SHROPSHIRE MINERAL RESOURCE ASSESSMENT

for Shropshire and Telford & Wrekin

by

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CONTENTS

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PHOTOGRAPHS

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SUMMARY

The Shropshire Minerals Resource Assessment (SMRA) project has been undertaken in response to Measure 2D4 – 101 of the National Heritage Protection Plan (NHPP). The aim of the project has been to assess the impact of past, current and future mineral extraction (both aggregates and non-aggregate) on the archaeological resource in the historic county of Shropshire. The project has also aimed to devise policy and procedures and make recommendations for the protection of the historic environment in relation to future possible mineral exploitation.

The principal sources used in the project were two county wide data sets, the Shropshire Historic Environment Record (HER), and GIS Data captured by Grahame French, the Shropshire Council Minerals Officer, as a personal project. Other datasets held by the HER and others were also reviewed and used where relevant.

The analysis of past and present mineral working resulted in the identification of 47 Mineral Resource Assessment zones of past extraction (SMRA Past Zones) made up of 5 broad mineral groups: Coal, Metal Ores, Sand & Gravel, Stone Quarries, and Peat. The future mineral resource potential comprised three broad types, sand and gravel extraction, stone quarrying (for both crushed rock and building stone) and open-cast coal and fireclay extraction. The analysis of these resources identified 42 areas where there was a realistic potential for future mineral exploitation (SMRA Future Zones). These “Future Zones” of mineral extraction should not, however, be seen as establishing any planning presumption in favour of future mineral working in these areas, merely that a potentially economic resource is considered to exist there.

The Shropshire Minerals Resource Assessment has been informed by national and regional research frameworks for the historic environment, in particular the West Midlands Regional Research Framework for Archaeology (WMRRF) and the National Association of Mining History Organisations’ (NAMHO) *“A Research Framework for the Archaeology of the Extractive Industries in England: Mining and Quarrying”* project.

The project has also formulated preferred options and mitigation strategies in response to applications for future exploitation of the mineral resource in Shropshire and Telford and Wrekin. Appropriate guidelines/methodologies have been developed for pre-determination archaeological evaluation and post-determination mitigation. The guidelines and methodologies have been based on.the data sets produced by the project, the relevant objectives of the research frameworks, and national and local policy.

1 INTRODUCTION

1.1 In November 2011 English Heritage issued a Call for Proposals under Measure 2D4 – 101 of the National Heritage Protection Plan (NHPP) for Mineral Resource Assessment (MRA) projects to assess the impact of past, current and future mineral extraction (both aggregates and non-aggregate) on the terrestrial historic environment.

1.2 Measure 2 of the NHPP activity programme aims wider English Heritage support and action at 'winnable battles' where focused action can counter, offset, mitigate or adapt processes and activities that would otherwise have a very significant impact on important heritage assets. Activity 2D4 (Mineral Extraction Impacts) focuses on regional impact assessments and tailored strategies for the mitigation of threats from mineral extraction. Output will comprise enhanced Historic Environment Records and improved Historic Environment planning advice, supported by GIS mapping. (NHPP Measure 2: Threat: Assessment and Response. Activity Programme: Activity 2D4 Mineral Extraction Impacts, 23rd May 2011)

1.3 Shropshire today is considered to be a largely rural county, but it's varied and complex solid and drift geology have in the past given rise to a variety of industries based on the exploitation of the county's rich mineral resources. This industrial archaeological resource is recorded on the Historic Environment Record (HER) maintained by Shropshire Council (SC). However, there are inevitably gaps in the data held by the HER and some inconsistency in the level or detail of recording of features associated with the exploitation of the mineral resource. Moreover, there are a number of surveys which were carried out before digital mapping was available and the results of these have not been fully integrated with the HER.

1.4 The Shropshire Mineral Resource Assessment project is primarily concerned with mapping the extent of past present and possible future mineral exploitation in the Shropshire and Telford & Wrekin areas, and assessing the impact of this exploitation on the archaeological resource. The project has aimed to devise policy and procedures and make recommendations for the protection of the historic environment in relation to future possible mineral exploitation. The project acknowledges the contribution that past mitigation in response to mineral exploitation has made to our knowledge and understanding of the historic environment.

1.5 The mineral resources assessed by the project included aggregate, non-aggregate and building stone, coal, ironstone, lead ore, copper ore, zinc ore, barites, clay, sand and gravel, marl, and peat. The project was not concerned with mapping the extent of past underground mineral exploitation. However, the areas covered by the surface remains of underground mining, e.g. mine buildings, shafts and adits, and spoil tips, were mapped and assessed.

1.6 Three key aims were proposed for the project:

- To contribute to NHPP Measure 2D4 101, the West Midlands Regional Research Framework for Archaeology and national research agendas by

assessing the impact of past, current and future mineral extraction on the terrestrial historic environment in Shropshire in a quantifiable and systematic manner.

- To map past, current, and possible future areas of mineral extraction and analyse the effect of the mineral extraction on the historic environment.
- To develop policy and strategies with the aim of improving the management and understanding of the historic environment in mineral extraction areas within Shropshire and Telford & Wrekin.

Photo 1: Abdon Burf, where Post-medieval mining and 20th-century quarrying have removed almost all traces of an Iron Age hillfort

2 BACKGROUND TO THE PROJECT

2.1 Geological Background (Summary)

2.1.1 Shropshire's geology is considered to be more varied than any similarly-sized area in Britain - and possibly in the world. Eleven of the thirteen recognised geological periods of time are represented in the county's solid geology. The hard Pre-Cambrian rocks of Sharpstones Hill and Haughmond Hill south and north of Shrewsbury, and volcanic tuffs west of Wellington provide sources of high quality road stone. The varied geology has also yielded a wide range of building stones, including high quality Grinshill sandstone worked north of Shrewsbury which is used regionally and nationally on heritage conservation projects. Underground volcanic activity, possibly in the late Devonian or early Carboniferous periods, injected mineral veins into the Ordovician rocks of the south Shropshire orefield, which have been exploited since Roman times but particularly in the 19th century when Shropshire was a leading world supplier of lead. Coal deposits laid down in the Carboniferous period are found in the southeast, east central, and northwest parts of the county, and have been exploited since medieval times. Limestone has been quarried or mined in northwest and southeast Shropshire, along Wenlock Edge and in the Ironbridge Gorge and is still worked at Llynclys south of Oswestry. It was exploited historically for agriculture, building, and iron-production. The combination of ironstone, limestone, clay and coal deposits in the Ironbridge Gorge area were instrumental in giving birth to the Industrial Revolution.

2.1.2 The county also has a complex superficial ('drift') geology, which includes extensive deposits of fluvio-glacial sands and gravels and, to a more limited extent, Pleistocene river terrace sands and gravels. The former are exploited by the aggregates industry in a number of locations in the county, and have historically been worked on a small scale throughout the lowland areas and the river valleys of the county. The sand and gravel deposits available for exploitation comprise both superficial and bedrock deposits. The superficial deposits are made up of river sands and gravels and glacial sands and gravels found in the major river valleys including the rivers Severn and Tern, and the Teme and Onny. The river sands and gravels include late glacial and post glacial terrace and alluvial deposits and fluvio-glacial outwash deposits. Glacial sands and gravels were deposited by streams flowing on, within and beneath ice-sheets. These deposits are often associated with glacial till, and may lie beneath till. The bedrock deposits exploited for sand and gravel in Shropshire comprise pebbly sandstones of the Chester Pebble and Kidderminster formations of the Triassic Sherwood Sandstone Group (BGS, 1998b).

2.1.3 The formation of peat deposits in lowland areas in post-glacial prehistoric periods has given rise to peat extraction, mainly in the north of the county around Whitchurch, but also in the south around Ludlow and Bridgnorth.

Periods	Epochs	MYA	Shropshire highlights
Quaternary	Holocene	0.01	Cooler conditions at the start of this period heralded a series of Ice Ages. Towards the end of this period, fluvio-glacial sands and gravels were laid down by melt waters..
	Pleistocene	2	
Neogene	Pliocene		There are no rocks of this age in Shropshire
	Miocene	23	
Palaeogene	Oligocene		There are no rocks of this age in Shropshire. Dolerite dykes of this age cut into the Triassic sandstones around Grinshill and Acton Reynald and may have caused the copper mineralisation in this area..
	Eocene		
	Palaeocene	66	
Cretaceous	Late		There are no rocks of this age in Shropshire
	Early	145	
Jurassic	Late		Shales, clays and thin limestones of Lower and Middle Lias rocks of the Jurassic period are found in the Prees area.
	Mid		
	Early	201	
Triassic	Late		Sandstones formed during this period cover much of north Shropshire, and include the famous Grinshill stone. The also outcrop along the eastern edge of the county.
	Mid		
	Early	252	
Permian	Lopingian		The Alberbury Breccia and Enville Beds, and the Bridgnorth Sandstone were formed during this period.
	Guadelupian		
	Cisuralian	299	
Carboniferous	Pensylvannian	359	The carboniferous period rocks in Shropshire include economic deposits of ironstone and coal. The deposits in the Coalbrookdale Coalfield gave rise to the Industrial Revolution.
	Mississippian		
Devonian	Late		Devonian period rocks in Shropshire are found in the Clee Hills area.
	Mid		
	Early	420	
Silurian	Pridoli		The shales and limestones of Wenlock Edge were formed in shallow sub-tropical seas during this period. The Downton (or Pridoli) Series of rocks in the Clun Forest area were also formed.
	Ludlow		
	Wenlock		
	Llandovery	443	
Ordovician	Late		The rocks of the Shelve area were formed west of the Pontesford-Linley Fault during this period. Igneous hydrothermal veins injected into these rocks gave rise to the Shelve Orefield, exploited from Roman times to the 20th C.
	Mid		
	Early	485	
Cambrian	Furongian		The Cambrian sea, spreading from the northwest , laid down a series of shales, sandstones, and limestones, including the Comeley sandstones and limestones, the , Wrekin Quartzite, and the Sheinton Shales. Trilobites found in these rocks have been used to divide the Cambrian into smaller segments of time.
	Series 3		
	Series2		
	Terreneuvian	570	
Precambrian		4,600	Oldest rocks in Shropshire formed at the end of the Precambrian. These rocks include the Rushton Schists, Primrose Hill Gneisses, Uriconian volcanics, and Longmyndian Sandstones.

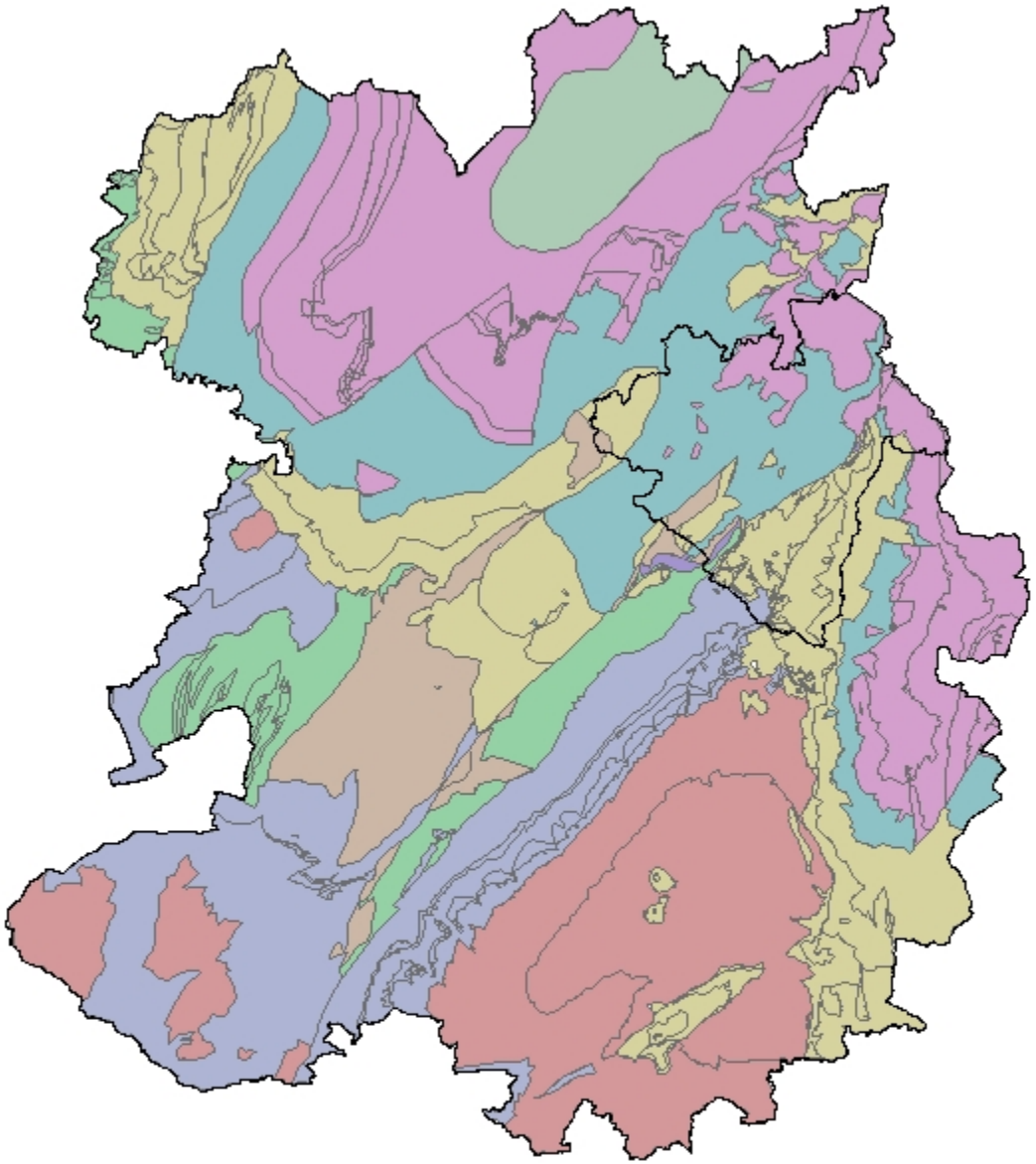
Table 2.1 Geological periods (after Toghill, 1990, and International Commission on Stratigraphy)

2.2 Past mineral working and the historic environment

2.2.1 Apart from the recording of a few chance finds as curiosities (such as the finding of "Roman" pottery and spades at Snailbeach lead mine in the early 19th century), there was little recording or even acknowledgement of the historic environment in the mineral extraction process before the later 20th century. Even well into the 20th century there was little attempt to avoid or record archaeological monuments lost to mining or quarrying. Typical was the total loss without record to quarrying of a number of hillforts (Clee Burf and Abdon Burf, and Nils Hill) and other significant losses to parts of other monuments.

2.2.2 The change in the approach to mitigating the effects of mineral extraction on the historic environment came, as with other areas of development, with the rescue movement in archaeology in the 1970s. The publication in 1960 of *A Matter of Time* (RCHME, 1960) highlighted the extent of buried archaeological remains in lowland areas and the rate of their loss to land development and in particular to gravel quarrying. The national contribution made by aerial photography to the understanding of the archaeological resource was reflected locally in Shropshire and it continues to do so.

2.2.3 Beginning in the 1950s, salvage recording and rescue excavation during or in advance of mineral extraction (as with other land development) has developed into a process of formal desk-based assessment, evaluation, and preservation or mitigation measures, embedding the management of the historic environment in the planning process. The development and maintenance of planning policy backed up by Historic Environment Records has been a key factor in this process. Public awareness and appreciation of the historic environment underpins this, and is itself dependent on the interpretation and dissemination of the results of the archaeological investigations.



N

Legend

Geological periods

Age

- Jurassic
- Triassic
- Permian
- Carboniferous
- Devonian
- Silurian
- Ordovician
- Cambrian
- Precambrian

0 5 10 20 Kilometers

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Shropshire Mineral Resource Assessment

Figure 1: Solid geology

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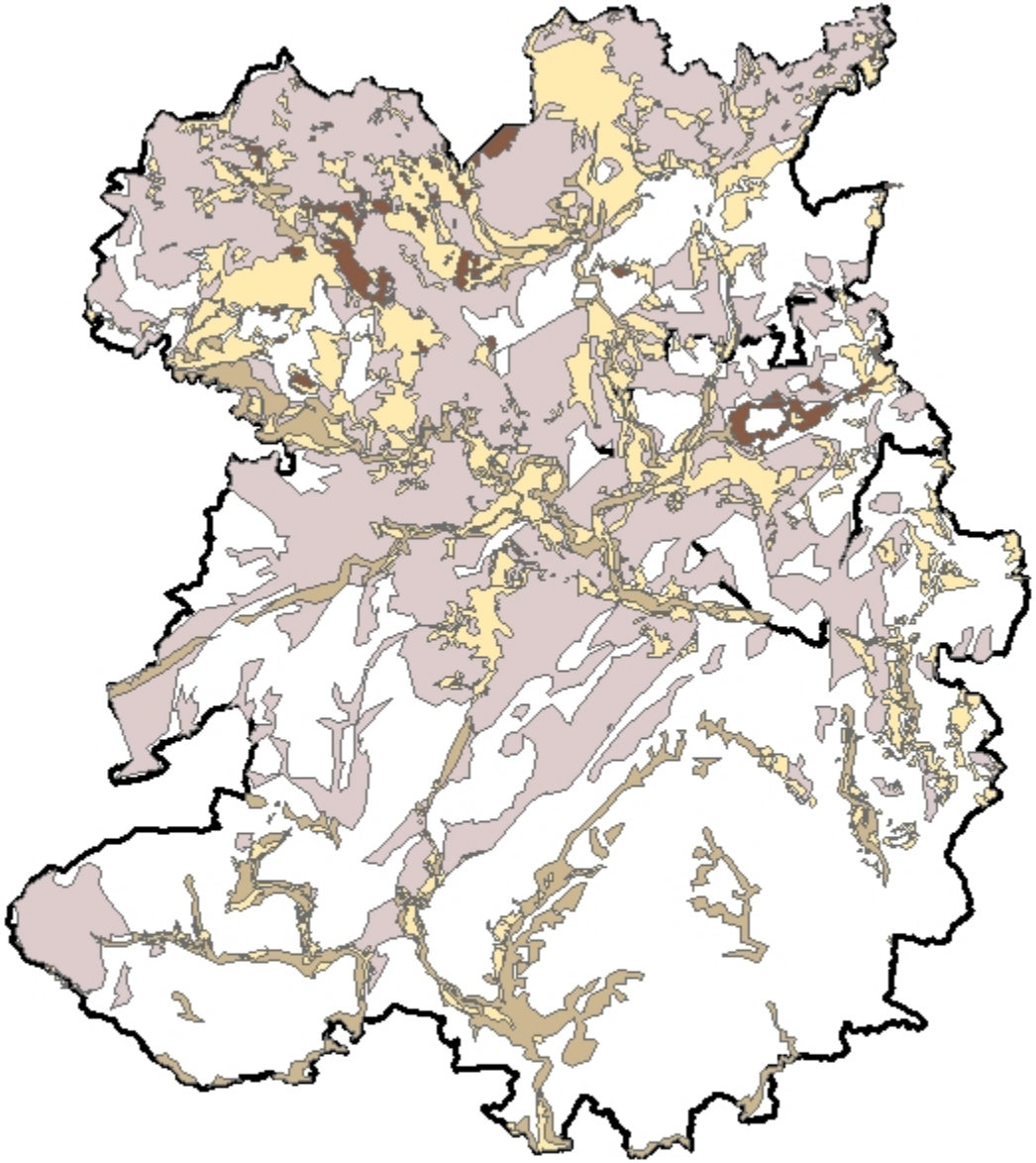
1:500,000



Drift geology

- Alluvium
- Boulder Clay
- Peat
- sand & gravel

N

0 5 10 20 Kilometers

Shropshire Council

Shropshire Mineral Resource Assessment

Figure 2: Drift geology

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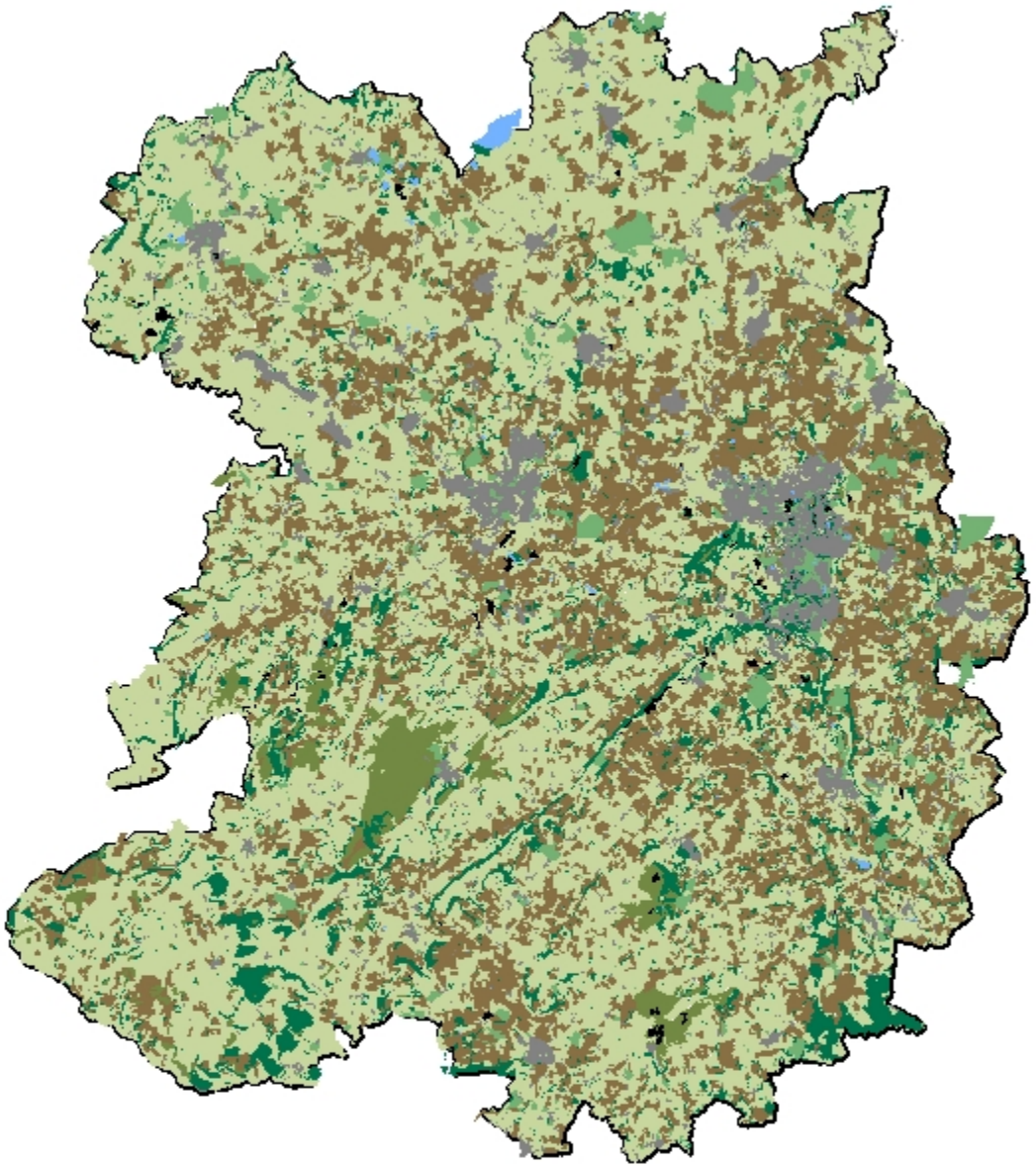
1:500,000



Landscape type

Shropshire Landscape Cover Type

- Common Land
- Fields
- Large Fields
- Mineral Extraction
- Ornamental & Orchards
- Settlement
- Water & Wetlands
- Woodland

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Shropshire Mineral Resource Assessment

Figure 3: Historic landscape cover

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Shirehall, Abbey Foregate, Shrewsbury, SY2 6ND

1:500,000

3 DESCRIPTION OF SOURCES

3.1 Review of Data Sources

3.1.1 Although other mainly localised datasets were identified and cross referenced to the HER, the principal sources used in the project were two county wide data sets, the Shropshire Historic Environment Record (HER) , and GIS Data captured by Grahame French, the Shropshire Council Minerals Officer, as a personal project.

3.1.2 The Shropshire Historic Environment Record (HER)

At the start of the project there were 810 mineral extraction related monument records in the HER.

