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Hinton St Mary Parish and Roman Site, Aerial Investigation

Edward Carpenter

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HINTON ST MARY
DORSET

Hinton St Mary Parish and Roman Site
Aerial Investigation

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SUMMARY
The aerial investigation and mapping of the Hinton St Mary Roman site was requested by Historic England South West Region to support a British Museum led project investigating the site. Aerial photographs and lidar covering the whole of Hinton St Mary parish were reviewed but no features that could be confidently attributed a Roman date based on their morphology were identified from the aerial sources. Most of the features identified are the remains of medieval/post medieval farming, mainly field boundaries and ridge and furrow. Some of these survive as very low earthworks and were identified on lidar, others were seen in historic aerial photographs and have since been levelled. Relatively few cropmarks were visible across the parish and this may be due to a combination of factors. There are a limited number of specialist archaeological aerial photographs and most non-archaeological aerial photographs were taken at times of the year when cropmark formation is unlikely; additionally, the presence of clayey soils across much of the parish may have hindered cropmark formation.

CONTRIBUTORS
The project was carried out by Edward Carpenter

ACKNOWLEDGEMENTS
Thanks to Sasha Chapman, Inspector and Ancient Monuments, Historic England, who discussed the site and read through an earlier draft of this report; and to Dr Peter Guest, Vianova Archaeology & Heritage Services for his comments considering the recent archaeological excavation of the site. Thanks also to my colleague Matthew Oakey who read through and provided comments on this report and Luke Griffin, Historic England Archive, who managed the loan of the aerial photographs.

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The Historic England Archive, Swindon

DATE OF RESEARCH
2021

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INTRODUCTION

In 1963 a large 4th-century Roman mosaic was discovered at Hinton St Mary and the site was scheduled the following year (NHLE 1002433). The large mosaic (8.6m by 5.9m) consists of two unequal-sized panels. The smaller includes a depiction of the ancient Greek hero Bellerophon. The larger depicts a human bust with a chi-rho monogram which may be an early representation of Christ. The results of the 1964 excavation suggested that the mosaic was part of a Roman courtyard villa (Painter 1965).

The mosaic was purchased by the British Museum where it was displayed from 1965 until 1997. Currently in storage, in 2023 the mosaic is to be loaned to the Dorset County Museum, Dorchester, where it will form the centrepiece of a new gallery. New archaeological investigation of the Roman site is planned as part of this loan agreement. The British Museum led project in partnership with Barbican Research Associates, includes two seasons of excavation and is intended to better understand the extent and layout of the Roman site within which the mosaic was discovered in advance of an exhibition in the Dorset County Museum, Dorchester.

In support of this project the aerial investigation and mapping of the site was requested by Historic England South West Region and this report presents the results of this work.

The Project Area

The Roman site is located at the southwestern edge of the village, but the aerial investigation looked at the whole of the parish of Hinton St Mary within which the village and the Roman site are centrally located (Fig 1). Hinton St Mary parish covers 433 hectares and is defined to the east by Chivrick's Brook and by the River Stour to the west. The geology of the area is predominantly limestone and forms part of the Corallian Group. The village is situated on higher ground just to the west of the centre of the parish. From here the land slopes gently east to Chivrick's Brook with a slightly steeper slope west to the River Stour. The village is located on an area of shallow lime-rich soils which extend south, but most of the parish consists of slowly permeable seasonally wet loamy and clayey soils (https://www.bgs.ac.uk; www.landis.org.uk). The poor drainage across much of the parish is evidenced by the numerous field drains identified (but not mapped) on historic aerial photographs as part of this project.

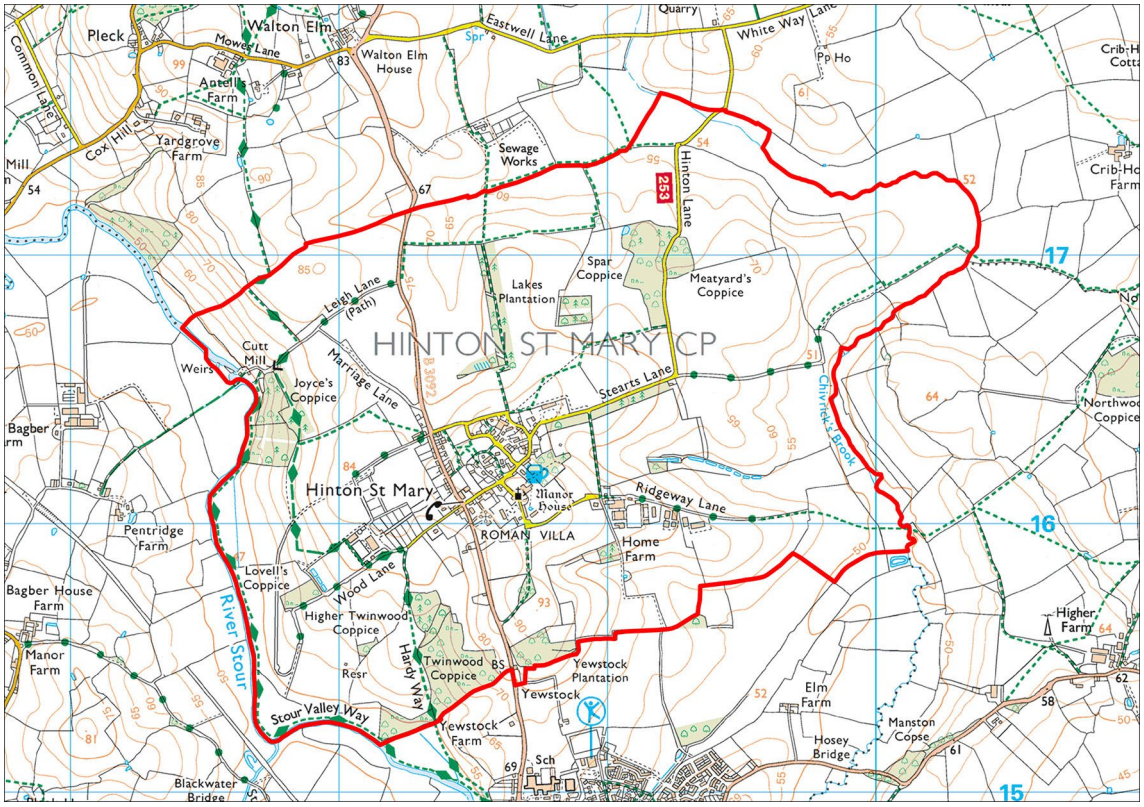


Fig 1: The project area. Base map Crown Copyright and database right 2022. All rights reserved. Ordnance Survey Licence number 100019088.

