Past & Present

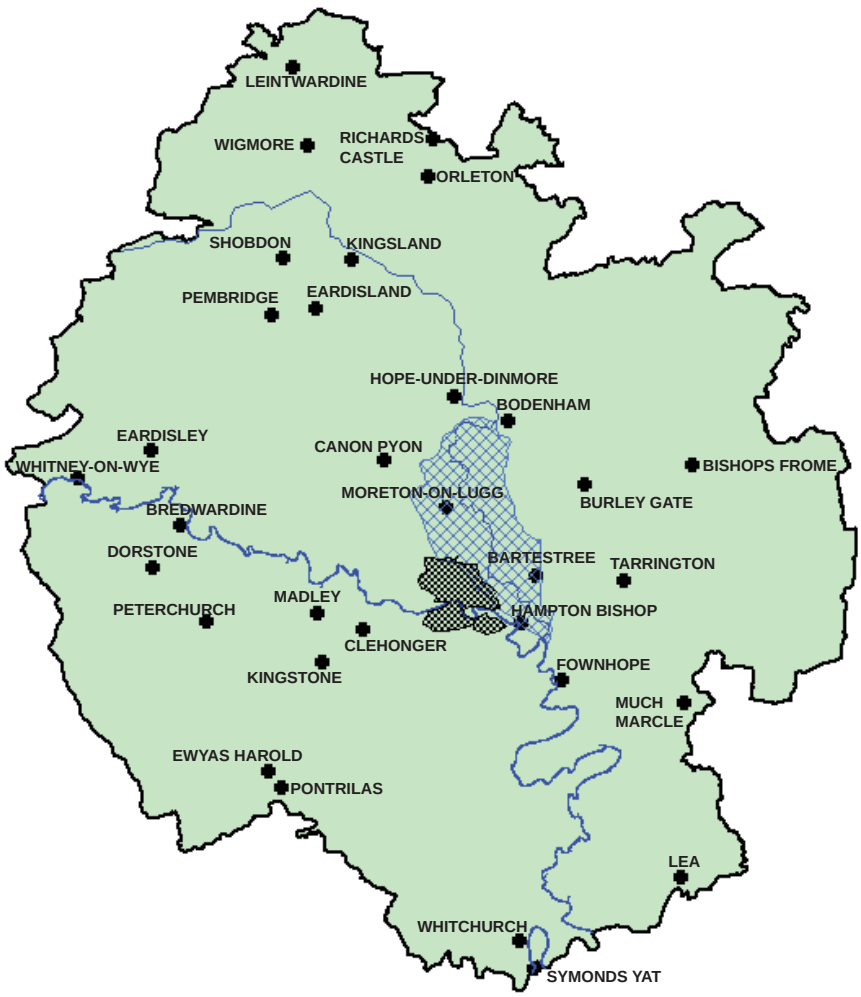
Quarries, Archaeology and the Lower Lugg Valley

Marden landscape taken from Sutton Walls © Herefordshire Archaeology

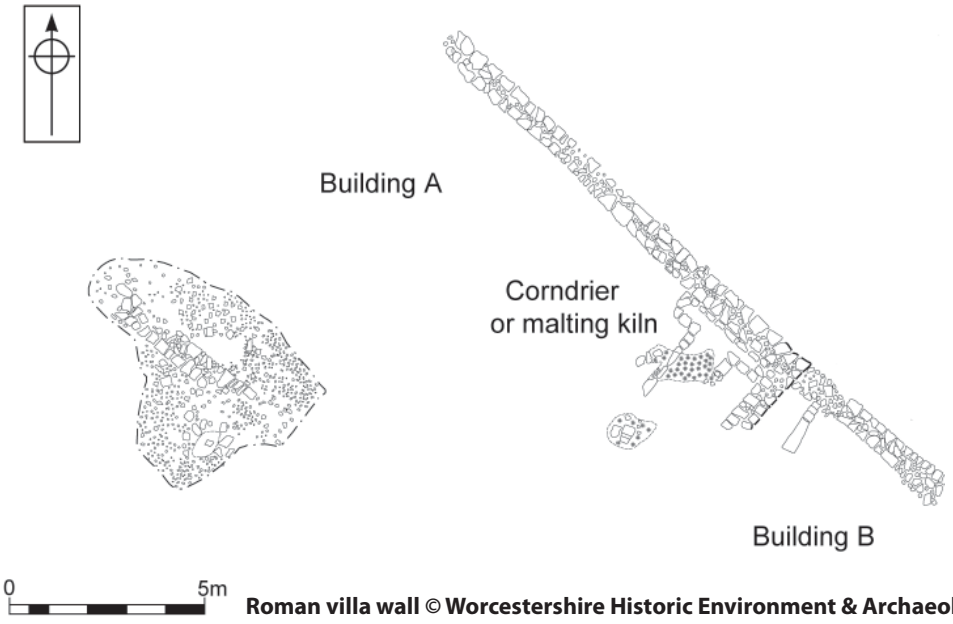
A story of a river valley

The gently rolling landscape of the Lower Lugg Valley is a place where people have always lived yet we have little knowledge of them. However, recent archaeological discoveries during gravel quarrying have transformed our understanding of past communities in the area. Exciting finds include the rich burial of a once important prehistoric leader, a fine Roman country house, and two of Britain's earliest known watermills. A new and fascinating Lower Lugg story is beginning to emerge, and that story links directly to present day life in the valley.

The Lower Lugg Valley is not a place that immediately reveals its ancient secrets. Road and rail travellers heading north from Hereford rapidly cross a flat stretch of landscape abruptly ended by the bulk of Dinmore Hill. Maybe some will glimpse the distinctive spire of Marden Church, the heaps of freshly dug gravel at Wellington Quarry, or the unusual flat-topped hill known by the locals as Sutton Walls. But there is little to obviously hint at the remarkable story behind these landmarks.



Front cover: Wellington Beaker burial reconstruction © Steve Rigby, Worcestershire Historic Environment & Archaeology Service



Roman villa wall © Worcestershire Historic Environment & Archaeology Service

Of course, it is no surprise that people have lived in the valley for a very long time. The familiar network of villages, old buildings, quarries, lanes and fields is a visible result of hundreds of years of local community life. Moreover, gravel quarrying on the low hills bordering the river floodplain has often disturbed the remains of even more ancient occupation. Quarrying at Sutton Walls in the 1930s, 40s and 50s turned up many 'finds' from a 2,500 year old settlement which once occupied the hilltop.

So far, finds like this have been commonplace. However, the gravel quarry at Wellington has unexpectedly revealed a much more interesting story. When quarrying began at Wellington in 1986, no one really anticipated significant archaeological discoveries. Unlike the earlier hilltop sites, the new quarry targeted the extensive gravel beds buried beneath the river floodplain. Given the obvious flooding issue, this didn't seem likely to be a place where people had ever lived. The fertile riverside land is now a patchwork of fields, and the remains of older 'ridge and furrow' fields suggest the area has long been used for agriculture.