Quantity	Percentage	Type
360	44%	Single Point features
45	6%	Multiple Point features
13	2%	Line features
389	48%	Polygon (Area) features.

3.1.3 Principal Sources for the HER Mineral Extraction related Monument Records prior to the Project.

Industrial Survey Project (mid 1990s) In the mid 1990s the Industrial Survey Project (Reid, 1994) systematically worked through the available historic OS maps, plus earlier small scale County Maps, identifying a wide range of industrial sites, including those relating to mining, quarrying and other forms of mineral extraction. This was done before the advent of GIS, and so all the data capture was done from and onto paper maps. The Industrial Survey maps have subsequently been made into a GIS background map.
Constraints of time and the limitations of the mapping process meant that in the Ironbridge area, a handful of large area portmanteau records were created.
It should also be noted that some categories of site were excluded from the Industrial Survey. These were:

- Individual Quarries below a 200m x 100m in size.
- Isolated Clay Pits not associated with a known kiln site.
- Small to medium sized depressions and water filled hollows, which may have been quarries (for gravel, sand, marl, lime or stone) or clay pits.

The Stiperstones Survey of 2004-5, a detailed fieldwork survey project, added many mining related point features, e.g. mineshafts, to the HER. Some have been assigned to parent polygon HER records, those that could not be assigned to parent records have been or are being agglomerated into mining area records.

In addition, the project led to a drive to enhance and create HER records for the mining features identified in the four areas covered by the **Nuffield Survey of the Ironbridge Gorge** (1985 -1988).

3.1.4 GIS Data captured by SC Minerals Officer

The other main data set was the suite of GIS point, line and polygon shapefiles created by Grahame French as a personal project.

GIS Dataset	Quantity	Topology
Historic Ironstone	7	*Polygon*
Limestone Mines	14	Point
Metal Mining features	110	*Polygon*
Metal Mineral Vein	122	Polyline
Vein Mineral Shaft	262	Point
Limekilns	388	Point
Historic Marl and Clay Pits	688	*Polygon*
Historic Coal Mining	703	*Polygon*
Historic Gravel Pits	727	*Polygon*
Historic Coal Shafts	1251	Point
Historic Quarries	1557	*Polygon*

The Grahame French (GF) polygon features were merged into a single 3793 record polygon dataset called "GFAreasAll", with a standardised set of attributes recording (where available) a Name, Geology and/or Mineral and/or Stone Type, and the particular GF dataset from which the record was derived.

These records were then correlated with other datasets, including the Marches Uplands Survey fieldwork (MUS) records, the NMP (MUMP) records and the quarries in the RIGS (Regionally Important Geological Sites) datasets. (see below)

The HER Monument records were then also correlated with the GFAreasAll dataset. This work led to the identification of:

- 606 HER Mineral Extraction GIS Records which had one or more direct GFAreasAll counterpart
- 111 HER Mineral Extraction GIS Records which coincided with a GFAreasAll record for a different type of mineral extraction.
- 365 HER Monument records not relating to mineral extraction which contained or overlapped GFAreasAll polygons. Some 160 of these were HER Monument records for Parks which contained quarries and or extraction pits.

All the GFAreasAll records for quarries which did not have existing HER Monument records, some 1260 records, were incorporated into the HER as Monument records in June 2013. This more than doubled the number of mineral extraction related records in the HER .

3.2 Other datasets reviewed and used

The Marches Uplands Survey Records (mid 1990s) This was an EH funded survey of the Upland areas of the west of Shropshire and Herefordshire. It generated 2126 point Records from a number of fieldwork transects. Some 350

were classified as “INDUSTRIAL” and a substantial proportion of these were associated with mineral extraction.

Marches Uplands Survey Report on “Mining, Settlement and Agriculture in the West Shropshire Mining District” (mid 1990s) This Included a List of 71 mining and related HER records within the Extensive Study area with added details of their Date Range and Ores, together with a Name Concordance

MUMP -Marches Uplands Mapping Project (mid 1990s) The NMR transcribed the evidence from aerial photographs for the Marches Uplands Survey generating:

1:10,000 scale AP transcriptions which have been made into a GIS background map layer.

2291 “MORPH” database and GIS point records, 244 of which are of MRA related Monument Types. 78 of these did not relate to any existing HER records.

Historic Landscape Characterisation Polygons.
The Historic Landscape Characterisation project of the early 2000s captured c 30,0000 HLCA polygons. Of these, 159 were defined areas whose predominant historic character derived from extractive industries of all types.

The Conservation Plan for the Historic Mining and Quarrying Landscape of the Clee Hills ASLF Project No 3844. Report issued March 2008
This included a gazetteer of sites and features, with concordance given to any existing HER records. The GIS data from the project was downloaded from the archive on the ADS website.

RIGS (or LGS) Sites
Shropshire Council hosts these on its public web mapping on behalf of the Shropshire Geological Society. There are 324 RIGS sites, of which 157 relate to Quarries or other types relevant to the Mineral Resource Assessment.

South Shropshire Mine Safety Surveys
South Shropshire District Council carried out Surveys of Mine Shafts, Adits and Workings etc for Public Safety purposes in 1999, 2002, 2004, 2006 and 2007. All except the 1999 surveys had GPS derived grid references for the assessed and photographed features, generating a total of 398 GIS point features. These were further grouped into 29 Mine areas.

Tithe Award Map with Field Names Transcriptions
In the 1980s Mr H.D.G Foxall transcribed the county’s Tithe Award Maps at 6in scale, annotating each field with its Name from the Schedule. These maps have subsequently been scanned and formed into a GIS layer.

4 METHOD STATEMENT

4.1 The existing data sets held by the Historic Environment Record (HER) were assessed. These data sets included records and mapping held by the Shropshire HER and Mineral Planning sections (See Appendix I for the data sets identified and assessed.)

4.2 The data sets, including the existing HER, were checked for quality, coverage, gaps, accuracy, and consistency. This assessment utilised GIS "geo databases" modelled on those used by the county HER's HBSMR database system (Exegesis SDM Ltd) and linked to Shropshire Council's corporate GIS system ArcGIS (ESRI). HBSMR is a fully relational database system which complies with national data standards.

4.3 The data analysis resulted in the creation of a polygon data set of 47 past and current mineral extraction zones (see Chapter 6). The zones were derived initially from the existing HER mineral extraction monument records and other available data sets, including the Minerals Section's existing historic mineral sites GIS survey, plus any available polygons for current mineral extraction sites. These zones defined areas of high concentrations of past mineral exploitation. They were compared with the geological characteristics, and the type and date range of the extraction sites was identified. The SC Senior Minerals Officer Principal Planning Officer (Minerals and Waste) was consulted with regard to the accuracy of the nature and extent of the extraction areas defined by the GIS polygons. The Historic Landscape Characterisation for the areas affected was used in assessing the effects of mineral extraction on the historic landscape. This process has resulted in the production of a comprehensive, consistent and reliable polygon data set of Past (and current) Mineral Extraction Zones which was used for the analysis phases of the project.

4.4 The data capture process also created a number of new extraction area records where the existing HER Monument records were all obviously "child" records, i.e. components, of a "parent" mineral extraction complex that did not previously exist as a monument record in the HER.

4.5 These data sets were then used to "clip" the existing HER records to produce data sets of HER monuments within each area. This include monument records of all types all types – monuments, find spots, and buildings, and were also recorded as GIS layers comprising polygon, line, and point data. These data sets were then used to compile a list of non-mineral sites and monuments that had been directly affected by past (and current) mineral extraction in each of these zones. (See sections 6.2.1 & 6.2.2)

4.6 The data was analysed against certain criteria, including the total area for each zone, the total numbers of HER records for each zone and the number of non-mineral HER monuments in each zone. This monument group was then analysed for the extent of loss from mineral extraction to each monument. A list of HER event records associated with recent mineral extraction was also compiled for each zone. A summary account of the effects of past mineral extraction on each of these zones is given in section 6.3 below.

4.7 Where past mineral exploitation has been accompanied by archaeological rescue work or planned mitigation this was assessed for the effectiveness of the archaeological response. This assessment was used to inform the formulation of the policies and procedures detailed in Chapter 9 below.

4.8 The potential future requirements for mineral resources for the county were identified in terms of type and quantity. The extent of the potential mineral resource that might supply these requirements was also mapped as GIS shapefiles, using the BGS mapping and existing Shropshire Council mapping for the appropriate geologies and aggregate-bearing areas, and refined with reference to the relevant sources detailed in Appendix I.

4.9 The Shropshire Council Mineral Officer assisted the project team in identifying areas of existing permissions and potential interest for future mineral exploitation. These were mapped as GIS polygons and are available as part of the MRA data set. This data includes identification of areas of current working, existing permissions and planned future workings. Broad protected zones have been identified as part of the Councils long-term planning process. The project has refined these to identify zones of potential future mineral interest and these have also been mapped (see Chapter 7). The MRA has identified areas of mineral resource that are not currently of immediate commercial exploitation interest (for example, shallow coal deposits), but which may become commercially viable in the future.

4.10 The MRA data set and HER data were used to analyse the various zones and areas of current and potential future extraction interest for the potential impact of mineral exploitation on the archaeological resource. The HER monuments within these areas of potential interest were analysed by date, type, and density and these compared with the overall archaeological resource for the county to assess the potential impact of meeting future mineral requirements.

4.11 The project team, in consultation with the Shropshire Council Minerals Officer and SC Environmental, Economic and Transport Policy Officer have reviewed the current policies for the exploitation of the mineral resource and the historic environment outlined in the Shropshire and Telford & Wrekin Minerals Local Plan 1996 – 2006 (Adopted Plan April 2000) and the Shropshire Local Development Framework: Adopted Core Strategy (March 2011).

4.12 The project has developed policies and strategies for protecting heritage assets at the strategic mineral planning level, based on the results of the MRA and taking into account likely future demand for mineral resources. In developing these policies and strategies, reference has been made to national and regional research frameworks for the historic environment, including the research aims identified in the National Association of Mining History Organisations *"A Research Framework for the Archaeology of the Extractive Industries in England: Mining and Quarrying" project* and the West Midlands Regional Research Framework, and other local research strategies and policies. These policies, strategies and methodologies have been based on the principles and guidance detailed in *Mineral Extraction and the Historic Environment* (English Heritage, 2008), and *Mineral Extraction and Archaeology: A Practice Guide* (Minerals and Historic Environment Forum, 2008).

5 THE ARCHAEOLOGICAL RESOURCE

5.1 The Historic Environment Record

5.1.1 The Shropshire Historic Environment Record (HER/SMR) is a continuously expanding information base covering all aspects of the historic environment, including not only archaeological sites and features, but also historic buildings, structures and landscapes. The HER is compiled and maintained by the Historic Environment Team at Shropshire Council. It covers the whole of the county of Shropshire, including Telford and Wrekin. The Record consists of a relational database system linking records of Monuments (sites, features, buildings, structures, findspots and landscapes) with records of Events (excavations, watching briefs, measured surveys, photographic surveys, site visits etc.), Designations (Scheduled Monuments, Listed Buildings etc.) and records of Finds (an underdeveloped element of the HER at present). The database is linked to the Council's GIS (Geographic Information System), and serves as an index to extensive supporting collections of paper maps, ground and aerial photographs, survey reports and plans, excavation reports and unpublished written records, which are held in the HER along with a range of books and periodicals.

5.2 Published studies, surveys, and overviews

5.2.1 The period based overviews below, particularly for the historic period, focus mainly on the rural areas of the county that are relevant to this assessment. Overviews of the urban centres were undertaken by the Central Marches Historic Towns Survey and published in the mid- to late 1990s, and in the case of Shrewsbury, by Nigel Baker in the late 1990s to mid- 2000s (Baker, 2010).

5.2.2 There have been a number of thematic surveys undertaken during the past three decades which cover large parts of the county – for example, the 1994-1999 Wroxeter Hinterland Project (ESA4787), the North West Wetlands Survey (Leah, 1998; ESA5699) of the early 1990s, the Marches Upland Survey (ESA5698) of the mid 1990s, and the Shropshire Aerial Survey Projects 2008-11 & 2012-3. The Victoria History of Shropshire has published volumes on the religious houses (Gaydon, 1973), Telford (Baugh, 1985), and agriculture (Baugh, 1989).

5.2.3 General overviews of the Industrial period (Trinder, 1996) and of the various mining industries (Pearce, 1995; Brown, 1999 & 2001) are available as well as numerous more specifically themed studies for the post medieval and early modern periods (see Chapter 3, above).

5.3 Period based overviews

5.3 1 The conventional dates used for the main archaeological periods used here are:

Palaeolithic (500,000 BC –10,000 BC)
Mesolithic (10,000 BC – 4000 BC)
Neolithic (4000 BC - 2201 BC)
Bronze Age (2600 BC - 700 BC)

Iron Age (700 BC – 43 AD)
Roman (43 AD – 410 AD)
Early medieval/Saxon (410 AD – 1065 AD)
Medieval (1066 AD – 1540 AD)
Post-medieval (1540 AD – 1901 AD)
Modern (1901 AD to present)

The total number of HER monuments (including findspots) for each period was arrived at using the search facility in the HER's HBSMR software, to initially include all periods for the total, then progressively narrowing the search criteria by removing the latest period from the search, and then subtracting the total from the previous total. A simple monument density of HER monuments per km^2 is also given (though this does not take account of the actual area of the monuments concerned):

Period	**Total HER Monuments**	**Density (mons/km^2)**
Palaeolithic (500,000 BC–10,000 BC)	4	0
Mesolithic (10,000 BC–4000 BC)	40	0.01
Neolithic (4000 BC-2201 BC)	152	0.04
Bronze Age (2600 BC-700 BC)	619	0.18
Iron Age (700 BC–43 AD)	530	0.15
Roman (43 AD–410 AD)	901	0.26
Early medieval/Saxon (410 AD-1065 AD)	40	0.01
Medieval (1066 AD–1540 AD)	2,052	0.59
Post-medieval (1540 AD–1901 AD)	6,171	1.77
Modern (1901 AD to present)	1,346	0.39
Unknown	*n/a*	*n/a*
Total	**11,855**	**3.40**

Table 5.1: Number of HER monuments by period

From this it will be seen that there is are considerably more than half the monuments recorded are for the post-medieval period – and this total excludes building records. There is also a considerable fall-off in recorded monuments for the early medieval period.

5.3.2 Palaeolithic

(i) The evidence for human activity in the study area (the historic county of Shropshire) in the Palaeolithic period is meagre. Such as evidence as there is consists of a mere half a dozen find spots of objects which span a period from c. 400,000bc to c. 10,000bc. Four of these find spots are of flint objects, of Lower to Middle Palaeolithic date (i.e. dating to before the last glaciation). Three of these finds come from the southeast of the county - a Lower to Middle Palaeolithic period Acheulian hand axe (Portable Antiquities Scheme [PAS] ref. HESH-DDC421) has come from the Highley area, a late Acheulian or Levalloisian type stone axe (HER 02758) from Claverley, and a flint hand axe (HER 02757) from somewhere in Neen Sollars parish. And a scatter of seven worked flint nodules and a hand axe (HER 03011) have come from Burfield, Clun, in the southwest of the county. Two Upper Palaeolithic findspots have been recorded - a flint flake (PAS ref. HESH-2BFA86) of probable later (upper) Palaeolithic date was found in the Oakengates area, and a late Palaeolithic or early Mesolithic barbed bone point (HER 03701) was recovered from a former mire at Porth-y-waen in the northwest of the county (Britnell, 1984).

None of these finds were made as a result of mineral extraction or developer-funded archaeology. The potential for peat deposits to hold artefactual and palaeoenvironmental material of late Palaeolithic date is demonstrated by the Porth-y-waen point (above) and the find in 1986 of the Condover mammoths (dated to 14,000 years BP) at Norton Quarry, Condover (see section 8.2.2).

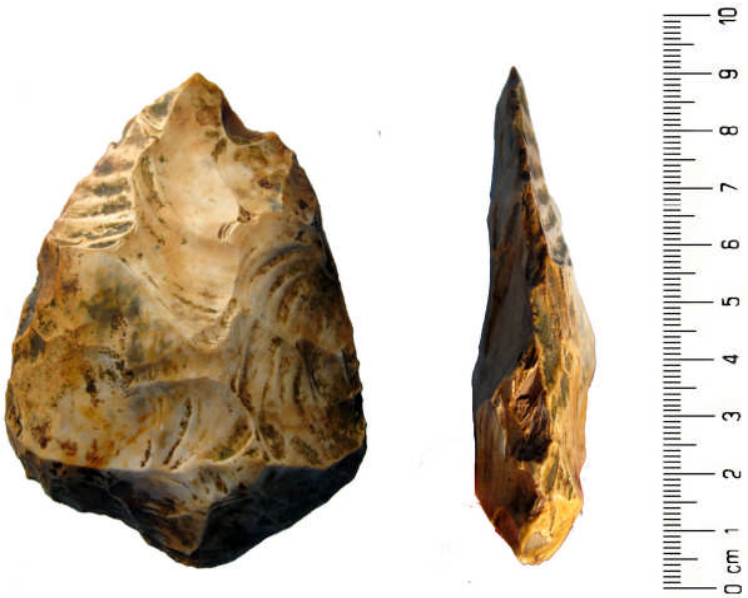


Photo 2: The Acheulian hand axe from Highley (PAS HESH-DDC421). © Birmingham City Council / Birmingham Museum and Art Gallery

5.3.3 Mesolithic

(i) The Mesolithic in Shropshire is represented in the HER again mainly by find spots of flint scatters. The largest of these find spots are from Grinshill Hill (HER 01629 & HER 04726), Newport (HER 21902), and southeast Shropshire (Burns, 1998; Middleton & Watson 1998; Saville, 1978; & Toms, 1978). At one site in northwest Shropshire some late Mesolithic or early Neolithic pits (HER 21228) were located during excavations on Wat's Dyke at Gobowen (Malim & Hayes, 2008). The North West Wetlands Survey (Leah *et al*, 1998) noted a sparse distribution of recorded lithic find-spots around the fringes of the wetlands in northwest Shropshire, and the Survey's own fieldwork also recorded flint scatters of Mesolithic date at Wykey Weir (NWWS SH70) on the edge of Baggy Moor, and at Tibberton (NWWS SH18) and Adeney (NWWS SH 23, 24, 25, 27 & 36) on the edges of the Weald Moors, as well as numerous find-spots of individual flint flakes; these find-spots have not yet been fully integrated into the county HER. To date there has been little attempt to synthesise the available data for this period and thus to attempt an understanding of the Mesolithic period in the county (see section 8.2.2).

5.3.4 Neolithic

(i) A stretch of ploughed out causewayed ditch associated with a circular enclosure (HER 02403) at Bryn y Wystynd, Woolston, has been identified as a possible causewayed enclosure (Oswald, Dyer, & Barber, 2001), and another causewayed enclosure probably lies beneath the Iron Age hillfort at The Roveries (HER 01221), where in 1961-2 Nick Thomas identified a causewayed ditch beneath the ramparts, together with a hearth and early Neolithic pottery from the interior (Chitty, 1961-7). A possible long barrow (HER 03262) at Rockhill, Clun, was destroyed in the 19th

century (though if this was a long barrow it is the only known example from the county), and a chambered tomb (HER 03023), the Monaughty Poeth Barrow at Llanfair Waterdine, was opened in the early 19th century. Neolithic settlement remains have been seen in excavations on the outskirts of Shrewsbury at Sutton Farm (HER 00084 & HER 00087) and at Belle Vue (HER 04582), at Pentrehylling in west Shropshire (HER 04481), and at Pontesford Hill Camp (HER 01055). A cropmark henge (HER 02054) and a cropmark double pit row (HER 02310) have been seen at Strefford, and Robury Ring, Wentnor (HER 00456) may also be a henge in origin. There are two other possible henges at Winsbury, Chirbury (HER 02127) and at Gobowen (HER 02366). Pits containing Neolithic pottery have also been recorded in the excavations of Bronze Age Ring ditches at Meole Brace (HER 00014) and Bromfield (HER 03958). There have been over 125 other find spots of Neolithic material from the county, including over 40 stone axes.

5.3.5 Bronze Age

(i) Communities living in the area in the succeeding Bronze Age also left traces of their presence in the form their tools and weapons, recovered as a result of agricultural activity or, more recently, metal detecting. Funerary monuments in the form of round barrows and ring cairns are found on the upland areas in the west and south of the county, and occasionally in the lowlands. These monuments are perhaps the earliest remains of man still to be found in an upstanding form in the Shropshire landscape. In lowland areas these barrows were usually built of earth excavated from a circular quarry ditch. Where these have been ploughed down, their presence is sometimes revealed by cropmark ring ditches. Ring ditches can appear as single monuments, but they tend to cluster in groups of two or more, forming nucleated, linear, or dispersed cemeteries perhaps serving particular Bronze Age communities. A summary in 1991 counted 61 ring ditches in the upper Severn Valley alone (Watson, 1991, p10-1). More sites have been revealed by more recent and current aerial photography programmes. There are currently 217 ring ditch sites listed on the HER in the county, some of which represent groups of two or three individual monuments – and this figure does not include those grouped in “Barrow Cemeteries” for example the, complex at Cloud Coppice, Berrington, which contains a group of 12 cropmark ring ditches. The total number of individual ring ditches is likely to number over 300. Watson observed that there was a tendency for the ring ditches in his upper Severn valley study area to be situated on low lying gravel river terraces – though a sizeable proportion (32%) were situated away from these on non-gravel soils, such as boulder clay. Though ring ditches are a not uncommon monument type, relatively small numbers have been subject to modern scientific excavation. Nevertheless, there is a growing corpus of excavation work on these sites being carried out to a modern standard, for example at Bromfield and at Meole Brace.

(ii) In the hills of southwest Shropshire (Clun Forest and Long Mynd) there are a few examples of cross-ridge dykes, a type of monument typical of the Early Bronze Age (2300 BC – 1400 BC), and which possibly served to mark the boundary between the lands of different Bronze Age communities. Two stone circles – Mitchell’s Fold (HER 01230) and Hoarstone (HER 01231) - stand at either end of Stapeley Common.

(iii) Over 50 burnt mounds have been recorded in Shropshire mostly from around the edges of the former wetlands of northwest Shropshire and The Weald Moors (Leah

et al, 1998, 70). Two of the Shropshire examples have been archaeologically excavated, at Rodway on the Weald Moors, where a date of between 1312 BC and 1168 BC was obtained (Hannaford 1999), and at Broadward on the southern border of the county.

Photo 3: The burnt mound at Rodway under excavation in 1999

(iv) In contrast to the widespread funerary monuments in both the upland and lowland parts of the county, and the widespread find spots of metalwork, Bronze Age settlement sites are virtually unknown in the county. There is some evidence that a number of the county's Iron Age hillforts, for example The Wrekin (HER 01069) and Old Oswestry (HER 00351), may have originated in the Late Bronze Age. Late Bronze Age pottery was also recovered from lower fills of a D-shaped enclosure (HER 04441) at Llynclys in the west of the county (Hannaford 1992). It is probable that other of the county's hillforts and cropmark enclosures are Bronze Age in origin too, though excavated evidence is scarce.

5.3.6 Iron Age

(i) Shropshire's most outstanding prehistoric monuments are its Iron Age hillforts. These monuments, which dominate the landscape with their massive ramparts and ditches, are defended settlements, and perhaps reflect an increasing need for security in unsettled times. Limited excavation on a number of Shropshire hillforts suggest that some at least of the hillforts may have been densely and in some cases at least permanently occupied. In 2011-2 English Heritage funded an assessment report on the county's hillforts (Dorling, P, & Wigley, A, 2012)

Photo 4: Caer Caradoc hillfort, Chapel Lawn, Clun

(ii) Although quite large numbers of people may have lived in the hillforts, most of the Iron Age population appear to have lived in defended farmstead settlements. A number of these smaller enclosure sites survive as earthworks in upland areas. There is no clear cut distinction today between a small "hillfort" and a large farmstead enclosure (and it is probable that there was no formal distinction in the eyes of their builders either). The majority of these smaller defended settlements lie in lowland areas however, and like the Bronze Age funerary monuments their remains have been ploughed away by the past two millennia of agriculture. The remains of the silted up enclosure ditches of these farmstead settlements are sometimes revealed by aerial photography. Excavations carried out on some of these enclosures in Shropshire and the Welsh borders have shown that they were occupied variously during the late Bronze Age, Iron Age, Romano-British, and early medieval periods. Traces of the fields farmed by the occupants of these enclosures can sometimes also be seen as cropmarks in the modern arable land of the valley floors and lower slopes.

