

Frampton On Severn
Aggregate Levy Sustainability Fund
(Project No. 4625 ASS)

Archaeological Aerial Survey
National Mapping Programme Report (Project No. 1441252)

Amanda Dickson



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Summary

This report describes the results of the Frampton on Severn ALSF (Aggregates Levy Sustainability Fund) survey, which was carried out by GCCAS to National Mapping Programme (NMP) standards. The NMP component was completed as part of Stage II of 'The Archaeological Landscape of Frampton on Severn' by Gloucestershire County Council Archaeological Service (ALSF project no. 4625). The project was designed as a proposal for further research and post-excavation on a number of sites within the environs of Frampton on Severn. The mapping of this area was primarily to aid and enhance the understanding of a number of these archaeological sites which had been partially excavated as a result of cropmarks recorded on Aerial Photographs in the early part of the 20th century and soilmarks reported by the gravel extraction companies. Most of these cropmarks have been subsequently destroyed by gravel workings. The Frampton on Severn ALSF, NMP project has accurately mapped these sites, clarifying their exact position within the landscape as well as enhancing our archaeological knowledge of their environs.

The total survey area initially covered 2 complete OS 1:10,000 quarter sheets, but one (SO70NW) was completed and included in the Forest of Dean NMP survey and is discussed in the Forest of Dean NMP report (Small & Stoertz 2006). Only the quarter sheet SO70NE is considered here. Although the two blocks are adjacent they do not necessarily show the same range of archaeological sites. Mapsheet SO70NW covers much of the River Severn including parts of its east and west banks, however the percentage of mapped extant Medieval ridge and furrow is comparable. The area covers a 5km by 5km block which is centred to the east of the village of Frampton on Severn (figure 1).

Archaeological analysis of this small area using aerial photographs has not only provided some explanations of the factors which have affected the visibility of the archaeological evidence from the air but may also partly explain why this region has a lower than average density of prehistoric sites and a higher than average density of sites of later or unknown dates. The Severn Vale as a whole is viewed as a poorly understood archaeological landscape and it is hoped that the Frampton on Severn ALSF along with all its contributors, including this NMP component, will go some way to re-addressing this (Mullin 2006a, 2006b).

As a result of the survey, 43 new monument records have been identified and created in the NMR's database (AMIE), and 39 existing records have been revised. This increases the total within the survey area from 56 AMIE records to 99. The existing records were updated and/or revised where the form or extent of the site could be clarified or where more detailed information was necessary to provide a better understanding of the site. Of the 43 new recorded sites, the majority reflected the Medieval and Post-Medieval landscape, particularly agricultural land use and settlement and included the possible identification of six Medieval settlement sites, such as those at Putloe and Wheatenhurst. The Second World War also left its mark within this small survey area. Four new pillboxes and a military camp were identified and added to the many existing world War two structures already recorded in the AMIE database.

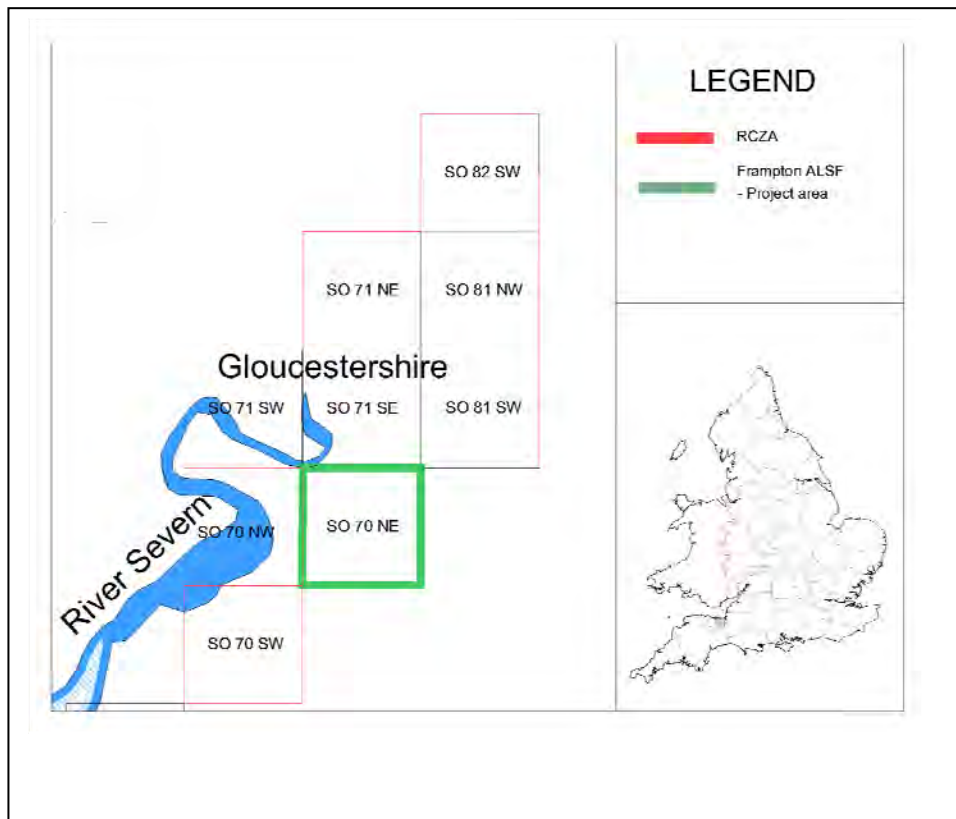


Figure 1 The project area highlighted in green with the adjacent Severn Estuary Rapid Coastal Zone Assessment.

Acknowledgements

All photographic sources were provided by the National Monuments Record Enquiry and Research Service team and the Cambridge University Unit for Landscape Modelling (ULM). Thanks to both for providing the loans. Details of the photographic sources can be found in Appendix 2 and 3 along with the HER data provided by Tim Grubb at Gloucestershire County Council Archaeological Service (GCCAS).

Additional thanks should go to Dave Mullin and Toby Catchpole also at Gloucestershire County Council Archaeological Service for their support and for providing valuable information, as well as to members of the English Heritage staff who provided training and assistance on all aspects of the project, particularly Sharon Bishop and Helen Winton.

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Introduction

The aerial survey of the Frampton on Severn region forms part of a wider project looking at the 'The Archaeological Landscape of Frampton on Severn', which is an area affected by aggregate extraction. The overall aim of the project is to enhance the archaeological record of this area, which is rich in archaeological material but an area which has also seen extensive aggregate extraction. The wider project, which is being carried out by Gloucestershire County Council Archaeological Service, will collate and re-evaluate the existing archaeological material, which dates from the prehistoric to Medieval period, from specific sites affected by extraction but which have not been adequately published. It is hoped that a result of the project will be to provide a research agenda for the area as well as a published report for dissemination to the wider public.

The main aim of the aerial survey was to use the aerial photographic record to identify and map the exact location of 5 ring-ditches at Netherhills, which had been excavated by R.J.C Atkinson in 1948 and to put them into context by mapping the archaeology of the wider landscape, including the nearby sites at Perryway, Eastington, Townfield farm and Park Corner Cottage. The excavation at Netherhills was undertaken as a 'rescue' excavation in response to the threat of gravel extraction but remains unpublished.

The aggregate industry has had a large impact on the archaeological record of this area. While the extraction process has identified and provided a means by which these sites were excavated, it has also destroyed much of the archaeological landscape forever. The rescue excavations have recovered archaeological material but the lack of site plans and published material leaves the aerial photographic record along with some ground shots, the main source of accurately locating the archaeology.

The other aims and objectives of the Frampton on Severn aerial survey were to identify, transcribe digitally and describe all archaeological features showing as cropmarks, soilmarks or earthworks on aerial photographs. This was to provide a wider context for the Prehistoric/Roman sites mentioned above and enhance the general archaeological understanding of the region. This included all plough-levelled and upstanding archaeological remains from the Neolithic period to 1945, including military and industrial features, which were visible on the available aerial photographs.

Methodology

The survey involved the interpretation, digital transcription and recording of all archaeological features which were visible on aerial photographs from the Neolithic period up to 1945 (to include all Second World War features and structures). This was carried out by systematic and detailed examination of all available oblique and vertical photographs which were derived from a number of sources. These included photographs held in the National Monuments Record (NMR), Swindon and Cambridge University's Unit for Landscape Modelling aerial photographic collections (formerly known as CUCAP). Details of the photographs consulted are listed in Appendix 2.

Other sources consulted included the British Geological Survey Geological solid and drift map for Gloucester (sheet 234), and the 1:2500 Historic Ordnance Survey Maps. Use was also made of the Gloucestershire County Council's HER data and English Heritage NMR data.