As soon as the quarry company got to work, a very different picture began to emerge. In the first area where the quarrymen began to dig down to the gravel, they almost immediately uncovered a grid-like pattern of carefully built stone walls, which seemed to be the foundations of a long disappeared building. When local archaeologists investigated, they found large amounts of Roman pottery and tiles, and realised that the walls were probably part of a Roman 'villa' - a large 1,800 year old country house once owned by a wealthy local landowner. It was a real surprise to find such a fine and important building buried in the river floodplain.

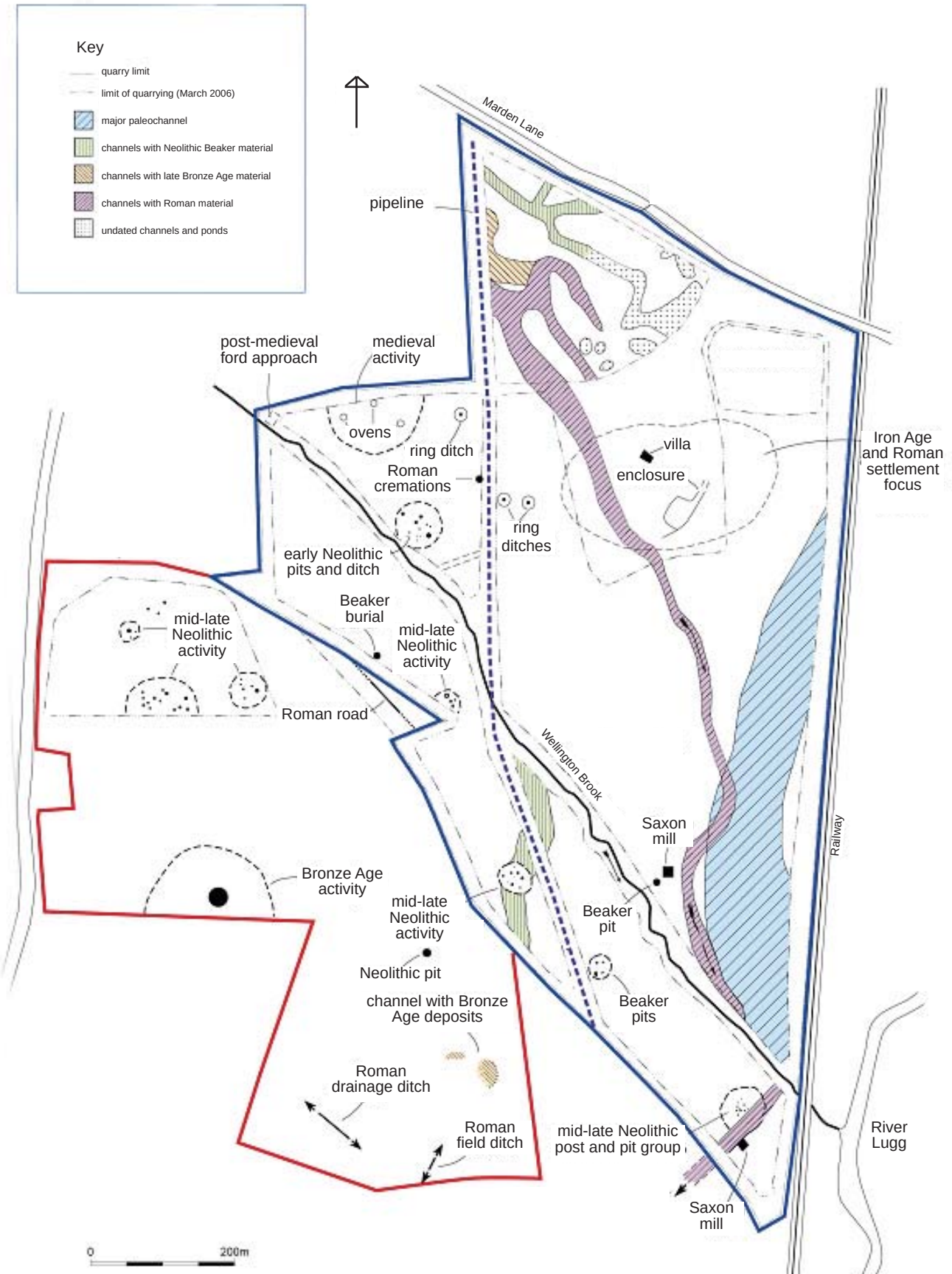
The villa was only the beginning. As quarrying at Wellington has continued, a wide array of other finds have come to light, and the archaeological puzzle has become more complicated and more fascinating. Discoveries include mysterious groups of 6,000 year old pits containing early pottery, the spectacular 4,500 year old burial of a local tribal leader, the boundaries of the Roman fields that once surrounded the villa, and the well preserved 1,300 year old remains of two of Britain's earliest known watermills.

Machinery at Wellington Quarry © Worcestershire Historic Environment & Archaeology Service

Alongside the simple excitement of discovering such unusual and exceptionally well preserved remains, archaeologists have also gradually set about coming to terms with this new evidence. First of all, there is the 'problem' of why these finds are even there, and what they reveal about the direct influence of the river on the way people have lived in the area. Then there is the issue of linking the new understanding of riverside life to the archaeological evidence from other parts of the Lower Lugg Valley in order to build a more complete picture of past community life. Finally, there is the ongoing matter of how best to investigate and protect the unexpectedly rich 'historic environment' of the Lower Lugg area.

Read on to discover some of the current answers to these puzzles, and the many further questions those answers inevitably raise!

River Lugg © Herefordshire Archaeology



Archaeological sites at Wellington Quarry

The Lugg Valley in snow
© Herefordshire Archaeology

People, floods and the River Lugg

Local life over the last 10,000 years and beyond has been closely tied to the River Lugg. The development of the river floodplain has been intertwined with the lives of the people living around it, and this process has resulted in a fascinating buried record of environmental and landscape change.

The River Lugg originates in the hills of mid Wales, and twists through eastern Powys and northern Herefordshire. Beyond Dinmore Hill, the Lower Lugg Valley cradles the river along its final 13km approach to the confluence with the River Wye. In this wide setting, the Lugg snakes across a flat floodplain flanked by gently rolling hills.

Most of the time the river seems little more than the benign centrepiece of this attractive landscape. However, in July 2007, after a spell of some of the wettest summer weather on record, the River Lugg showed a very different side. Rising rapidly, the turbid waters soon overflowed the surrounding flood banks and inundated large areas of the valley floor. Marden church filled with water for the first time most people could remember - even the famous holy well of St Aethelbert 'went under'. Bodenham village, likewise, experienced the worst flooding for years. And when the waters went down, a sludgy coating of 'alluvium' (the silt and soil carried downstream by the floods) was left behind.