(iii) In complete contrast to the preceding Bronze Age, only two Iron Age burials are known from the county. At Bromfield a small circular ring ditch (B10) produced a sand stain probably representing a body associated with an iron bracelet, an iron La Tene I brooch of c. 475 – 375 BC, and a small bronze object (Hughes, 1995, pp64-75), and at Bridgwalton quarry, Morville, the remains of a an adult male, radiocarbon dated to Cal BC 410 to 190, were recovered during quarrying (Hannaford, 2011).

Photos 5: The remains of an Iron Age burial at Bridgwalton quarry

(iv) Iron Age ceramic finds from the county are meagre, though this is due to the small number of excavations on Iron Age sites, and the relative small scale of the majority of these excavations. Petrological analysis of pottery from Varley's 1939-40 Old Oswestry excavations, and from BUFAU's 1991 excavations at Preston Farm, indicate that some of the pottery was probably of local origin, some was of regionally distributed types, other was imported from some distance (Wessex) (Williams, 1991 & 1994). A significant proportion of the Iron Age ceramic assemblage from Shropshire comprises fragments of salt containers, of both Droitwich and Cheshire types. The ceramic material hints at potentially complex trading patterns over considerable distances. Increasing quantities of Iron Age metalworking, including coinage, is now being recorded from the county, thanks almost entirely to the work of Portable Antiquities Scheme.

5.3.7 Romano-British: 43 AD to 409 AD

(i) The Roman military arrived in the study area in the late 40s AD. A fort (HER 00033) was established south of Wroxeter by c. 47 AD. By c. 57 AD a legionnary fortress for the 14th Legion had been established at Wroxeter as a base for the conquest of mid and north Wales. Some 50 or so other Roman military sites forts, fortlets and signal stations, and temporary or marching camps, are known from the county.

(ii) The military functions of the fortress at Wroxeter were moved to Chester c. 90 AD, but the fortress' vicus and canabae remained and formed the basis of the Roman town of *Viroconium Cornoviorum*. Unlike the legionary fortresses at Colchester, Gloucester, Lincoln, and York, Wroxeter did not become a colonia of veterans, though it is likely that it became the civitas capital for the Cornovii tribe from an early date. The town grew to become the fourth largest walled city in the Roman province. The site of the Roman city is a Scheduled Ancient Monument (NHL 1003705, "The site of the Roman Town of Wroxeter [Viroconium Cornoviorum] Shropshire)". (White & Dalwood, 1996; Gaffney, White, & Goodchild, 2007).

(iii) A network of roads were developed through the territory, initially at least to support the military campaigns. The principal roads were Watling Street (HER 00099) from London to Wroxeter, Watling Street north which ran from Wroxeter to Chester (HER 00066), Watling Street west from Wroxeter to Forden Gaer (HER 00098), and Watling Street south from Wroxeter to Leintwardine (HER 00108). All of these remain partially in use as modern roads. The HER records a number of minor Roman roads – some real, some postulated or mis-dated later routes, and some unlikely and even imaginary routes.

(iv) Other settlements developed along the road network; some like Whitchurch – Mediolanum - (HER 02702) and Oakengates – Uxacona – (HER 01113), and Craven Arms were associated with forts, others - Meole Brace, Shrewsbury (HER 00002) Rutunium (HER 01143), and Heath Road, Whitchurch (HER 04288) - appear to be purely civilian settlements. A Roman settlement has been suggested at Westbury, on a change in alignment of Watling Street west, though the evidence for this is slim; another settlement, in this case away from the known major road network, is known from fieldwork at Upton Cressett (HER 01919).

(v) As late as the 1980s there were less than ten known or probable villa sites in Shropshire (Baugh, 1989, p24). New sites that have since been revealed by aerial photography and by an analysis of find spots of Roman building material from the HER and antiquarian sources bring the total of probable villa sites or higher status farmsteads to about 32. No analysis of the Iron Age to Roman cropmark enclosures beyond the typology produced by Whimster in the late 1980s has been undertaken to date, though the work of the current Roman Rural Settlement Project may provide the basis for such an analysis.

(vi) Known Roman industrial sites are in the main focussed on the civilian or occasionally military settlements. The evidence includes glassworking (HER 06471), pottery and tile production (HER 00090) at Wroxeter; pottery production sites at Meole Brace (HER 08135) and Duncote Farm (HER 00046) near Wroxeter, coal mining at Oakengates, copper mining at Llanymynech hillfort (HER 01117), lead mining at Shelve (Snailbeach and Roman Gravels) area, and lead cupellation for silver at Brompton/Pentrehylling (HER 04482).

(vii) Findspots of Roman material are widespread across the county; increasing numbers of finds of Roman metalwork in particular are being recorded by the Portable Antiquities Scheme (the majority of these have not been recorded as HER find spots).

5.3.8 Early medieval/Saxon: 410 AD to 1065 AD

(i) About 40 monuments and find spots of Saxon or early medieval date are recorded on the HER although these include multiple entries for Offa's and Wat's Dykes, a probable Bronze Age cross-ridge dyke, a probable Civil War cemetery, and a motte and bailey of probable post-Conquest date. Discounting these entries gives a more certain total of 15 monuments and find spots, although again there are a number of find spots recorded by the PAS not recorded on the HER database.

(ii) The Roman city of Wroxeter continued in use as an urban centre into the 7th century AD. The area probably also saw settlers of Anglo-Saxon origin arriving in the 7th century AD, with the county coming under the control of the Anglo-Saxons in the middle decades of the 7th century with the expansion of the English kingdom of Mercia. The early Saxon period saw the organization of landholding into the shire and hundreds and the emergence of the county town of Shrewsbury, which was probably established as a royal and ecclesiastical centre in the 8th century (Baker, 2012). This period also saw a marked change in the pattern of rural settlement, with dispersed farmsteads giving way to nucleated settlements. An idea of the extent of settlement in the county can be arrived at from the manors recorded by the

Domesday Survey (Thorn & Thorn, 1986) and other settlements identified through Gelling and Foxall's work on place-names (Gelling, 1990).

(iii) Excavations in advance of quarrying of an Iron Age cropmark farmstead enclosure at Bromfield (HER 00488) revealed that its enclosing ditch and (probably) rampart survived into the early Early medieval/Saxon period when the enclosure was re-used as a cemetery in the 7th to 8th century (Stanford 1995). St Milburga's Priory, Much Welock (HER 00307), was founded in c. 680 AD by Merewald, King of Mercia for his daughter St Milburga, who was abbess there until her death in c. 722 AD. Burials dating from the 3rd to 6th centuries AD (HER 03768) have been recovered from Barrow Street in the town. A cropmark complex at Frogmore, near Atcham (HER 00047) appears to include three buildings very similar in layout to the Saxon palace at Yeavering (Northumberland) and is believed to represent the site of a high status 7th century aristocratic residence. At Atcham itself, excavation work in advance of a housing development revealed evidence for domestic settlement radio-carbon dated to 681 – 787 AD (Hannaford, 2000).

(iv) Offa's Dyke (HER 01000), the longest archaeological monument in Britain, runs along the northwestern and southwestern edges of the county. The dyke was constructed on the orders of King Offa during the late 8th century and formed a boundary between Offa's kingdom of Mercia and the Welsh kingdoms to the west. It probably served both to regulate traffic and commerce across the border and to provide some defence against cross-border raids from the west. Like Offa's Dyke, Wat's Dyke is considered to have been a frontier earthwork. It is generally presumed to have been earlier than Offa's Dyke, because of its shorter length and more easterly position, and has been attributed to Offa's predecessor, Aethelbald (716-57 AD) (Stenton, 1971; Stanford, 1980). Excavations in 1997 produced a radio-carbon date centred on 446 AD, and within the period 411-561 AD from a small hearth on a buried ground surface immediately beneath the bank component of Wat's Dyke at Mile End, Oswestry (Hannaford, 1998).

(v) There were a number or recorded Viking raids or incursions into Shropshire – a charter of 855 AD records Vikings - *pagani* – in the territory of the Wreocensaete. A Danish army over-wintered by the River Severn at Quatford in 895-6 AD and built a fort there (Gelling, 1992, p134). Another army of Northumbrian Danes crossed the river here in 910 AD before being defeated at the battle of Tettenhall (Horowitz, 2008). In recent years a small number of Viking period finds have been recorded by the Portable Antiquities Scheme from the Shropshire area. Shrewsbury is thought to have been fortified, probably by Aethelflaed, in the early 10th century (Baker, 2010, p96). A number of settlements along the western border of the county have also been suggested as possible *burhs* – Maesbury, Westbury, Pontesbury, and Chirbury (Gelling, 1986). Towards the end of the Early medieval/Saxon period, the western parts of the county were subject to a number of devastating Welsh raids and incursions (Thorn & Thorn, 1986, Note 1).

5.3.9 Medieval: 1066 AD to 1499 AD

(i) The Domesday Survey of 1086 gives a picture of a largely settled landscape, though with areas of waste and recent waste (i.e. lands in the west of the county subjected to Welsh raiding in the years preceding the Conquest). Shrewsbury appears to be the county's only town, though a number of large manors are recorded

some of which developed into the later market towns. The excellent and comprehensive notes to the 1986 Phillimore edition of the Domesday Book volume for the county (Thorn & Thorn, 1986) provide a detailed picture of the settlement of the county in the 11th century. The Victoria History of Shropshire volume on agriculture in the county (Baugh, 1989) provides a detailed account of the rural settlement and agricultural practices in the county in the Middle Ages. Other general accounts of medieval rural settlement are to be found in Rowley's works of 1972 and 1986 and Stanford's of 1991. The county's religious houses and their landscapes are dealt with in detail by the Victoria History (Gaydon, 1973). At the time of the conquest, the majority of the population lived in manors, nucleated settlements surrounded by open fields, common land, and woodland. Most of these settlements have continued to the present day to become the county's modern hamlets, villages, and towns. A number have shrunk, particularly over the last century and are now represented by single farmsteads, and a few failed completely to become the "deserted medieval settlements" that are a feature of the landscape south Shropshire hills (although some of these, such as the settlement at Cold Weston (HER 01264), were not finally abandoned until the late 19th century – one of the cottage platforms here has a cast iron cooking range embedded in one of its walls).

(ii) Settlements For most of these early settlements, the principal surviving elements are the church and churchyard, and perhaps the street plan. The sites of 83 manor houses and a further 195 moated sites or moats are identified as HER monuments; a gazetteer of moated sites in Shropshire was published in 1987 (Watson, 1987). There are also 159 HER records for medieval parks and deer parks (Stamper, 1993, &1996). At least 539 field systems, including areas of surviving ridge and furrow earthworks, are recorded on the HER. Many more areas of crop mark ridge and furrow are apparent on aerial photographs and have not been recorded, and with a some exceptions there has been no systematic attempt to establish the extent of the field systems around each individual manor. Some area studies have been undertaken by the Victoria History, and some local studies have been undertaken for individual settlements or small groups of settlements particularly as part of archaeological desk-based assessments and environmental impact assessments.

(iii) Castles The Normans' need to establish and maintain their control over Shropshire after the Conquest is reflected in the large number of castle sites in the county. The Shropshire HER contains 167 records for castles. This includes 29 major castle sites (with extensive earthworks, substantial upstanding and ruinous stone elements) and 88 earthwork motte and bailey, motte, ring-work and bailey and ring-work castles, six fortified manor houses and two tower keeps. The total also includes 18 'mounds' which represent possible mottes, 21 possible castle sites, three 'site of castle' records. (Baker et al, 2013). Two popular studies of Shropshire's castles have been produced in recent years based on the HER records (Jackson, 1988; Duckers, 2006).

Photo 6: Ludlow Castle

(iv) Religious houses All but one (Wenlock Abbey) of Shropshire's monastic houses were founded after the Norman Conquest. 13 abbeys and priories, seven friaries, eight hospitals, as well as six collegiate churches, four almshouses, two preceptories and a religious guild (Gaydon, 1973, p25). During the medieval period, the county's principal religious houses (and a number from outside the county) acquired substantial landholdings within the county by the end of the medieval period. The HER records 28 granges though there were probably more; by the later Middle Ages, most of these will have been farmed by tenants.

(v) Industry Medieval rural industry is marked by in the main by the sites of water-mills (220 HER records), a small number of windmill sites (five HER records), and small quarries (though only two have HER records), ironworking and bloomer sites (five HER records), and mining in the Shelve area (four HER records). A pottery waster dump is known from Cockshutt, near Ellesmere (HER 04715), and a kiln base was found in an evaluation at Noble Street, Wem (Hannaford, 1996, ESA4971).

(vi) Towns The development of the county town of Shrewsbury in the medieval period is traced in detail in Baker's archaeological assessment (Baker, 2010). The medieval period also saw the development of the county's towns from manorial settlements; individual assessments were undertaken by the Central Marches Historic Towns Survey and published in the mid- to late 1990s.

5.3.10 Post-medieval and Industrial: 1500 AD to 1913 AD

(i) The post-medieval period in Shropshire saw the rise of the county's market towns and transport systems, and the effects of the industrial revolution and agricultural improvements.

(ii) The presence of ironstone and clay and good milling streams led to a proliferation of ironworking sites and forges in the late medieval to early post-medieval periods on the River Tern, in the Coalbrookdale area, and on the tributary streams of the River Severn south of Bridgnorth. At the same time the mineral resources of the Shelve anticline, particularly the lead ore, began to be exploited with increasing intensity. The Ordovician rocks of the Stiperstones-Shelve area also contain numerous intrusive mineral veins, dating from the late Devonian period, and lead and barytes mineralisation in the Shelve area gave rise to a thriving mining industry in the late 18th and 19th centuries. Other rural industries proliferated, and are represented in the HER by records for water mills; forges; stone quarries; sand, gravel, and clay

quarries; brickworks; mining – ironstone/coal/clay and mineral ores; and transport – canals, roads, and railways.

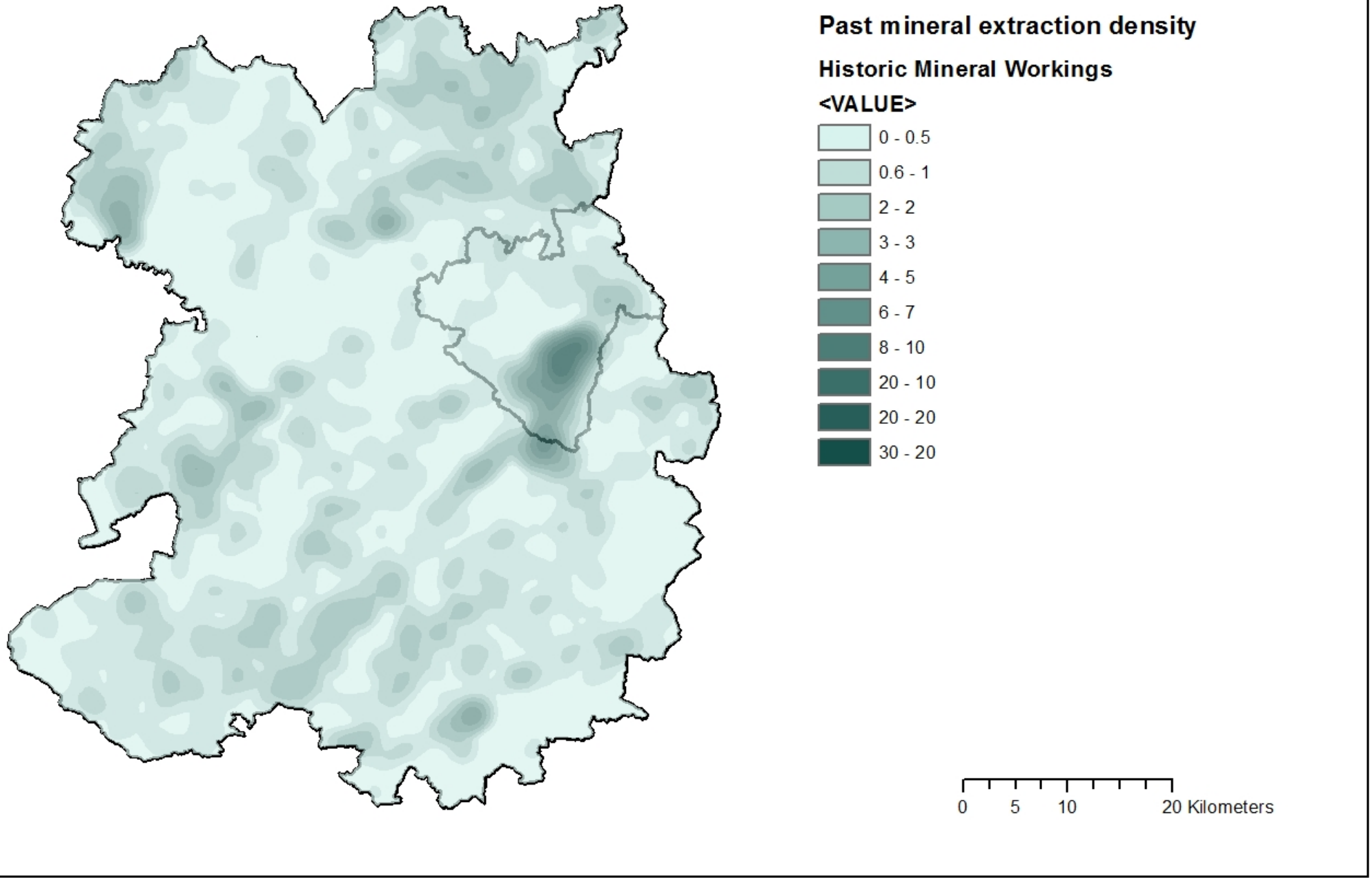
(iv) The increased wealth of the property owning class was reflected in the building of country houses and there endowment with parks and gardens. A survey of the county's parks and gardens was undertaken by Stamper in the 1990s and formed the basis for the English Heritage Register of Parks and Gardens in the county (Stamper, 1993 & 1996). The development of agriculture in the county in this period has been analysed through the historical sources by the Victoria History of Shropshire (Baugh. 1989). The Shropshire Historic Farmsteads Characterisation Project has mapped 6194 farmsteads and 1764 outfarms and field barns farmsteads across the county of Shropshire (Baxter, 2010), and these form by far the largest group of records on the HER for the later post-medieval to early modern periods.

5.3.11 Modern: 1913 AD to Present

(i) The 20th century saw the decline of ironworking and coal mining in the Telford area. In the mid to late 20th century open-cast coal (and clay) extraction saw large parts of the area around Telford subject to large scale quarrying. These quarries, former mining sites and areas of spoil dumping have been reclaimed for housing and industrial land to create the new town of Telford. Much of this work was carried out without archaeological intervention, and such surveys (e.g. the Nuffield Surveys of the late 1980s) have tended to be retrospective and map-based, creating a bias towards later post-medieval monuments in this area.

(ii) Apart from the farmsteads noted above, the 20th century monuments recorded on the HER tend to reflect particular datasets, for example, defence sites recorded by the Defence of Britain Project, or gardens recorded by the Parks and Gardens Survey. The monuments include mining sites and collieries, breweries, various military sites (pill boxes, airfields, prisoner of war camps, aircraft crash sites), parks and gardens, and industrial sites amongst others.

Photo 7: A WWII spigot mortar mount and emplacement on Haughmond Hill



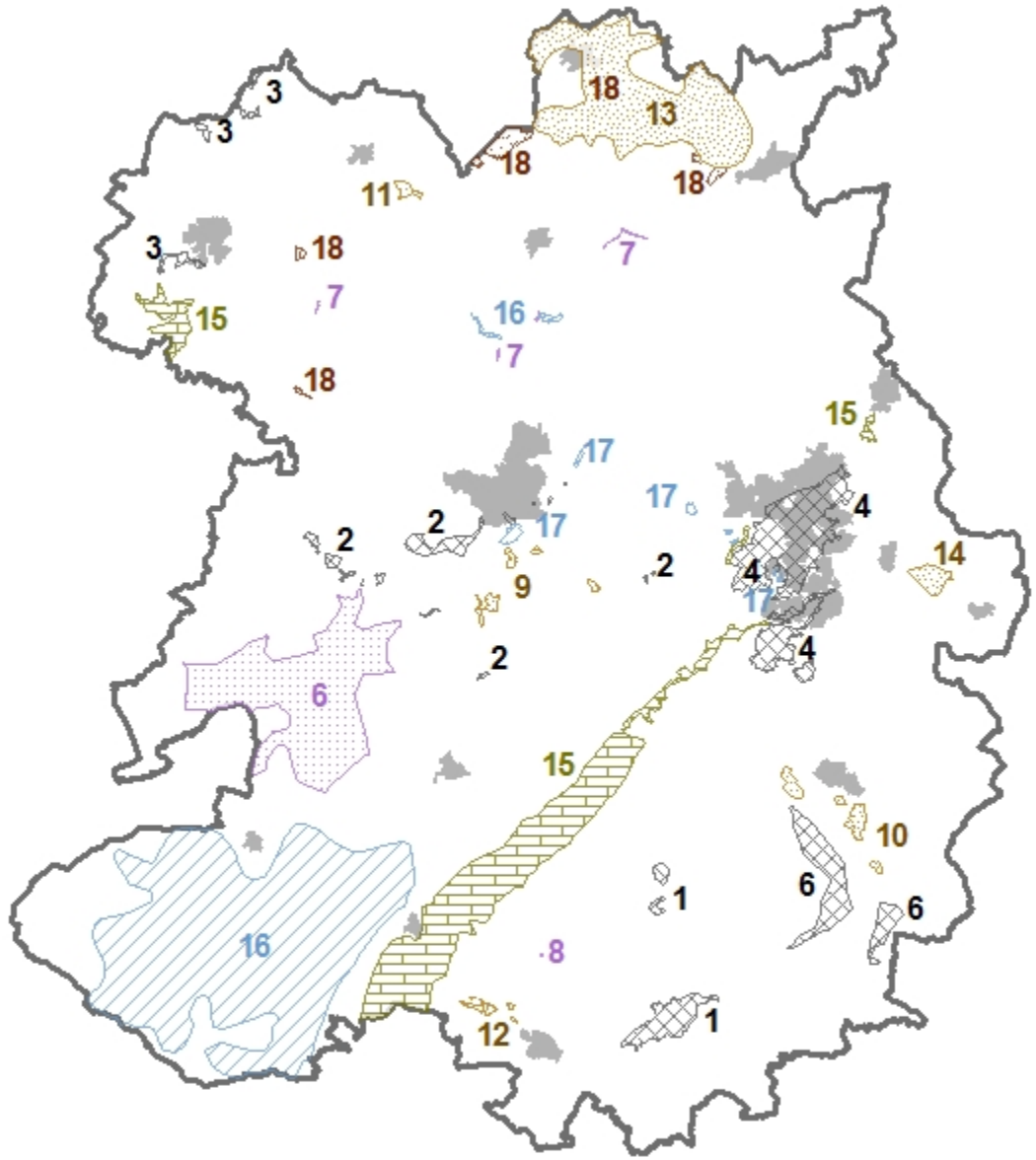
Shropshire Council

Shropshire Mineral Resource Assessment

Figure 4: Density of past mineral extraction (based on HER and GF data sets)

Archaeology Service
Shropshire Council
Historic Environment Team, Environment Group,
Shirehall, Abbey Foregate, Shrewsbury, SY2 6ND

1:500,000



Legend

SMRA past groups

Mineral

- Coal
- Limestone
- Metal ore
- Peat
- Sand & gravel
- Stone

COAL
1 Clee Hills Coalfield
2 Shrewsbury Coalfield
3 Oswestry Coalfield
4 Coalbrookdale Coalfield
5 SE Shropshire Coalfield

METAL ORES
6 SW Shropshire Orefield
7 N Shropshire Copper Mines
8 SE Shropshire Copper Mines

SAND & GRAVEL
9 Cound
10 Morville, Eardington, & Hampton
11 Wood Lane, Colemere
12 Bromfield
13 NE Shropshire
14 Albrighton

