of Exeter provides documentary evidence to confirm that this practice was established by the mid-16th century (Smart forthcoming) and is probably earlier in origin.

The implications of this relationship become clearer when one considers the small woods and copses so characteristic of the Blackdown Hills. By recording such previously unregarded classes of monument, the survey has revealed a hitherto overlooked but significant influence on the character of the Blackdown Hills, contributing to the distinctive landscape of the AONB.

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APPENDIX A: SITES SUGGESTED FOR LISTING CONSIDERATION

Theme 2: Religious, ceremonial, funerary					
Name	**Priority**	**MonID: MDV**	**SM no.**	**Notes**	**Figure No. ***
Barrow, W of Brown Down Cottage, Otterford	Medium	SOM 43457	1016414	There is some discrepancy between the scheduled area (SM 32166) and that transcribed from aerial photographs of 1948 during this survey. It may be worth revisiting the source used to map the scheduled area against that used in this transcription, in view of possibly amending.	N/A
Round barrow, 110m south west of Spittle Pond Cottages, Higher Wambrook	Medium	SOM 53223	1020545	The location of the Scheduled area could be considered in light of the evidence of the survey.	N/A
A possible barrow of Bronze Age date south of Weston Farm, Wambrook parish.	Medium	SOM 37308	N/A	The earthworks are interpreted as the possible site of a near-levelled round barrow and should be considered for designation assessment.	N/A
Bowl barrow 310m south of Widworthy Barton, Widworthy	Medium	MDV 11191	1017475	The Scheduled area (listing number 1017475) appears to be based on the OS mapping which is circa 3 metres offset from the feature as shown on the 2016 lidar information. It may be worth revisiting to accurately map the exact extent and consider altering the Scheduled area.	N/A
Dunkeswell Abbey	Medium	1890	1009303	Extend the scheduled area to the east to include additional earthworks identified by the survey.	14

Theme 4: Settlement					
Name	**Priority**	**MonID: MDV**	**SM no.**	**Notes**	**Figure No. ***
An enclosure of possible prehistoric date under Castle Plantation, Curland	Medium	SOM 38528	N/A	Earthworks interpreted as evidence of a possible enclosure of possible prehistoric date. Located under the tree cover of under Castle Plantation, Curland. Identified from lidar imagery.	23
Deserted settlement, Trickey Warren	Medium	SOM 45516	N/A	The medieval settlement is defined by extensive earthwork banks and ditches with good preservation around the core of the former settlement, which includes building platforms and small enclosures. Extensive outlying field boundaries are visible to the north and northwest and the whole site occupies an area of approximately 16 hectares. The site is recommended for scheduling.	N/A

Theme 5: Military, Defence					
Name	**Priority**	**MonID: MDV**	**SM no.**	**Notes**	**Figure No. ***
Horse Pool Copse Hillfort	High	SOM 53259	1018636	The extent of the Scheduled area should be considered in light of the evidence of the survey; minor adjustment or extension to south west and south east.	N/A
Orchard Wood hillfort	Medium	SOM 11685	N/A	The largely complete earthwork remains of the hillfort within Orchard Wood should be considered for Scheduled Monument designation. The earthworks are covered with dense tree cover, although are clearly visible on lidar images. The survey has added some additional detail to the ground survey carried out by EH in 2002.	38
Motte and Bailey at Castle Hill, Widworthy Park	High	15339	1017477	A possible outer bailey is indicated by wide earthwork banks and ditch; the extent of the scheduled area is recommended for reassessment.	43
Motte and bailey at Buckerell Knap, Buckerell parish	Medium	1848	N/A	Previously much debated features; Lidar supports interpretation of mound and surrounding platforms as a small, possibly early post-conquest motte and bailey.	44
Motte and bailey at Bushy Knap, Buckerell parish	Medium	117867	N/A	Previously debated features; Lidar supports interpretation of mound and surrounding platforms as a small, possibly early post-conquest motte and bailey. NMP created new parent record for mound (11509) and platforms (75239).	44