Sources, scope, and methodology

For this project all vertical and oblique aerial photographs of Hinton St Mary held in the Historic England Archive were assessed. These cover the period 1945 to 2020 and include recent aerial reconnaissance photographs taken by Historic England's Aerial Investigation and Mapping team. Ortho-rectified digital aerial photographs covering the period 2015-2021 were supplied via the Aerial Photography for Great Britain (APGB) agreement. In addition, Dorset Council aerial photographs were viewed online via the Dorset Explorer map https://explorer.geowessex.com/.

Environment Agency lidar at 1m resolution from a 2018 survey was downloaded from the DEFRA Survey Data Download website. This was processed using Relief Visualisation Toolbox 2.2.1 to produce 2D GeoTIFF images.

The Ordnance Survey historic mapping and the 1843 tithe map were also consulted.

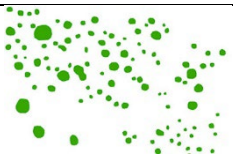
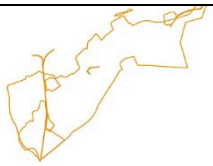
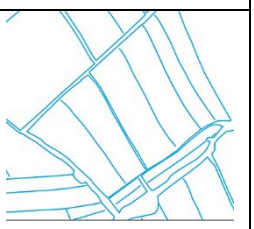
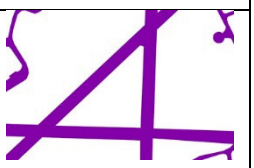
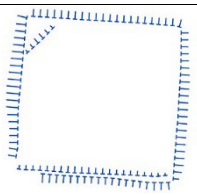
Archaeological features from the Neolithic onwards may be visible on aerial sources but for this project no prehistoric or Roman remains were identified from the air. All the archaeological features visible on the lidar and aerial photographs are thought to date to the medieval and post medieval periods.

Photographic prints showing archaeological features were scanned and then rectified using the specialist Aerial 5.36 program. The rectification process involves matching features on a 1:2,500 Ordnance Survey digital map (the control) with the same features on the scanned aerial photograph to remove all height and tilt distortion. This gives an overall accuracy of plotted features of 2m or less to the true ground position. A digital terrain model (DTM) was incorporated into the calculation to improve accuracy by compensating for undulating terrain. The lidar and many of the digital vertical photographs were already georeferenced so could be imported directly into the mapping software.

Archaeological features were mapped from rectified photographs and lidar visualisations using the ArcMap GIS software. These features were mapped on different layers based on the original form of the feature (bank, ditch etc) irrespective of whether these were seen as earthworks or cropmarks (Table 1). A monument polygon was drawn around features or groups of features corresponding to a single archaeological site or 'monument' and the monument number is attached to the mapped features.

Archaeological monuments were recorded to Historic England Data Standards as Historic England Research Records. Some of these were updates of the previous National Record of the Historic Environment (NRHE) database. Where applicable, the record was concorded with Dorset Council's Historic Environment Record (HER). These records can currently be accessed via the Heritage Gateway website (www.heritagegateway.org.uk).

Table 1 Mapping layer content and drawing conventions.

Layer name	Layer content	Layer colour	Feature Type	
BANK	Embanked features such as mounds, and banks	Red	Polygon	
DITCH	Cut features such as ditches, pits, or hollow ways	Green	Polygon	
EXTENT_OF_FEATURE	Extent of large area features such as areas of quarrying	Orange	Polygon	
RIDGE_AND_FURROW_AREA RIDGE_AND_FURROW_ALIGNMENT	Outline ridge and furrow Direction of ridges	Cyan Cyan	Polygon Polyline	
STRUCTURE	Structures	Purple	Polygon	
SCARP_SLOPE_EDGE	T-hachure showing break and direction of slope	Blue	Polyline	

THE ROMAN SITE

The Roman remains are in a small field situated at the southwestern edge of the village of Hinton St Mary (Fig 2). The mosaic was discovered by chance in 1963 and subsequently excavated first by Dorset County Museum in 1963, then by the British Museum in 1964-5, and interpreted as a courtyard villa with three wings (Painter 1965, 150). The earthworks were surveyed (Taylor 1967) and the location and extent of the Roman remains were also recorded by a geophysical survey of the site (Payne 1996). Most recently, an archaeological evaluation of the site was carried out in 2021 (Guest *et al* 2021). This excavation showed that the mosaic was part of a large high-status Roman building erected c AD 270-300 that was in use for most of the 4th century, although it is uncertain if this was a villa. The remainder of the scheduled area was occupied by Roman buildings likely to have had agricultural functions.