LIMESTONE
15 Limestone

STONE
16 Building Stone
17 Road Stone

PEAT
18 North Shropshire wetlands

N

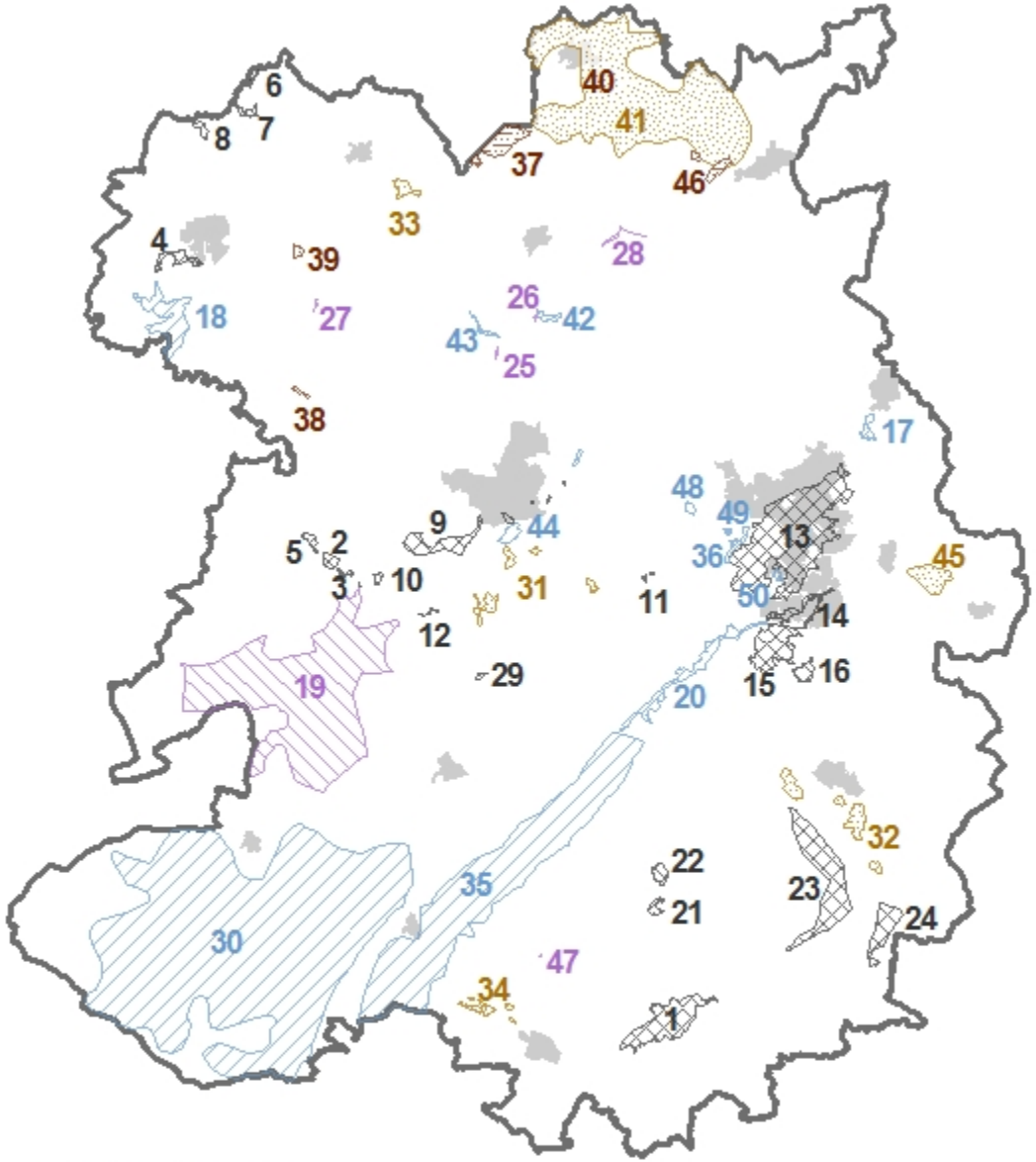
Shropshire Council

Shropshire Minerals Resource Assessment

Figure 5: The past extraction mineral groups

Archaeology Service
Shropshire Council
Historic Environment Team, Environment Group,
Shirehall, Abbey Foregate, Shrewsbury, SY2 6ND

1:500,000



Legend

Mineral

- Coal
- Metal ore
- Peat
- Sand & gravel
- Stone

COAL

Clee Hills Coalfield
1 Clee Hill
21 Clee Burf
22 Abdon Burf

Shrewsbury Coalfield
2 Asterley
3 Malehurst
5 Westbury
9 Hanwood-Shrewsbury
10 Pontesford
11 Dryton
12 Longden Common
29 Leebotwood

Oswestry Coalfield
4 Morda
6 Coed yr allt
7 St Martins
8 Weston Rhyn

Coalbrookdale Coalfield
13 Telford
14 Coalbrookdale and Madeley
15 Benthall & Broseley
16 Caughley

SE Shropshire Coalfield
23 Billingsley
24 Highley & Alveley

METAL ORES

SW Shropshire Orefield
19 Southwest Shropshire

N Shropshire Copper Mines
25 Pimhill
26 Clive
27 Eardiston
28 Weston

SE Shropshire Copper Mines
47 Upper Hayton

SAND & GRAVEL
31 Cound
32 Morville, Eardington, & Hampton
33 Wood Lane, Colemere
34 Bromfield
41 NE Shropshire
45 Albrighton

STONE QUARRIES

Limestone
17 Lilleshall & Church Aston
18 Llanymynech
20 NE Wenlock Edge
35 SW Wenlock Edge
36 Steeraway & The Hatch

Building Stone
30 Clun Forest
42 Grinshill
43 Myddle

Road Stone
44 Sharpstones Hill & Haughmond Hill
48 Leaton
49 Ercall & Maddocks Hill
50 Doseley

PEAT

North Shropshire wetlands
37 Whixall & Wem Mosses
38 Turf Moor
39 Rednal
40 Brown Moss
46 Smythemoor & Moreton Wood

N

0 5 10 20 Kilometers

Shropshire Council

Shropshire Minerals Resource Assessment

Figure 6: The SMRA Past Zones

Archaeology Service
Shropshire Council
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1:500,000

6 PAST MINERAL EXTRACTION AND THE HISTORIC ENVIRONMENT

6.1 Past mineral extraction zones

6.1.1 The analysis of past and present workings has resulted in the identification of 50 Mineral Resource Assessment zones of past extraction of varying size. These past mineral extraction zones (SMRA past zones) have been selected on the basis of the type and concentration of the mineral extraction processes in each of these zones. Some of the zones are relatively small and discrete – for example the individual copper mining areas in north Shropshire. Others are much larger, for example, the southwest Shropshire Orefield zone. Three zones - the Clun Forest building stone, the SW Wenlock Edge lime works, and the NE Shropshire sand & gravel quarries SMRA Past Zones have been selected because they identify particular concentrations of small-scale past workings of a certain type.

6.1.2 The SMRA past zones have been grouped by type into 5 broad mineral groups: Coal, Metal Ores, Sand & Gravel, Stone Quarries, and Peat. These groups are not exclusive – for example, coal mining areas would also produce clay, ironstone, limestone, and road stone, the Llanymynech limestone working zone also included areas of lead and copper mining, and a former area of peat extraction (Brown Moss) was also the site of a sand and gravel quarry.

6.1.3 The underlying solid and drift geology has been identified for each of these SMRA past zones using GIS shapefiles produced by Shropshire Council's Minerals Manager and GIS data supplied to Shropshire Council by the BGS and the Shropshire Geological Society (see table 1, below). The recorded past mineral extraction for each of these zones has been identified and checked using existing HER data and data supplied by the Shropshire Council's Minerals Manager. The SMRA Past Zones have been analysed for the effect of the past mineral extraction on the archaeological resource as recorded on the Shropshire Historic Environment Record (HER).

6.1.4 The Historic Landscape Characterisation data has also been examined for each zone, and simplified to produce GIS Landscape Cover polygons for each zone.

6.1.5 In the mining areas (particularly the coal and ironstone mining areas) the SMRA past zones have been defined by the extent of the spoil tips as well as the actual shafts. Although spoil tips may have buried – and theoretically sealed – heritage assets, in practical terms the assets are lost, and, as in the case of the widespread clearance and redevelopment of the spoil tips in the eastern part of the Telford coalfield in the later 20th century, any buried heritage assets will have been lost.

6.1.6 These five broad mineral groups have been further subdivided into zones of past mineral working "Past Zones" (see table 6.1).

Table 6.1: The "Past Zones" of past and current mineral extraction

Mineral type	Group	Size (km^2)	Past Zone
Coal	Clee Hills Coalfield	9.0	1 Clee Hill
		0.7	21 Clee Burf
		1.1	22 Abdon Burf
	Shrewsbury Coalfield	0.8	2 Asterley
		0.3	3 Malehurst
		0.6	5 Westbury
		4.6	9 Hanwood-Shrewsbury
		0.3	10 Pontesford
		0.1	11 Dryton
		0.1	12 Longden Common
		0.2	29 Leebotwood
	Oswestry Coalfield	1.2	4 Morda
		0.2	6 Coed yr allt
		0.5	7 St Martins
		0.5	8 Weston Rhyn
	Coalbrookdale Coalfield	33.3	13 Telford
		1.9	14 Coalbrookdale & Madeley
		6.4	15 Benthall, Broseley
		1.3	16 Caughley
	Forest of Wyre Coalfield	13.2	23 Billingsley
		3.8	24 Highley - Alveley
Metal ores	SW Shropshire Orefield	82.9	19 SW Shropshire Orefield
	N Shropshire Copper Mines	0.1	25 Pimhill copper mine
		0.1	26 Clive copper mines
		0.1	27 Eardiston copper mines
		0.2	28 Weston copper mines
	SE Shropshire Copper Mines	0.1	47 Upper Hayton copper mine
Sand & gravel		2.4	31 Cound
		4.3	32 Morville, Eardington, & Hampton
		1.1	33 Wood Lane, Colemere
		1.0	34 Bromfield
		76.8	41 NE Shropshire sand & gravel quarries
		3.5	45 Albrighton
Stone quarries	Limestone	0.8	17 Lilleshall and Church Aston
		6.9	18 Llanymynech
		5.2	20 NE Wenlock Edge
		75.2	35 SW Wenlock Edge
		0.6	36 Steeraway and The Hatch
	Building Stone	227.4	30 Clun Forest building stone quarries
		0.5	42 Grinshill quarries
		0.4	43 Myddle quarries
	Road Stone	1.4	44 Sharpstone Hill & Haughmond Hill quarries
		0.4	48 Leaton quarry
		0.1	49 Ercall & Maddocks Hill
		0.3	50 Doseley
Peat	North Shropshire wetlands	3.7	37 Whixall & Wem Mosses
		0.2	38 Turf Moor
		0.4	39 Rednal
		0.4	40 Brown Moss
		1.3	46 Smythemoor & Moreton Wood

Table 6.2: SMRA Past Zones, solid and drift geology, and minerals extracted

SMRA No	SMRA Past Zone	Minerals extracted	Geology - solid	Geology - drift
1	Clee Hill	Coal, ironstone, clay, roadstone	Carboniferous - Carb LM CoalMsrs & Carb Igneous	None
2	Asterley	Coal	Carboniferous - Carb Halesowen & Carb(U) Salop Fm	Boulder clay
3	Malehurst	Coal	Carboniferous - Carb Halesowen	Boulder clay, Alluvium
4	Morda	Coal	Carboniferous - Carb LM CoalMsrs, Etruria Marl, & Carb(U) Salop Fm	Boulder clay
5	Westbury	Coal	Carboniferous - Carb Halesowen	Boulder clay
6	Coed yr allt	Coal	Carboniferous - Carb Halesowen	None, Boulder clay
7	St Martins	Coal	Carboniferous - Carb Halesowen & Etruria Marl	None, Boulder clay
8	Weston Rhyn	Coal	Carboniferous - Carb LM CoalMsrs	Boulder clay, Sand and gravel
9	Hanwood-Shrewsbury	Coal	Carboniferous - Carb Halesowen & Carb(U) Salop Fm	Boulder clay, Sand and gravel, Alluvium
10	Pontesford	Coal	Carboniferous - Carb Halesowen	None, Boulder clay, Sand and gravel, Alluvium
11	Dryton	Coal, clay	Carboniferous - Carb Halesowen	None, Sand and gravel
12	Longden Common (Newhouse Colliery)	Coal	Carboniferous - Carb Halesowen	Boulder clay
13	Telford	Coal, ironstone, clay, limestone	Carboniferous - Lower Carbonifer, Carb LM CoalMsrs, Carb Halesowen, Etruria Marl, Carb(U) Salop Fm, & Carb Igneous	None, Boulder clay, Sand and gravel
14	Coalbrookdale and Madeley	Coal, ironstone, clay, limestone	Carboniferous - Carb LM CoalMsrs, Carb Halesowen, Etruria Marl,	None, Boulder clay
15	Benthall, Broseley	Coal, ironstone, clay	Carboniferous - Carb LM CoalMsrs, Carb Halesowen, & Etruria Marl	None, Boulder clay
16	Caughley	Coal, clay	Carboniferous - Carb LM CoalMsrs, Carb Halesowen, & Etruria Marl	None
17	Lilleshall and Church Aston	Limestone	Carboniferous - Lower Carbonifer, Carb LM CoalMsrs, Carb (M), Carb(U) Salop Fm; Permian - PT Bridnorth Ssn	None, Boulder clay
18	Llanymynech	Limestone, Pb, Cu	Ordovician - Ordovician; Carboniferous - Lower Carbonifer; Permian - PT Bridnorth Ssn	None, Boulder clay, Sand and gravel
19	SW Shropshire Orefield	Pb, Bar, Zn, Cu	Precambrian - Precamb Sediment; Ordovician - Ordovician, Ordov Igneous; Silurian - Lower Silurian	None, Boulder clay

SMRA No	SMRA Past Zone	Minerals extracted	Geology - solid	Geology - drift
20	NE Wenlock Edge	Limestone	Silurian - Wenlock Lstn, & Upper Silurian	None, Boulder clay
21	Clee Burf	Coal, Stone - agg	Devonian - Upper Devonian; Carboniferous - Carb LM CoalMsrs, & Carb Igneous	None
22	Abdon Burf	Coal, Ironstone	Devonian - Upper Devonian; Carboniferous - Carb LM CoalMsrs, & Carb Igneous	None
23	Billingsley	Coal, Ironstone, Clay, Stone - agg	Devonian - Lower Devonian & Upper Devonian; Carboniferous - Carb LM CoalMsrs, Carb Halesowen, & Carb(U) Salop Fm;	None
24	Highley - Alveley	Coal	Carboniferous - Carb Halesowen & Carb(U) Salop Fm	None
25	Pimhill copper mine	Cu	Triassic - PT Kidderminster, PT Wilmslow Ss, PT Tarporley Si	None
26	Clive copper mines	Cu	Triassic - PT Kidderminster, PT Wilmslow Ss, PT Tarporley Si	None
27	Eardiston copper mines	Cu	Triassic - PT Kidderminster, PT Tarporley Si, & PT Mercia Mudstn	None
28	Weston copper mines	Cu	Triassic - PT Kidderminster, PT Wilmslow Ss, PT Tarporley Si, & PT Mercia Mudstn	None
29	Leebotwood	Coal, clay	Carboniferous - Carb Halesowen	Boulder clay, Sand and gravel
30	Clun Forest building stone	Stone	Precambrian - Precamb Sediment; Ordovician - Ordovician; Silurian - Lower Silurian, Wenlock Lstn, & Upper Silurian; Devonian - Lower Devonian	None, Boulder clay, Sand and gravel, Alluvium
31	Cound	Sand and gravel	Carboniferous - Carb Halesowen & Carb(U) Salop Fm	Boulder clay, Sand and gravel
32	Morville, Eardington, & Hampton	Sand and gravel	Devonian - Lower Devonian; Carboniferous - Carb Halesowen & Carb(U) Salop Fm; Permian - PT Bridnorth Ssn	Boulder clay, Sand and gravel, Alluvium
33	Wood Lane, Colemere	Sand and gravel	Triassic - PT Tarporley Si & PT Mercia Mudstn	Boulder clay, Sand and gravel, Peat
34	Bromfield	Sand and gravel	Devonian - Lower Devonian	Sand and gravel, Alluvium
35	Wenlock Edge SW	Limestone	Silurian – Lower Silurian, Wenlock Lstn, Upper Silurian, & Amestry Limestone	None, Sand and gravel, Alluvium, Boulder clay
36	Steeraway and The Hatch	Limestone, clay/marl	Carboniferous - Lower Carbonifer, Carb LM CoalMsrs, & Carb Igneous	None
37	Whixall and Wem Mosses	Peat	Triassic - PT Mercia Mudstn	Boulder clay, Sand and gravel, Peat
38	Turf Moor	Peat	Triassic - PT Kidderminster & PT Wilmslow Ss	None, Peat
39	Rednal	Peat	Triassic - PT Kidderminster & PT Wilmslow Ss	Peat

SMRA No	SMRA Past Zone	Minerals extracted	Geology - solid	Geology - drift
40	Brown Moss	Peat, gravel	Jurassic - Lower Jurassic	Sand and gravel
41	NE Shropshire sand & gravel quarries	Sand and gravel	Triassic - PT Mercia Mudstn; Jurassic - Lower Jurassic	Boulder clay, Sand and gravel
42	Grinshill quarries	Stone	Triassic - PT Mercia Mudstn, PT Tarporley Si, PT Kidderminster, & PT Wilmslow Ss	None
43	Myddle quarries	Stone	Triassic - PT Kidderminster & PT Wilmslow Ss	None
44	Sharpstones Hill and Haughmond Hill quarries	Stone	Precambrian - Precamb Sediment; Carboniferous - Carb(U) Salop Fm	None, Boulder clay, Sand and gravel
45	Albrighton	Sand and gravel	Triassic - PT Kidderminster & PT Wilmslow Ss	Sand and gravel
46	Smythemoor and Moreton Wood	Peat	Triassic - PT Mercia Mudstn	Boulder clay, Sand and gravel, Peat
47	Upper Hayton	Cu	Devonian - Upper Devonian	None
48	Leaton	Stone	Precambrian - Igneous	Boulder clay
49	Ercall and Maddocks Hill	Stone	Precambrian – Igneous, Cambrian, Ordovician	None
50	Doseley	Stone	Carboniferous - Carb LM CoalMsrs, Carb Igneous	Boulder clay

6.2 HER records of assets affected by past mineral extraction

6.2.1 There are a total of 6,363 HER records for sites and monuments that lie within or partly within the 50 SMRA Past Zones. These include all types – monuments, findspots, and buildings, and are recorded also as GIS layers as polygon, line, and point data. Of these, 141 non-mineral sites and monuments have been directly affected by past (and current) mineral extraction. A breakdown of the totals for each SMRA Past Zone is given in Table 6.3 below. Table 6.4 gives a breakdown of the non-mineral HER records affected by past working broken down by category and by period. Certain categories score highly in this table. A significant number of parks and gardens and field systems have been affected by past workings. However, this is mainly because of their large physical area and in most cases the percentage loss in terms of the individual sites is tiny (see Table 6.5). More significant is the number of prehistoric (Neolithic and Bronze Age) burial sites – barrows and cropmark ring-ditches – that have been lost to mineral extraction (mainly 20th century gravel extraction). Ten of these sites (6% of the resource in the county for this class of asset) have been affected, and of these most have been lost entirely and not all with any degree of archaeological recording. The same is true for cropmark farmstead enclosures of Iron Age / Romano-British date. And 9 hillforts have been affected by extraction within the SMRA Past Zones (out of a county total of 68). In two cases the hillforts have been entirely lost, and a further site has been 95% destroyed by past extraction.

Photo 8: Remains of an Iron Age hillfort, post-medieval mining, and 20th century quarrying on Clee Burf

6.2.2 Moreover these figures only document the loss to these classes within the SMRA Past Zones – other sites outside these zones have been affected. For example, Table 6.6 shows hillforts damaged by episodes of past mineral extraction (this list has been compiled using the data from the recent "Herefordshire Archaeology and Shropshire Council: Later Prehistoric Enclosures in Herefordshire and Shropshire" project). Similarly the number of field systems and parks and gardens outside the SMRA Past Zones affected on a small scale by small-scale stone quarries and sand, gravel or clay pits is likely to be significant (though the loss in percentage terms of both individual monuments and for these classes is likely to be insignificant).

Table 6.3: Shropshire Mineral Resource Assessment Past Zones

SMRA No	Past Zone name	Minerals extracted	Date range of workings	Area (km^2)	Non-min HER sites affected	Total HER sites in zone
1	Clee Hill	Coal, Stone - agg	Medieval – 20th C	9.0	1	135
2	Asterley	Coal	Post Medieval – 20th C	0.8	0	9
3	Malehurst	Coal	Post Medieval – 20th C	0.3	1	6
4	Morda	Coal	Post Medieval – 20th C	1.2	0	22
5	Westbury	Coal	Post Medieval – 19th C	0.6	1	3
6	Coed yr allt	Coal	Post Medieval – 19th C	0.2	0	3
7	St Martins	Coal	Post Medieval – 20th C	0.5	1	20
8	Weston Rhyn	Coal	19th – 20th C	0.5	0	16
9	Hanwood-Shrewsbury	Coal	Post Medieval – 20th C	4.6	3	60
10	Pontesford	Coal	Post Medieval – 20th C	0.3	0	17
11	Dryton	Coal	Post Medieval – 19th C	0.1	1	2
12	Longden Common (Newhouse Colliery)	Coal	Post Medieval – 20th C	0.1	0	4
13	Telford	Coal; Ironstone; Clay	Roman – 21st C	33.3	32	289
14	Coalbrookdale and Madeley	Coal; Ironstone; Clay	Post Medieval – 20th C	1.9	2	53
15	Benthall, Broseley	Coal; Ironstone; Clay	Medieval – 20th C	6.4	3	137
16	Caughley	Coal; Clay; Limestone	Post Medieval – present	1.3	6	44
17	Lilleshall and Church Aston	Limestone	Post Medieval – 19th C	0.8	0	14

SMRA No	Past Zone name	Minerals extracted	Date range of workings	Area (km^2)	Non-min HER sites affected	Total HER sites in zone
18	Llanymynech	Limestone; Stone – bldg; Metal ores (Pb; Cu)	Iron Age – 21st C	6.9	10	186
19	SW Shropshire Orefield	Metal ores (Pb; Cu; Bar; Zn); Stone - agg, bldg	Roman – 20th C	82.9	9	2,269
20	NE Wenlock Edge	Limestone	Medieval – 20th C	5.2	1	76
21	Clee Burf	Coal; Stone - agg	Post Medieval – 20th C	0.7	1	4
22	Abdon Burf	Coal; Ironstone	Post Medieval – 20th C	1.1	3	12
23	Billingsley	Coal, Clay, Stone - agg	Post Medieval – 20th C	13.2	1	64
24	Highley - Alveley	Coal, Clay, Stone - agg	19th C – 20th C	3.8	0	25
25	Pimhill copper mine	Metal ores (Cu)	18th – 20th C	0.1	0	1
26	Clive copper mines	Metal ores (Cu)	18th – 19th C	0.1	0	3
27	Eardiston copper mines	Metal ores (Cu)	Post Medieval	0.1	0	1
28	Weston copper mines	Metal ores (Cu)	Post Medieval	0.2	1	7
29	Leebotwood	Coal, Clay	18th C – 19th C	0.2	0	6
30	Clun Forest building stone	Stone – agg, bldg	Roman – 20th C	227.4	5	1,811
31	Cound	Sand & gravel	19th C – 21st C	2.4	7	28
32	Morville, Eardington, & Hampton	Sand & gravel	19th C – 21st C	4.3	7	27
33	Wood Lane, Colemere	Sand & gravel	19th C – 21st C	1.1	0	2
34	Bromfield	Sand & gravel	19th C – 21st C	1.0	13	25

SMRA No	Past Zone name	Minerals extracted	Date range of workings	Area (km^2)	Non-min HER sites affected	Total HER sites in zone
35	SW Wenlock Edge	Limestone; Stone – agg, bldg	Medieval – 20th C	75.2	6	475
36	Steeraway and The Hatch	Limestone; Clay	Post Medieval – 20th C	0.6	0	10
37	Whixall and Wem Mosses	Peat	Post Medieval – 20th C	3.7	1	15
38	Turf Moor	Peat	Post Medieval – 19th C	0.2	0	1
39	Rednal	Peat	Post Medieval – 19th C	0.4	0	1
40	Brown Moss	Peat; Sand & gravel	Post Medieval – 19th C	0.4	0	0
41	NE Shropshire sand & gravel quarries	Sand & gravel	Post Medieval – 20th C	76.8	5	415
42	Grinshill quarries	Stone – bldg	Medieval – 21st C	0.5	3	7
43	Myddle quarries	Stone – bldg	Post Medieval – 21st C	0.4	0	5
44	Sharpstones Hill and Haughmond Hill quarries	Stone – agg	Post Medieval – 21st C	1.4	13	18
45	Albrighton	Sand & gravel	Post Medieval – 20th C	3.5	2	28
46	Smythemoor and Moreton Wood	Peat	Post Medieval – 19th C	1.3	0	1
47	Upper Hayton	Metal ores (Cu)	Post Medieval – 19th C	0.1	0	1
48	Leaton	Stone – agg	20th C – 21st	0.4	0	0
49	Ercall & Maddocks Hill	Stone – agg	19th – 20th C	0.1	0	2
50	Doseley	Stone – agg	19th – 20th C	0.3	2	7

Table 6.4: Summary of HER assets affected by past mineral working by category and period

Period	HER Category	No. of non-mineral HER sites affected by mineral extraction in SMRA zones	Total Shropshire HER for class
Prehistoric			
Late Neolithic/Bronze Age	Ring ditches, ring cairns, barrows	10	175
	Inhumation & Cremation cemeteries	4	17
Bronze Age	Findspots	3	178
Iron Age	Hillforts	9	68
Iron Age/Roman	Enclosures	9	594
Roman			
	Roman roads	3	62
	Roman marching camps	1	28
Saxon			
	Findspots	1	8
	Boundary bank, Dyke (defence), Frontier defence	1	2
	Inhumation cemeteries	1	3
Medieval			
Medieval	Mottes, ringworks, and baileys	2	126
	Moated sites	1	192
	Forge	1	25
	Field systems, ridge& furrow, field boundary	19	702
	- field systems	11	119
	- ridge& furrow	8	444
	- field boundary	4	191
	Boundary stones	3	5 med (22 all period)
Medieval, Post Medieval	Trackways	1	68
	Deserted & shrunken settlements	3	232

Period	HER Category	No. of non-mineral HER sites affected by mineral extraction in SMRA zones	Total Shropshire HER for class
Post Medieval			
	Findspots	1	24
	Canal	6	18
	Canal lifts	3	5
	Canal tunnel	1	10
	Industrial	21	
	- ironworking	7	107
	- brickworks, tileworks	2	157
	- potteries	2	59
	- mining remains	4	212
	- lime kiln	1	117
	- tramway	4	20
	- other industrial	1	n/a
	Other buildings	13	n/a
	Farmsteads	3	45
	Parks and gardens etc	16	355
20th C			
	Military depot	1	7
	Military airfield	1	4
Unknown			
	Trackways	3	83
	Non antiquities	4	

6.3 SMRA Past Zone summary accounts

6.3.1 COAL

6.3.1.1 Clee Hills Coalfield

Past Zones: 1 Clee Hill; 21 Clee Burf; 22 Abdon Burf

(i) The Clee Hills (Clee Hill or Titterstone Clee, and Brown Clee) have been mined for coal and ironstone since medieval or early post-medieval times. There are numerous remains of bell-pits and early mining remains at Knowbury (HER 04625), on Clee Hill itself (HER 07106, 07108, 07112, 07113, 08036) at Blue Stone (HER 07119), Cornbrook (HER 07118 & 08037) and Catherton Common (HER 07120 & 08039). In the 19th century a small road stone quarry developed on Titterstone Clee Hill itself, which grew in size considerably during the 20th century. In particular a hard black dolerite, known locally as "dhustone" was quarried, often being cut into 4" stone sets. Other 19th century road stone quarries on the south side of Clee Hill were also extended considerably during the 20th century. Similarly there are remains of medieval and post-medieval coal and ironstone mining on Brown Clee hill (HER 06696 on Clee Burf and HER 06986, 06690, & 06992 on Abdon Burf, although some workings, particularly to the east of Abdon Burf, lie outside the HER polygons), and later coal mining and road stone quarrying (HER 06697 & 06987).