All photographs were rectified using the Aerial 5.29 computer rectification package. Due to the nature of some of the photographs control points were sometimes hard to obtain and control points were commonly taken from soft boundaries i.e. hedges, river courses and diffuse field boundaries, as well as on two occasions relying on the 1972 Ordnance Survey Mapsheet (1:10,560), as a base map instead of the modern landline vector mapping. However, despite this, all control points have an average error of less than 2m and are accurate to within 0.9m of each other. All archaeological features were then transcribed at 1:2500 scale and were mapped using English Heritage standard mapping conventions in AutoCAD; a list of these can be found in Appendix 5. An average level of accuracy of <2m to the map was achieved and this gives an overall accuracy of plotted features, to true ground position, within 1.25-3.75m. A digital terrain model function is also used to compensate for steep or undulating terrain.

Archaeological features which were identified to be significant were recorded in the National Monuments Record database, known as AMIE, as well as allowing existing records to be amended or updated. Newly recorded monuments were given an indexed and textual description and are translated onto the English Heritage in-house WebGIS. The final part of the process has been the analysis of the mapped archaeology the results of which have been described in this report.

Topography and Land use

Project Area

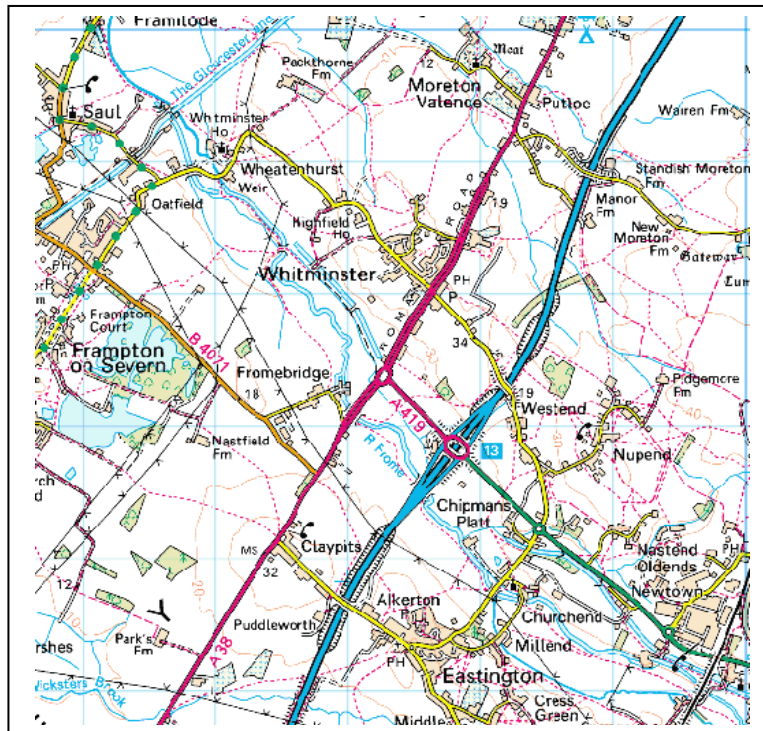


Figure 2 Modern Ordnance Survey map of the survey area

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The survey area, which includes parts of the parishes of Whitminster, Eastington, Standish, Moreton Valence and Fretherne with Saul as well as Frampton on Severn, is located within the county of Gloucestershire. It is bounded to the west by the eastern shore of the Severn estuary and to the east by the foothills of the Cotswold Hills.

The area surrounding Frampton on Severn is characterised by a low-lying topography (figure 3), with the highest point at Nupend Farm in the east of the survey area, which rises to 40m above sea level. The lowest is the floodplain along the River Frome which is circa 10m above sea level. Therefore there is only a difference of 30m across the whole survey area. The River Frome, which bisects the survey area, drains much of the region westwards out of the valley towards the River Severn at Upper Framilode.

The village of Frampton on Severn is located on the east bank of a large bend on the River Severn and adjacent to the confluence of the River Frome. These rivers would have provided natural communication routes, particularly in prehistoric times when much of the landscape was wooded.

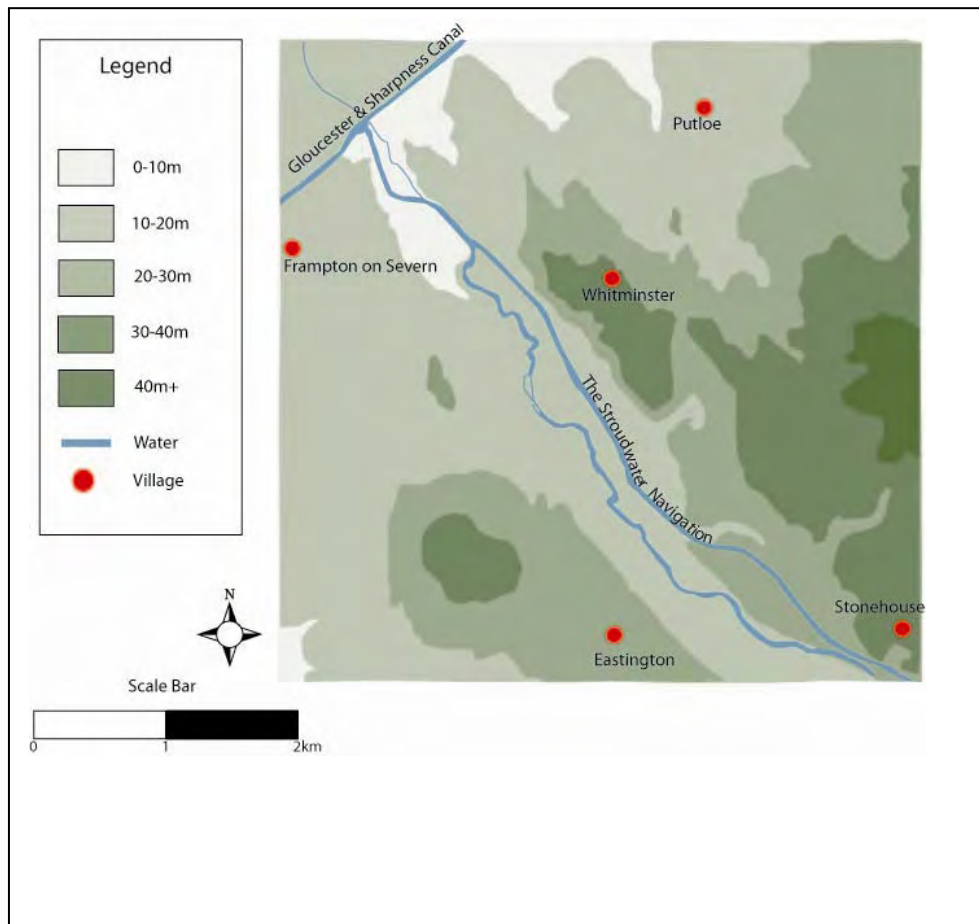


Figure 3 Topographical map of the survey area

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Rivers and streams would have provided good access between the lowlands of the Severn Vale in the west and the uplands of the Cotswolds to the east (Darvill 1987). In Roman times the region would have been connected by good road transportation links such as the A38, which still follows the former Roman route and which was a major artery in Post-Medieval times. Prehistoric and later communities would have been well connected and were not isolated groups. Evidence of this is also found from exchange of goods and raw materials, as well as common traditions in tomb designs for example, within the Gloucestershire area and wider landscape (Darvill 1987).

The construction of canals in the Post-Medieval periods would have increased trade and communications still further. The Stroudwater Navigation canal opened in 1779 and linked the River Sever to Stroud and joined the Thames and Severn canal extending the route to London. It also had a junction with the Gloucester & Sharpness canal (formerly Gloucester & Berkeley) which opened in 1847 (Tucker 2003). More recently the M5 motorway constructed in the early 1970s bisects the survey area orientated north-south and parallel to the A38.

Geology and Soils

The majority of the survey area sits on Jurassic clays which are overlain by 'islands' of Pleistocene gravels (figure 4). The largest gravel deposit in the west of the survey area belongs to a gravel terrace from the River Frome. Gravel has also been deposited as small pockets adjacent to its northern floodplains. There are also deposits of fan gravels found in the northeast of the survey area. The River Frome bisects the area from northwest to southeast and deposits of alluvium are found along its whole length. In the very northwest of the survey area, to the north of the Gloucester & Sharpness canal, are also deposits of estuarine alluvium from the River Severn.