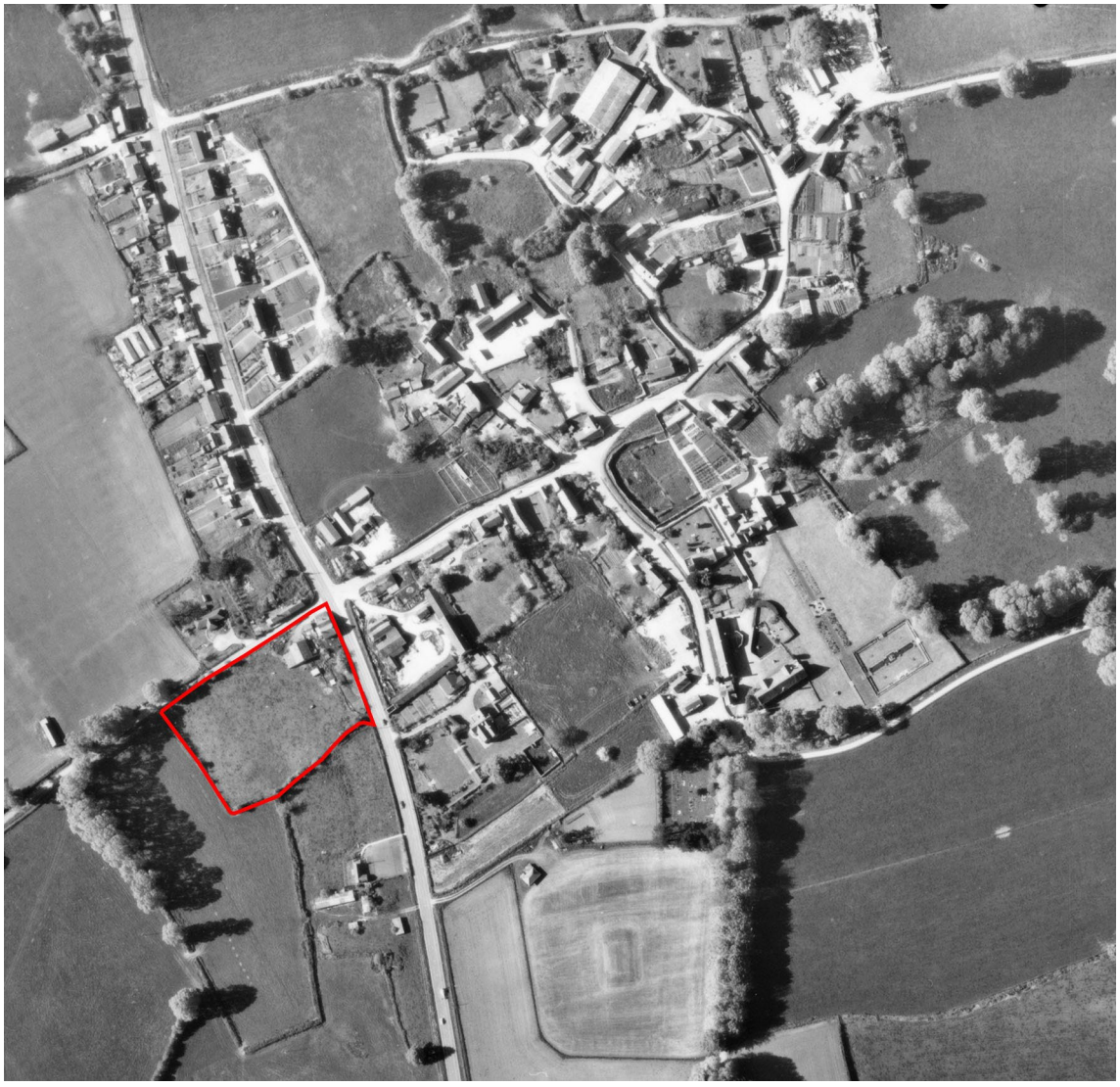


Fig 2: Hinton St Mary village with the field containing the Roman remains outlined in red OS/74059 V 275 15-MAY-1974 © Crown Copyright. Ordnance Survey.

All the aerial photographs assessed by this project show the field under grass and it was also recorded as pasture in the 1843 tithe map apportionment (IR 29/10/109). No Roman features have been identified from the aerial sources anywhere in the project area including the field where the mosaic was discovered, and associated Roman remains are located.

Although no Roman remains have been seen, some slight earthworks within the field and defining part of the field boundary are visible on lidar. The earthworks within the field are the remains of a pond and a narrow ditch. The ditch runs northwest – southeast across the width of the field and is aligned on the pond, which is located on the south-eastern edge of the field. The pond (but not the ditch) is depicted on 19th-century 1:2,500 Ordnance Survey maps (dated 1887 and 1902). The south-eastern edge of the field is partly obscured by trees in the 1940s photographs, and it is not clear if it was still in use at that date but was presumably abandoned by the 1960s, if not before, as the area is shown as marsh on the 1960s earthwork survey (Taylor 1967, fig 2).

Within the field there are also low lynchets defining the northwest, southwest, and southeast sides and these indicate that this field has been ploughed. As well as the lynchets, the 1960s earthwork survey identified a low scarp (also the result of ploughing) which was not seen on the aerial sources (ibid). The generally even surface of the field interior is presumably the result of this ploughing and Taylor suggests that this was of two phases and that the ploughing had been carried out for a 'considerable period' (Taylor 1967, 33). The adjoining fields have also been ploughed and this has created larger lynchets which run along the southwest and southeast sides of the field (Fig 3).

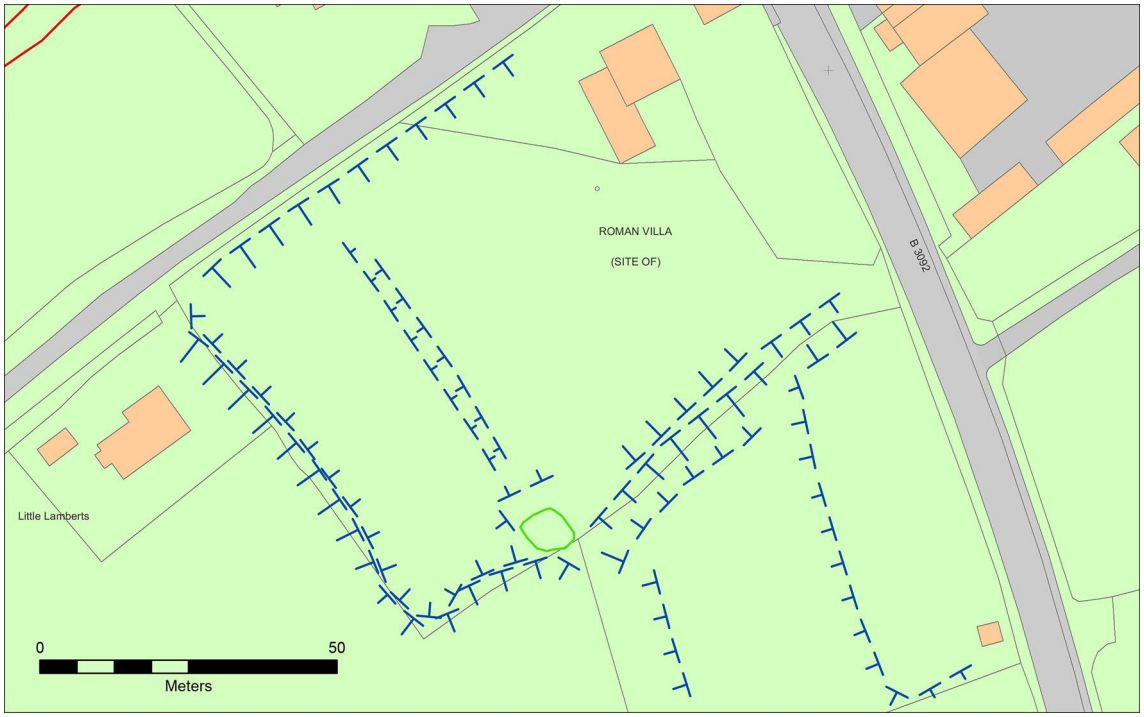


Fig 3: Earthworks in and around the field where the mosaic was discovered. © Historic England; base map Crown Copyright and database right 2022. All rights reserved. Ordnance Survey Licence number 100019088.