(ii) There are a number of ring cairns (HER 01182 & HER 03299) and stone circles (HER 03289 & HER 03293) (possibly natural features) on Titterstone Clee which evidence activity on the hill in the Late Neolithic and Bronze Age periods.

Photo 9: An Early Bronze Age axe of Irish extraction was found on Titterstone Clee in 1889, within a few yards of a second flat axe, embedded in soft earth between large blocks of basalt whilst driving a road into Dhustone Quarry. ©Shropshire Museums Service (SHYMS: A/2003/205)

(iii) Two ring cairns which have been damaged by quarrying are also included in the description of the Iron Age hillfort Titterstone Clee Hill Camp (HER 00427) on the hill. The hillfort was originally of c. 33ha in area. By 1901 the road stone quarry on the hill had encroached into an area of 0.3ha into the fort. By the late 20th century 9.2ha of the hillfort (c. 28% of the original monument) had been lost to quarrying. A "Saxon" spearhead was found within the hillfort during quarrying in the 20th century.

(iv) There were two hillforts on the summit of Brown Clee hill. The defences of Clee Burf (HER 00181) at the southern end of the hill were intact in 1901; by the late 20th century 1.3ha out of its original area of 4ha had been lost to quarrying for road stone and coal. Only the SE part of the rampart is still discernible today. Much of the remainder of the interior of the fort is covered by the bell pits and pit mounds of post-medieval mining, indicating that much of the interior of the fort had already been damaged before the later quarrying.

(v) A Neolithic stone axe (HER 02600) was found on Abdon Burf at the north end of Brown Clee hill in 1939. A late Neolithic or Bronze Age cairn (HER 02586) with large well-fitted stone slabs has been lost to quarrying here, as has another possible cairn (HER 00599) recorded in the SE entrance, though this may have been part of the ramparts of the later Iron Age hillfort. Again, at the northern end of the summit, Abdon Burf hillfort (HER 00182) was intact in 1901. Antiquarian sources describe a number of small stone circles within the hillfort, thought to be the remains of hut circles. This suggests a remarkable degree of preservation. The hillfort was entirely lost without record to quarrying and mining in the course of the 20th century. A section of the rampart 135m long may survive, though much mutilated, on the northeastern side of the fort. Some mining had clearly taken place within the interior in the post-medieval period – a number of old shafts and pit mounds are shown on the 1901 OS – as are some of the stone circles. Given the extent of former mining on Clee Burf, it is possible that these stone circles were also the remains of bell pits – the bell pits on Clee Burf were at one time thought to be the remains of hut circles.

6.3.1.2 Shrewsbury Coalfield

Past Zones: 2 Asterley; 3 Malehurst; 5 Westbury; 9 Hanwood-Shrewsbury; 10 Pontesford; 11 Dryton; 12 Longden Common (Newhouse Colliery); 29 Leebotwood

(i) The Shrewsbury coalfield was worked from at least the early 17th century (there is a 1727 reference to the coal pits at Asterley) through to the 20th century. The last pit, the Castle Peace Colliery at Pontesford, closed in 1947. Ironstone and limestone were also extracted from these workings.

(ii) In the small Dryton SMRA Past Zone the site of post medieval coal mining (HER 06851) may overlie cropmark features associated with two small rectangular cropmark enclosures (HER 00468) of Iron Age/Romano-British date. An Iron Age and Romano-British double ditched rectilinear enclosure (HER 00015) at Meole Brace was seen on excavation in 1968-9 and again in c. 2007 to have been partially damaged by a small sand/gravel quarry (also visible on APs). This site has since been lost to development. A cropmark field system (HER 00019) of possible prehistoric or Romano-British date to the east of Shrewsbury may also have been slightly affected by post-medieval mining – shallow underground workings here were seen during the construction of the A5 Shrewsbury Bypass in 1989-91. At Westbury the Roman road (HER 00098) between Wroxeter and Forden Gaer runs close by former mining remains. Although the road does not appear to have been directly affected by the former mining, it is possible that associated features such as side ditches or quarry pits may lie within the area of the mining remains on the south side of the road.

(iii) Part of a post-medieval field system (HER 08619) may have been slightly affected by post-medieval mining to the southeast of Shrewsbury (Sutton coal pits HER 06777). Remains of shafts and pit mounds (bell pits) can be seen at Malehurst to the north and northeast of the present farm in an area of unrecorded ridge and furrow ploughing; the area of the medieval settlement (HER 03655) of Malehurst is unclear but from the aerial photographs ridge and furrow ploughing would appear to be on the site of, to the south of and possibly to the east of the present Malehurst Farm. Some former mining remains (spoil tips) are shown on the 2nd edition 25" OS in this zone.

6.3.1.3 Oswestry Coalfield

Past Zones: 4 Morda; 6 Coed yr allt; 7 St Martins; 8 Weston Rhyn

(i) The Oswestry coalfield is really part of the Denbighshire Coalfield. The coalfield was being worked from at least the end of the 16th century in the Morda area. The last large mine, Ifton Colliery, closed in 1968.

(ii) At the northeasternmost end of the St Martins SMRA Past Zone, a pit mound (HER 06546) lies up against a field boundary and area of former ridge and furrow (HER 08257). No other HER assets have been affected by former mining in these zones.

6.3.1.4 Coalbrookdale Coalfield

Past Zones: 13 Telford; 14 Coalbrookdale & Madeley; 15 Benthall & Broseley; 16 Caughley

(i) The Coalbrookdale Coalfield has been divided into four Past Zones, the Telford, Coalbrookdale & Madeley, Benthall & Broseley, and Caughley. The first two zones within the coalfield were separated by anticlinal areas (domes), the most important being the 'Symon Fault' (a misnomer since it is an unconformity), which left a barren northeast / southwest band with no workable coals. (Dave Coxill, *pers. comm.*) Although the Benthall & Broseley and Caughley Past Zones lie on the south side of the River Severn, they are considered to be part of the Coalbrookdale Coalfield.

(ii) It has been said that coal may have been worked in the Roman period at Oakengates. Coal has been found in hypocaust flues at Wroxeter and it is thought that the coal measures were probably exposed during the construction of Watling Street near The Nabbs at Oakengates (Coxill, 1995). Coal was certainly being extracted in the Telford Coalfield Past Zone in the medieval period - Wenlock Priory granted a licence to dig for coal at the Brockholes (Madeley) in c.1322 (Pearce, 1995, p28). However, ironstone rather than coal was the main mineral extracted from this zone in the early post-medieval period, and it remained an important product into the 19th century. With the development by Abraham Darby I in 1709 of the use of coke instead of charcoal for smelting iron, the production of coal came to predominate. The Upper Coal Measures contain high quality red clays but poor coal seams; the Lower and Middle Coal Measures contain the more productive coal seams, ironstone, and fire-clay (Brown, 1999, p9). Clay for brick-making was an important by-product too, particularly in the south of the coalfield, and limestone was also mined and quarried at The Hatch, Little Wenlock, and Lincoln Hill. Ironstone

mining ceased in the 1940s, and the last coalmine, Granville Colliery, closed in 1979. Open cast mining is still being carried out in the western part of the coalfield, with the Huntington Lane open cast site currently operational.

(iii) The Roman road Watling Street (HER 00099) runs from east to west through the middle of the coalfield, and a 600m length of the road had been lost to mining by 1901 (though probably much earlier) at Oakengates.

(iv) Dawley Castle (HER 00693), a medieval moated manor house obliterated by spoil heaps from Castle Furnaces and also possibly from neighbouring collieries to the south (the Botany Bay Colliery) and the north. The possible site of a medieval forge site (HER 03918) at Lawley known from documentary sources has been suggested to be preserved in a field name, though this probably refers to a 19th century smithy lost to 20th century open cast workings and housing. Granville Colliery was sited at southernmost end of the former Lilleshall Park (HER 07771) a medieval deer park, and the site of a medieval hunting lodge (HER 15000) was lost to the shafts and spoil for coal and ironstone working at Lodgebank Colliery.

(v) Newdale near Lawley was the site of the 18th century Newdale iron working complex (HER 03920) and residential settlement. The remains of the settlement were partly demolished in the 1960s; some were excavated in the 1980s and other structures were recorded prior to open cast working on the site in the 1990s (Cable, 1987). Individual components included a reverberatory furnace (HER 21234), a possible casting pit (HER 21236), a range of buildings (West Row) in the foundry (HER 21237), industrial buildings (HER 17290) later converted to a farmhouse, Newdale Farmhouse (HER 26007), another building (HER 17291) which later became a Methodist chapel (HER 14300) and then a barn, a row of cottages (North Row, HER 17482), a row of back to back houses (Long Row, HER 15495), a school house (HER 17483), and a toll house (HER 15393).

(vi) The remains of Lawley Furnace (HER 03917), a 19th century blast furnace, were re-discovered during 20th century open cast mining and land reclamation work. The remains were recorded and then reburied (Hannaford, 1994).

(vii) Various Canals and features associated with the canals have been directly affected by mining and quarrying in this zone. The Donnington Wood Canal (HER 03407), England's second industrial age canal, was cut from Donnington Wood to Pave Lane in 1765-8. By 1901 spoil from Barn Pits Colliery had encroached onto a branch from the canal to Old Lodge Furnaces. The Wombridge Canal (HER 03406), cut in 1787-8, extended the western end of the Donnington Wood Canal to Wombridge. The waste from the Wombridge Iron Works and associated coal shafts had encroached on the southern end of this canal by 1901. The Wrockwardine Wood canal lift and inclined plane (HER 03401) linked the Donnington Wood Canal to the Shropshire Canal (HER 03408). By 1901 mining spoil and waste probably also from Donnington Wood Furnaces (HER 03858) had covered the northern end of the incline. The Shropshire Canal (HER 03408) was a William Reynolds canal and ran from the Donnington Wood Canal (HER 03407) to Sheepwash Meadow, Coalbrookdale. Various sections of the canal were opened between 1789 and 1792. A branch of the canal from Horsehay to Brierly Hill was disused in 1800 and a tramroad was laid along the towpath here. Various other sections were closed in the

19th century, and by 1902 the canal had been covered by mining spoil at The Nabb and elsewhere in Oakengates, at the Botany Bay Colliery, the Wharf Colliery (Malinslee), and the Dawley Parva Colliery, and another section was lost to the Doseley Quarries in the 20th century. The Stirchley Incline (HER 03402) lay on the section of the canal running through the Coalbrookdale and Madeley SMRA zone. The southern end of the incline was lost to the spoil tips of Halesfield Colliery in the later 19th century, and the northern half by the Brookside housing estate in the 20th century. The Ketley Canal (HER 03405) was completed in 1788 to carry coal and limestone from Oakengates to the Ketley works of William and Richard Reynolds. By 1901 a section of the canal had been lost to coal workings and spoil in the Hartshill area, and the southern end of the Ketley Incined Plane (HER 00701) on the canal and the western end of the canal at Ketley were also covered in mining spoil.

Photo 10: The Huntington Lane Open Cast site, Little Wenlock, with The Wrekin hillfort top right (©Shropshire Council 2013)

(viii) To the west of New Works Lane, Lawley, well preserved coal mining remains (HER 04503, NHL 1018461) dating back to the 16th century and possibly earlier have been affected by open cast working. The northern part of the site has been lost to open cast mining in the early 21st century (the Huntington Lane Open Cast site); a haulage road linking two parts of the open-cast workings was laid through the scheduled part of the site. A small network of tramways (HER 04728) adjoins and runs into the northern end of the area of historic coal workings; part of this tramway system has been lost to the current open cast working. A programme of archaeological investigation and recording accompanied the open cast working. The northern and southern parts of a group of early coal workings (HER 21873) at Little Wenlock have also been lost to 20th century open cast working.

(ix) Brick-lined mine shafts associated with a former 19th century brick and tile works (HER 07218) at Redhill have been lost to further recent clay quarrying at the Redhill Clay Pit. The Hadley Brick and Tile Works (HER 07206) themselves have now also been lost to further quarrying for clay, extending the original clay pits.

(x) Also at the Hadley Brick and Tile Works site, Hadley Lodge (HER 16950), Hadley Lodge Farm (HER 20898), and an un-named farmstead (HER 22540) identified from the 1901 map by the Historic Farmsteads Characterisation Project have been lost to quarrying for clay. Another farmstead recorded by the Historic Farmsteads Characterisation Project that has been lost is a farm 260m southeast of Lower Coalmoor Farm (HER 22540) lost to late 20th century opencast mining. Part of a shrunken settlement (HER 21877) of post medieval date around Field View, Coalmoor, was lost to opencast mining in the second half of the 20th century.

(xi) Coal and ironstone were being mined at Benthall from the mid 13th century at least – in 1250 Philip de Benthall granted Buildwas Abbey a right of way to carry ironstone and coal over his land (Pearce, 1995, p28). The ironstone mines were exhausted by the early 19th century, and the coal mines by the early 20th century. Clay was still being mined until recent times mining. Open cast quarrying for coal and clay continued into the late 20th century at Posenhall and Willey Park and into the 21st century at Caughley.

(xii) Willey Park (HER 07566) comprising the northern part of Willey parish, was in existence by 1291. It was enlarged in 1537. In 1618 the park was mapped; it then comprised c. 430 a. and had a central enclosure with lodge and fishponds. In 1757 the south-east part of the park was let for iron making to the New Willey Co., and the remainder was enclosed soon after. The southern part of the park, south of Barrow Lane, which later became part of the 19th century park (HER 07554) around Willey Hall, contains the remains of coal mining and sand and clay pits. The northern part of the park also contains mining remains and a number of clay pits. The 19th century park and gardens (HER 07506) at Benthall Hall has a small spoil tip at the southeast end of the park, but otherwise appears to have been unaffected by the post-medieval coal and ironstone mining in Benthall.

(xiii) At Caughley early coal workings, including areas of bell pits (HER 08501 & 08505) and early railways (HER 08506) serving the coalworkings south of Caughley Porcelain Works, and possible pottery dumps from Caughley Porcelain Works (HER 08504), have been lost to modern open cast mining and quarrying. The site of the Caughley Porcelain Works (HER 00644) which was operating from c. 1750 to 1815, was lost to opencast mining in the late 1960s. Most of the buildings had been demolished c. 1820, though some are still shown on the site on the 1901 OS map.

6.3.1.5 Forest of Wyre Coalfield

Past Zones: 23 Billingsley; 24 Highley - Alveley

(i) Ironstone mining in the Billingsley Past Zone may date from the medieval period as recent work on forge sites at the Ned's Garden bloomery (HER 08244) and the Fiddle bloomery (HER 21045) have suggested medieval dates. Small scale coal mining here probably also dates from the medieval period. By the late 16th century a

proper colliery was operating at Chetton (possibly HER 00609) (Pearce, 1995, p56). In the 19th century larger scale workings were opened at Highley (HER 07032) and Billingsley (HER 07029 & 07044), and later at Kinlet (HER 07036). New mines at Chorely (HER 07037 & HER 07046) and Alveley were opened in the 20th century. Alveley was the last mine in this coalfield to be worked, closing in 1969. The Billingsley SMRA Past Zone comprises a scattered area of former, mainly small scale, mine workings. The Highley – Alveley SMRA Past Zone takes in the 19th and 20th century mines on both sides of the River Severn, but also some older workings (probably late 18th or early 19th century) on the west bank (HER 07038 & HER 07039).

(ii) The only heritage asset directly affected by coal workings in these SMRA zones is a post-medieval deer park, Kinlet Park (HER 07531). There was a deer park at Kinlet in the 13th century, but the post-medieval park appears to date from the later 18th century. A small spoil heap and a coal shaft lie in the northern end of the park.

6.3.2 METAL ORES

6.3.2.1 SW Shropshire Orefield

Past Zones: 19 SW Shropshire Orefield

(i) The Stiperstones-Shelve area has long been of great interest to geologists, as the rocks here show a complete sequence of the Ordovician period (Toghill, 1990) laid down when the area lay under the southeast margin of the Iapetus Ocean. The rocks also contain numerous intrusive mineral veins, dating from the late Devonian period, and lead and barytes mineralisation in the Shelve area gave rise to a thriving mining industry in the late 18th and 19th centuries.

(ii) The lead deposits in the southwest Shropshire orefield may have been worked in Roman times. Three or possibly four lead pigs, all apparently bearing the stamp of the Emperor Hadrian, are supposed to have been found in the Shelve area; one (C.I.L. 1209a - possibly the same as 1209b) were found in 1767, 3km northwest of Bishop's Castle, two were apparently recovered from smelting slag at Snailbeach, in 1796 (C.I.L. 1209c) and in 1851 (C.I.L. 1209f). Another was also apparently found in 1851 (C.I.L. 1209e) (Clement Whittick, 1932). Old workings at Roman Gravels have been claimed to be of Roman origin - spades found inside the workings are of a type elsewhere considered to be of Roman date (Wright, 1862). The upper levels at Snailbeach were known in the 19th century as the Roman Levels (VCH, 1908), and also in the 19th century unprovenanced finds of Roman pottery and coins were made in the workings at Snailbeach.

(iii) There are documentary references to mining in Shelve in the late 12th century (Pearce, 1995, p70; Trueman and Gill, *op.cit.* and Ove Arup, *op.cit.*). It is also possible that some of the supposedly Roman workings may in fact be of medieval date, as may be some of the Roman tools found in these workings. There is a record of a mine in Hogstow Forest being held by one John Clifton in 1552, and of prospectors working in Habberley Office in1613. There is a specific reference to mining at Snailbeach in the form of contracts signed by Derbyshire miners in 1676 and again in 1688 (VCH, 1968). Large scale mining began in the 18th century, probably at the southern end of the Stiperstones at the Grit Mine. By the mid to late

18th century there were a number of large mines, including The Bog and Pennerley, (which are shown on Rocque's 1752 county map) and Snailbeach. In the mid-19th century the Snailbeach Lead Mine was one of the country's largest producers of lead ore. The other main minerals exploited in the southwest Shropshire orefield were zinc and barites (or barite), particularly in the later 19th and 20th centuries. Witherite, calcite, fluorspar and copper have also been extracted. Copper was produced with barytes at Westcott, and was prospected for at Wilderley, Norbury and Chittol Wood Mines (Brown, 2001, p89). The local stone has also been exploited for building and there are numerous small quarries Some of these at the northern end of the zone at Nils Hill, Poles Coppice and Callow Hill, Pontesbury, were been extended in the 20th century, exploiting the Stiperstones Quartzite for roadstone; Callow Hill Quarry is still operational.

(iv) A number of monuments in the southwest Shropshire orefield zone have been affected by mineral exploitation, either from the digging of shafts, adits and quarries, or from the dumping of spoil, or from the siting of mine buildings and other infrastructure. A small Iron Age hillfort (HER 01740) at Nils Hill, Pontesbury, had been entirely destroyed by quarrying for road stone by 1981. Ritton Castle (HER 01327) is a univallate (single rampart) Iron Age hillfort adapted in the early medieval period to form a 'ringwork and bailey' castle and it is believed to have been the principal residence of Ritton Manor at this time. Buildings associated with Ritton Castle Mine (HER 01326) are sited within the hillfort. Field systems of possible prehistoric or medieval date on Cefn Gunthley (HER 04018 and HER 04266) show evidence of early to mid-19th century lead and barites mining in the form of mine shafts and spoil pits from Cefn Gunthley Mine (HER 06862 and 06875). A field system on Stapeley Hill (HER 04328), again of probable prehistoric date, also contains remains of 19th to early 20th century lead mining (HER 06867). Two areas of possible cultivation ridges (HER 04331) on Rorrington Hill have been quarried on their southernmost edge. (However, these cultivation ridges, like those on Middleton Hill (HER 04378) and some of those within the field system on Stapely Hill may be of geological origin reflecting the bedding planes in the underlying rock.) Another area of possible cultivation ridges (HER 04332) on Nick Knolls (near Hope) contains a lead mining shaft, possibly part of the Wood Level (HER 06807). The eastern edge of an area of ridge and furrow earthworks (HER 21433) on Hope Common has been encroached upon by a small area of mining spoil, probably also part of the Wood Level workings. Earthworks of enclosures associated with the deserted house or smallholding Rock House (HER 09586) near Black Rhadley Hill have been affected by quarrying for stone.

6.3.2.2 N Shropshire Copper Mines

Past Zones: 25 Pimhill copper mine; 26 Clive copper mines; 27 Eardiston copper mines; 28 Weston copper mines

(i) Copper is also to be found as malachite in the red Triassic sandstones of north Shropshire. The copper was mined in the post medieval period through to the 19th century. As well as copper, small quantities of cobalt and vanadium were also extracted from Pimhill Copper Mine from between 1870-5. Copper was mined at Clive and Grinshill from the late 17th century until the 1860s (HER 03783). There are copper mine workings within Hawkstone Park (HER 07583), a medieval deer park

and a post medieval park. Otherwise the north Shropshire copper mining has not directly affected other heritage assets, though the past workings are heritage assets themselves.