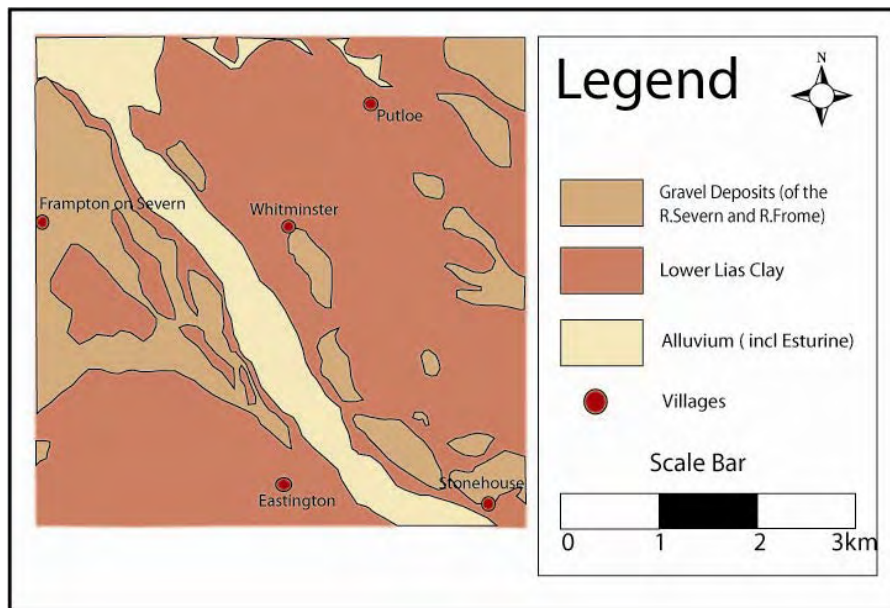


Figure 4 Geological map. The clay deposits seen in the gravel deposits around Frampton on Severn mark areas which have been affected by Gravel Extraction

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Land Use

The main settlement centres today are at Frampton on Severn, Stonehouse, Eastington and Whitminster, all of which have experienced increased housing development. The present settlements have largely Medieval origins and have grown from scattered settlements, mainly small and loosely knit hamlets with outlying farmsteads. There is documentary evidence to suggest that some grew up around existing moated sites as at Moreton Valence, where the moat is still visible (VCH p119-22). There is little evidence to suggest that Medieval settlement favoured only the freely draining gravel deposits, with the village of Frampton on Severn being the main exception, whereas the gravel deposits along the River valleys are where one might expect evidence of Roman or prehistoric sites to be located. The surrounding clay soils would have been subject to flooding and water logging, so the gravel deposits would seem ideal sites for the early inhabitants in Prehistoric times. All the other settlements are located on relatively higher ground than Frampton on Severn,

so it would seem that elevation was just as important as the underlying geologies in avoiding waterlogged areas.

The area is largely rural in character with the majority of the land used for agriculture, including water meadows. The land surrounding the River Frome was more suited to water meadows than other farming practices, the lack of any ridge and furrow suggest that the land was used as such in Medieval times. The importance of the rivers and road networks coupled with the natural resources brought economic growth to the region in non-agricultural trades and occupations, especially in Post-Medieval times. These other trades included brick and tile works, aggregate industries, mills and fishing to name a few. However, much of the survey area comprised a high proportion of small open arable fields which were gradually inclosed by private agreement. This inclosure may have begun as early as the 14th century but certainly by the 18th century much of the land was already inclosed (VCH p294-96). During this time of piecemeal inclosure some of the land was used as orchards or turned to pasture, with cheese and cider being notable products in the 18th and 19th centuries (VCH p119-22), which may partly explain why large extents of Medieval and/or Post-Medieval ridge and furrow are still visibly extant into the late 20th century.

The underlying geology and soils have not necessarily influenced the present pattern of settlement but are an important aspect to the past and present industrial land use of the region. To a lesser extent, the gravels and clays are an obvious natural resource and have been extensively exploited from Medieval times to the present day. Evidence of the latest and most extensive phase can be seen by the large Gravel lakes which remain around the village of Frampton on Severn and attest to the post First World War expansion. The lakes are currently utilised for various watersports but many of the smaller scale gravel pits are left as hollows in the ground. Some show evidence of infilling, as at Bond's Mill, where the pit has been returned to agricultural use. The aggregate industry has had a large impact in this region from the wealth that it brought from exporting the gravel to places such as Avonmouth, where it was used to build the docks (VCH p139-43), to the effect it has had through destroying evidence of prehistoric activity and settlement. The Jurassic clays are also a good natural resource, especially around Stonehouse, where it is known as suitable for brick making (VCH p276-84) and the name of the hamlet of Claypits in the parish of Eastington suggest such a use.

Factors affecting the visibility of the archaeological remains

The Medieval and Post-Medieval agricultural land use of the survey area obviously has a huge affect on the visibility of archaeological remains on aerial photography. The area has been regarded as a region of low monument density of known dates and has produced a low number of cropmark sites. This is not surprising due to the almost blanket coverage of Medieval/Post-Medieval ridge and furrow which has been recorded in the aerial photographs, much of which was still extant in the late 1940s and remained so until the early 1970s. The lack of plough levelled fields has preserved a higher percentage of archaeological upstanding remains from the Medieval period, while masking any earlier buried archaeology. There are 'gaps' however in the ridge and furrow, particularly in the south-west of the area in the parish of Frampton on Severn, where remaining pockets of woodland were likely to have been more extensive. The low-lying clay geology here is less suitable for arable production. The Medieval water meadows recorded along the River Frome are also characterised by a lack of ridge and furrow. The expansion of urban centres, particularly at Stonehouse in the SE corner of the survey area, has obscured the visibility of the archaeological remains on aerial photographs and the modern industrial estate has damaged a large area of Medieval/Post-Medieval ridge and furrow since 1988, when the last photography was taken.

The formation of cropmarks therefore appears to be limited in the survey area. Those that have been identified and transcribed have all come from a handful of oblique photographs. Some of these are not of the best quality and generally have bad control, i.e. they do not have enough accurate points visible on both the aerial photographs and the base maps, with which to rectify the photographs. This subsequently increases the inaccuracy of the plotted features. Some of these crop marks have also been destroyed by Gravel extraction, the reason for which the photographs were taken. As a result they remain the only evidence (apart from small scale excavations) and therefore they comprise an important record of the archaeological information. Unfortunately, while the freely draining geologies such as the gravel deposits are known to be conducive to cropmark formation and are where one might expect to find evidence of past activity (Wilson 2000); they are also a valuable natural resource. This aerial survey has therefore highlighted the impact that the aggregate industry has had in the region, in terms of our understanding of past settlement. While the extraction process has provided some evidence of past activity, allowing partial excavation, the aerial photographs are a reminder of the damage caused by extensive gravel exploitation.

There was good coverage of vertical air photography taken by the RAF in 1946 and 1947, but a large gap exists until 1970-71 for much of the area, while specific areas were only targeted in 1985 and 1988. Certain urban sites and the former Moreton Valence (Haresfield) Second World War airfield were particularly favoured targets for survey. The vertical air photographs were not taken specifically for identifying archaeology and are therefore not necessarily taken in the optimum conditions for viewing buried or upstanding archaeological remains