THE WIDER PROJECT AREA

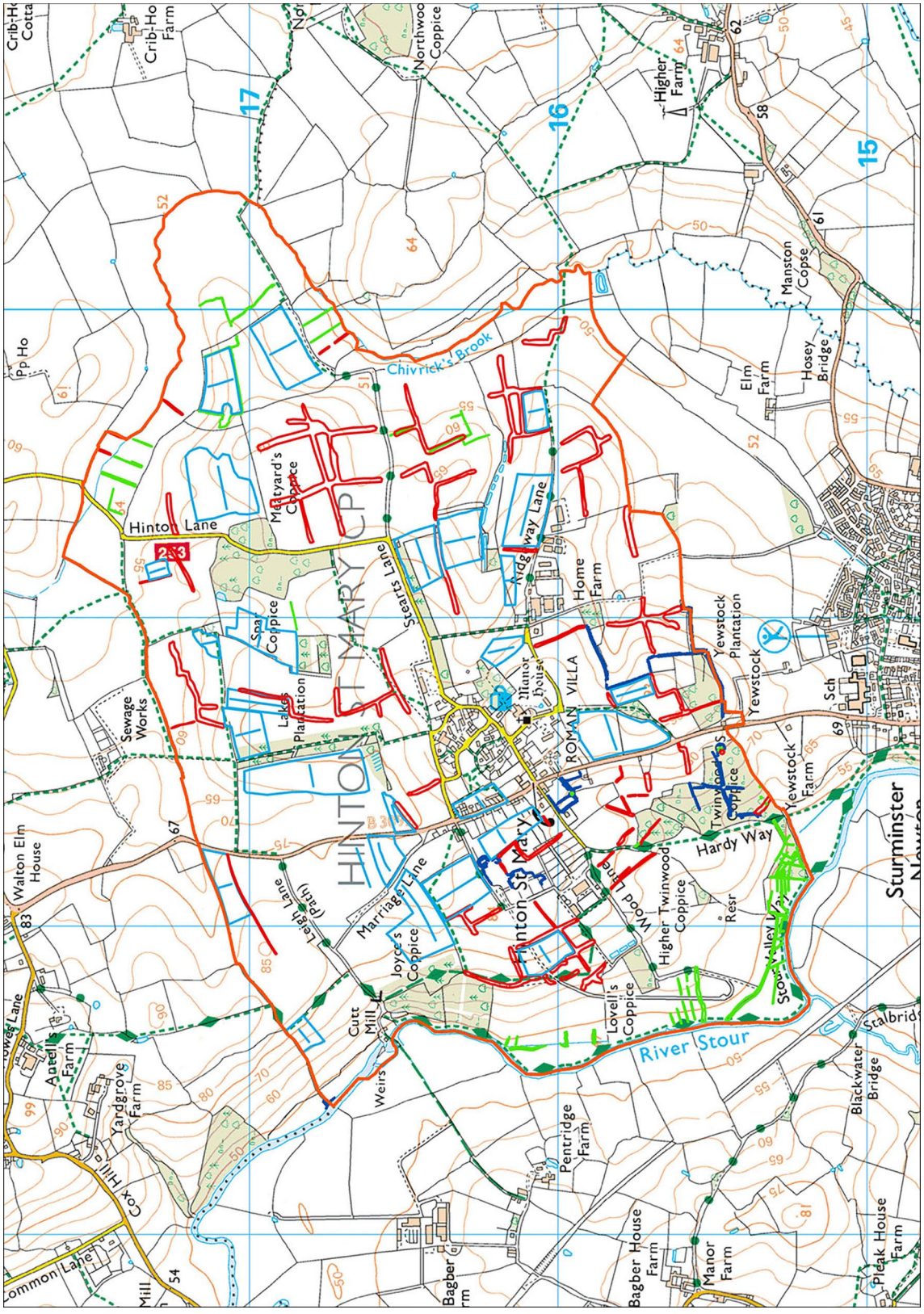


Fig 4: All features mapped. © Historic England; base map Crown Copyright and database right 2022. All rights reserved. Ordnance Survey Licence number 100019088.

The earthworks and cropmarks associated with farming and land management make up most of the features identified on aerial sources across the parish (Fig 4). They are a combination of field boundary banks or ditches, lynchets, ridge and furrow, and water meadows. Other features seen include small areas of former quarrying and the remains of lanes and trackways. Many of the features identified survive as very low earthworks that have been reduced in height and spread by later ploughing. Others were seen as earthworks on historic aerial photographs but have since been levelled, while a small proportion were seen as cropmarks.

Fields

Many of the former fields identified were seen on lidar and show as boundary banks (most of the features seen in red in Fig4) or as ridge and furrow (seen in pale blue in Fig 4). Fewer field boundaries were identified as cropmarks, and these are concentrated in the southwest and east of the parish (some of the features seen in green in Fig 4). There are some cases where both the cropmark and earthwork of the same field boundary have been identified. Although the evidence of former fields was seen across much of the parish, those features associated with arable farming formed by ploughing are absent from the south-west. Together, evidence of the banks, ditches and ridge and furrow enable some of the earlier field pattern to be determined (Fig 5).