6.3.2.3 SE Shropshire Copper Mines

Past Zones: 47 Upper Hayton

(i) The isolated copper working sites in southeast Shropshire have not directly affected other known heritage assets.

6.3.3 SAND & GRAVEL

6.3.3.1 Sand and gravel has been extracted on a small scale for use as aggregate since the Iron Age – the use of gravel as metalling for a trackway was recorded during the excavation of the Iron Age enclosure (HER 00020) at Preston Farm (Ford Hill) for the A5 Bypass (Ellis *et al*, 1994, pp15-24). Gravel used as aggregate in the Roman period for roads and for floors and yards in settlements, has been demonstrated in the excavations at Wroxeter, Heath Road (Whitchurch), and Meole Brace. However, gravel is likely to have been extracted locally and on a relatively small scale, and there are no known Roman gravel extraction sites. Sand and gravel pits are occasionally noted on later post medieval estate plans. However the principal source for pre-20th century workings are the larger scale (1:25") Ordnance Survey plans of the late 19th century. Larger scale extraction in the 20th century has been mapped using SC databases and Ordnance survey mapping.

6.3.3.2 Cound

Past Zone: 31 Cound

(i) The area alongside the Cound valley in central Shropshire provides an arc of sites that have been extracted on a moderate to large scale in the 20th and 21st century. Some of these workings, at Dorrington at the western end of the arc and at Venus bank at the eastern end have their origins in sand and gravel pits shown on the 1901 OS mapping. The Shropshire Mammoths are perhaps one of the more important geological finds in Britain during the last 100 years. The remains of an adult male mammoth and three juveniles were found in 1986 at Condover Quarry. Apart from being amongst the most complete mammoths ever found in Britain they are amongst the youngest at c. 14,000 years BP.

(ii) The site of a burial mound of probable Bronze Age date (HER 00824) southeast of Stapleton, contained at least one burial (which was excavated); the barrow has since been completely destroyed by sand and gravel quarrying. At the same site, traces of a strongly palisaded early Romano British enclosure (HER 02709) were found on the southeast side of the Wayford Hill. A number of inhumations were found nearby and were considered to be of medieval date (though on what grounds is unknown). Cropmarks of a rectangular enclosure with an annexe to the SW, of probable Iron Age to Roman date (HER 02205) were located in the Norton Farm quarry. A mosaic was reported to have been found here. The site was evaluated in 1996 (results not known), and has since been lost to quarrying. The line of the Roman road from Wroxeter to Forden Gaer was formerly thought to pass through a later 20th century gravel extraction site at Betton's Abbot; the road has now been

shown by excavation and by aerial photography to run 400m further to the north. A series of post medieval field boundaries (HER 21246) adjacent to Bomere Pool were recorded by an evaluation in 1996 prior to their removal by quarrying.

6.3.3.3 Morville, Eardington, & Hampton

Past Zone: 32 Morville, Eardington, & Hampton

(i) In the Morville SMRA Past Zone a Bronze Age barrow (cropmark ring ditch) cemetery (comprising HER 00213, 00215, 00428, 00429, & 00430) has previously been excluded from the extraction areas (although one of the ring ditches of HER 00428 does lie within the extracted area). However, there are currently plans to extend extraction at the Bridgwalton quarry into the area of this cropmark complex. There has been some evaluation (no geophysics), some limited trial trenching, and some salvage recording at Bridgwalton. A Late Bronze Age bronze hoard comprising two looped and ribbed palstaves, a socketed chisel and a socketed axe or gouge were found in a gravel pit at Eardington in 1925 (HER 03218). In 2003, an Iron Age burial (HER ESA6508) was found during quarrying at Bridgwalton (one of only 2 known Iron Age burials from Shropshire – see Bromfield below). The site of a possible rectangular cropmark enclosure (HER 00204) of Iron Age or Roman date was lost to gravel extraction at Eardington in the 1940s-60s. Other Iron Age or Roman rectangular enclosures were lost to extraction at c. 700m northwest of Hampton Loade (HER 00211) in 1980s-90s, at Lower Forge, Eardington (HER 02087) in 1970s, and at Hay Farm, Eardington (HER 04564) in the 1990s. This last site was subject to archaeological evaluation, excavation, and recording prior to extraction (HER ESA4928). A canal tunnel (HER 03802) between the Eardington Upper Forge (HER 03800) and Eardington Lower Forge (HER 03801) lies in an area worked for gravel in the early 1970s, though the effect of this extraction on the tunnel is not recorded.

6.3.3.4 Wood Lane (Past Zone 33)

Past Zone: 33 Wood Lane, Colemere

(i) Gravel extraction at Wood Lane, Colemere has not directly affected any known heritage assets.

Photo 11: Wood Lane sand and gravel quarry

6.3.3.5 Bromfield
Past Zones: 34 Bromfield

(i) Gravel extraction at Bromfield has destroyed extensive remains of prehistoric, Roman and early medieval date. Much of this loss has been mitigated by programmes of archaeological investigation and recording. Cropmark linear features representing substantial ditches, possibly flanking a trackway (HER 02029) were evaluated in 1991 prior to gravel extraction. Neolithic and Early Bronze Age pits (HER 03958), and Neolithic and Bronze Age barrows, cropmark ring-ditches and cremation cemeteries (HER 02327, HER 02576, HER 03953, HER 03955, HER 03956, HER 03060, & HER 03957) form part of a wider Neolithic and Bronze Age necropolis that has been substantially damaged (albeit with varying levels of archaeological recording) by gravel extraction. Within the same area, one cropmark ring ditch (HER 03954) proved on excavation to be of early Iron Age date. A rectangular cropmark enclosure of an Iron Age farmstead (HER 00488) on excavation proved to have been re-used as an inhumation cemetery in the Saxon period. A Roman temporary camp (HER 00192) has also been lost to extraction here (though again with some archaeological investigation and recording). A post medieval gravel quarry (HER 03035) has also been subsumed within the 20th century workings.

6.3.3.6 NE Shropshire sand and gravel quarries
Past Zones: 41 NE Shropshire sand & gravel quarries

(i) This SMRA Past Zone represents an area with a concentration of small sand and gravel pits identified from the 1901 OS mapping by the SC Minerals Officer. These former, mainly 19th century workings, have affected a small number of heritage assets. A medieval deer park, Tilstock Park (HER 02851) contains a number of small sand and gravel and clay pits shown on the 1901 OS. Additionally many of the fields in the Tilstock park area contain one or more small ponds or pools, possibly the remains of earlier small-scale gravel or marl extraction. Areas of medieval ridge and furrow ploughing at Calverhall (HER 08720) and The Kempley (HER 08721) each contains a small post-medieval sand and gravel pit. Shavington Park (HER 07602), a medieval and post-medieval park contains a number of small sand and gravel pits shown on the 1901 OS. The site of RAF Tilstock airfield (HER 21549) also contains a number of small sand and gravel pits shown on the 1901 OS.

6.3.3.7 Albrighton sand and gravel quarries
Past Zones: 45 Albrighton

(i) The Albrighton SMRA Past Zone represents a small concentration of 19th and 20th century sand and gravel quarries, shown on the OS mapping from 1901 to 1954. Neachhill Park (HER 07539), a post medieval and modern park and garden, which also contains part of a World War II depot (HER 08539) associated with RAF Cosford, contains a number of small sand and gravel pits shown on the 1901 OS.

6.3.4 STONE QUARRIES
6.3.4.1 Limestone
(i) The limestone from all the zones in this group has been extensively used as building stone and it can be argued that this is the primary use for the stone from

most of these zones. However, the chemical properties of limestone enable its processing for use in agriculture for de-acidifying soil, and for use in mortar, and this is reflected in the archaeological record by the kilns and transport infrastructure that evidence this processing industry. Accordingly the limestone extraction zones have been given a separate sub-category within the Stone Quarries group. The limestone from Wenlock Edge was probably used by the Romans for mortar at Wroxeter. It has been suggested that the limestone from Llanymynech was the source for white tesserae used in mosaics at Wroxeter and the surrounding area (White & Barker, 1998, p58-61). Wenlock Edge limestone is likely to have been widely used for mortar in the region during the medieval period, and it is likely that the limestone in the Llanymynech and Oswestry Past Zones were likewise exploited at this time too. In the post medieval period limestone was also used in increasing quantities for use as a flux in iron smelting, and the limestone mining and quarrying in the Steeraway and The Hatch SMRA Past Zone, and in the Telford, Coalbrookdale and Madeley SMRA Past Zones mainly fed the iron industry of the Ironbridge Gorge and Telford area. The limestone from the Llanymynech (Llynclys Quarry) and NE Wenlock Edge SMRA Past Zones has also been used for road stone in the later 20th century. Other minerals are sometimes found within the limestone zones, and so for example, lead and copper has also been extracted since Roman times – and possibly earlier – from the Llanymynech SMRA Past Zone.

6.3.4.2 Lilleshall and Church Aston

Past Zone: 17 Lilleshall and Church Aston;

(i) The lime working in the Lilleshall and Church Aston lime works past zone has not directly affected any known (non-mineral) heritage asset.

6.3.4.3 Llanymynech

Past Zones: 18 Llanymynech

(i) This zone includes quarries and metal mining at Llanymynech itself, the quarries at Llynclys, Nantmawr, and Treflach, and metal mining remains at Crickheath and Moelydd. Three Iron Age hillforts lie within this extraction area. Two of these have been directly affected by mineral extraction. Llanymynech Hillfort (HER 01117) lies mainly in Wales, with only the line of the eastern defences and the northern defences lying in Shropshire. Where the northern defences have survived post medieval and 20th century limestone quarrying they comprise substantial stone and earthen ramparts and ditches. The eastern defences have been entirely removed by quarrying. Bwlch y Gwynt Hillfort (HER 01563) comprises the remains of a small univallate hillfort, which has small limestone quarries cut into its northwest defences and in its southern end. The third hillfort, Blodwell Rock Camp (HER 01439), immediately adjacent to Llanymynech Hillfort, appears to have escaped quarrying activity. The Saxon boundary bank, Offa's Dyke (HER 01000) runs through this area (and incorporates the western ramparts of both Llanymynech Hillfort and Blodwell Rock Camp in its length), and has been damaged by limestone quarrying at Treflach and at Llynclys. An area of medieval or post medieval ridge and furrow (HER 08421) has been partially overlain by limekilns and associated infrastructure at Llanymynech (though does not appear to have been directly affected by quarrying).

(ii) The western end of a former tramway (HER 04618) serving quarries at Whitehaven (HER 06638) has been lost to modern stone quarrying here, as have

some of the features associated with the older workings themselves, including a network of tramways (HER 28554). Rock View Farm and its associated terraced fields (HER 08154), another farmstead Stone House (HER 27532) and part or all of a smallholding complex (HER 28564) at Llynclys have been lost to the same quarrying operations.

6.3.4.4 NE Wenlock Edge

Past Zone: 20 NE Wenlock Edge

(i) The only heritage asset directly affected in this extraction zone is an area of medieval or post medieval ridge and furrow earthworks (HER 05000) north of Much Wenlock Priory, which may have been cut into by the former Standhill Rock Limestone Quarry (HER 07306).

6.3.4.5 SW Wenlock Edge

Past Zone: 35 SW Wenlock Edge

(i) At Hungerford a small stone quarry sits in a medieval field system (HER 04310). There is a small stone quarry within the medieval deer park (HER 21622) at Millichope, and several further quarries in the larger area of the 19th century park there (HER 07742). A small stone quarry sits in 19th century parkland (HER 21724) at Corfton Hall and at the post medieval Shipton Hall park and garden (HER 07547) a former stone quarry predates a group of outbuildings.

6.3.4.6 Steeraway and The Hatch

Past Zone: 36 Steeraway and The Hatch

(i) Limestone working here has not directly affected any known heritage assets.

6.3.4.7 Building Stone

Past Zones: 30 Clun Forest building stone; 42 Grinshill quarries; 43 Myddle quarries

(i) The Clun Forest SMRA Past Zone represents an area with a concentration of small stone quarries identified from the 1901 OS mapping by the SC Minerals Officer. The Upper Silurian rock here mainly comprises Ludlow and Downton series siltstones and mudstones, which although they weather easily have been extensively used as building stone because they are easily worked and particularly suitable for coursed rubble construction. The stone has been used as building stone since the medieval period at least. It is also thought that certain stone roof tiles of a green and purple mottled micaceous sandstone, found on a number of Roman sites in Shropshire are from the Clun Forest Past Zone deriving possibly from Cefn Einion Formation stone (P Toghill, *pers. comm.*). The stone has also been extensively used as aggregate for tracks and for road construction.

(ii) Grinshill Hill in north Shropshire consists of an outcrop of Triassic sandstone capped with Keuper Marl. Some of the sandstone has been altered by volcanic activity to produce a hard-wearing but easily worked freestone, known as Grinshill Stone. The hill has been exploited for this high quality building stone since the 13th century. Most of the quarries (HER No. 06691) have been abandoned since the early 20th century, although there is still one working quarry here. The geological strata on the hill have provided a variety of building stones used locally for roofing

slates, doorsteps, paving etc., and freestone for high quality building work. In particular, the best building stone, a buff-coloured freestone, has been used in high status buildings from the medieval period onwards. The stone was used at Buildwas abbey in the 12th century, and in Shrewsbury from the 13th century. The 16th century Shrewsbury Market Hall and Shrewsbury School (now Shrewsbury Library), the 18th century English Bridge and new St Chad's Church, Shrewsbury, Attingham Hall, and Atcham Bridge, and the 19th century Shrewsbury, Chester, Gloucester and Cheltenham railway stations, and the Royal Salop Infirmary in Shrewsbury, Aberystwyth University, the Elan Valley reservoirs, all used Grinshill stone in their construction (Scard, 1990).

(iii) The Myddle Hill quarries have been worked probably since medieval times and certainly since the early post medieval period for building stone. The stone is a Triassic red sandstone – essentially the same stone as the Grinshill stone, but which has not been altered. This red sandstone has also been quarried extensively at Nesscliffe Hill, and at a number of smaller quarries in north Shropshire.

(iv) Bury Ditches (HER 00149) is an Iron Age multivallate hillfort; there is an old stone quarry on the northern side of the interior. A 16km length of Offa's Dyke (HER 01000) runs through the western part of the Clun Forest SMRA Past Zone, and a small stone quarry cuts into the monument at Lower Spoad. A small stone quarry has been cut into an area of medieval ridge and furrow earthworks (HER 28674) at Woolston. A small knoll at Birds Holding, Stowe, which has been suggested as a possible motte (HER 03024) is probably a natural feature, but it was the site of 19th century stone quarrying. There are a number of small stone quarries and two small sand and gravel pits within the post medieval parkland (HER 07757) at Walcot Hall.

(v) A find spot of Mesolithic (HER 01629 & HER 04726) and Neolithic (HER 08370) flints on the summit of Grinshill hill, indicate occupation of the hilltop in these periods. (The immediate findspots themselves were not in a quarried area, and have not been directly affected by quarrying).

6.3.4.8 Road Stone

Past Zones: 44 Sharpstones Hill and Haughmond Hill quarries; 48 Leaton; 49 Ercall & Maddocks Hill

(i) Quarries at Sharpstones Hill Haughmond Hill either side of Shrewsbury have exploited a very hard Pre-Cambrian greywacke for roadstone since the 19th century. At Leaton, the Leaton Quarry has been working the Precambrian (Uriconian) volcanic rocks for general aggregate since the mid-20th century. The Ercall and Maddocks Hill quarries also worked the Precambrian igneous, Cambrian, and Ordovician rocks for aggregates from the end of the 19th century through to the late 20th century. Doseley Quarry exploited Carboniferous period rocks for aggregates also in the late 19th and 20th centuries.

(ii) Bronze Age activity on Sharpstone Hill is evidenced by the finding of a polished stone axe hammer in 1948 (HER 00111). Post medieval quarrying (HER 08141) has cut into the northeastern side of the defences around The Burgs Iron Age hillfort (HER 00060) at Bayston Hill. The Roman road (HER 00098) between Wroxeter and Forden Gaer runs across Sharpstone Hill and cropmark linear features (HER 08632)

associated with the road were seen on the southeast side of the hill. Recent excavation work in advance of 21st century quarrying suggested Iron Age origins for this section of the road (Malim 2012). A post medieval trackway (HER 01268) follows the ridge of the hill, and may be continuation of the medieval and post medieval Portway. Cropmarks of a road or track (HER 08140), a field system (HER 08141), and ridge and furrow (HER 08492) of probable medieval date were recorded in advance of 21st century quarry extension on the southeast side of Sharpstone Hill. Three boundary stones (HER 08143, HER 08144 & HER 08145) of medieval or post medieval date lay on the Condover / Shrewsbury St Chads parish boundary on the southeast side of Sharpstone Hill. One of the stones had been lost or moved prior to the 21st century quarry extension. A post medieval farmstead (HER 27575) at the southwestern end of the hill has also been lost to modern quarrying.

(iii) At Haughmond Hill 19th century and (in particular) 20th and 21st century quarrying for roadstone has cut into the medieval and post medieval Haughmond Park (HER 07679). The quarrying here has also removed part of a post medieval carriage drive (HER 08282) associated with Sundorne House. The quarrying at Doseley in the 20th century removed a section of the Shropshire Canal and a railway which followed part of the canal bed after the abandonment of the canal in that area.

6.3.5 PEAT

6.3.5.1 North Shropshire wetlands

Past Zones: 37 Whixall and Wem Mosses; 38 Turf Moor; 39 Rednal; 40 Brown Moss; 46 Smythemoor and Moreton Wood

(i) Peat cutting for domestic use was widespread in the medieval and post medieval periods, and there are references in documents held at Shropshire Archives – such as the reference to peat cutting on Smithmoor and Morton Wood. Although this cutting was for domestic purposes and was not on the same scale as the later industrial extraction at Whixall Moss, nevertheless the cuttings appear to have been of some depth:

> Orders and directions from Sir Rowland Hill Baronet (22 July 1775): Only the inhabitants of the townships of Morton Longford and Bletchley are to get turf or peat upon Smithmoor; as this indulgence is designed for the benefit of the poor, no person shall get turf or peat who keeps a team and can fetch his own coals; every person getting turf or peat upon Smithmoor is to pay 6d p.a. to Mr John Peplow of Morton, who is to apply the money in levelling down the sides of the old turf pits so as to make them less dangerous. He is appointed to direct when and where turf or peat shall be got. No more turf is to be flayed in Morton Wood. (SA REF: 2919/1/3/R323512)

(ii) At Whixall Moss, a Middle Bronze Age looped palstave (HER 01572) was found in 1927, 8ft deep in the peat. Close to this findspot, three bog bodies of possible Iron Age or Roman date were found in the 19th century: in c.1867 the body of a young man, partly covered by a leather apron, was found “2 - 3 feet” down in the peat, in a sitting position near a three-legged stool; in c.1877 the body of a woman was found at a similar depth; and in 1889 the body of a man was found lying flat “4 – 5 feet” down in the peat to the west of Manor House (on the basis of its depth in the peat

this last may possibly have been of Bronze Age date) (Welcome to Whixall/The Bog Bodies).

Photo 12: Whixall Moss © Shropshire Council

Table 6.5: Individual HER sites affected by past mineral extraction, showing percentage of asset lost, source, and period
Evidence: CM cropmark; E earthwork; Bldg building; F findspot; Doc documentary sources; Exc excavation; O other

SMRA Past No.	Name	Minerals	Non-mineral HER sites affected by mineral extraction	Extent of loss	Period	Evidence:
1	Clee Hill	Coal, Stone - agg	00427 – Univallate hillfort, Ring cairn, Findspot	28%	Bronze Age, Iron Age, Saxon	E, F
2	Asterley	Coal	None	0		
3	Malehurst	Coal	03655 – Deserted settlement	n/k	Medieval	Doc
4	Morda	Coal	None	0		
5	Westbury	Coal	00098 – Road (Roman)	<1%	Roman	CM, E, Exc
6	Coed yr allt	Coal	None	0		
7	St Martins	Coal	08257 – Field boundary, Ridge & furrow	<1%	Medieval, Post Medieval	E
8	Weston Rhyn	Coal	None	0		
9	Hanwood-Shrewsbury	Coal	00015 - Rectangular enclosure, Field system 00019 - Enclosure, Field system 08619 – Field boundary	<1% <1%	Iron Age, Roman Iron Age, Roman Post Medieval	CM CM Exc
10	Pontesford	Coal	None	0		
11	Dryton	Coal	00468 - Rectangular enclosure	<1%	Iron Age, Roman	CM
12	Longden Common	Coal	None	0		

SMRA Past No.	Name	Minerals	Non-mineral HER sites affected by mineral extraction	Extent of loss	Period	Evidence:
13	Telford	Coal, Ironstone, Clay	00099 – Road (Roman)	<1%	Roman	Doc, E
			00693 – Manor house, Moat, Moated site	100%	Medieval	Doc
			00701 – Canal lift, Inclined plane	100%	Post Medieval	Doc
			03401 - Canal lift, Inclined plane	100%	Post Medieval	Doc
			03405 - Canal	96%	Post Medieval	Doc, E
			03406 - Canal	94%	Post Medieval	Doc, E
			03407 - Canal	60%	Post Medieval	Doc, E
			03408 - Canal	92%	Post Medieval	Doc, E
			03917 - Blast furnace	50%?	Post Medieval	Doc, Exc
			03918 - Forge	100%	Medieval	Doc
			03920 – Foundry, Iron working site	100%	Post Medieval	Doc, Exc
			04503 – Mining remains	50%	Post Medieval	E
			04728 - Tramway	75%	Post Medieval	E, Doc
			07206 – Brickworks, Tile works	100%	Post Medieval	Doc
			07218 - Brickworks, Tile works	100%	Post Medieval	Doc
			07771 – Deer park	<1%	Medieval, Post Medieval	Doc
			15000 – Hunting lodge	100%	Medieval?, Post Medieval	Doc
			15393 – Toll house	100%	Post Medieval	Doc
			15495 - Back to back house	100%	Post Medieval	E, Exc
			16950 - House	100%	Post Medieval	Doc
			17290 – Iron foundry, Agricultural building, Farmhouse	100%	Post Medieval	Doc
			17291 – Foundry, Methodist chapel (14300)	100%	Post Medieval	Doc
			17482 - House	100%	Post Medieval	Exc
			17483 - House	100%	Post Medieval	Doc
			20898 - Farmstead	100%	Post Medieval	Doc
			21234 – Reverberatory furnace	100%	Post Medieval	Exc
			21236 - Pit	100%	Post Medieval	Exc
			21237 – Industrial building, Worker's cottage	100%	Post Medieval	Doc
			21873 – Mining remains	40%	Post Medieval	Doc
			21877 – Farm building, House, Outbuilding, Shrunken village	100%	Post Medieval	Doc
			22540 – Farmstead	100%	Post Medieval	Doc
			22850 – Farmstead	100%	Post Medieval	Doc

SMRA No.	Name	Minerals	Non-mineral HER sites affected by mineral extraction	Extent of loss	Period	Evidence:
14	Coalbrookdale and Madeley	Coal, Clay	03402 - Canal lift, Inclined plane 03408 – Canal	100% 92%	Post Medieval Post Medieval	Doc Doc, E
15	Benthall, Broseley	Coal, Ironstone, Clay	07506 – Park, Garden 07554 - Park 07556 – Park	<1% <1% 50%	Post Medieval Post Medieval Medieval, Post Medieval	Doc Doc Doc
16	Caughley	Coal, Clay, Limestone	(04316 – Pottery works, Saggar Maker's workshop) 00644 – Pottery works 08501 – Bell pits 08503 – Findspot 08504 – Refuse disposal site 08505 – Bell pits 08506 – Railway (17315 – House)	0 100% 50% 0 75%? 85% 95% 0	Post Medieval Post Medieval Post Medieval Post Medieval Post Medieval Post Medieval Post Medieval Post Medieval	Doc, Exc Doc Doc Doc, F Doc Doc Doc E
17	Lilleshall and Church Aston	Limestone	None	0		
18	Llanymynech	Limestone, Stone – bldg, Metal ores (Pb)	01000 - Boundary bank, Dyke (defence), Frontier defence 01117 - Hillfort 01563 - Hillfort 04618 - Tramway 06638 – Lime kiln, Limestone quarry 08154 – Cultivation terrace, Farm 08421 – Ridge & furrow 27532 - House 28554 - Tramway 28564 - Field system, Outbuilding, Smallholding,	<1% 20% 3% 11% - 100% 35% 100% 30% 5%	Saxon Iron Age Iron Age Post Medieval Post medieval Post Medieval Medieval, Post Medieval Post Medieval Post Medieval Post Medieval	E E E Doc E E E Doc Doc E, Doc
19	SW Shropshire Orefield	Metal ores (Pb, Cu, Bar, Zn), Stone – agg, bldg	01327 - Univallate hillfort, Ringwork & bailey 01740 - Hillfort 04018 - Field system 04266 - Field system 04328 – Cultivation ridge, Field system 04331 - Cultivation ridge, Field system, Ridge & furrow 04332 - Ridge & furrow 09586 – Deserted settlement 21433 - Ridge & furrow	20% 100% <1% <1% <1% <1% <1% <1% <1%	Iron Age, Medieval Iron Age Prehistoric, Medieval Prehistoric, Medieval Prehistoric, Medieval Medieval, Post Medieval Medieval Post medieval Post Medieval	E Doc E E E E E E E