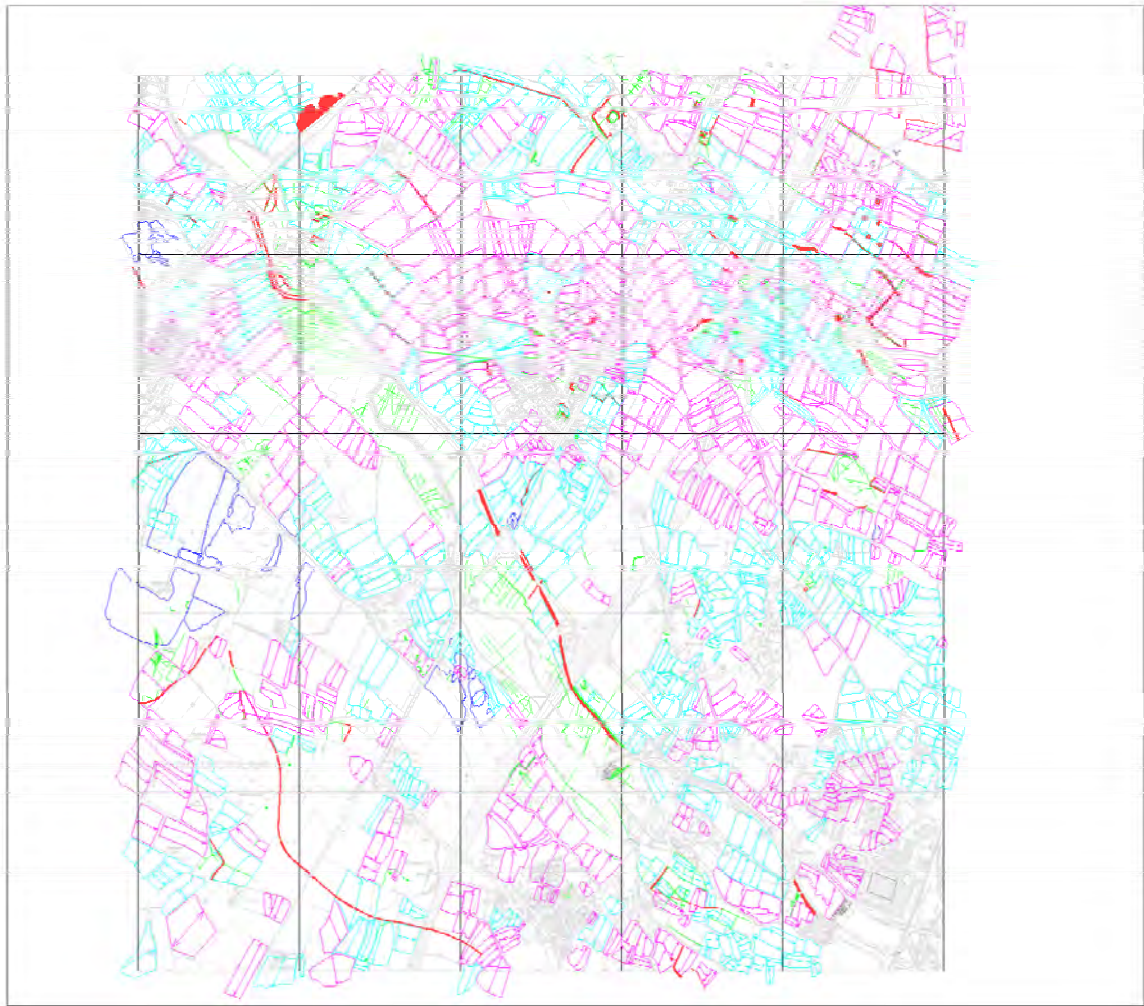


Figure 5 The final NMP transcription of the project area, showing the extent of the Medieval to Post-Medieval ridge and furrow. See appendix 5 for mapping conventions

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Previous archaeological work

Perhaps the most notable previous archaeological work, in terms of the current project, was carried out by R.J.C Atkinson in the 1948 at Netherhills, Fromebridge. They were undertaken as 'rescue' excavations in response to the threat of gravel extraction. The excavations revealed a possible Bronze Age burial site with four barrows and a ring-ditch thought to be Roman in date. Unfortunately Richard Atkinson's site report on the rescue operation was not published beyond a brief note in the Proceedings of the Cotteswold Naturalists Field Club (Clifford 1948). Other excavations were also carried out in advance of gravel extraction at Perryway and Eastington Gravel pits. In the 1920s, St Clair Baddeley identified what he thought was a Roman settlement in gravel workings east of Frampton Court and published his findings in 1928 (Baddeley 1928). Gardiner (1932) excavated in the Eastington Gravel pit in the 1930s which revealed numerous finds ranging from the Palaeolithic to Roman in date, as well as a small number of Medieval and Post-Medieval pottery. Small scale archaeological work has been carried out since, including archaeological monitoring undertaken in advance on pipelines and during the construction of the M5 motorway in the late 1960s and early 1970s. (Mullin 2006a, 2006b). Re-evaluation and collation of all the archaeological material that has been excavated and published has also taken place as part of Stage I of the 'Archaeological Landscape of Frampton on Severn' by Dave Mullin of GCCAS, to which the results of this aerial survey will form part and subsequent stages of this project will involve a re-interpretation of the archaeology of the area.

These excavations and Dave Mullin's report have provided a useful context within which to interpret the archaeology visible on the aerial photography, particularly the cropmarks revealed around Frampton On Severn.

The Archaeology

Archaeological sites recorded in the SMR and NMR prior to the NMP survey ranged in date from the Early Prehistoric to the Second World War. Arguably the most significant Prehistoric and Roman sites identified in the gravel workings by excavation and aerial photographs are around Frampton on Severn, which mainly consists of burials and scattered artefacts. Other possible Roman sites were identified from small scale excavations and spot finds, such as the Whitminster 'Villa' and an occupation site dated to the 2nd and 4th centuries AD, located north of Packthorne Farm. The systematic examination of all available aerial photographs has not revealed new evidence of Prehistoric or Roman sites. However, an important contribution to the project was to clarify the exact form, position and extent of known cropmarks to the south and north of the old Perryway gravel pit. The accurate mapping and interpretation also helps to potentially characterise this archaeology into distinct areas of settlement and burial.

The highest concentrations of archaeological remains visible on aerial photographs are of Medieval to Post-Medieval date. Much of the Medieval agricultural landscape remained in 1946 in the form of extant ridge and furrow. The lack of intense modern ploughing in this region has resulted in the good preservation of many Medieval and Post-Medieval earthwork features. Despite this, many of these upstanding remains had not previously been identified or recorded in any great detail, even though some are clearly visible on the aerial photographs. As a result of the survey five new possible Medieval settlement sites have been identified.

The aerial survey has provided a better picture of the Post-Medieval landscape. A brickworks near Bond's Mills, west of Stonehouse has been identified, the only one recorded in the survey, even though the VCH suggests that clay surrounding Stonehouse was very suitable for the brick and tile industries. The partly demolished Meadow Mill was also mapped, recording the original layout of the buildings and leats. The mill site is now a modern trading estate, near Chipmans Platt. The most obvious Post-Medieval industrial activity are the gravel workings which are scattered throughout the survey area. The main pits are found East of Frampton on Severn, where gravel extraction continues today. Most pits identified are fairly small scale, but those at Perryway are rather extensive.

The survey area has a concentration of Second World War remains, some of which had already been identified by the Defence of Britain project. The aerial survey was able to identify four new pillboxes which are all located in the Frome valley, protecting the Stroudwater Navigation canal. Also recorded are a military camp of unknown function and camouflaged ball-bearing factory (Tucker 2003) and the previously unknown location of a 'killer' searchlight battery noted in the Gloucestershire SMR.

Prehistory-Roman

The earliest archaeological finds were found at Eastington gravel pit, opposite the junction with Perryway and the A38. These include a Neolithic arrowhead and possible Palaeolithic flint tools. Much of the archaeological remains were found as a result of gravel extraction, and subsequent small 'rescue' excavations that were undertaken.

The earliest archaeology features visible on the available aerial photographs range in date from Bronze Age to Roman and comprise four sites which are found to the east of Frampton on Severn. These sites are located on the gravel deposits, which are a lot more freely draining than the surrounding clay deposits and would have been ideal locations for settlement in the past (Darvill 1987). Freely draining geologies are also particularly conducive to cropmark formation under optimum conditions and are therefore locations where one might expect to see cropmark evidence of buried archaeological features.