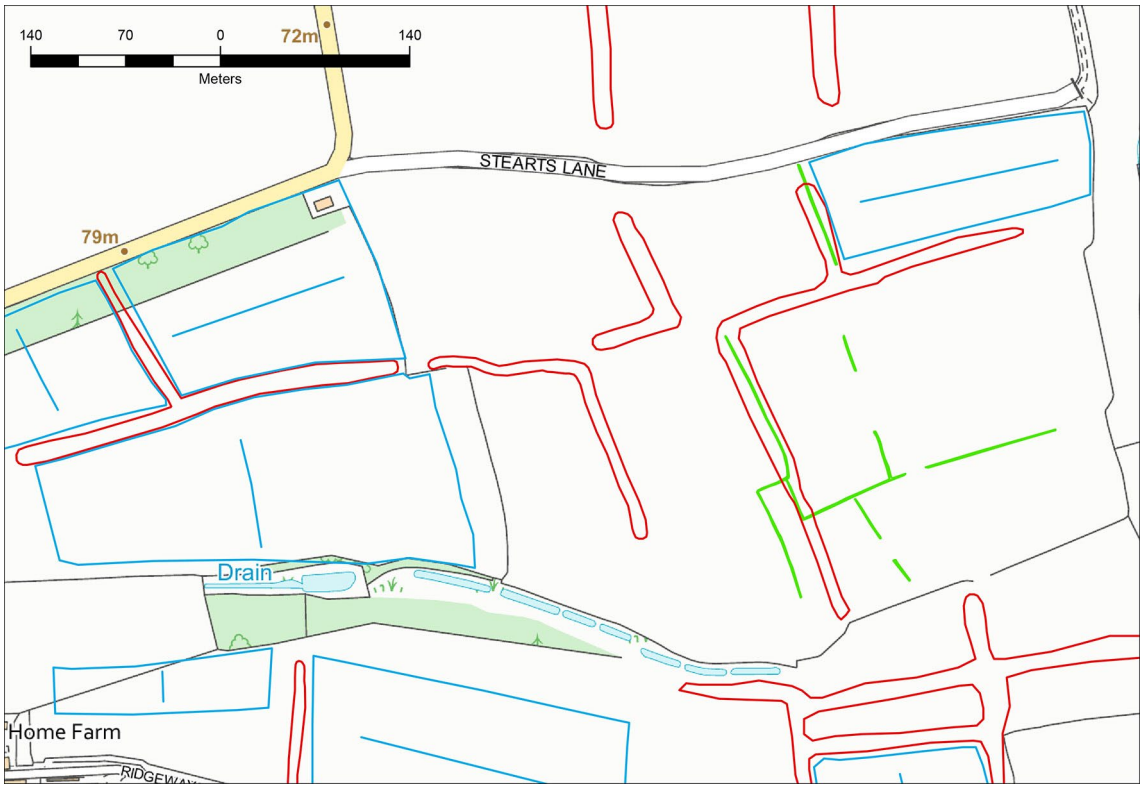


Fig 5: The earlier field pattern revealed through former field banks (red), ditches (green) and ridge and furrow (blue). The central band of this image running left to right is now two fields, but the aerial sources show that the same area was once divided into at least 12 fields. © Historic England; base map Crown Copyright and database right 2022. All rights reserved. Ordnance Survey Licence number 100019088.

The field pattern derived from the aerial sources is of a parish subdivided into numerous small fields. Most of these fields are depicted on the 19th-century maps and were still in use in the 20th century and shown in the 1940s aerial photographs. Some of these are only shown on the 1843 map indicating that they were removed during the second half of the 19th century. There are also some field boundaries seen on lidar or on historic aerial photographs which do not appear on any 19th-century maps. These earlier boundaries appear to fit with the surviving field pattern and are possibly medieval or post medieval in origin but indicate some rationalisation of the field pattern had taken place prior to 1843 (Fig 6).

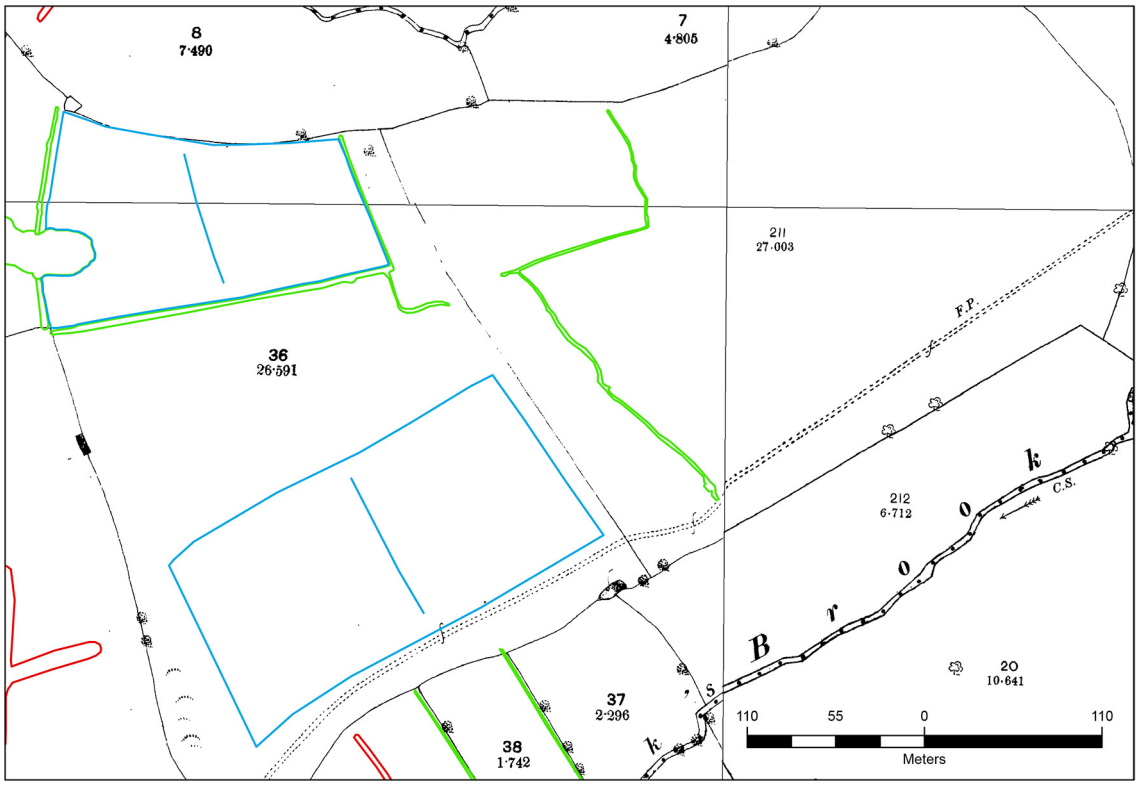


Fig 6: Old field boundaries and ridge and furrow mapped from 1940s aerial photographs and since levelled. These field boundaries had been removed before 1843 but they do appear to relate to surviving field pattern seen in the 19th-century Ordnance Survey map. Mapping © Historic England; Ordnance Survey 1:2,500 published 1887 © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2022) Licence numbers 000394 and TP0024.

The arrangement of fields seen on the historic maps remained relatively unchanged into the middle of the 20th century and generally matches the field pattern seen in use in the 1940s aerial photographs. There are no aerial photographs from the 1950s and 1960s but those taken in the 1970s show field amalgamation was underway by that date. Recent aerial photographs show the result of this amalgamation and most of the farmland is now divided into large arable fields (Fig 7).