SMRA No.	Name	Minerals	Non-mineral HER sites affected by mineral extraction	Extent of loss	Period	Evidence:
20	NE Wenlock Edge	Limestone	05000 - Ridge & furrow	<1%	Medieval, Post Medieval	E
21	Clee Burf	Coal, Stone - agg	00181 - Univallate hillfort	95%	Iron Age	E
22	Abdon Burf	Coal, Ironstone	00182 - Univallate hillfort 00599 – Mound, Round barrow 02586 – Round cairn	100% 100% 100%	Iron Age Neolithic, Bronze Age Neolithic, Bronze Age	E Doc Doc
23	Billingsley	Coal, Ironstone, Clay, Stone - agg	07531 – Deer park, Park	<1%	Post Medieval	Doc
24	Highley - Alveley	Coal, Clay, Stone - agg	None	0		
25	Pimhill copper mine	Metal ores (Cu)	None	0		
26	Clive copper mines	Metal ores (Cu)	None	0		
27	Eardiston copper mines	Metal ores (Cu)	None	0		
28	Weston copper mines	Metal ores (Cu)	07583 – Deer park, Garden, Park	<1%	Post Medieval	Doc
29	Leebotwood coal working	Coal, Clay	None	0		
30	Clun Forest building stone	Stone –agg, bldg	00149 – Multivallate hillfort 01000 - Boundary bank, Dyke (defence), Frontier defence 03024 – Non antiquity, Motte 07757 - Deer park, Garden, Park, Arboretum 28674 – Field system	<1% <1% 25%? <1% ?	Iron Age Saxon Medieval Post Medieval Unknown, Medieval	E E E Doc E
31	Cound	Sand & gravel	00098 – Roman road (superseded) 00824 – Round barrow 02205 – Rectangular enclosure 02709 – Palisaded enclosure; inhumation cemetery 03999 - Non antiquity 21244 - Non antiquity 21246 - Field boundary, Field system, Field boundary	<1% 100% 100% 100% - - <1%	Roman Bronze Age Iron Age, Roman Roman; Medieval N/A N/A Medieval, Post Medieval	Doc Doc, Exc CM Doc CM CM Doc, Exc

SMRA No.	Name	Minerals	Non-mineral HER sites affected by mineral extraction	Extent of loss	Period	Evidence:
32	Morville, Eardington, & Hampton	Sand & gravel	00204 - Non antiquity, Rectangular enclosure 00211 - Rectangular enclosure (00213 – Ring ditch) (00215 – Ring ditch) 00428 - Linear feature, Ring Ditches 02087 – Rectangular enclosure 03218 - Findspot 03802 – Canal tunnel 04564 - Enclosure	100% 100% 0 0 ? 100% 0 ? 100%	N/A, Iron Age, Roman Iron Age, Roman (Bronze Age) (Bronze Age) Bronze Age Iron Age, Roman Bronze Age Post Medieval Iron Age, Roman	CM CM (CM) (CM) CM CM F E Exc
33	Wood Lane, Colemere	Sand & gravel	None	0		
34	Bromfield	Sand & gravel	00192 – Oven, Temporary camp (Roman) 00488 - Farmstead, Rectangular enclosure, Inhumation cemetery 02029 - Trackway 02327 - Cinerary urn, Cremation cemetery, Round barrow 02576 – Ring ditch 03035 - Quarry 03953 - Ring ditch 03954 - Ring ditch 03955 - Ring ditch 03956 - Cremation cemetery 03957 – Round barrow 03958 – Pit, Settlement 03060 - Cremation cemetery	100% 100% 55% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%	Roman Iron Age, Roman, Saxon Unknown Bronze Age Bronze Age Post Medieval Bronze Age Iron Age Bronze Age Bronze Age Bronze Age Neolithic, Bronze Age Bronze Age	CM CM CM CM CM E CM CM CM CM Exc Exc Exc
35	Wenlock Edge SW	Limestone, Stone – agg, bldg	04310 – Field system, Lynchet 07547 – Park, Garden 07742 - Garden, Landscape park, Kitchen garden 07754 – Park, Garden 21622 – Deer park 21724 – Park	<1% <1% <1% <1% <1% <1%	Medieval Post Medieval Post Medieval Post Medieval Medieval, Post Medieval Post Medieval	E Doc Doc Doc Doc Doc
36	Steeraway and The Hatch	Limestone	None	0		
37	Whixall and Wem Mosses	Peat	01572 – Find spot	100%	Bronze Age	F
38	Turf Moor	Peat	None	0		

SMRA No.	Name	Minerals	Non-mineral HER sites affected by mineral extraction	Extent of loss	Period	Evidence:
39	Rednal	Peat	None	0	Unknown	Doc
40	Brown Moss	Peat	None	0		
41	NE Shropshire sand & gravel quarries	Sand & gravel	02851 – Deer park 07602 – Park, Walled garden 08720 – Ridge & furrow 08721 – Marl pit, Ridge & furrow 21549 – Military airfield	<1% <1% <1% <1% <1%	Medieval Medieval, Post Medieval Medieval Medieval Modern	Doc Doc E E E
42	Grinshill quarries	Stone – bldg	01629 – Find spot 04726 - Find spot 08370 – Find spot	<1% <1% <1%	Mesolithic Mesolithic Neolithic	F F F
43	Myddle quarries	Stone – bldg.	None	0		
44	Sharpstones Hill and Haughmond Hill quarries	Stone – agg	00060 – Multivallate hillfort 00098 - Road (Roman) 00111 - Find spot 01268 - Trackway 07679 - Park 08143 – Boundary stone, Parish boundary 08144 - Boundary stone, Parish boundary 08145 - Boundary stone, Parish boundary 08146 – Field system 08282 - Drive 08492 – Ridge & furrow, Field boundary 08632 – Earthwork, Trackway, Road 27575 – Farmstead	40%? <1% 100% 70% 15% 100% 100% 100% 100% 10% - 100% 100%	Iron Age Roman Bronze Age Medieval, Post Medieval Medieval, Post Medieval Unknown, Post Medieval Unknown, Post Medieval Unknown, Post Medieval Medieval Post Medieval Medieval, Post Medieval Unknown, Roman Post Medieval	E CM, E, Exc F E Doc Doc Doc Doc CM E, Doc CM E Doc
45	Albrighton sand and gravel quarries	Sand & gravel	07539 – Park 08539 – Military depot	1% <1%	Post Medieval, Modern Modern	Doc Doc
46	Smythemoor and Moreton Wood	Peat	None	0		
47	Upper Hayton	Cu	None	0		
48	Leaton	Stone – agg	None	0		
49	Ercall & Maddocks Hill	Stone – agg	None	0		
50	Doseley	Stone – agg	03408 – Canal 03875 - Railway	1% 20%	Post-medieval Post-medieval	Doc Doc

Table 6.6: From Hillforts Project: Hillforts with damage from past mineral extraction

HER	Name	Mineral extraction
00113	Ebury Hill	Stone
00129	The Berth	Sand & gravel
00135	Haughmond Hill	Stone
00149	Bury Ditches	Stone – bldg/agg
00158	Norton Camp	Stone
00180	Nordy Bank	Coal, Limestone
00181	Clee Burf	Coal, Ironstone
00182	Abdon Burf	Coal
00187	Stitt Hill	Stone
00249	Caus Castle	Stone
00419	Caynham Camp	Limestone
00427	Titterstone Clee Hill Camp	Stone - agg
01108	Wall Camp, Kinnersley	Sand & gravel
01117	Llanymynech Hillfort	Limestone, Metal ore (PB, Cu)
01327	Ritton Castle	Metal ore (Pb, Bar) / Stone
01438	Stevenshill	Limestone
01740	Nils Hill	Stone

Photo 13: Nordy Bank hillfort, with medieval and post-medieval mining encroaching on its eastern defences

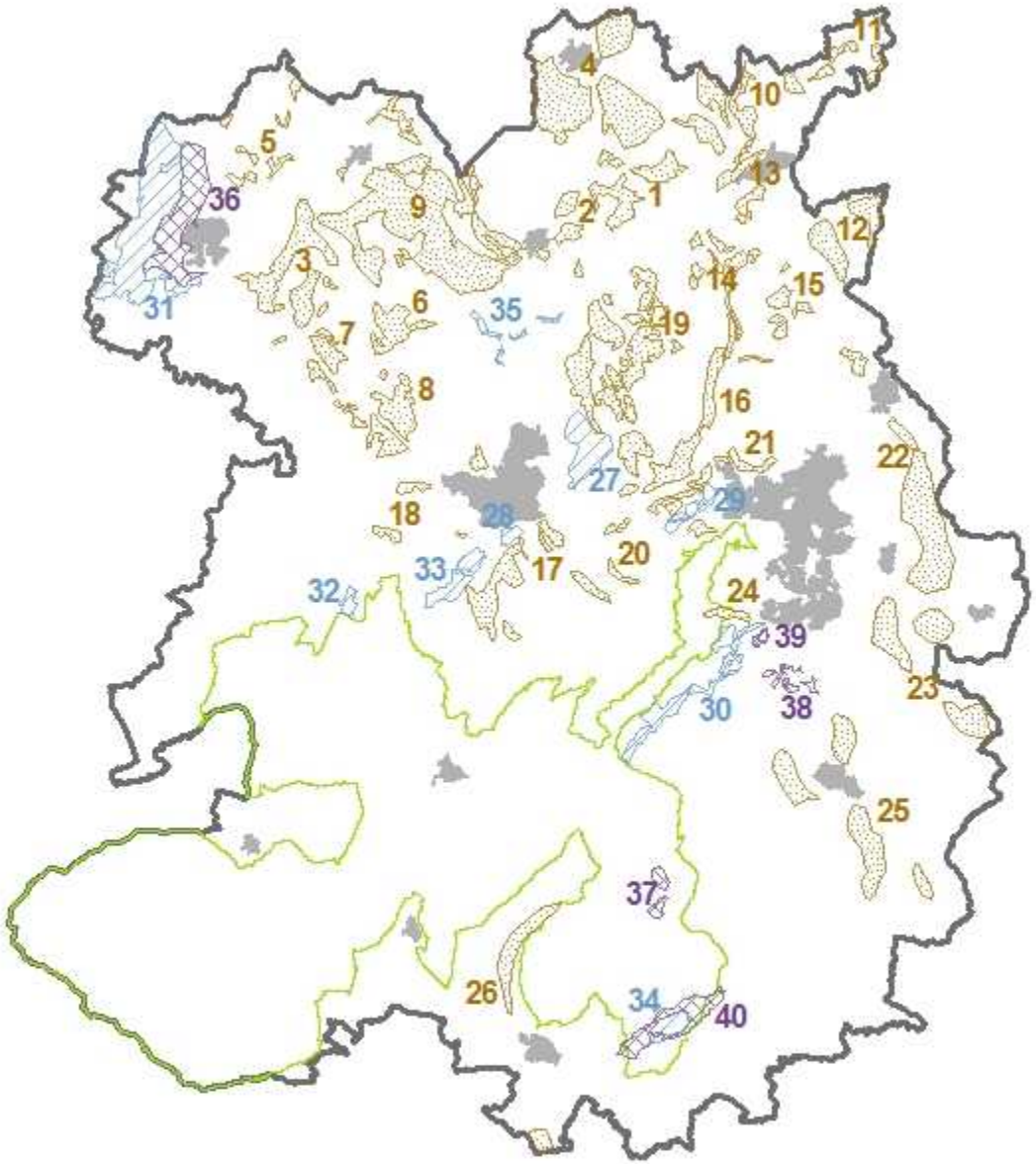
Table 6.7: Archaeological work accompanying modern extraction (ESAs)

No	SMRA Past Zone	HER Event Nos.	Description	HER Record Nos.
1	Clee Hill	ESA3420	Evaluation at Knowbury (application refused 1993)	(04625 – Mining remains)
13	Telford	ESA3241	SCCAS WB at Lawley Furnace	03917 - Blast furnace
		ESA3383 ESA6483	LUAU evaluation of Dawley Road Opencast Coal Site (Huntington Lane) Huntington Lane Surface Mine Environmental Statement (Entec) and evaluation & w/b (Headland Archaeology)	04503 – Mining remains 04728 – Tramway
		ESA3242	IGMT evaluation/excavation at Newdale	03920 – Foundry, Iron working site 14300 – Methodist chapel 15393 – Toll house 15495 - Back to back house 16907 - Bridge 17290 – Iron foundry, Agricultural building, Farmhouse 17291 – Foundry, Friends meeting house, Methodist chapel 17482 - House 17483 - House 21234 – Reverberatory furnace 21236 - Pit 21237 – Industrial building, Worker's cottage 26007 – Farmstead
		ESA6645	Wardell Armstrong monitoring of restoration	07218 – Brick & tileworks
		ESA6078	1984 Investigation of Limestone Mines in the Wrekin area by Wardell Armstrong	

No	SMRA Past Zone	HER Event Nos.	Description	HER Record Nos.
15	Benthall, Broseley	ESA3405 ESA5201	Evaluation of opencasting at Lodge Coppice, Barrow	07556 - Park
		ESA5584 ESA6516 ESA6734 ESA6735 ESA6736	DBA, Evaluation & WB for opencasting at Windmill Lane, Posenhall	
		ESA6078	1984 Investigation of Limestone Mines in the Wrekin area by Wardell Armstrong	07506 – Park, Garden 07554 – Park
16	Caughley	ESA5137	1987 evaluation of the saggar works in advance of opencast extension	(04316 – Pottery works, Saggar Maker's workshop) 08503 – Findspot 08504 – Refuse disposal site 08505 – Bell pits
		ESA5149	1998 Assessment of Caughley Quarry in advance of quarry extension by IGMT (Desk-top assessment)	08501 – Bell pits 08504 – Refuse disposal site 08505 – Bell pits 08506 – Railway
		ESA5841	2000 Evaluation of Caughley Quarry extension	08504 – Refuse disposal site 08505 – Bell pits 08506 – Railway (17315 – House)
		ESA5842	2004 Fieldwalking of Caughley Quarry extension by Castlering Archaeology	08504 – Refuse disposal site 08505 – Bell pits
		ESA5844	1960s Limited observations during first phase of quarrying at Caughley Quarry	

No	SMRA Past Zone	HER Event Nos.	Description	HER Record Nos.
18	Llanymynech	ESA5028	Assessment of extension to Llynclys quarry (Rock View Farm and The Gronwen & Trefonen Mineral Railway	06630 – The Gronwen & Trefonen Mineral Railway 06638 – Lime kiln, Limestone quarry 08154 – Cultivation terrace, Farm
31	Cound	ESA479 ESA5027 ESA6251	BUFAU Evaluation of Condover Quarry extension Phoenix Consulting DBA of Condover Quarry extension	02205 – Rectangular enclosure/Villa? 21244 - Non antiquity 21246 - Field boundary, Field system, Field boundary 03999 - Non antiquity
32	Morville, Eardington, & Hampton	ESA466 ESA5228 ESA5532 ESA5476 ESA5477	1993 Evaluation at Bridgwalton Farm and East Farm, Underton 1998-1999 assessment of Morville Quarry extension 1992 Fieldwalking Survey at Bridgwalton Farm, Bridgnorth in advance of proposed gravel extraction 1992 DBA of Bridgwalton and Underton Farms in advance of proposed gravel extraction 1992 Fieldwalking Survey at Underton Farm, Bridgnorth in advance of proposed gravel extraction	(00213 – Ring ditch) (00215 – Ring ditch) 00428 - Linear feature, Ring Ditches
		ESA3402 ESA3403 ESA4928	Evaluation and excavation at Eardington	04564 - Enclosure
		ESA6508	Salvage recording 2003 of Iron Age human remains at Bridgwalton Quarry.	

No	SMRA Past Zone	HER Event Nos.	Description	HER Record Nos.
34	Bromfield	ESA4519	Webster excavations	00192 – Oven, Temporary camp (Roman)
		ESA495 ESA2552 ESA4520 ESA3253 ESA3256 ESA3258 ESA2810	Stanford excavations	00488 - Farmstead, Rectangular enclosure, Inhumation cemetery 02327 - Cinerary urn, Cremation cemetery, Round barrow 03953 - Ring ditch 03956 - Cremation cemetery 03957 – Round barrow 03958 – Pit, Settlement 03060 - Cremation cemetery
		ESA4521 ESA3254 ESA3257	BUFAU evaluation and excavations	00192 – Oven, Temporary camp (Roman) 02576 – Ring ditch 03954 - Ring ditch 03955 - Ring ditch
		ESA2484	SCCAS/BUFAU evaluation	02029 - Trackway
44	Sharpstones Hill and Haughmond Hill quarries	ESA4762 ESA5943 ESA5944 ESA6216 ESA6261	Evaluation and excavation of extension in 2000s by SCCAS and SLR	00098 - Road (Roman) 01268 - Trackway 08143 – Boundary stone, Parish boundary 08144 - Boundary stone, Parish boundary 08146 – Field system 08492 – Ridge & furrow, Field boundary 08632 – Earthwork, Trackway, Road
48	Leaton	ESA6659 ESA6858	2011 Watching Brief at Leaton Quarry by C Haines 2012 2011 Watching Brief at Leaton Quarry	



N

SMRA Future Zones

- future sand and gravel zones
- future stone zones
- future coal zones
- aonb boundary

Sand & Gravel Zones

1 Prees
2 Wem and Edstaston
3 West Felton
4 Whitchurch
5 Gobowen and St Martins
6 Baschurch
7 Knockin and Nesscliffe
8 Forton and Little Ness
9 Ellesmere
10 Market Drayton NW
11 Norton in Hales
12 Hinstock
13 Market Drayton S
14 Hodnet Heath
15 Childs Ercall
16 Tern Valley
17 Dorrington and Condover
18 Shrewsbury W
19 Roden Valley
20 Wroxeter
21 Wrockwardine and Weald Moors
22 Newport and Shifnal
23 Kemberton and Chesterton
24 Buildwas
25 Bridgnorth
26 Ludlow

Stone Zones

27 Haughmond
28 Bayston Hill
29 Leaton
30 Much Wenlock
31 Craignant & Treflach
32 Callow Hill
33 Lyth
34 Clee Hill
35 Myddle & Grinshill

Coal & Fireclay Zones

36 Oswestry Coalfield
37 Brown Clee
38 Caughley
39 Benthall
40 Titterstone Clee

0 5 10 20 Kilometers

Shropshire Council

Shropshire Minerals Resource Assessment

Figure 7: The SMRA Future Zones of potential future mineral extraction

Archaeology Service
Shropshire Council
Historic Environment Team, Environment Group,
Shirehall, Abbey Foregate, Shrewsbury, SY2 6ND

1:500,000

CHAPTER 7: FUTURE MINERAL EXPLOITATION

7.1 Future mineral extraction

7.1.1 The future mineral resource potential in Shropshire falls within three broad themes: Sand and Gravel extraction, Stone quarrying (including crushed rock and building stone) and open-cast Coal and Fireclay extraction.

7.1.2 Future Sand and Gravel working

The principal sources of sand and gravel in Shropshire are the glacial sands and gravels of the lowland areas of the north and eastern parts of the historic county. However river sand and gravels are also exploited, particularly in the south of the county, and there is some working of bedrock deposits along the eastern side of the county. The current guideline for sand and gravel production in Shropshire and Telford & Wrekin is 0.82 million tonnes per year (mt p/a); during the period 2005-2009 the Shropshire sub-region produced an average of 0.75mt p/a of sand and gravel, which equates to approximately 10 – 15 ha (hectares) p/a in area. The 2011 Shropshire Core Strategy considered that additional sand and gravel resources might be required within the period up to 2026 to provide for flexibility and local competition. (Shropshire Core Strategy, 7.29, p123)

7.1.3 Future Stone quarrying

(i) Crushed rock During the period 2005-2009 the Shropshire sub-region produced an average of 2.30mt p/a of crushed rock. Production of crushed rock from a single site in Telford & Wrekin (Leaton Quarry) contributed about a quarter of the production from the sub-region. The 2011 Shropshire Core Strategy considered that there were sufficient crushed rock aggregate resources available from permitted sites for the period up to 2026. (Shropshire Core Strategy, 7.29, p123). High quality specialist roadstone is produced from a number of quarries in the Shropshire region (Haughmond, Bayston Hill, and Callow Hill).

(ii) Building stone There is currently one operational quarry in the county providing building stone. This is the Grinshill Stone Quarry which produces a high quality sandstone used in both new build and restoration work. The stone has been used extensively within the county since the 13th century, and throughout the UK over the last two hundred years. A small number of smaller quarries operate intermittently, for example, the Coppice Barn Quarry at Diddlebury, which provides stone for specific repair and restoration projects. These have not been included in this current assessment due to their small scale and infrequent working; any future extensions of these small quarries will be covered by the policies and procedures recommended by this project.

7.1.4 Future Coal and Fireclay working

(i) At present, it is considered that it is unlikely that there will be a future requirement for open cast coal in the Shropshire and Telford and Wrekin area. Nevertheless, three potential areas for future extraction have been assessed for this report. The resource potential of the Oswestry coalfield is believed to be poor; coal has been recovered in recent years from the Clee coalfield in preparation for the quarrying of dolerite. The main source of recently worked coal deposits in the county are from the Coalbrookdale Coalfield. Historically this coalfield has been extensively worked underground, but in the second half of the 20th and beginning of the 21st centuries

coal and fireclay have been extracted by open-cast working. There are limited potential areas for future exploitation of coal and fireclay, and these have been identified and assessed.

(ii) Coal bed methane (fracking) is possible and the area to the east of Oswestry across to Ellesmere has been identified for possible testing. The drill sites for fracking themselves are relatively small, but the sites may involve significant land-take for lagoons, infrastructure, storage tanks, etc.. There is also a potential for conventional hydrocarbon exploration in the east and north of the county. Both these processes however lie beyond the remit of this assessment.

7.1.5 Main mineral types

Three broad types of materials for future mineral exploitation have been considered: Sand and Gravel, Stone (including both crushed rock and building stone), and Coal and Fireclay. The sand and gravel resource has been divided for convenience into six geographically based groups, and then into 26 individual zones ("Future Zones") where it is considered that there is a potential for future extraction (see table 7.1).

7.1.6 Sand and Gravel The definition of the 26 sand and gravel zones has been based on a GIS shapefile produced by the SC Minerals Officer. This was produced for predictive use only and is based on existing and proposed mineral safeguarding zones, geological baseline data (supplied by the BGS), and evidence from past mineral exploitation (principally as recorded on the OS 2nd Ed. 25" mapping). In addition, these areas have been refined on the basis of "realistically workable" deposits, i.e. deposits of a minimum size (a minimum of 1.5mt – 2mt, 20ha area by 15m depth), realistic transport infrastructure, and with areas of major existing development subtracted.

7.17 Stone and Coal & Fireclay The Stone (crushed rock and building stone) and Coal and Fireclay "Future Zones" have been similarly based on mineral resource data provided by the BGS, and existing and proposed mineral safeguarding areas. The potential stone resource has been divided into four groups based on rock types, and then into nine zones with potential for future extraction. The coal and fireclay resource has been grouped by coalfield and then sub-divided into five zones with possible potential for future extraction (see table 7.1).

7.18 The 40 Future Zones thus identified have been further refined according to principals in the Shropshire Core Strategy by which broad locations for potentially workable mineral exploitation have been defined to lie within 2km of transport routes but outside international biodiversity designations and the AONB (Shropshire Core Strategy, section 7.30, p123). It must be emphasized that the Future Zones of mineral extraction identified in this document should not be seen as establishing any planning presumption in favour of future mineral working in these areas, merely that a potentially economic resource is considered to exist there.