Discussion of the cropmark sites

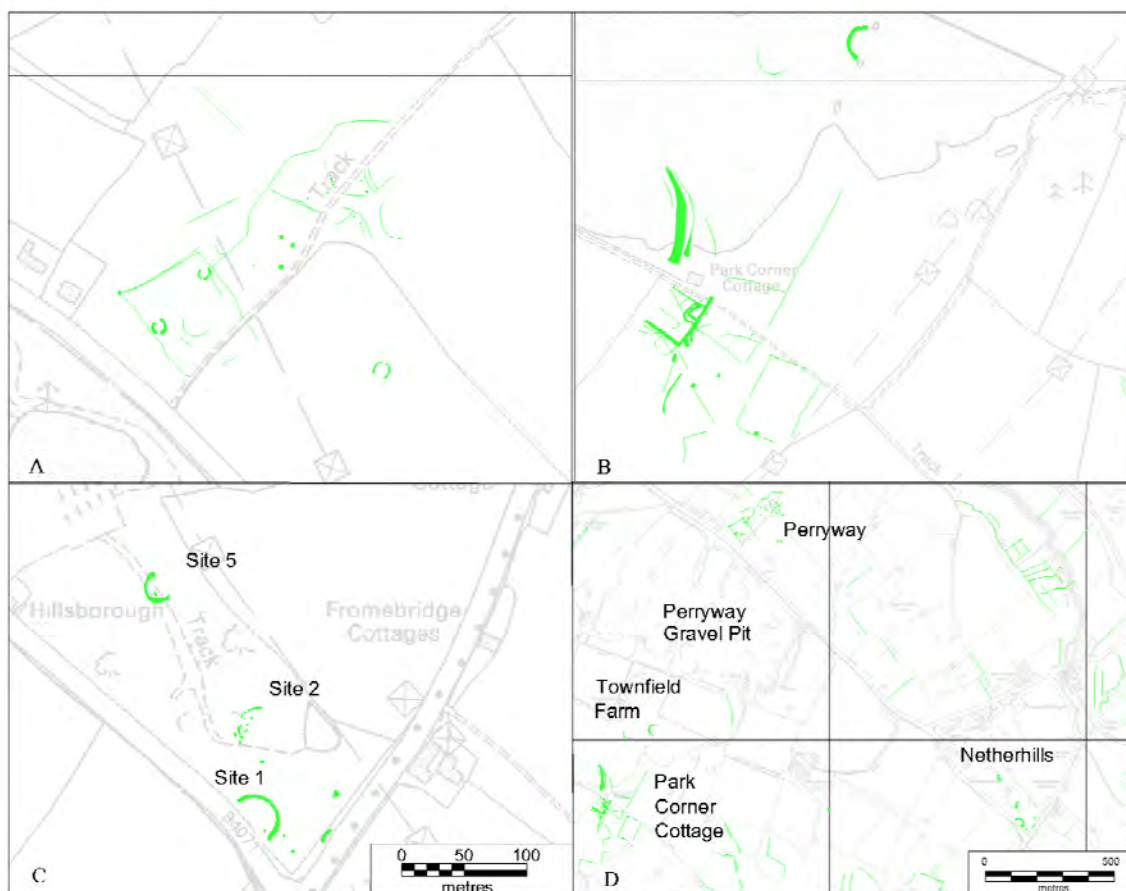


Figure 6 NMP transcription showing the cropmarks east of Frampton on Severn. (A) Perryway, (B) Park Corner Cottage to the south and Townfield farm to the North, (C) Netherhills, (D) Location of the cropmarks in relation to each other. - The green lines represent ditches

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Netherhills

This site east of Frampton on Severn adjacent to Fromebridge (figure 3C), is believed to be a Bronze Age barrow cemetery with a total of four barrows (sites 1-2, 4-5), and defined by ring-ditches. A further ring-ditch (site 3) was provisionally dated to the Roman period and may suggest that the site was continually used or at least re-used in Roman times. The site was partially excavated by R.J.C Atkinson in 1948 but no site plan is available and only section drawings remain of the site. Therefore the locations of the barrows described by Atkinson were unclear. Through this survey their location has been identified from oblique air photography (courtesy of CUCAP) and a general ground shot of the gravel workings taken by Atkinson. From the aerial photography three sites 1, 2 and 5 were mapped, site 3 was not visible and

one, site 4, is only just visible on Atkinson's general view of the gravel workings and was therefore not mapped.

Perryway

This is a relatively new site which was recorded in the Gloucester County Council SMR but was not in the NMR database. The photograph was briefly described as cropmarks and possibly shows the location of a Romano-British settlement. The cropmarks on a single oblique photo from 1948 probably represent a palimpsest of archaeological activity from Iron Age and/or Roman to Medieval (figure 3A). The site comprises a rectilinear ditched enclosure probably dating to the Iron Age or Roman period and shows similarities with the rectilinear enclosure recorded at Park Corner Cottage. Other significant archaeological cropmarks are three possible ring-ditches of similar form and dimensions. It is difficult on the photograph to determine the exact nature of the possible pit alignments, pits and linear ditches which may have geological origins.

Park Corner Cottage

This site was known previously from aerial photographs and was thought to be associated with the archaeological features identified by St Clair Baddeley in 1928 from Perryway Gravel pit. The whole site at Perryway was interpreted as a "tribal settlement of some permanence...[of]...non-Christian folk" (Baddeley 1928). St Clair Baddeley also raised the possibility that the site may continue to the south and west. The cropmarks visible to the south of the Perryway gravel pit have been mapped and a more likely interpretation is that it is a possible Roman and/or Iron Age settlement site probably used into the Early Medieval period. This is supported by Baddeley who uncovered inhumations and some artefacts which were dated to the Anglo-Saxon period at Perryway Gravel pit nearby, and believed that the area was a possible settlement of Saxon invaders (Baddeley 1928). The cropmarks are spread over a large area and comprise three notable rectangular enclosures which appear to suggest a range of dates, as there does not appear to be a contemporaneous relationship between the ditched enclosures. There seems to be a long term settlement or at least activity at this site similar to the site at Perryway.

Much of the rest of the archaeological cropmarks are obscured by geological cropmarks as well as plough levelled Medieval and Post-Medieval ridge and furrow orientated northwest/southeast. Interestingly, the rectilinear enclosure visible on the far right hand side (figure 3B) is very similar in shape and dimensions to the rectilinear enclosure seen to the north at the Perryway cropmark site and may suggest a contemporary settlement at both these sites.

Townfield Farm

The cropmark of the ring-ditch east of Townfield Farm was also previously known and associated with the site identified by St Clair Baddeley's excavations. A second ring-ditch to the south of Townfield Farm was identified as part of the recent aerial survey. The cropmark is faint and only visible on the periphery of one of the specialised oblique photographs hence there will be some inaccuracies in the rectification and transcription process. The two possible ring-ditches are 61m apart and have similar dimensions (figure 3B). Their proximity suggests that they are broadly contemporaneous with each other and may have had a similar function. Three circular ditches were identified by Baddeley at the Perryway gravel pit, just to the north of Townfield farm and although no direct dating evidence was found, nearby burials and artefacts give dates spanning the 1st to the 4th centuries AD. It is probable that the two ring-ditches at Townfield farm are an

extension of the site identified at Perryway gravel pit as well as the cropmark sites identified to the south and north at Park Corner Cottage and Perryway respectively and may therefore have broadly similar dates (figure 3D).

Conclusion

The freely draining gravels around Frampton on Severn would have provided a suitable site for prehistoric settlement and indeed this is where some of the earliest known archaeological remains have been uncovered through excavation and from aerial photographs. The aerial survey has been able to clarify and interpret these previously poorly understood sites. Roman influences arrived at different periods throughout Gloucestershire and in many cases there is evidence for Iron Age settlements being re-used as Roman sites (Darvill, 1987). This explains the range of dates from the artefactual evidence and suggests the area around Frampton on Severn was continually settled through the later Prehistoric and Roman era. Unfortunately the locations of the Prehistoric and Roman sites on the gravel deposits are also where some of the most extensive gravel extraction has taken place. The extraction process has destroyed much of the known archaeological remains. Luckily some rescue archaeology was undertaken and the aerial photographic record has provided the means to accurately map the archaeological features. The archaeological cropmarks of possible Iron Age to Roman settlements north and south of Perryway have not been affected by gravel extraction and the archaeological features are likely to remain buried beneath the soil. These two sites and the surrounding area have not been recently retargeted by aerial survey and the oblique photographs from 1948 and 1953 are all that exist showing the sites. Therefore there is the potential to find new archaeological sites near Frampton on Severn, particularly over the surviving gravel deposits.

Medieval and Post-Medieval

The survey area is characterised by an almost blanket coverage of ridge and furrow, of which large swathes were still visible on aerial photography in 1970-71. All visible extant and plough levelled ridge and furrow have been recorded along with associated features, such as plough headlands, drainage ditches and boundary ditches. No distinction has been made between Medieval, with its curving ridges and later Post-Medieval steam ploughed ridge and furrow, though a note has been made in the NMR database records. The lack of modern ploughing has preserved much of the ridge and furrow and has also contributed to the survival of other earthwork remains, particularly from the Medieval period.

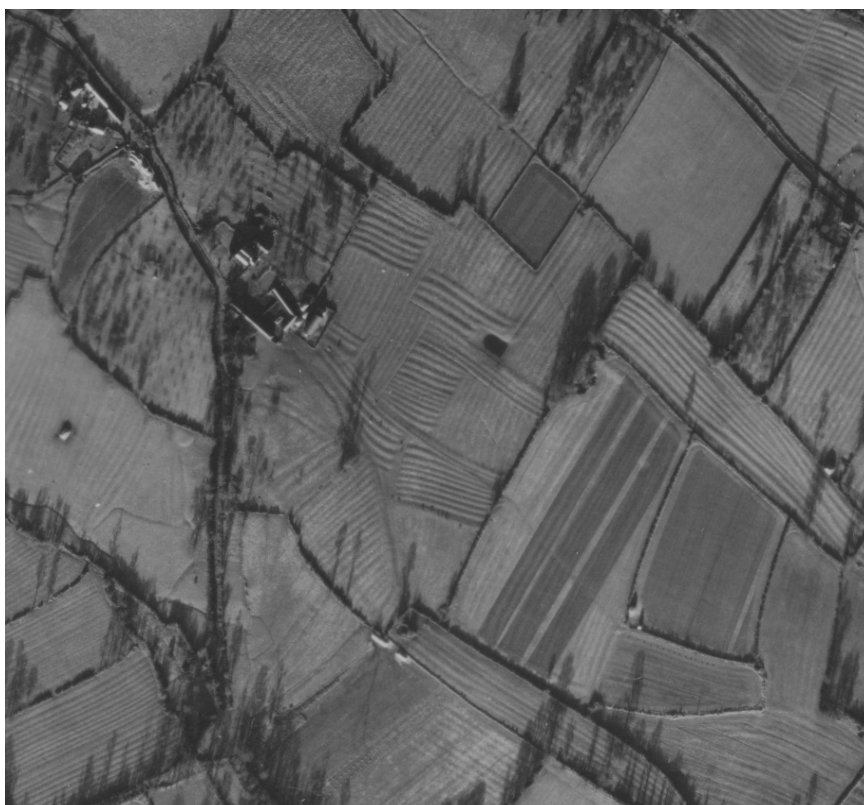


Figure 7 Extract from an RAF vertical photograph showing open fields of Medieval Ridge and Furrow