The 2007 floods were an all too harsh reminder of the natural process which has created the river floodplain over the last 10,000 years. Since the end of the last Ice Age, repeated floods have deposited a thick accumulation of alluvium across the valley floor. As a result, the undulating surface of the underlying gravel has been slowly buried, and the present flat floodplain has formed. In places, the gravel is now capped by up to three metres of alluvium.

The River Lugg in flood © Herefordshire Archaeology

Neolithic floodplain reconstruction © Steve Rigby, Worcestershire Historic Environment & Archaeology Service

Understanding the way the floodplain has 'grown' suddenly begins to unlock the apparent mystery of the archaeological finds at Wellington. People in the past were able to live very close to the river because, at an earlier stage of floodplain development, raised gravel 'islands' existed which were not so prone to regular flooding. Gradually, as the valley bottom filled up with alluvium, even the higher gravel areas became uninhabitable. Eventually, they too were buried by alluvium together with the abandoned remains of human occupation.

In detail, things are not quite as simple as this might sound, and changes in climate have also affected floodplain development. Evidence from old river channels suggests that large quantities of water flowed into the valley in the immediate post Ice Age period, and the river appears to have had several different channels at that time. In the last 8,000 years the scale of river flow has dramatically declined, and the Lugg has gradually assumed its current single channel. However, even within that period there have been episodes when climate change caused increased river flow, and adjoining areas were subject to more severe flooding.

Crucially, the archaeological finds emphasise that local communities were not just passive witnesses to this process, but also directly influenced the changing floodplain environment. In Roman times, for example, it appears that the land around the villa at Wellington was drained to create more stable conditions for the settlement and for growing crops in the surrounding fields. By contrast, in the 17th and 18th centuries, people instead made active use of the annual flooding to create so called 'water meadows'. Carefully managed networks of ditches distributed the water and the alluvium across the land, and this fertilising process maximised summer grass growth for hay production and animal grazing.

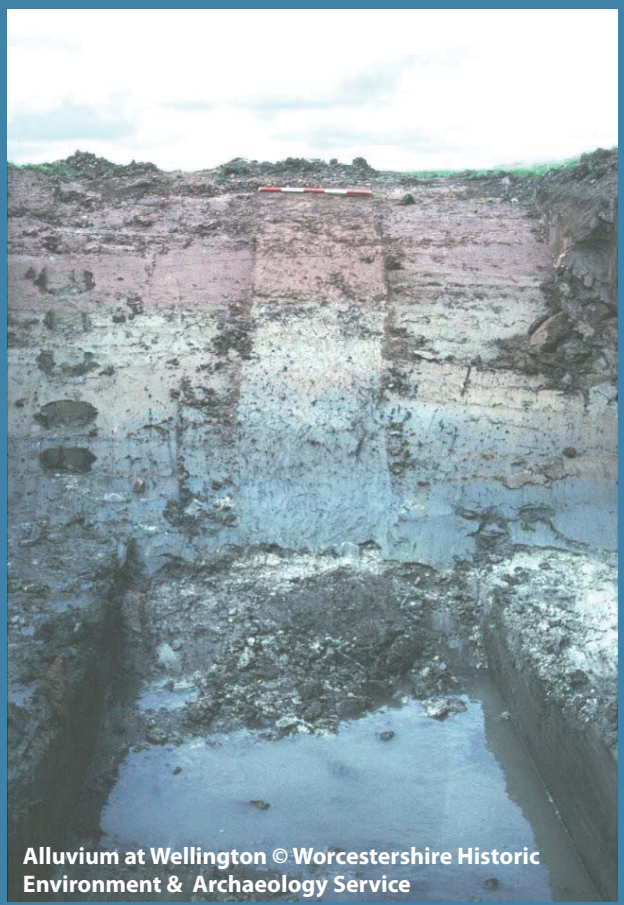
What emerges is a complicated yet intriguing relationship between local communities and the natural environment. In the floodplain at Wellington and elsewhere, people and the River Lugg have together created a unique buried record of changing environment and past landuse. However, it is equally clear that the same story is also relevant to the rest of the wider surrounding landscape. Communities living at Wellington were also, of course, using other parts of the valley in similar specialised ways. The new archaeological understanding gained at Wellington Quarry necessarily leads to a fresh perspective on the evidence of past life in the Lower Lugg Valley as a whole.

Interpreting the floodplain

Specialist investigation of the floodplain deposits at Wellington Quarry has revealed much information about the ancient environment. In-filled ancient river channels (so called 'palaeochannels') allow former courses of the river to be identified. In addition, careful study of the fragile plant remains preserved within the waterlogged channels provides evidence about past vegetation near the river. For example, the effect of early farming can be seen at Wellington in the increase of cereals and grasses from about 4,500 years ago.

Differences in the buried alluvium also record broader climatic changes. An upper layer of red coloured alluvium buries Roman, Saxon and Medieval remains (such as the Roman villa and the Saxon mills) and apparently results from a period of wetter climate and more flooding. Below the red alluvium, a yellow alluvium layer covers prehistoric features such as Neolithic pits and hearths, and may represent an earlier phase of more gradual floodplain accumulation.

However, there are many unresolved questions. The colour of the alluvial layers partly results from chemical changes in the buried silts, and that process also affects the preservation of archaeological evidence. Moreover, across a large floodplain area, it can be hard to interpret how apparently similar layers or palaeochannels recorded in different places actually fit together as a whole.



Alluvium at Wellington © Worcestershire Historic Environment & Archaeology Service

Sutton Walls Iron Age hillfort © Herefordshire Archaeology

Hunters, farmers and tribes

For much of the vast period of prehistoric occupation, people lived in small mobile groups, and made seasonal use of the wide range of natural resources available in the valley. Farming became the basis of daily life about 6,000 years ago, and more complicated patterns of settlement have developed since that time. Much archaeological evidence of this process survives in the Lower Lugg Valley, and reveals the varied way of life of successive prehistoric communities.

Early people

Early people were living in Britain by about 750,000 years ago, with anatomically modern humans (our own direct ancestors) first arriving about 40,000 years ago. The vast span of Palaeolithic (Old Stone Age) occupation coincides with the Ice Age, and people would have only been able to live in the Lower Lugg Valley during the warmer 'inter-glacial' periods.

Hard evidence of local Palaeolithic communities is very limited. The only certain find from this entire period is a single handaxe (one of the oldest kinds of stone tool) which was found in 1977 by a local resident in a garden in Tupsley (see information panel, page 15). In addition, Woolly Rhinoceros, Mammoth and Horse bones have been discovered during quarrying of Ice Age period gravel deposits. The local presence of such animals demonstrates the prolonged existence of varied environments ideal for supporting the mobile 'hunter-gatherer' lifestyle of small groups of Palaeolithic people.