Fig 7: Aerial photographs of Hinton St Mary parish (outlined in orange) showing the modern field pattern. Next Perspectives APGB Imagery 09-APR-2020/22-APR-2021 © Bluesky International/Getmapping PLC.Image supplied to Historic England through the APGB agreement by Next Perspectives.

Most of the ridge and furrow consists of narrow and straight ridges indicative of a post medieval date and several blocks lay within field boundaries seen in the 1940s aerial photographs. Elsewhere there is evidence that larger areas of medieval ridge and furrow were later broken down in smaller fields. Field boundaries seen in the 1940s aerial photographs south of Ridgeway Lane follow the classic reverse-S pattern typical of medieval ridge and furrow and associated with open fields. These boundaries have since been removed, although their line is preserved in the lane running south from Home Farm (Fig 8).

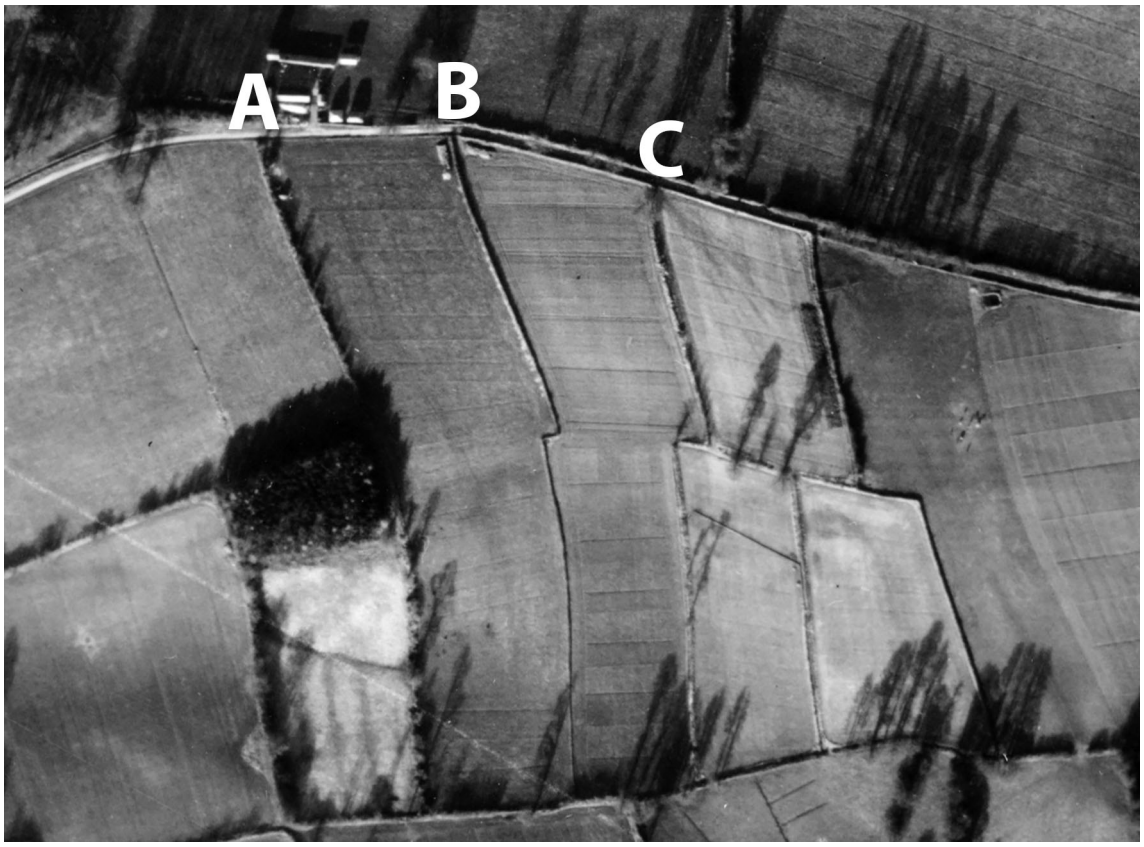


Fig 8: Possible evidence of medieval open fields. The boundaries extending down from A, B and C appear to follow a reverse-S line typical of medieval ridge and furrow. Detail of RAF/CPE/UK/1924 FS 2318 16-JAN-1947 Historic England RAF Photography.

One block of ridge and furrow that survives to the south of the village illustrates the effects of later ploughing on earthworks. The 1940s photographs show the earthworks of ridge and furrow across this field, but by that date the north-eastern part of had been fenced off and used as a cricket ground (Fig 9). The remainder of the field continued as farmland and was ploughed in the intervening decades, which resulted in the levelling of the ridge and furrow. In contrast, the ridge and furrow still survives as low earthworks within the cricket ground, although some levelling has taken place due to the creation and maintenance of the pitch (Fig 10).

Fig 9: Ridge and furrow running top to bottom across whole field including cricket ground (lower right side of field) seen in 1947. Detail of RAF/CPE/UK/1924 FS 2318 16-JAN-1947 Historic England RAF Photography.