RAF CPE/UK/1913 3131 30-DEC-1946 © English Heritage (NMR) RAF Photography

As a consequence, five new possible Medieval settlement sites have been mapped and recorded and others have been updated. They are all small sites which comprise building platforms and boundary ditches. Perhaps the most interesting Medieval site is at Putloe, adjacent to the A38 (figure 8). The site is clearly visible as earthworks on photographs taken in 1946 and comprises a raised rectangular platform which is enclosed by a boundary ditch. The east side of the platform and boundary ditch appears to be plough damaged by Medieval and/or Post-Medieval ridge and furrow, suggesting an earlier date for the site. The interior of the platform comprises two raised mounds, a possible building platform, a possible ring-ditch, possible pits and linear features. The hamlet of Putloe existed by 1221 and continued to grow throughout the

Medieval period but, in or before 1717, it suffered from a fire and much of the hamlet would have been destroyed (VCH p203-33), including this site.

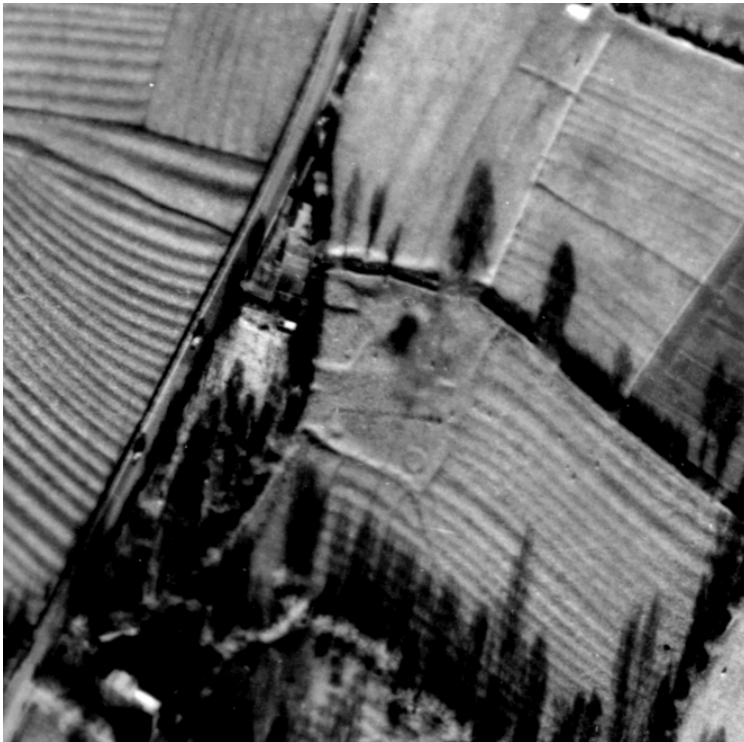


Figure 8 Extract from a RAF vertical photograph showing the earthwork remains of a Medieval Settlement at Putloe

RAF CPE/UK/1913 4133 30-DEC-1946 © English Heritage (NMR) RAF Photography

Water meadows of probable Medieval or Post-Medieval date have been recorded along the River Frome valley on either side of the main confluence of the river. The water meadows are visible as a system of straight parallel and perpendicular ditches along with longer more sinuous ditches which represent remnant confluences of the River Frome.

Medieval and Post-Medieval earthworks may have survived well in 1946 but, by 1985-1988, the aerial photography shows the extent and increase of modern ploughing and development that has taken place in the study area, which now affects the long term survival of many of the upstanding Medieval and Post-Medieval earthworks. Modern housing developments in the villages of Whitminster and Eastington and modern industrial estates east of Stonehouse have destroyed large areas of blocks of ridge and furrow.

Industrial and associated archaeology



Figure 9 An extract from an OS vertical photograph showing the flooded gravel pits at Perryway as they were in 1979

OS/79034 43 19-MAY-1979 © Crown copyright. Ordnance Survey

Medieval to Post-Medieval agriculture may have been a vital part of the Frampton on Severn landscape, but its habitants were more likely to be employed in industrial occupations in the Post-Medieval era (VCH p123-27). This would have been aided by the good infrastructure which allowed the import and export of goods. i.e. the opening of the Stroudwater Navigation canal in 1779 and the Gloucester & Sharpness canal in 1827.

The aerial survey recorded all visible excavation sites, even those associated with later 20th century gravel workings as these coincided with areas of known destroyed archaeology, though most were already being worked prior to 1945. Sand, Gravel and Clay are all likely to have been extracted, but the gravel workings have been the most extensive. Around 1922 a mineral railway was constructed to transport the gravel directly from the Perryway gravel pit (figure 9) to the Bristol & Birmingham railway at Frocester and to the Gloucester & Sharpness Canal at The Splatt, south of Frampton on Severn. The mineral railway was a temporary rail link during the course of extraction and was demolished sometime before 1946. It is still visible in places on aerial photography as an earthwork, though most had been plough levelled.

Clay was also an important resource used to produce brick and tiles. The documentary evidence supports this but no brick works had previously been

recorded in the NMR database. However a possible site was recorded by aerial survey west of Bond's Mill, Stonehouse. Earthworks visible on aerial photography hint at a clay pit and the possible remains of buildings and a kiln. This is supported by the Tithe Map of 1839 that refers to the field in which the site is located as Brick Kiln Ground.

Mills have played an important part in Frampton's industrial past and landscape, manufacturing a range of products. The majority of mills are distributed along the length of the River Frome, which provided the power before the advent of steam and a means to transport the goods (Mills & Riemer 1989) before the construction of the Stroudwater Navigation (the Frome was notoriously difficult to navigate). The mills utilised the River Frome with its separate channels modifying its flow by widening and straightening large sections. This also rendered some of the channels to shrink to mere ditches. These sections of former river course are visible on aerial photography with the remnant meanders forming ox-bow like ditches.

Military Structures

The Second World War left its mark over much of British countryside and the landscape around Frampton on Severn is no exception. Many WWII sites were demolished or destroyed after the war but some WWII structures remain extant in the present landscape. The Second World War sites had previously been identified by the Defence of Britain project and from the Henry Wills Gazetteer of Defence Sites. The aerial survey was able to identify new sites from RAF photographs taken in 1946 and 1947, not long after the end of the war in 1945, which had yet to be removed.



Figure 10 Extract from a RAF vertical photograph showing the Military camp on the left and the camouflaged ball-bearing factory in 1947

RAF CPE/UK/1961 3043 09-APR-1947 © English Heritage (NMR) RAF Photograph

The WWII military airfield, RAF Moreton Valence (formerly Haresfield), in the far northeast corner of the survey area, was visible prior to the construction of the M5 motorway which essentially follows the line of the former northeast/southwest runway. As the airfield was utilised up until its closure in 1968 (Berryman 2005), many of the airfield's WWII structures were still visible on aerial photography taken in 1958, such as the blister hangers, blast pens, nissen huts and possible bomb store. Much of the airfield's buildings and structures have been demolished and it has subsequently reverted back to agricultural land, whilst some areas are now modern industrial estates.

During the war it is well known that a great effort was made to conceal industrial sites from the air and the ball bearing factory west of Stonehouse was no exception (Tucker 2003). The factory's roof was painted to camouflage it from enemy bombing. The effort made to conceal these sites has also hampered modern reconnaissance despite RAF coverage after the war. Adjacent to the camouflaged factory building is a newly identified possible military camp, comprising of rows of nissen huts. This was probably associated with the factory, possibly providing temporary housing for the workforce (figure 10).