The Mesolithic (Middle Stone Age) people who re-colonised the Lower Lugg after the end of the last Ice Age around 10,000 years ago continued to live by hunting and gathering. Stone tools called microliths (literally 'small stones') have been recovered at Wellington Quarry. These tiny flint blades would have originally been fixed to wooden shafts to make specialised tools and weapons such as arrows and knives.

Animal and pollen remains preserved in Mesolithic period peat deposits discovered during quarrying at Wellington and Lugg Bridge have revealed a mixed woodland and grassland river edge environment populated by animals such as Red Deer and wild cattle. It is even possible that Mesolithic people were deliberately clearing/burning local woodland to create improved hunting conditions.

This page: Hill Croft Neolithic enclosure excavations © Herefordshire Archaeology

Bronze Age pottery reconstruction © Steve Rigby, Worcestershire Historic Environment & Archaeology Service

The first farming communities

From about 6,000 years ago people in Britain began to combine hunting and gathering with growing crops and keeping domesticated animals, and this important development is associated with the Neolithic (New Stone Age) period. It is marked in the archaeological record by the first use of pottery, the introduction of new kinds of stone tools such as polished axes, and the construction of impressive burial and ceremonial monuments.

The Lower Lugg Valley was an important focus of Neolithic settlement. At Wellington Quarry, groups of pits contained early Neolithic pottery, and other finds included flint tools and axes, hearths, post holes, and a circle of pits which perhaps defined a small ceremonial monument. Pollen preserved in old silted up river channels also reveals evidence for Neolithic woodland clearance and cereal cultivation, emphasising the gradually increasing impact of farming on the environment and landscape of the Lower Lugg Valley.

Recent excavations at Hill Croft Field, Bodenham examined part of a Neolithic hill top enclosure, and provided an interesting insight into Neolithic activity away from the river. A mixture of human bones, animal bones and broken pots had been deposited in the end of a ditch next to the entrance, probably as part of regular ceremonial activities over a number of years. Snail shells also hinted that the enclosure had been built in a woodland clearing.

By 4,000 years ago, significant changes in lifestyle which mark the beginnings of the Bronze Age, include the burial of prominent individuals within circular enclosures sometimes covered by a large circular mound (so called 'round barrows'). A burial excavated at Wellington Quarry contained grave goods including a fine 'Beaker' and a collection of flint tools (see information panel, page 17). 'Ring ditch' crop marks identified on aerial photographs of the Lower Lugg are probably the remains of the many similar burial places which once existed on the slightly higher ground adjacent to the river floodplain.

Flints found at Wellington Quarry
© Worcestershire Historic Environment & Archaeology Service

The importance of the broader Lugg/Wye confluence locality for early farming communities has been further emphasised by archaeological excavations in 2006/7 south of Hereford at Rotherwas. Discoveries included the Rotherwas Ribbon, a unique Neolithic or Early Bronze Age monument, and the remains of a 4000 year old round house with a south facing porch.

The Tupsley handaxe

Back in 1977, a local boy was digging in the back garden of his parents' house at Tupsley on the eastern fringe of Hereford. As he dug into the gravelly soil, a large, grey, pointed stone caught his attention. He picked the stone up and showed it to his dad. As they looked more closely at the stone, it did indeed look as if it had been carefully chipped and flaked to create the triangular shape, and it seemed natural to make a chopping action with it.

Tupsley handaxe © Hereford Museum Resource & Learning Centre

Although unconvinced the 'find' was really anything more than just a 'funny stone', they decided to take it to Hereford Museum to get it looked at. As soon as the museum experts saw it, they excitedly realised that it was actually a rare and perfectly preserved example of one of the earliest kinds of stone tool - a Palaeolithic (Old Stone Age) handaxe.

Before that day in 1977, no one had seen or touched that handaxe since prehistoric times. Perhaps its last owner, one of Herefordshire's earliest inhabitants, had used it to butcher meat after a successful hunting expedition. In one chance discovery, the known story of local life had been extended back by tens of thousands of years.

Bronze Age landscape reconstruction © Steve Rigby, Worcestershire Historic Environment & Archaeology Service

Tribes and hillforts

The Later Bronze Age (from about 3,400 years ago) and the subsequent Iron Age (from about 2,800 years ago) are associated with the increasing use of a variety of metal tools and objects. An important development is the construction of hillforts and other enclosed settlements, and such sites were set within a surrounding rural landscape of fields, farmsteads and lanes.

Crop marks on aerial photographs of the gravel terraces fringing the Lower Lugg floodplain show the pattern of many long disappeared boundaries and enclosures, which probably date from this time. These lost landscapes suggest that occupation of the Lower Lugg intensified markedly in the later prehistoric period. As yet, there is no excavation evidence to reveal more of the detail of this story.

Iron Age cooking reconstruction © Worcestershire Historic Environment & Archaeology Service

Sutton Walls Iron Age anvil © Hereford Museum Resource & Learning Centre

Iron Age occupation of the prominent hilltop at Sutton Walls began about 2,500 years ago. Excavations have revealed Iron Age round houses, which had periodically been repaired and rebuilt. Specialised manufacturing activity such as iron-working also took place at the site, and large pots were found which had once contained salt imported from Cheshire. The construction and maintenance of the massive rampart around the hillfort, which was added to and strengthened at least once, represents a major effort of coordinated labour. Sutton Walls was evidently an important commercial, military and political centre for a powerful local tribal group.

At Wellington Quarry, human and animal remains of Iron Age date were deliberately deposited in the marshy margins of the river. This evidence of ceremonial activity is an interesting contrast to the finds from Sutton Walls.

The Wellington Beaker burial

One of the most important discoveries to have been made at Wellington Quarry is the 'Beaker' burial which was found in 1996. A decayed skeleton was discovered lying in a simple grave surrounded by precious objects. The burial dates from around 4,500 years ago, and is one of the most significant finds of this period ever made in the Midlands.

Wellington Beaker © Worcestershire Historic Environment & Archaeology Service

The most impressive of the surviving finds is a beautifully made and carefully decorated Beaker. Although squashed and fragmented when excavated, it has been possible to rebuild this delicate pot so that it can be displayed. The Beaker may have been especially made for the man in the grave and was probably placed alongside him along with the other finds in the belief that it would be useful in the afterlife.

As well as the Beaker, four flint arrowheads, four flint blanks (to make more arrowheads), five flint knives and several other flint objects had been placed with the body. A wristguard or bracer (an object worn by archers to protect their wrists) made of finely polished stone was also recovered

Last, and by no means least, tiny corroded metal fragments and staining of the soil showed that a simple tanged copper knife had also been placed alongside the body. Metal grave goods are only known from about five percent of Beaker graves and are even rarer in early examples such as this one. They are among the earliest metal objects to be found in Britain and the presence of this object in the grave emphasises the importance of the person buried here.