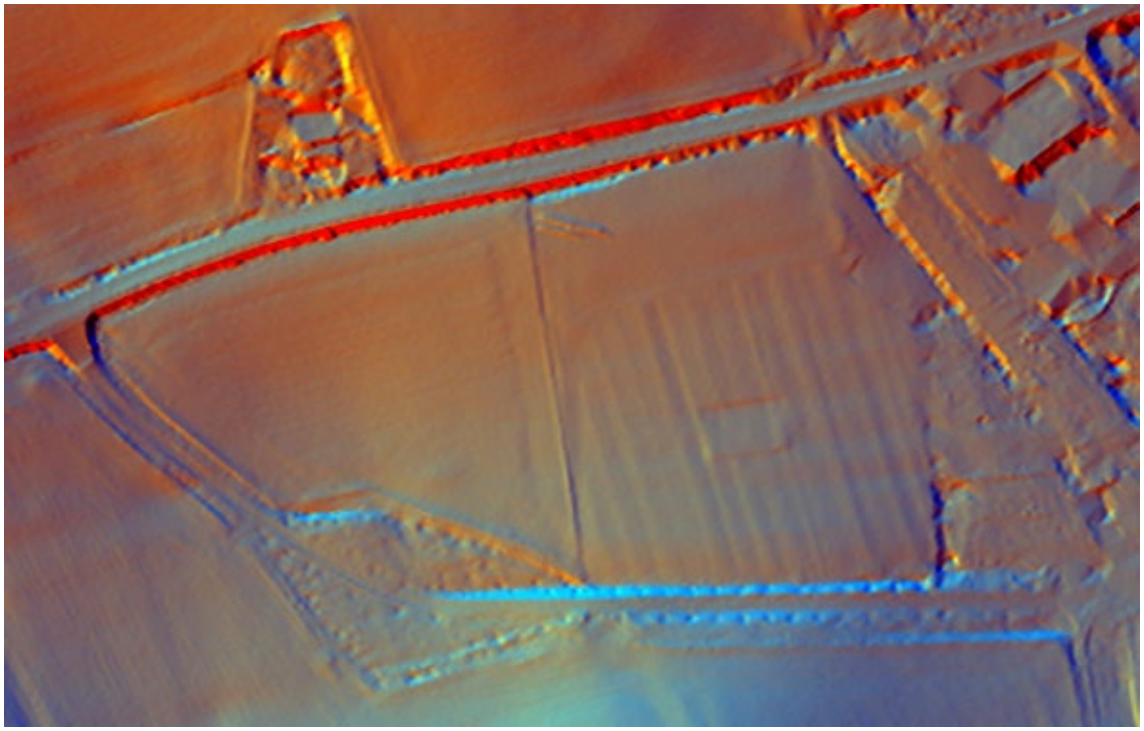


Fig 10: Lidar showing the same area in 2018. The low earthworks of the ridge and furrow only survive in the cricket ground. © Environment Agency copyright 2018. All rights reserved.

Meadows

Much of the low-lying land alongside the River Stour and Chivrick's Brook was used as meadow but the aerial evidence for this is limited and consists of fragmentary cropmarks of boundary ditches. Where identified they generally match the field pattern seen on the 19th-century maps. Several of the fields alongside the two watercourses, particularly in the east alongside Chivrick's Brook have meadow field names (mead) on the 1843 tithe map and were then used as pasture. Some of the boundary ditches seen in the east appear to subdivide larger areas and in places adjoining meadows all share the same name such as the three meadows called Costly Mead in the east of the parish.

Alongside the River Stour on the western side of the parish fragmented cropmarks of several narrow fields have been identified. These can also be matched to the 19th-century field pattern and are listed as meadow or as pasture on the tithe apportionment. However, most of these have woodland names on the tithe apportionment reflecting the earlier land use. The subdivision of larger plots is also seen here and some of the cropmarks seen are the remains of the boundaries to three adjoining fields all called Lower Wood and four fields all called Little Wood (Fig 11).

Fig 11: The cropmarks of field boundary ditches defining narrow fields running diagonally left to right. The area is arable but was pasture in the 19th century when the narrow fields were in use. The 19th-century field names indicate the area was previously woodland. Next Perspectives APGB Imagery 03-JUN-2018 © Bluesky International/Getmapping PLC.Image supplied to Historic England through the APGB agreement by Next Perspectives.

Along the southwestern side of the parish, following the River Stour, is a network of earthwork channels. These extend across a field and into the adjacent woodland (Fig 12). In the 19th century the field was divided in two, the larger called Broad Mead, the smaller Brock Hole Mead. This was adjacent to a small wood, now called Brockhole but in the 1840s called Brock Hole Withy Bed. The name Brock Hole presumably refers the river (brook), and the hollow (hole) nature of this low-lying area where the land rises relatively steeply to the north. The lidar suggests that the northern side of the former Broad Mead may be defined by a wide channel that runs

southeast from the river, although the hedgerow there may be obscuring the true nature of this feature. To the south of this are several narrow channels. Further narrow channels are to the east in the field formerly called Brock Hole Mead and the adjacent woodland. These channels may possibly be the remains of a post medieval water meadow, although they are fragmentary and follow an irregular arrangement which makes interpretation difficult.

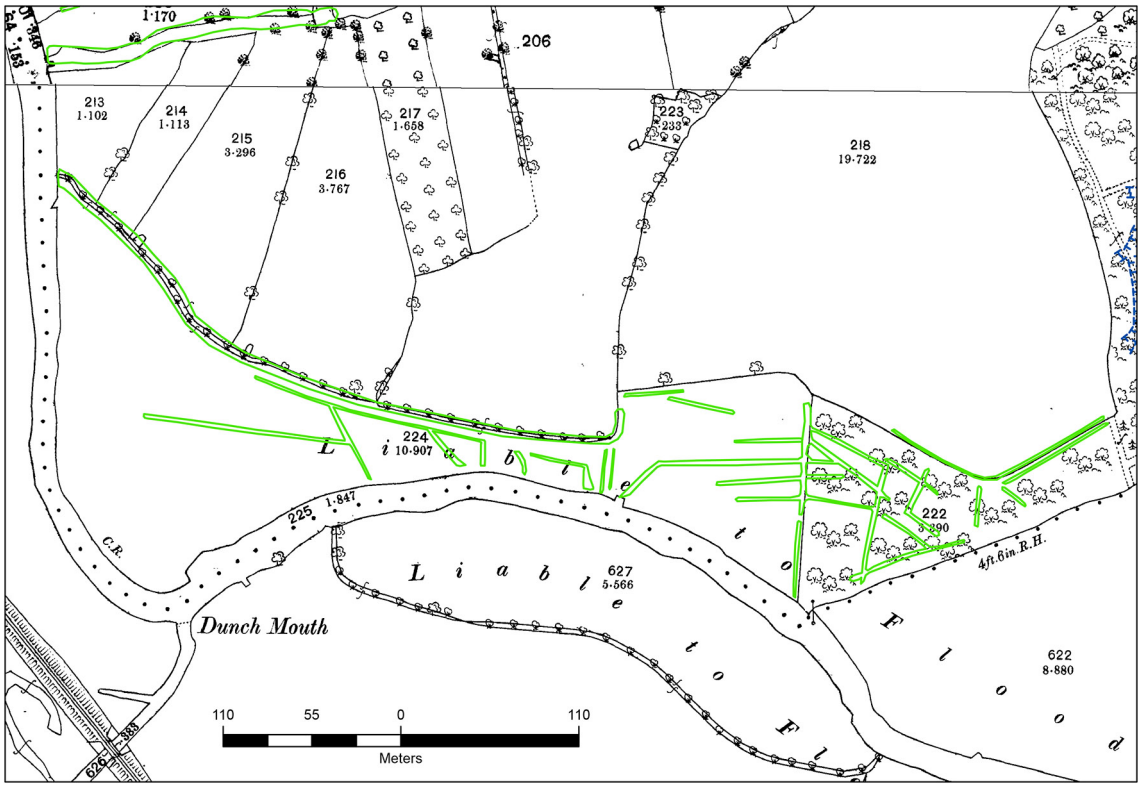


Fig 12: Possible water meadow and remains of withy bed along River Stour. Mapping © Historic England; Ordnance Survey 1:2,500 published 1887 © and database right Crown Copyright and Landmark Information Group Ltd (All rights reserved 2022) Licence numbers 000394 and TP0024.