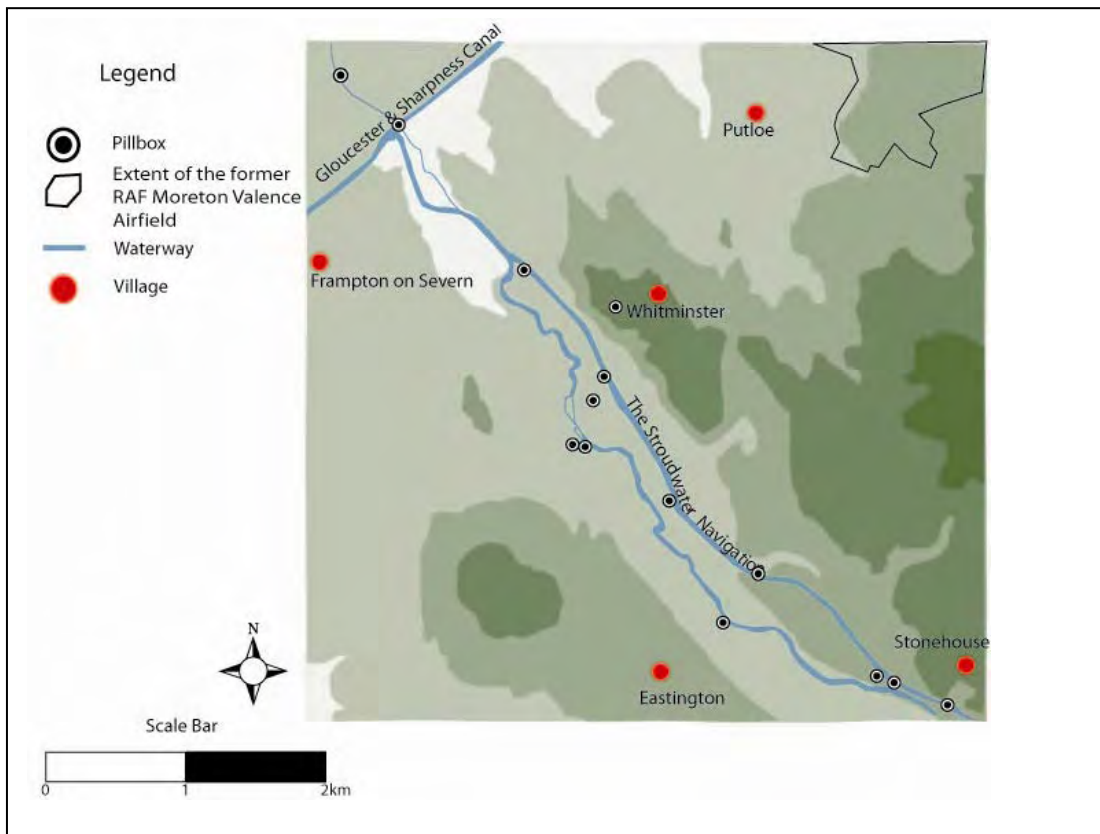


Figure 11 Location of all known Pillboxes along the Stroudwater Navigation, known as the GHQ line.

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There are 14 recorded pillboxes, four of which are new sites. They are located along the Stroudwater Navigation canal (figure 11) between Saul Junction (a junction with the Gloucester & Sharpness Canal) and Ocean Bridge at Stonehouse. They were located as such to protect the north and south approaches of the canal as well as the main bridges which crossed over the canal at Fromebridge, Pike Lock and at Stonehouse. These pillboxes were part of the GHQ line manned by the Home Guard (Tucker, 2003)

The aerial survey has also revealed the exact location of a searchlight battery which was recorded in the Gloucester County Council SMR as a 'killer' type searchlight battery, listed as the No. 349 Searchlight Battery on 14th October 1941. The searchlight is visible as a single circular bank overlying the Medieval ridge and furrow

Conclusion

The NMP survey and recording as part of the Frampton ALSF has revealed the location and extent of buried archaeological features, particularly the Bronze Age Barrows at Netherhills, a site which was the primary aim of the project. The aerial survey of this site has proved beneficial by identifying the exact location of two barrows that were previously unknown. The survey also highlighted the preservation of many archaeological remains visible as earthworks from the Medieval and/or Post-Medieval landscape, such as five new possible Medieval settlements. No further Prehistoric or Roman sites were recorded from the aerial photographs but, perhaps more important, shows the impact of the aggregate industry on the known sites from these periods. The majority of these have been destroyed by this industrial activity.

There is currently a low density of cropmarks on the current aerial photographic archives but, as the Medieval/Post-Medieval agricultural landscape is gradually plough levelled by modern agricultural practices, more buried archaeology may become visible. This is likely to occur over the remaining gravel deposits that have not been exploited by the aggregate companies. A programme of retargeting these areas, along with the existing cropmark sites, will prove to be beneficial to any further study of this region and is increasingly important if future gravel extraction continues over the remainder of the gravel deposits.

The end product of the wider Frampton on Severn ALSF project will be to produce a report and research agenda for the area and disseminate the results to the wider public. The NMP component has been an important part of that wider project through not only identifying and recording archaeological features visible on aerial photographs, but also by highlighting areas of gravel extraction and its affects on the modern and past landscapes.

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Small, F and Stoertz, C. (eds) 2006. *Gloucestershire Forest of Dean NMP*. English Heritage: Swindon

Tucker, J. 2003. *The Stroudwater Navigation*. Stroud:Tempus

VCH Glos X. 1972. *The Victoria County History of Gloucestershire*, Vol X. London

Wilson, D R. 2000. *Air Photo Interpretation of Archaeologists 2edn*. London: Tempus

Appendix 1 – Sources

National Monuments Record (NMR) provided vertical and oblique photographs:

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

Unit Landscape Modelling (formerly Cambridge University Committee for Air Photography, CUCAP) provided vertical and oblique aerial photographs from their Air Photo Library.:

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

Additional monument information was courtesy of Gloucester County Council Sites and Monuments Record.

Tim Grubb
Gloucester County Council Archaeology Service
Environment Department
Shire Hall
Westgate Street
Gloucester
GL1 2TG

Appendix 2 – Photographic Sources

NMR Vertical Loan

Sortie	Frame Numbers		Date
RAF/CPE/UK/1913	3129	3138	30-Dec-46
RAF/CPE/UK/1961	3036	3046	09-Apr-47
RAF/CPE/UK/1961	4039	4044	09-Apr-47
RAF/CPE/UK/2098	3048	3058	28-May-47
RAF/CPE/UK/2098	3064	3065	28-May-47
RAF/CPE/UK/2098	3078	3089	28-May-47
RAF/CPE/UK/2098	3254	3267	28-May-47
RAF/CPE/UK/2098	3288	3297	28-May-47
RAF/CPE/UK/2098	4078	4090	28-May-47
RAF/CPE/UK/2098	4253	4266	28-May-47
RAF/58/503	5061	5062	11-Jun-50
RAF/58/503	5098	5100	11-Jun-50
RAF/CPE/UK/1825	4059	4060	04-Nov-46
US/7PH/GP/LOC234	5029	5034	15-Mar-44
OS/71074	64	66	12-Apr-71
OS/71301	82	91	24-Jun-71
OS/71301	101	111	24-Jun-71
OS/64030	100	104	16-May-64
OS/64030	106	120	16-May-64
OS/64030	172	176	16-May-64
OS/69076	1	2	04-Apr-69
OS/68298	3	7	07-Sep-68
OS/71071	84	86	12-Apr-71
OS/71071	120	122	12-Apr-71
OS/71071	139	141	12-Apr-71
OS/71071	159	161	12-Apr-71
OS/71071	200	202	12-Apr-71
OS/71267	165	173	02-Jun-71
OS/71267	177	180	02-Jun-71
OS/71267	184	186	02-Jun-71
OS/71436	195	201	25-Aug-71
OS/71436	209	218	25-Aug-71
OS/70308	48	51	05-Sep-70
OS/70054	1	3	28-Apr-70
OS/70054	72	79	28-Apr-70
OS/85149	39	48	08-Jun-85
OS/85149	52	61	08-Jun-85
OS/88102	16	18	16-May-88
OS/88102	19	25	16-May-88
OS/88102	55	58	16-May-88
OS/79034	35	36	19-May-79
OS/79034	42	44	19-May-79
MAL/57302	57573	57575	24-Nov-57
MAL/57302	57583	57594	24-Nov-57