Romano-British settlement reconstruction © Steve Rigby, Worcestershire Historic Environment & Archaeology Service

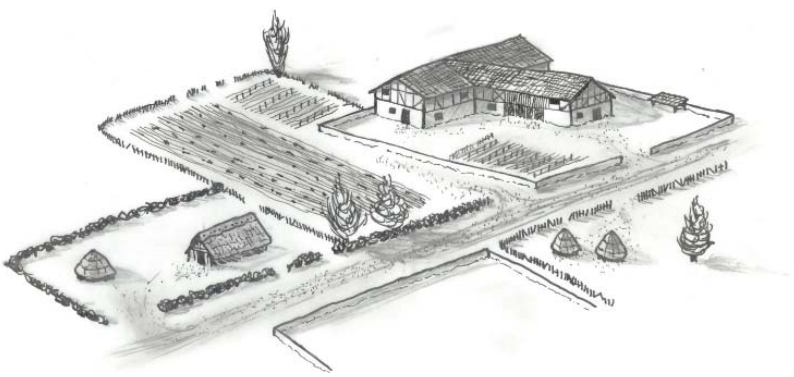
Roman life

The Roman conquest of Britain nearly 2,000 years ago established a period of Roman rule which lasted for over 350 years. As well as the creation of military infrastructure (such as forts and roads), and the establishment and rebuilding of many settlements, Roman influence on daily life extended to everything from pottery to styles of dress. However, despite such changes, overall patterns of settlement and established tribal affiliations probably carried on much as before.

The Roman town of Kenchester (located west of Hereford) was an important influence on life in the Lower Lugg Valley for much of the Roman period. The Roman country house and its associated estate (including agricultural buildings and surrounding fields) discovered at Wellington Quarry is one of several such sites known within the area around Kenchester. Cropmarks recorded on aerial photographs of a flat hilltop at Sheepcote (near Lugwardine) may represent another similar Roman country estate, and Roman pottery and other finds have been recovered during archaeological 'fieldwalking' in this area.

At Sutton Walls, skeletons found haphazardly dumped in the rampart ditch have been interpreted as defenders killed during the initial Roman military assault on the hillfort. Even so, settlement continued during the Roman period within Sutton Walls much as it had done in the Iron Age, although now with Roman style pottery and other artefacts. Parts of a Roman period settlement found during archaeological evaluation of the proposed Portway Quarry site are also very much of traditional 'farmstead' type.

Other local finds of Roman remains (such as coins, pottery and other artefacts) emphasise the density and stability of established ways of life across much of the Lower Lugg area during the Roman period. It is likely that many sites known from linear cropmarks on aerial photographs were also in use in Roman times.



Roman villa reconstruction © Chris Atkinson, Herefordshire Archaeology

Laystone bridge, Marden © Herefordshire Archaeology

From kings to commuters

Developments during the last 1,000 years have fundamentally influenced the cultural traditions which are still central to modern life in the Lower Lugg Valley. Distinctive patterns of fields, villages, roads and other settlement features evolved from Saxon times onwards, and many of these local details are still an active part of today's landscape.

Britons and Saxons

Formal Roman government ended in Britain around 1,600 years ago. For a time, local leaders probably managed to maintain established systems of Roman administration in many areas. However, the arrival of Anglo-Saxon people from northern Europe introduced different cultural traditions. Gradually, a new social and political order emerged based around competing Anglo-Saxon kingdoms. By about 1,200 years ago, the Lower Lugg area had become a strategically important zone on the western borders of the Anglo-Saxon kingdom of Mercia.

Archaeological evidence from this time is relatively scarce, and can be difficult to distinguish from remains from other periods. However, finds of human skeletons during 19th and 20th century gravel quarrying on hilltops at Ashgrove and Frankland's Gate probably represent British cemeteries dating from the immediate post Roman period, and show that the Lower Lugg communities continued to flourish at this time.

1999 Time Team excavations at Freen's Court © Herefordshire Archaeology

More intriguing still is the evidence for the later existence of a Mercian royal estate in the Marden/Sutton area. Medieval writers describe the murder in 794 of King Aethelbert of East Anglia at King Offa's palace at Sutton. This story is also supported by the fact that Marden church contains a holy well associated with Aethelbert. In addition, the Saxon water mills from Wellington (see information panel, page 27) are also likely to be part of a royal estate.

However, remains of Offa's palace have proved difficult to identify. No evidence of Saxon activity was discovered during the excavations at Sutton Walls, and recent archaeological work in the Freen's Court/Sutton St Michael area was also inconclusive. The discovery of enclosures and large stone barns of late Saxon or Medieval date may represent later re-development of the royal site, but no remains could be certainly dated to the time of Offa.

Medieval communities

The invasion of England by William the Conqueror nearly 1,000 years ago not only marked the end of Anglo-Saxon political control, but also led to widespread changes in local life which have left a distinctive and varied archaeological legacy. This includes much evidence of Medieval settlements, buildings and road networks (many of which remain in use today), and the remains of Medieval farming.

In the context of Medieval English-Welsh border conflict, the Lower Lugg had a key strategic position on the main north-south access route along the Welsh border area. The importance of the area was also underpinned by the Medieval growth of the adjacent city of Hereford as a major administrative, religious and economic centre.

Medieval landscape reconstruction © Steve Rigby, Worcestershire Historic Environment & Archaeology Service

Bodenham church © Herefordshire Archaeology

The pattern of villages and settlements which exists today in the Lower Lugg is mainly of Medieval origin. Many settlements were planned and deliberately laid out at this time, and older buildings such as churches still retain Medieval fabric. In addition, earthwork humps and bumps consisting of linear hollows, boundaries and rectangular platforms mark the sites of former Medieval settlements. Excavation of the deserted Medieval village at Sutton St Michael has shown that it was abandoned in the 14th century during a period of general population decline across Britain.

The Lower Lugg Valley also preserves significant evidence of Medieval agriculture. Many areas of wave like 'ridge and furrow' earthworks survive in grassland areas, and represent the remains of former Medieval field systems. The distinctive ridge and furrow pattern marks out the strips of land belonging to individual farmers within large fields which were worked on a communal basis.

The last 400 years

Archaeological evidence from the last 400 years is often neglected because of its familiarity as part of our everyday lives, and because so much documented historical evidence exists for this period. Nevertheless, it should be emphasised that much of the fragile character of today's visible landscape reflects relatively recent settlement activity. Moreover, this inheritance reveals distinctive evidence of the lives of past communities.

The majority of the buildings which now exist in the Lower Lugg Valley are of 17th century and later date. They range from houses, barns and water mills to 20th century housing estates on the edges of earlier villages, and the late 20th century Moreton-on-Lugg Industrial Estate (built on the site of the former Moreton-on-Lugg military camp).