Theme 5: Military, Defence (continued)					
Name	Priority	MonID: MDV	SM no.	Notes	Figure No. *
Taunton Stop Line - various	High	MDV 119535 & SOM 15410 Parent records		Visit newly recorded or uncertain features to confirm interpretation, materials and survival. In Devon these include railblocks 72473, 52939 & 48680, embankments 117218, 119766 & 119767, pillbox 52933 and possible pillboxes 119012, 119169, 119709, 119749, 119750. In Somerset these include road blocks 38464 & 38467, anti-tank obstacles 38465, 38468, 38469 & 38514 and anti-tank ditch 38466. Numerous of the surviving elements of the Taunton Stop Line have been suggested as suitable for designation (group value, rarity, survival, representativeness, documentation) and this may now be more pressing given new demands for housing in the east of Exeter area. A revisit of Foot's 2005 assessment of inland defences (which the Devon HER has just started to accession) in light of the AI&M results would be beneficial. For Weycroft he stated that "the surviving anti-invasion defence works ... be considered of national importance. They enable the defence of this section of the Taunton Stop Line to be interpreted, and provide evidence of the articulation of the defence and the inter-relationship of its functionally different components. Such interpretation is assisted by the extensive available documentary evidence of defence structures that were built as part of the overall strategy, but which have now been removed"; "Ground evidence of the many hundreds. of miles of anti-tank ditch that were excavated in 1940/41 is rare". As well as the areas that Foot identified as worthy of designation at Weycroft, Wadbrook and Ilton, there are a	N/A

					variety of surviving remains around Axminster, and features recorded during the SDC RCZA NMP project at Axmouth (Hegarty, Knight & Sims 2014). The AI&M survey has added detail to the HER records of some of the sites and features, identified additional features, and provided information about their condition. The following elements survive in the Axminster area: anti-tank ditch 48158, 48159, 48160, 48668, 48669 & 49435; anti-tank cubes 47891, 49432 & 72471; and pillboxes 48165, 48670, 49436, 50877, 50878, 52923, 52925, 52927, 52929, 52934, 39372, 39373, 39374, 48667,48670, 48672, 48673, 48674, 48675, 48679, 52938, 52940, 52941 & 52942. Much of the defences between Ilminster and Ilton have been levelled, although there is a strong case for the consideration and protection of surviving sites that make up the Ilton anti-tank island, to include for example pillboxes 55199, 55200, 55201 & 55202 and gun emplacement 55242. Pillboxes 55200 and 55201, in particular, represent rare and outstanding examples of their type. Some of the features around Donyatt Halt also form a coherent surviving group (55193, 55194, 55195, 55354, 55412, 55364, 55355). The good survival of structures at Ilton, which are in part due to its more rural setting outside of towns where other anti-tank islands are normally found, would make it a good candidate for establishing a 'pillbox walk' in the area (Foot 2005)

Second World War Airfields	Medium	See below		The wartime airfields within the Blackdown Hills are a neglected and diminishing historical resource. The airfields that were established on the Blackdown Hills at this time were part of a complicated and interdependent system of military bases, initially important to the defence of the nation and subsequently to the liberation of Europe. The airfields once included a wide range of structures and earthwork features. Whilst many have since been demolished, those that survive, although they may not be of great individual importance, collectively they represent an important reminder to a crucial period in recent British history. Some of these surviving features represent rare surviving examples of their type. In most cases, substantial remains of the tarmac airfield, with perimeter track and dispersal loops survive, as well as associated earthworks, such as bomb stores and aircraft pens. Some airfields, such as Dunkeswell survives as a substantially complete example of a Second World War airfield with three surviving structures designated as listed buildings, whilst surviving features such as fighter pens and pillboxes at RAF Culmhead are designated as Scheduled Monuments. Structures and/or earthworks associated with other similarly complete airfields such as Upottery have no such protection. If not already done so, consideration then should be given to a more consistent system of designation and the collective protection of individual structures and earthworks of the individual airfields.	N/A

Theme 5: Military, Defence (continued)					
Name	Priority	MonID: MDV	SM no.	Notes	Figure No. *
Merryfield airfield	Medium	SOM 55403		Good survival of airfield. Fighter pens, control buildings and pillboxes have been Scheduled. See Francis, P. 1997 RAF Culmhead: history and condition survey, unpublished report	54
RAF Culmhead	Medium	SOM 44340		Good survival of the airfield. No listed buildings or SM. See Francis, P. 1995 Blackdown Hills Airfield Survey Dunkeswell and Upottery, Blackdown Hills AONB.	53
Upottery airfield	Medium	MDV 47202		Good survival of the airfield. Several buildings are listed, watch office and operations buildings. See Francis, P. 1995 Blackdown Hills Airfield Survey Dunkeswell and Upottery, Blackdown Hills AONB , unpublished report.	54

Theme 7: Industrial, extractive					
Name	Priority	MonID: MDV	SM no.	Notes	Figure No. *
Whetstone mines north of Hembury Hill Farm, Payhembury parish	Medium	50051-3, 117163	N/A	Remains of a significant local industry. These remains need to be considered in the wider context of this industry across the Blackdown Hills; see Hegarty, Knight and Sims 2016, Appendix A.	N/A

* Images have been supplied to Historic England for those monuments not illustrated in this or the final survey report.

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