NMR Oblique Loan

Sortie	Index	Accession Number	Frame	Date
SO7510	4	CAP 8133	67	05-Jul-53

SO7705	1	NMR	2123	1147	19-Jul-82
SO7705	2	NMR	2123	1148	19-Jul-82
SO7705	3	NMR	2123	1149	19-Jul-82
SO7706	1	NMR	2123	1150	19-Jul-82
SO7706	6	NMR	2123	1151	19-Jul-82
SO7706	7	NMR	2123	1152	19-Jul-82
SO7805	1	HAW	9405	39	11-Sep-60
SO7805	2	HAW	9405	40	11-Sep-60
SO7805	3	HAW	9405	41	11-Sep-60
SO7809	1	HAW	9410	3	10-May-61
SO7809	2	HAW	9410	4	10-May-61
SO7905	6	NMR	4836	23	28-Jun-93
SO7905	7	NMR	4836	24	28-Jun-93
SO7905	8	NMR	4836	25	28-Jun-93
SO7905	9	NMR	4836	26	28-Jun-93
SO7910	1	HAW	9436	1	04-May-58
SO8004	6	NMR	4845	6	13-Aug-93
SO8004	7	NMR	4845	7	13-Aug-93
SO7407	1	CAP	8073	46	25-Jun-52
SO7407	2	CAP	8073	47	25-Jun-52
SO7407	3	CAP	8073	48	25-Jun-52
SO7407	4	CAP	8073	49	25-Jun-52
SO7407	5	CAP	8073	50	25-Jun-52
SO7407	6	CAP	8281	6	01-Jul-55
SO7407	7	CAP	8281	7	01-Jul-55
SO7407	8	NMR	18557	5	15-Dec-99
SO7407	9	NMR	18629	18	15-Dec-99
SO7407	10	NMR	18629	19	15-Dec-99
SO7407	11	NMR	18629	20	15-Dec-99
SO7407	13	NMR	23234	34	17-Sep-03
SO7407	14	NMR	23234	35	17-Sep-03
SO7407	15	NMR	23234	36	17-Sep-03
SO7407	16	NMR	23234	37	17-Sep-03
SO7407	17	NMR	23234	38	17-Sep-03
SO7407	18	NMR	23266	11	17-Sep-03
SO7407	19	NMR	23266	12	17-Sep-03
SO7407	20	NMR	23266	13	17-Sep-03
SO7407	24	NMR	23266	17	17-Sep-03
SO7408	4	NMR	23633	24	20-Jul-04
SO7408	11	NMR	23662	35	24-Sep-04
SO7408	12	NMR	23662	36	24-Sep-04
SO7409	2	NMR	23662	37	24-Sep-04
SO7409	3	NMR	23662	38	24-Sep-04
SO7504	1	NMR	2159	1087	19-Jun-84
SO7504	2	NMR	2159	1088	19-Jun-84
SO7504	3	NMR	2159	1089	19-Jun-84
SO7504	4	NMR	2159	1090	19-Jun-84
SO7504	5	NMR	2159	1091	19-Jun-84
SO7504	6	NMR	2159	1092	19-Jun-84
SO7504	7	NMR	2159	1093	19-Jun-84
SO7505	1	NMR	2159	1079	19-Jun-84
SO7505	2	NMR	2159	1080	19-Jun-84
SO7505	3	NMR	2159	1081	19-Jun-84
SO7505	4	NMR	2159	1082	19-Jun-84

SO7505	5	NMR	2159	1083	19-Jun-84
SO7505	6	NMR	2159	1084	19-Jun-84
SO7505	7	NMR	2159	1085	19-Jun-84
SO7505	8	NMR	2159	1086	19-Jun-84
SO7506	1	CAP	8133	62	05-Jul-53
SO7506	2	CAP	8133	63	05-Jul-53
SO7506	3	CAP	8133	64	05-Jul-53
SO7506	4	CAP	8133	65	05-Jul-53
SO7506	5	CAP	8281	2	01-Jul-55
SO7506	6	CAP	8281	3	01-Jul-55
SO7506	7	CAP	8281	4	01-Jul-55
SO7506	8	CAP	8281	5	01-Jul-55
SO7507	1	CAP	8073	51	25-Jun-52
SO7507	2	HAW	9390	23	17-May-59
SO7507	3	HAW	9390	24	17-May-59
SO7507	5	NMR	18629	9	15-Dec-99
SO7507	6	NMR	18629	10	15-Dec-99
SO7507	7	NMR	18629	11	15-Dec-99
SO7507	8	NMR	18629	12	15-Dec-99
SO7507	9	NMR	18629	13	15-Dec-99
SO7507	10	NMR	18629	14	15-Dec-99
SO7507	11	NMR	18629	15	15-Dec-99
SO7507	12	NMR	18629	16	15-Dec-99
SO7507	13	NMR	18629	17	15-Dec-99
SO7507	14	NMR	18567	4	15-Dec-99
SO7507	15	NMR	18567	5	15-Dec-99
SO7507	16	NMR	18567	6	15-Dec-99
SO7508	1	CAP	8073	45	25-Jun-52
SO7508	2	CAP	8281	8	01-Jul-55
SO7508	3	CAP	8281	9	01-Jul-55
SO7509	1	NMR	23714	4	24-Sep-04

Cucap Loan

Frame Number	Date
AN46	16 Jun 1948
AN47	16 Jun 1948
AN48	16 Jun 1948
AN49	16 Jun 1948
AN50	16 Jun 1948
HX51	25 Jun 1952
MI62	5 Jul 1953
MI63	5 Jul 1953
MI64	5 Jul 1953
MI65	5 Jul 1953
WU27	30 Jun 1958
WU28	Mon, 30 Jun 1958
ABF59	Fri, 17 Jun 1960
BNH18	Fri, 15 Jun 1973

Appendix 3 - Archaeological scope of the survey

Earthworks, Plough levelled features and buried remains

All cropmarks and soil marks which represent earthworks or stonework of archaeological origin have been recorded. All earthworks visible on aerial photographs have been mapped whether or not they are still extant on the most recent photography. Features which have been assigned an uncertain date or thought to be possible geological marks have also been recorded only where they are associated or may be confused with archaeological features.

Military Structures

Military buildings and structures from the Second World War (pre-1945) were recorded but the Military airfield and camp were not depicted in great detail, although their main features were identified. Other buildings were only recorded if they were no longer in existence or were only visible as earthworks, cropmarks and soil marks.

Ridge and Furrow and water meadows

Medieval and/or Post-Medieval ridge and furrow and water meadows were also recorded. The ridge and furrow was recorded by county parish, where possible, due to extent of the coverage. Levelled and extant fields of ridge and furrow were depicted using different conventions and furrow directions were indicated by arrows. Areas of extensive water meadows thought to pre-date 1945 have also been transcribed and recorded.

Industrial archaeology

Areas of industrial archaeology have been mapped where they can be recognised to pre-date 1945. The exception to this was the extraction sites that were of a post-1945 date. It was deemed useful to map their extent as known adjacent archaeology has already been destroyed by its process and the surrounding area may potentially yield archaeological remains in the future.

Appendix 4 –NMR archaeological database (AMIE)

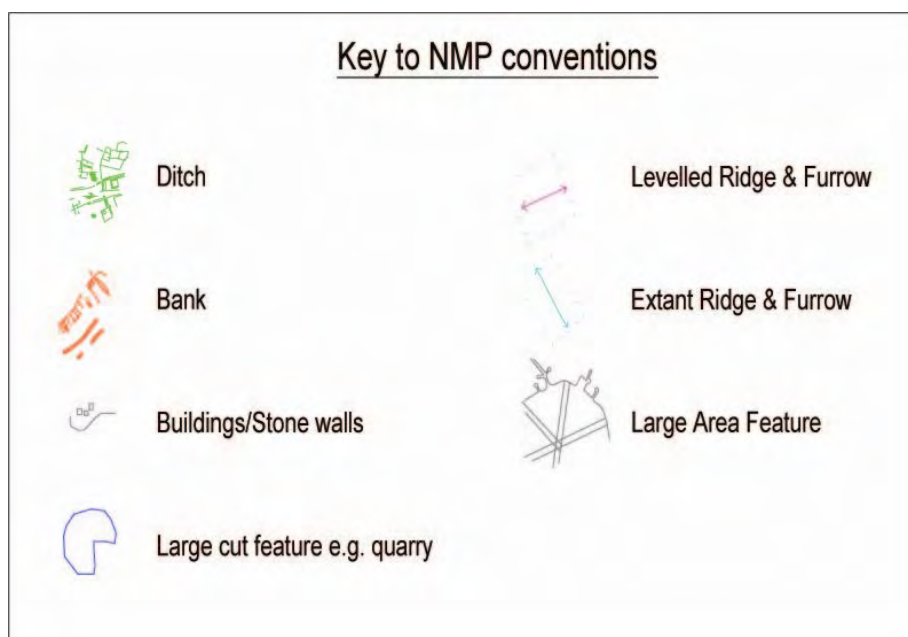
Frampton on Severn Aggregates Levy Sustainability Fund Project – Collection Record: AF00212

Frampton on Severn ALSF: SO 70 NE – Drawing Record: MD000121

Gloucestershire County Council: Frampton on Severn NMP, Gloucestershire, ALSF – Event record: 1441252

As a result of the survey, 43 new monument records in the NMR's database (AMIE) have been identified and created, as well as the revision of 39 existing records. This increases the total from 56 AMIE records to 99 within the survey area.

Appendix 5 –AutoCAD NMP Mapping Conventions



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