Bartestree old convent © Herefordshire Archaeology

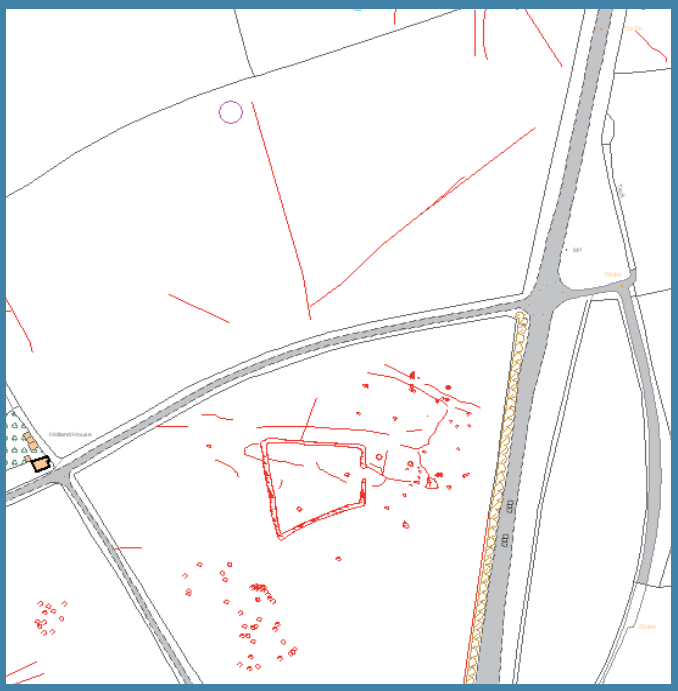
Aerial photographs

A specialist 'aerial archaeologist' has recently studied the Lower Lugg Valley using archaeological evidence recorded on aerial photographs. For example, aerial photographs of fields by the A49 near Wellington show a series of dark lines which represent a long lost pattern of enclosures and boundaries. This ancient landscape is revealed as the crop ripens more quickly over the deeper soil in the buried ditches.

Using evidence plotted from many different photographs, it was possible to produce a composite digital map providing a detailed record of all the archaeological features in this area. The completed mapping includes a probable Bronze Age 'ring ditch' burial, rectangular enclosures perhaps dating from the Iron Age, and a complicated pattern of other boundaries which are perhaps of later prehistoric and Roman date.

Of course, archaeological features revealed on aerial photographs cannot be certainly understood and dated on this evidence alone. Moreover, while some areas in the Lower Lugg Valley are suitable for observing features such as crop marks (especially the gravel 'terraces'), other zones of different underlying geology and landuse (such as the deeply alluviated flood plain) are much less susceptible to showing up buried remains in this way.

Crop marks at Green Farm, Wellington



Plan of crop marks at Green Farm

Major road and transport networks have also evolved during this period. In the 19th century, the construction of the Hereford and Gloucester canal across the valley was closely followed by the building of the railway, and the latter remains in use today. In the late 20th century, the A49 was reconstructed as a major road transport route.

Another development during recent centuries was the enclosure of agricultural land. This began in Medieval times, but the large rectangular fields which now cover much of the Lower Lugg (especially the valley floor area) result from coordinated 18th and 19th century re-organisation of the agricultural landscape, and the associated abandonment of traditional practices such as water meadow management. The 18th and 19th century farms scattered through the Lower Lugg were built as part of this process of agricultural change.

The Lower Lugg Valley was also influenced by wider patterns of 18th century and later industrial development. This is most obvious in the 19th and 20th century development of sand and gravel quarrying. Patterns of 19th century quarrying revealed by old maps show about twenty-five small quarries dispersed away from the flood plain area. The four principal clusters of activity were the Ashgrove area, the Frankland's Gate/Sutton area, The Lyde/Portway area and the Bartestree area. Small quantities of gravel could be easily transported from these sites for local use.

Old gravel quarry at Bodenham © Herefordshire Archaeology

Strawberry polytunnels © Herefordshire Archaeology

Quarrying of some hilltop sites (such as the quarry established in the mid 20th century at Sutton Walls) continued into the 1960s. However, the main focus of quarrying in the 20th century shifted to large sites in the floodplain area. The trend began with Bodenham Quarry, and continued in the 1980s and 90s with the Lugg Bridge and Wellington quarries.

Quarrying is not the only way in which the modern Lower Lugg landscape continues to change. In recent times, many homes have been built in the area, and new kinds of commercial and agricultural activity have developed, such as strawberry growing under polytunnels. Many people who live in the area now travel to work in places such as Hereford, Worcester and Ludlow. Nevertheless, the landscape still helps to sustain a sense of historical place for local communities faced by the ever increasing pressures of 21st century change.

Saxon watermill at Wellington
© Worcestershire Historic Environment & Archaeology Service