Water meadows were a form of farmland improvement popular in the 18th century. Letting water onto a field for a short period raises the ground temperature enough to encourage grass growth and was a particularly valuable technique in early spring when winter fodder stocks were low but cold weather inhibited new grass growth to graze livestock. Assuming there is a wide channel along the northern edge of the field, water would have been taken along this from the river. This could then be directed across the fields, a process known as drowning, before being returned to the river further downstream. It is not clear if the adjoining channels within Brockhole wood were originally part of this possible water meadow or are associated with the growing of willows (withys in the earlier place name) that once took place there.

Paths

The 19th-century maps show a network of paths and lanes across the parish that largely remain in use. Two short earthworks identified on lidar represent since abandoned continuations of this road network. In the southwest of the parish is a slight depression running across a field which is the remains of the western end of Wood Lane that once extended to the bank of the River Stour. In the northeast of the parish an earthwork bank about 160m long may follow the line of a track that provided access to field from Hinton Lane. The earthworks of smaller paths within woodland have also been seen on lidar.

Quarries

There is limited evidence of extraction or quarrying in the parish. The best-defined earthwork was a small quarry in the northeast of the parish (since filled-in) which measured about 80m by 25m. This was situated on sandstone and in 1940s aerial photographs appears abandoned and grassed over. This quarry cuts through a block of ridge and furrow and the adjoining field boundary but is not depicted on any 19th-century maps so presumably had fallen out if use by then (Fig 13). There is also extensive but shallow extraction seen on lidar over an area of limestone west of the village and one of the fields in this area was called Stony Hill. Extraction of the western end of this site appears to be underway in 1974, but smaller areas in the east are older and in one case interrupts the line of a field boundary. These are best seen on lidar, but faint depressions are visible on the 1940s aerial photographs by which time appear to be abandoned and grassed over. Other areas of extraction are much smaller and include what may be claypits in Twinwood Coppice.

Fig 13: An abandoned quarry seen in 1947 at the north-eastern end of the parish. This has since been filled in. Detail of RAF/CPE/UK/1924 RP 3318 16-JAN-1947 Historic England RAF Photography.

DISCUSSION

Christopher Taylor used the title '*The Later History of the Roman Site*' for his paper looking at the earthworks in the field where the mosaic was discovered (Taylor 1967) and the phrase 'later history' also seems appropriate to this aerial investigation of the parish where no obvious Roman remains were identified. A Roman link to the parish has been proposed by Susan Pearce who suggest that the Hinton St Mary parish boundary may be of Roman-British or Celtic origins since the Roman site is positioned at the centre of the parish (Pearce 1978, 52), but nothing was identified in this survey to support or contradict this.

Most of the features mapped from aerial sources date to the medieval and post medieval periods and relate to the arrangement of fields. During the middle ages there were three open fields in the parish. Taylor observed that the shape of the fields in the southwest and the way in which they appear to have been cut into the woodland 'suggests that the area was never part of the medieval open-field system' (Taylor 1967, 33). The absence of ridge and furrow or boundary banks on the aerial sources supports this as does the tithe map apportionment. Although in the 1840s these fields were arable, pasture and meadow, many retained woodland names reflecting their earlier use. Except for the wooded areas and the meadows along the watercourses, the open-field system is likely to have occupied much of the remaining land.

The enclosure of these open fields began early, and the small acreages recorded in the 16th century indicate that a great deal of enclosure had already taken place by that date (RCHME 1970 114-117). Most if not all the field boundaries seen on lidar and aerial photographs probably belong to this period of enclosure that began in the 16th century.

As the aerial evidence shows, by the 1840s, some of these smaller fields identified on the aerial sources had been given up and amalgamated into larger plots of farmland. A comparison between the 1843 and 1887 maps shows further field amalgamation had taken place during the 19th century. This period of field amalgamation had ended by the late 1800s, perhaps halted by the agricultural depression which started in the 1870s. The 1940s aerial photographs show a field pattern essentially unchanged from 60 years earlier. By the 1970s the aerial photographs show fields were again being amalgamated and field boundaries removed, resulting in the field pattern today.

Agriculture is one of the factors determining survival of archaeological features and as the description of the field where the mosaic was located shows, repeated ploughing on sloping ground may create earthworks in the form of lynchets but will also level the interior and remove any archaeological (or other) earthworks in the process. A comparison between the 19th-century map and the results of the lidar survey shows that many of the removed boundaries have left no surface trace. Those boundaries that have been identified on lidar are very low and spread earthworks.

Relatively few cropmarks were visible across the parish and this may be due to a combination of factors. There were a limited number of specialist archaeological aerial photographs and most non-archaeological aerial photographs were taken at times of the year when cropmark formation is uncommon. The few cropmarks

identified across Hinton St Mary will in part be due to the types of soil and the crop grown. The large area of clayey, slowly draining soils that covers most of the parish may inhibit their formation, although of the cropmarks seen (mainly old field boundary ditches) most were on this clayey soil. Much of the land closer to the village is off the clayey soils but under grass, which is slower than cereals to respond to changing conditions and generally cropmarks do not appear in grass except in drought.

LIST OF REFERENCES

Guest, P, Hobbs, R and Luke, M 2021 *Archaeological Evaluation of the Roman 'Villa' At Hinton St Mary: Assessment Report*.

Painter, KS 1965 'Excavation of the Roman Villa at Hinton St Mary, 1964' Proc Dorset Natur Hist Archaeol Soc **86** 150-154

Payne, A 1996 *Report on Geophysical Survey, July 1996, Hinton St Mary, Dorset* Historic England Research Report 70/1996

Pearce, SM 1978 *The Kingdom of Dumnonia Studies in History and Tradition in South Western Britain AD350-1150* Padstow: Lodenek Press

RCHME 1970 *An inventory of the Historical Monuments in Dorset, Volume 3, Central*. London: HMSO

Taylor, CC 1967 'The later history of the Roman site at Hinton St Mary, Dorset' *The British Museum Quarterly* **32** 31-35

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