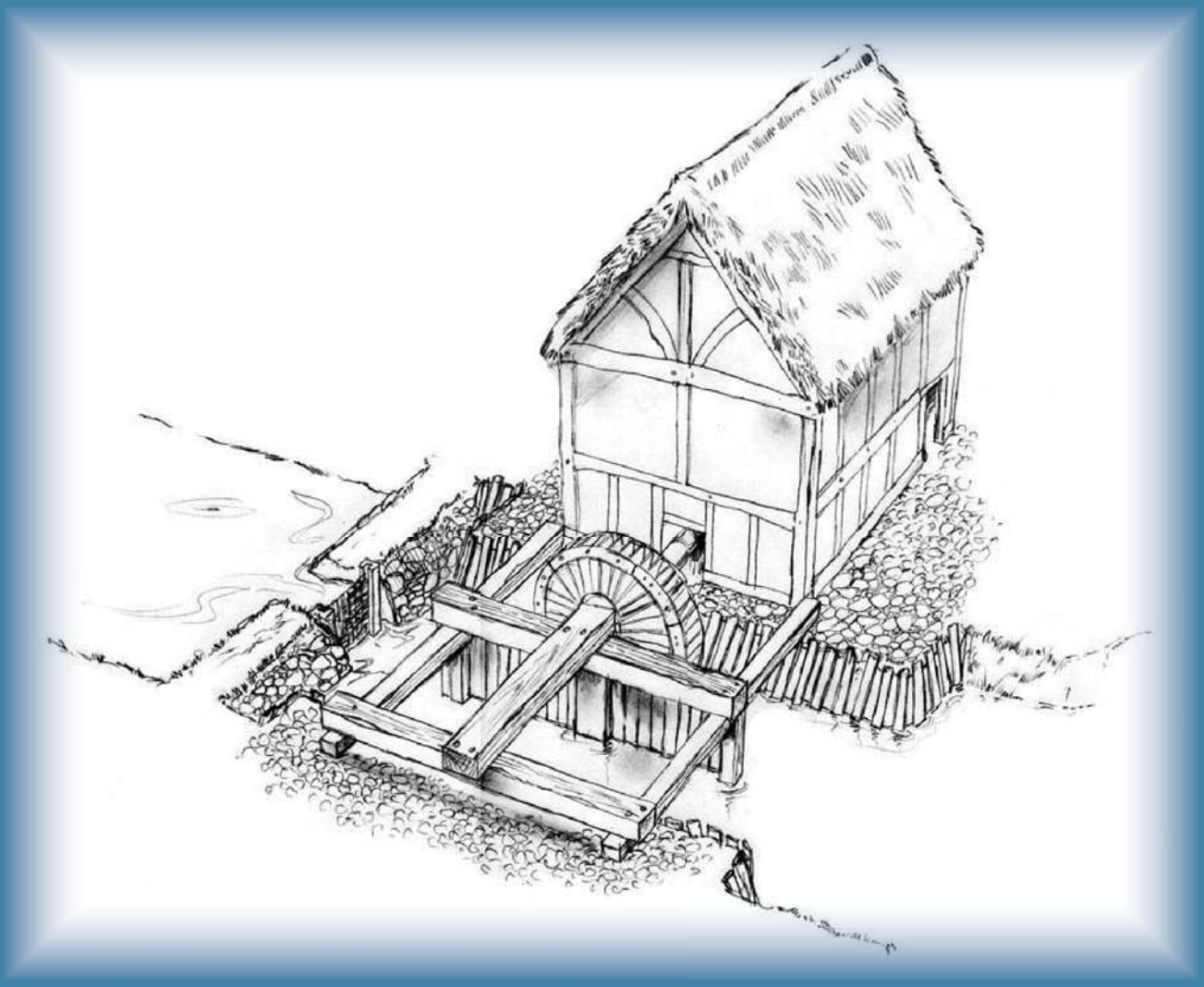
The Wellington mills

Probably the most important discoveries at Wellington were made in 2000. A large timber structure was discovered in a big pit dug into the gravel close to a former channel of the Wellington Brook. The structure comprised a frame of three large oak timbers and the remnants of a planked floor. Dating was limited (it was thought it might be Roman) and at first the archaeologists didn't even know what it was.

The key to the mystery lay under one corner of the frame – a large broken millstone had been used along with several timber wedges to prop this corner up where it had been undermined (probably by water). The stone was far too large to be a hand-turned quern and indicated that the building must be a mill.

Detail showing broken millstone
© Worcestershire Historic Environment & Archaeology Service

To find out whether this was a Roman mill, samples were taken for radiocarbon dating and also for tree ring dating (dendrochronology). When the date came back it actually turned out the mill was built in the late 7th to early 8th century. Although not Roman, this actually made it an even more exciting find from the enigmatic 'Dark Ages'.



Wellington Saxon watermill reconstruction
© Worcestershire Historic Environment & Archaeology Service

As if this wasn't enough, two years later a second mill dating from the first half of the 8th century was found further downstream of the first. Wellington could now boast two examples from this very poorly understood period of our past! Apart from giving an extremely important insight into early milling technology, the mills also strongly supported the case for the presence of a Mercian royal estate in the Marden/Wellington area. Other examples of mills of this period (such as that at Tamworth in Staffordshire) are also associated with Anglo-Saxon royal estates.

Herefordshire Archaeology guided walk © Herefordshire Archaeology

Looking after the past

Gravel quarrying has revealed a surprising story of past community life and landscape change in the Lower Lugg Valley. The new discoveries have also emphasised the local potential for many more important archaeological finds. The challenge now is to research, protect and conserve this legacy alongside the ongoing development of life in the valley, and continuing gravel quarrying in particular.

The archaeological 'resource'

We now know that archaeological remains of all periods are present throughout the Lower Lugg landscape. These remains reveal a fascinating story of past community life stretching back many thousands of years. Moreover, that story connects directly to modern life in the valley, and to important present day issues such as understanding the local effects of climate change.

It is also clear that we have so far only glimpsed a small part of the archaeological 'resource', and there is good potential for future archaeological research. For example, the recent Neolithic and Bronze Age finds at places such as Wellington Quarry and Hillcroft Field, Bodenham imply that much is yet to be found relating to the puzzling local way of life at that time. Similarly, the Anglo-Saxon royal estate in the Marden area provides a nationally important opportunity to investigate rare archaeological evidence of this little known period.

The valley floor emerges as an especially important area for archaeology. Not only was this zone intensively settled in the past, but archaeological remains are now deeply buried and exceptionally well preserved in the waterlogged conditions of the river floodplain. It is perfectly reasonable to anticipate not just more discoveries of the kind already made (such as prehistoric burials, Roman buildings and early water mills) but perhaps other rare finds such as boats, trackways and prehistoric riverside settlements.

Archaeological excavation at Wellington Quarry
© Worcestershire Historic Environment & Archaeology Service

Managing archaeology and quarrying

The development of gravel quarrying will continue to be a major influence on the management and discovery of archaeological remains in the Lower Lugg Valley. Gravel quarrying is an important economic activity, and the extensive gravel reserves under the river floodplain are the main source of local aggregate supply. However, modern planning restrictions mean it is very unlikely that the earlier hilltop sites will ever be quarried again.

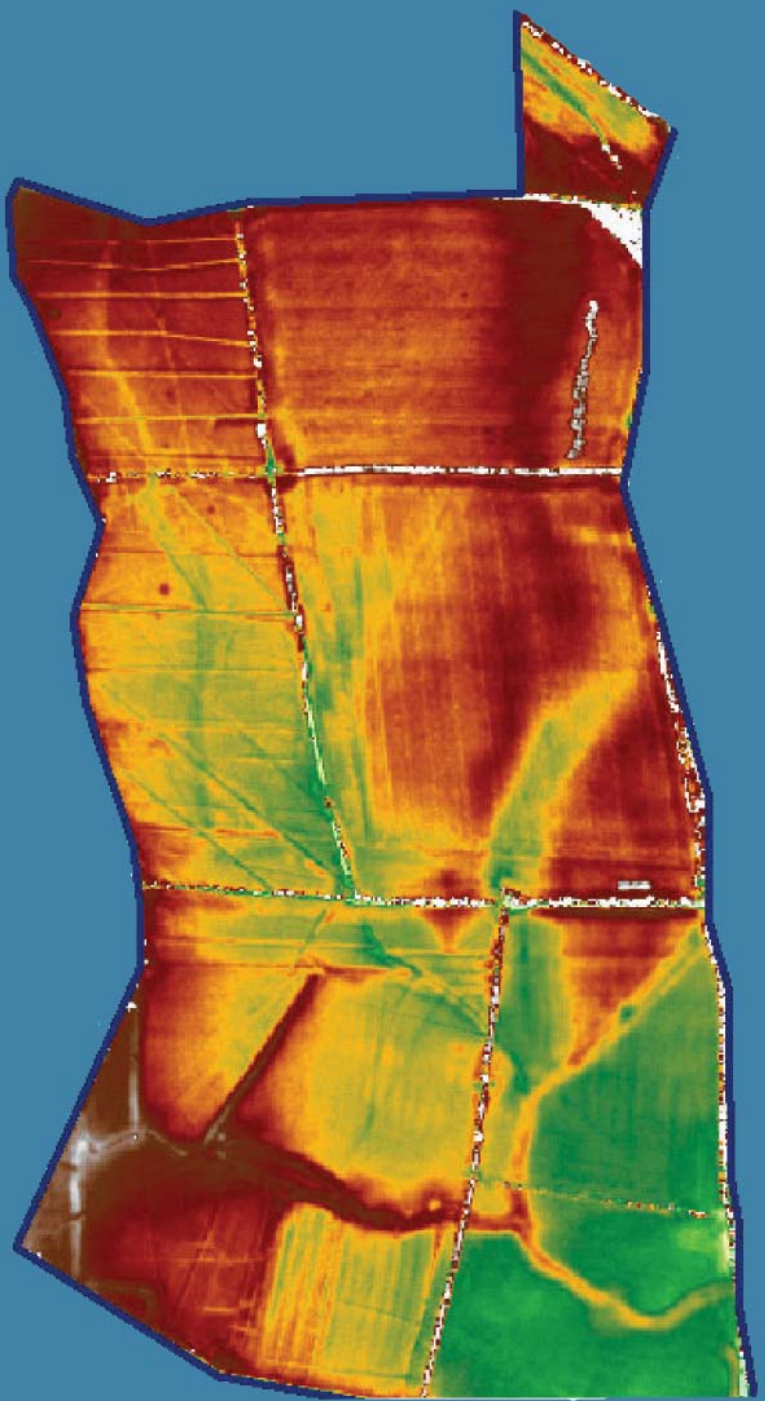
At the present time, Tarmac Limited operate the Wellington Quarry, and also have permission for a large nearby site at Portway. These two sites (including a south extension of Wellington Quarry) are anticipated to meet local demand into the 2020s.

Since 1990, planning requirements for evaluation and excavation of archaeological remains have been an integral part of the modern quarrying process. In addition, methods of archaeological work in the particular conditions of the Lower Lugg floodplain continue to improve. For example, archaeologists now routinely work alongside quarry workers during the process of digging down to the gravel so that archaeological remains can be spotted, excavated and recorded. New techniques are also being developed to better evaluate archaeological remains in advance of quarrying (see information panel, page 32).

It is important that planning authorities, heritage organisations, archaeologists, local people and quarry companies continue to work together to record and protect local archaeology. A particular challenge is better public presentation of archaeological discoveries. One way of doing this might be through imaginative restoration of former quarry sites to include archaeological reconstructions and recreations of past river environments.

Aerial photograph of Wellington Quarry

New techniques at Wellington Quarry



LIDAR image of a section of the Lower Lugg Valley © Environment Agency

With the support of Tarmac Limited, a range of modern 'remote sensing' techniques are now being used to help evaluate archaeological remains before quarrying commences. For the latest proposed extension to Wellington Quarry, a sophisticated aerial survey method called LIDAR was used to accurately map the ground profile. This allowed features such as the shallow depressions of old river channels to be identified. In addition, geophysical survey – employing specialist instruments to detect buried layers beneath the ground – was also used to identify areas of possible archaeological interest such as former 'gravel islands' concealed in the floodplain.

The LIDAR and geophysics information was combined within a computerised 'model' of the buried landscape to reveal zones of high archaeological potential. These locations were then tested by conventional archaeological excavation. Discoveries included a Bronze Age cemetery, Neolithic pits and old river channels containing important ancient environmental evidence. As a result, the best possible archaeological information was available prior to the quarry extension planning application.

The future of the past?

The story of the Lower Lugg Valley which has emerged in the last thirty years is already a remarkable one, revealing a place where natural forces and countless generations of local people have combined to shape a fascinating landscape legacy.

As local communities and the landscape continue to change, so fresh archaeological discoveries will be made. There is considerable potential for further archaeological research and a great opportunity to learn more about our ancestors, and therefore more about ourselves. The past has an exciting future in the Lower Lugg Valley!

Bodenham village © Herefordshire Archaeology

Finding out more

The Lower Lugg Archaeology And Aggregates Resource Assessment can be accessed at: **www.ads.ahds.ac.uk**. The document includes detailed evaluation of all archaeological, geological and quarrying information for the area, and concludes with an archaeological research framework for the Lower Lugg Valley. It also includes a full bibliography of all Lower Lugg archaeological information and excavation reports.

The Herefordshire Sites and Monuments Record (SMR) is a key reference source for archaeological information in the Lower Lugg Valley and is maintained by the county archaeological service. The basic SMR resource is a computerised database and can be accessed at: **www.smr.herefordshire.gov.uk**. In addition, Herefordshire Council SMR staff are available to help with specific queries about the known archaeology of the Lower Lugg Valley or any other part of Herefordshire.

Information about the archaeology of Wellington Quarry can be viewed at: **http://worcestershire.whub.org.uk/home/wccindex/wcc-arch/wcc-arch-research/wcc-arch-surv/wcc-arch-surv-wellington.htm**

Please note that no archaeological remains are publicly visible at Wellington Quarry and the active areas of the site are not open to public access.

About this booklet

The booklet has been prepared by Ian Bapty and Natalie Preece of Herefordshire Archaeology (the archaeology service of Herefordshire Council) with funding from the Aggregates Levy Sustainability Fund (ALSF) via English Heritage. Additional 'information panel' text relating to the discoveries at Wellington Quarry was supplied by the Worcestershire Historic Environment and Archaeology Service.

The booklet is based on the results of the 2007 'Lower Lugg Archaeology and Aggregates Resource Assessment', which was coordinated and prepared by Herefordshire Archaeology with ALSF funding via English Heritage.

The booklet was designed by Sarah Connelly, Herefordshire Council.

Principal archaeological work in the Lower Lugg Valley

The archaeological excavations and recording at Wellington Quarry (1986 to present) have been undertaken by the Worcestershire Historic Environment and Archaeology Service (and predecessor organisations) on behalf of Tarmac Limited and the previous quarry operators at Wellington. Herefordshire Archaeology undertook the excavation of the Neolithic site at Hill Croft Field, Bodenham (2006), the suspected Saxon palace at Freen's Court (1990-2002), and the deserted Medieval settlement at Sutton St Michael (2002). The excavations at Sutton Walls hillfort were carried out between 1948 and 1951 by a team led by Kathleen Kenyon, an eminent archaeologist of that time.

The 2007 air photography mapping work was undertaken by Chris Cox of Air Photo Services.

Medieval ridge and furrow fields © Herefordshire Council

Bronze Age landscape reconstruction © Worcestershire Historic Environment & Archaeology Service

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