7.19 Whilst there is strong policy protection for the AONB there is also a recognition that minerals can only be worked where they are found and working small-scale vernacular stone quarries can assist in promoting local distinctiveness. The recently reissued AONB Management Plan acknowledges this and it is referred to in Policy

CS20, emerging SAMDev policy, DCLG online minerals guidance (April 14) and publications by the BGS (see Chapter 9).

Table 7.1: The Future Zones with potential for future mineral extraction

Mineral type	**Group**	**Size (km^2)**	**Future Zone**
Sand and Gravel	NE Shropshire	64.2	1 Prees 2 Wem and Edstaston 4 Whitchurch 10 Market Drayton NW 11 Norton in Hales 13 Market Drayton S
	NW Shropshire	97.4	3 West Felton 5 Gobowen and St Martins 6 Baschurch 7 Knockin and Nesscliffe 8 Forton and Little Ness 9 Ellesmere
	Tern and Roden Valleys	52.4	14 Hodnet Heath 16 Tern Valley 19 Roden Valley 21 Wrockwardine and Weald Moors
	Severn Valley	37.4	17 Dorrington and Condover 18 Shrewsbury W 20 Wroxeter 24 Buildwas 25 Bridgnorth
	E Shropshire (inc. Telford & Wrekin)	50.1	12 Hinstock 15 Childs Ercall 22 Newport and Shifnal 23 Kemberton and Chesterton
	Corve and Teme Valleys	8.3	26 Ludlow
Stone (Crushed rock)	Sandstone (Longmyndian)	14.9	27 Haughmond 28 Bayston Hill 33 Lyth
	Igneous	7.6	29 Leaton 32 Callow Hill 34 Clee Hill
	Limestone	38.7	30 Much Wenlock 31 Craignant & Treflach
(Building stone)	Sandstone (Triassic)	1.7	35 Myddle & Grinshill
Coal and Fireclay	Oswestry Coalfield	17.1	36 Oswestry Coalfield
	Coalbrookdale Coalfield	3.3	38 Caughley 39 Benthall
	Clee Hills Coalfield	10.1	37 Brown Clee 40 Titterstone Clee

7.2 HER records of assets in future mineral extraction zones

7.2.1 Table 7.2 below shows the data for the total number of monuments (including Monuments and Find spots but excluding Buildings, Hedgerows, and Landscapes) within the HER broken down by future mineral group and by period and provide some comparison with the period totals for the HER.

Table 7.2: Numbers of HER monuments in Future Zones against totals in HER by period

Period	Total for HER	All Future Zones	Sand & Gravel	Stone	Coal and Fireclay
Prehistoric	(1345)[a]	68	65	2	1
Palaeolithic (500,000 BC–10,000 BC)	4	0	0	0	0
Mesolithic (10,000 BC–4000 BC)	40	2	0	2	0
Neolithic (4000 BC-2201 BC)	152	6	2	3	1
Bronze Age (2600 BC-700 BC)	619	96	78	12	5
Iron Age (700 BC–43 AD)	530	9	4	3	2
Iron Age to Roman	(620)[b]	202	184	16	2
Roman (43 AD–410 AD)	901	45	35	10	0
Early Medieval (410 AD-1065 AD)	40	3	0	1	2
Medieval (1066 AD–1540 AD)	2,052	134	88	30	16
Medieval to Post-medieval	(1,233)[c]	32	26	4	2
Post-medieval (1540 AD–1901 AD)	6,171	1,096	590	330	179
Modern (1901 AD to present)	1,346	16	15	1	0
Unknown	n/a	27	24	1	2
Totals	**11,855**	**1,737**	**1,111**	**417**	**212**

a represents monuments (including find spots) of undefined prehistoric date
b includes enclosures, field systems, linear features, and trackways of probable Iron Age to Roman date which form part of the 1,431 combined totals for these periods
c includes parks, field systems, roads, deserted settlements, watermills, fishponds and certain other features of medieval to post-medieval date which form part of the 8,223 combined totals for this period

7.2.2 Direct comparison however is problematic as certain type sites – for example, cropmark enclosure sites or parks – may span two or more periods. Other monuments have been given the generic date "Prehistoric" where dating is uncertain within this period (and a consequent date range between the Palaeolithic and Iron Age). The term "undefined prehistoric" has been used here to distinguish these sites from more precisely datable prehistoric sites. Whereas the relatively small numbers of such sites in the future zones has enabled some filtering and correction of this data (for example, "prehistoric" cropmark enclosures have been assigned to the "Iron Age to Roman" period), this has not been attempted for the HER as a whole. And, of course, as the vast majority of these sites have not been investigated archaeologically, there can be no absolute certainty about their assigned date or date range. As the data is broken down by both period and class, it becomes realistic to compare the monument totals for period and type within the zones and the HER as a whole (See Appendix II, tables App II.1, II.2, & II.3).

7.2.3 A crude figure for monument density has been produced by dividing the number of HER monuments by the area in square kilometres of the future zones to give a figure for monuments per square kilometre (mons/km^2). These figures have been broken down by period and by the mineral group types. The density figures do not take account of the actual size or area of the monuments (or the size of their

HER GIS polygons) and of course many of the monuments are recorded as point data. Where monuments, such as Wroxeter Roman city (HER 00026) or Haughmond Abbey (HER 00116) contain a large number of individual components, these components have been filtered out in order to avoid distorting the density figures. Tables showing the total number of monuments, broken down by period, and also showing monuments density, for each group have been included in the discussion of the future extraction zones in the next section.

7.2.4 The density figures need to be treated with a degree of caution. The monument totals include those recorded by the HER as "Monuments" and "Find spots". Although the HER monuments recorded as "Building", "Hedgerow" and "Landscape" have been filtered out, a number of buildings are recorded under "Monuments" and this in particular affects the total monument numbers for the post-medieval period. Moreover, a single HER monument may contain a number of individual archaeological sites, for example, a cropmark complex, recorded as a single monument, may contain ring ditches, farmstead enclosures, and field systems, all of different periods; these may be distinct and separate monuments, unrelated other than in their geographical juxtaposition. This in particular affects the total monument numbers for the prehistoric and Roman periods.

7.2.5 Notwithstanding these cautionary notes, the density figures are useful for providing a rough guide for the monument densities in the zone groups for comparison with each other and with the overall county density. The total numbers of monuments in the future extraction zones and monument densities are shown in the tables that accompany the summary accounts in section 7.3 (below). Monument densities that differ substantially from the county average (i.e. by +/- 25% or more) have been highlighted in bold (greater than expected) and italics (lower than expected).

7.3 SMRA Future Zone summary accounts

7.3.1 Sand and Gravel

7.3.1.1 The 26 zones where future sand and gravel extraction may be practicable have been grouped for convenience into six groups, NE Shropshire, NW Shropshire, the Tern and Roden Valleys, the Severn Valley, E Shropshire, and the Corve and Teme Valleys. These groups cover a total area of 308km^2, or 9% of the historic county of Shropshire. There are a total of 1,111 HER monuments in these zones, also representing 9% of the HER monuments for Shropshire.

Table 7.3: Monument numbers in the Sand and Gravel Groups

Period	County		Sand and Gravel Groups					
		Total S&G	NE Shrops	NW Shrops	Tern & Roden Valleys	Severn Valley	E Shrops	Corve & Teme Valleys
Prehistoric*	(1345)[a]	65	1	23	24	12	5	0
Palaeolithic	4	0	0	0	0	0	0	0
Mesolithic	40	0	0	0	0	0	0	0
Neolithic	152	2	1	0	0	1	0	0
Bronze Age	619	78	5	25	7	30	1	10
Iron Age	530	4	0	2	0	1	1	0
Iron Age to Roman	(620)[b]	184	1	81	47	40	4	11
Roman	901	35	8	5	1	16	3	2
Early Medieval	40	0	0	0	0	0	0	0
Medieval	2,052	88	21	5	12	26	11	13
Med to Post-med	(1,233)[c]	26	2	3	1	12	6	2
Post-medieval	6,171	591	113	184	83	83	112	16
Modern	1,346	15	5	2	2	3	2	1
Unknown	n/a	24	2	6	8	5	2	1
Totals	11,855	1,112	159	335	185	229	147	56

(a, b, & c: see notes to Table 7.2)

Table 7.4: Monument density in the Sand and Gravel Groups

Period	County		Sand and Gravel Groups					
		Total S&G	NE Shrops	NW Shrops	Tern & Roden Valleys	Severn Valley	E Shrops	Corve & Teme Valleys
Prehistoric*	0.39	*0.21*	*0.02*	*0.24*	0.46	0.32	*0.10*	*0*
Palaeolithic	0	0	0	0	0	0	0	0
Mesolithic	0.01	0	0	0	0	0	0	0
Neolithic	0.04	*0.01*	*0.02*	*0*	*0*	0.03	*0*	*0*
Bronze Age	0.18	**0.25**	*0.08*	**0.26**	*0.13*	**0.80**	*0.02*	**1.20**
Iron Age	0.15	*0.01*	*0*	*0.02*	*0*	*0.03*	*0.02*	*0*
Iron Age to Roman	0.18	**0.59**	*0.02*	**0.83**	**0.90**	**1.07**	*0.08*	**1.33**
Roman	0.26	*0.11*	*0.13*	*0.05*	*0.02*	**0.43**	*0.06*	0.24
Early Medieval	0.01	0	0	0	0	0	0	0
Medieval	0.59	*0.28*	*0.33*	*0.05*	*0.23*	0.70	*0.22*	**1.57**
Med to Post-med	0.35	*0.08*	*0.03*	*0.03*	*0.02*	0.32	*0.12*	*0.24*
Post-medieval	1.77	1.91	1.76	1.89	1.58	**2.22**	**2.24**	1.93
Modern	0.39	*0.05*	*0.08*	*0.02*	*0.04*	*0.08*	*0.04*	*0.12*
Unknown	n/a	0.08	0.03	0.06	0.15	0.13	0.04	0.12
Totals	3.40	3.58	*2.46*	3.44	3.53	**6.12**	2.93	**6.75**

High density values are bold (more than 25% above the overall county density)
Low density values are italic (more than 25% below the overall county density)

7.3.1.2 NE Shropshire

Future Zones: 1 Prees; 2 Wem and Edstaston; 4 Whitchurch; 10 Market Drayton NW; 11 Norton in Hales; 13 Market Drayton S

(i) The NE Shropshire Future Sand and Gravel Group comprises a number of discrete areas where there is potential for the exploitation of sand and gravel deposits. The zone includes the area covered by the Past Extraction Zone 41 (see Chapter 6). The minerals include some river sand and gravel along the upper Tern valley and glacial sand and gravel elsewhere. The potential future zones in this group cover a total area of 64.2km^2, and contain 158 HER monuments, giving an overall density of 2.46 mons/km^2. There is one active sand extraction site in this group at Stoke Heath (Tern Hill Quarry), currently with permission to operate until June 2014.

(ii) The Prehistoric monuments in this group are characterized in the main by find spots, including an urnfield (HER 00919) at Prees Heath in the Whitchurch Future Zone. There is a cropmark ring ditch (HER 03694) and an unusual survival of an earthwork barrow (HER 03694) in an arable landscape in the Market Drayton NW Future Zone near Moreton Say; this is a Scheduled Ancient Monument (SAM) (National Heritage List Entry [LE] No. 1019655). There is a cropmark enclosure (HER 02296) of Iron Age to Roman date in the Market Drayton NW Future Zone; six of the eight Roman sites in the group lie in the Whitchurch Future Zone, including the Heath Road Roman roadside settlement (HER 04288) just to the southeast of the Roman town of *Mediolanum*, two Roman roads, and a number of find spots. The known cropmark evidence in these zones is likely to be highly under-representative of the actual prehistoric to Roman archaeological resource in these areas, for the reason that the northeast of the county has been under-flown in comparison with the central part and the Marches along the west side. This accounts for the lower density of prehistoric to Roman period monuments in this zone compared with the county as a whole. The unusual survival in mainly arable farmland of a Bronze Age barrow has led to its designation as a SAM, though the presence of this monument also suggests that other ploughed out remains of this period await discovery in this area. Data from the Portable Antiquities Scheme would also suggest – as might be expected – that Roman activity in the area, particularly around Whitchurch (Roman Mediolanum), was more intense than the HER records for the Future Zones in this area might suggest.

(iii) The medieval archaeology in these zones comprises a range of monuments typical of rural lowland settlement. The monuments include three high status sites which have been designated as SAMs. Pan Castle, Whitchurch (HER 01039, LE 1020286) is a well-preserved example of a medieval motte and bailey castle, of particular interest because of its proximity to the medieval town of Whitchurch, and proven to contain extensive archaeological remains. Blakemere Castle (HER 01040, LE 1017013) is a manor house and moated site northeast of Whitchurch, and another well-preserved moated site lies at Middle Morrey (HER 01041, LE 1017010) in the Market Drayton NW zone. Other medieval monuments include two chapels, fishponds, (deer) parks, a possible deserted settlement at Belton (HER 02987) and field systems (including earthwork and cropmark ridge and furrow). Although the density of medieval remains in these zones is also below the average for the county,

they are typical of lowland rural settlement in the county; three of these monuments, all high status sites, have been designated as SAMs.

(iv) Likewise the post-medieval monuments in these zones are typical of lowland rural settlement in the county for this period. 86 of the 112 post-medieval sites in these zones are farmsteads identified and classified by the desk-based Historic Farmsteads Characterisation Project 2008 – 2010 (ESA6427), largely from the digital version of the c.1900 OS large scale mapping. The westernmost edge of Combermere Abbey Park (HER 30600), a post-medieval Grade II Registered Park (LE 1000639) lies just inside the eastern edge of the Whitchurch Future Zone. There are three more parks in the Market Drayton NW zone: Adderley Hall (HER 07561), Cloverley Hall (HER 07575), and Shavington Hall (HER 07602), and another at Bellaport Hall (HER 07563) in the Norton in Hales zone, none of which is registered. The remaining post-medieval monuments in these zones are a mix of rural settlement and agriculture (the sites of former cottages, a squatter settlement (HER 21593) on Prees Heath common, and field systems), and rural industry and transport (roads, canals and railways, sand and clay pits, saw mills and a watermill).

(v) The 20th century monuments in these zones are mainly military sites and located on Prees Heath – a WWI training camp, barracks and hospital (HER 21590 & 21591), and a WWII internment camp, POW camp and airfield, RAF Tilstock (HER 21549). There is also a WWII aircraft crash site (HER 21331) at Woore Hall Farm, of a German bomber shot down over Market Drayton

(vi) Future assessment of applications for mineral extraction in this group of Future Zones should take into account that the relative paucity of evidence for prehistoric and Roman activity here is probably merely a reflection of the lack of aerial photographic survey.

7.3.1.3 NW Shropshire

Future Zones: 3 West Felton; 5 Gobowen and St Martins; 6 Baschurch; 7 Knockin and Nesscliffe; 8 Forton and Little Ness; 9 Ellesmere

(i) The NW Shropshire Sand and Gravel Group is the largest grouping of future zones. It extends from the Montford Bridge just to the northwest of Shrewsbury to Dudleston on the northern boundary of the county. The landscape is mainly low-lying glacial deposits left by the retreating ice sheets with isolated hills of outcropping Triassic sandstone. It includes the "Meres and Mosses" area around Ellesmere. There has been good past aerial photographic coverage of the West Felton, Baschurch, Knockin and Nesscliffe, and Forton and Little Ness Future Zones, and these zones have produced a relatively high number of cropmark sites, particularly ring ditches and enclosures. The potential future zones cover a total area of 97.4km^2, and contain 335 HER monuments, giving a density of 3.44 mons/km^2. There is an active sand and gravel extraction site at Wood Lane, Ellesmere. Another site, at Sleap Airfield, near Wem, has permission for the extraction of sand and gravel, but has not yet commenced operation.

(ii) There are 21 undefined prehistoric monuments in this group of zones, including a number of find spots, 10 pit alignments and seven other linear features. There are

15 Bronze Age ring ditch sites, and a barrow cemetery at Baschurch, part of which is a SAM (HER 02451, LE 1016824). The barrow cemeteries in the Baschurch Future Zone on the north and west sides of Baschurch village are marked by a number of cropmark ring ditches (HER 02396, 02397, 02398, 02451, 04038, 04086). Part of the western cemetery (HER 02451) has been designated as a Scheduled Ancient Monument [SAM] (LE 1016824). The northeastern part of this barrow cemetery was subject to an archaeological evaluation in 2002, and geophysical survey identified a number of features, confirmed by trial excavation. Dating evidence was scant, but two hearths produced radiocarbon dates of between AD 420-700 (Appleton-Fox, 2002) suggesting possible re-use of the early Bronze Age cemetery in the early Saxon period. A group of burnt mounds (HER 28079, 28080, & 28081) was identified by the North West Wetlands Survey just to the northeast of Rednal airfield in the West Felton Future Zone and are an indication of mid to late Bronze Age activity in this area.

(iii) The NW Shropshire group of sand and gravel Future Zones sits in area of intensive settlement of Iron Age to Roman date. Aerial photographic survey has identified 73 Iron Age to Roman period cropmark enclosures in these zones, a significant proportion of the total for the county as a whole. Four of the enclosure sites have associated field systems, and another eight cropmark field systems in these zones are assigned to this period. The Wetlands within the Ellesmere Future Zone have produced two find spots of dugout canoes (HER 00845 & 00888), the latter of which has been C_{14} dated to between 465BC to 200BC. There are two Roman temporary camps at Perry Farm (HER 00935) in the West Felton Future Zone and at Lower Hordley (HER 02449) in the Ellesmere Future Zone. A hoard of 362 coins (HER 00878), mostly of mid to late 3rd century date also was found at Hordley. Another temporary camp and a fort are known from cropmarks and excavation at Rhyn Park (HER 00645, LE 1003716) in the Gobowen & St Martins Future Zone. The cropmark ring ditches and enclosures in particular contribute to higher than expected totals for Bronze Age and Iron Age to Roman period monuments in this group, and are a reflection at least in part of the amount of aerial photographic reconnaissance here. The lighter sand and gravel soils that predominate here produce cropmarks more readily than heavier glacial clay soils, and have tended to be flown more frequently as a result. However, it is also likely that these soils provided a more favourable environment for occupation and (arable) agriculture in the later prehistoric to Roman periods and so it is possible that they were more heavily settled. The proximity of Nesscliffe Hill Camp hillfort to the cropmark enclosures in the Knockin and Nesscliffe and the Forton and Little Ness zones would suggest an association between these monuments, with the smaller settlements forming part of the hinterland of the hillfort. Similarly, the enclosures in the Dorrington and Condover zone may be associated with The Burgs hillfort at Bayston Hill (as are three in the Lyth Stone Future Zone).

(iv) The Medieval sites in the zone again are typical of rural settlement. At the top end in terms of status are a Scheduled castle with an associated shrunken settlement (Shrawardine Castle, HER 00052, LE 1015707) and a deer park (HER 00596) at Shrawardine in the Forton & Little Ness Future Zone, a motte at Crosemere, which has also been Scheduled (HER 01005, LE 1020289), and possible deserted settlements at Kenwick (HER 00993) in the Ellesmere Future Zone and Shelvock Farm (HER 02391) in the West Felton zone. Other sites in this group

include a ridge and furrow field system at Dudleston in the north of the Gobowen & St Martin's zone, and a rabbit warren (HER 03722) at Knockin. The relative lack of medieval sites in the potential future zones here reflects the relative low level of rural development in the post medieval and modern periods – the area has remained essentially agricultural in nature. Settlement has tended to remain concentrated in the medieval settlement centres, and the methodology used by the SC Minerals Officer (see section 7.1.6 above) for identifying potential exploitable sand and gravel deposits has avoided these settlements. But there has also been a lack of published research in the medieval settlement of this area – for example it has not been covered by a VCH volume - and it is probable that a number of former (documented) medieval settlements in the NW Shropshire group of zones, now represented by a single farmstead, are not recorded as such on the HER. Nor is this currently seen as a priority for research (see section 8.2.6, below).

(v) With this last point in mind, there are 122 post medieval farmsteads (identified and classified by the desk-based Historic Farmsteads Characterisation Project) in this group of future zones. This represents two thirds of the 184 post medieval sites in this group; this is the same proportion as for the NE Shropshire group of Future Zones. The remaining post-medieval monuments in these zones are a mix of rural sites and rural industry and transport. There are 15 parks and gardens, although only one of these, Pradoe (HER 07633, LE 1001251) in the West Felton Future Zone is a Registered Park (Grade II). Other monuments include roads, canals and railways, two sand and clay pits, nine watermills and a windmill, two limekilns, two brickworks and an ironworks.

7.3.1.4 Tern and Roden Valleys

Future Zones: 14 Hodnet Heath; 16 Tern Valley; 19 Roden Valley; 21 Wrockwardine and Weald Moors

(i) This zone includes river gravel deposits along the Tern valley and glacial deposits and river gravels along the Roden valley. The potential future zones cover a total area of 52.4km^2, and contain 185 HER monuments, giving a density of 3.53 mons/km^2. There has been reasonably good aerial photographic coverage of the southern part of this group, but the western part of the Roden valley zone and the northern part of the Tern valley zone are less well covered, probably due to restrictions caused by military flying from RAF Shawbury and RAF Tern Hill respectively.

(ii) There are 24 undefined prehistoric monuments in these zones, including 10 pit alignments, six other linear features, six field systems and two find spots of flint objects. The Bronze Age monuments in these zones include six ring ditches (HER 04473, 02261, 04938, & 00040), although one of these sites at Longdon on Tern (HER 00040) comprising 3 ring ditches was largely removed by quarrying in the early 1980s without record, and another (HER 04938) at Crudgington is thought to be dubious, possibly the result of crop watering. A site of a burnt mound (HER 01610) was noted at Withington during drainage work. The density of Bronze Age monuments is marginally less than might be expected in this group in comparison with the average density for the county as a whole. By contrast, there are 38 Iron

Age to Roman period cropmark enclosures, five field systems and a trackway. The Roman road (HER 00066) from Wroxeter to Chester also runs through this area.

(iii) As with the NW Shropshire Group, the Tern and Roden Group provides a typical range of medieval rural sites, although the density of these sites in this group is lower than the county average. There is a medium-sized stone castle (HER 01133) and a deserted settlement (HER 02867) at Moreton Corbet in the Roden Valley zone. The monument includes the remains of a medieval castle, a ruinous post-medieval house, and the earthwork and buried remains of its formal gardens and is a SAM (LE 1015317). There are two moated sites at Stoke on Tern (HER 01147) and at Crudgington (HER 01721). Lower status settlement and agricultural activity in these zones is indicated by a grange (HER 08292) for Haughmond Abbey at Homebarne Grange, Haughton, a deserted settlement (HER 00951) and chapel (HER 01363) at Poynton, with ridge and furrow field systems at Sugdon and Charlton (HER 04683 & 04682), and a possible rabbit warren (HER 00036) at Charlton.

(iv) There are 57 post-medieval farmsteads identified and classified by the desk-based Historic Farmsteads Characterisation Project in this group of zones, two parks, seven watermills and a windmill, two brickworks and a forge, all of post-medieval date. The potential of the watermills of the Tern and Roden valleys to shed light on the development of industry in Shropshire was highlighted by Robin Chaplin in 1969 (Chaplin, 1969, pp1-6). Documentary research on the seven watermills known in this group of Future Zones may provide some evidence for early industry in this area, but below-ground remains, particularly deposits of slag and other residues, may well hold important clues for the development of the local iron industry in the early post-medieval period.

(v) Whilst the lower reaches of the Tern Valley were identified by Watson as one of the key areas for cropmark ring-ditches (Watson, 1991), they occur mainly on the upper terraces, and most lie just outside the boundary of the Tern Valley Future Zone. One such barrow cemetery of two cropmark ring-ditches (HER 00102) was lost without record to housing between 1999 and 2010 at Bratton just outside the eastern edge of the Wrockwardine and Weald Moors Future Zone. When the dubious and destroyed monuments are discounted, the number of Bronze Age sites in this zone is reduced still further, giving added importance to the surviving monuments of this period.

(vi) The density of Iron Age to Roman period sites in these zones is substantially higher than the overall county density for this period. The predominant monument types contributing to this are cropmark enclosures and field systems; these moreover are concentrated within the Roden Valley and the southern part of the Tern Valley Future Zones within this group. The areas not considered suitable for future mineral extraction around the zones in this group have also produced cropmarks of ring-ditches, farmstead enclosures and field systems. It appears likely that the high density of cropmark sites in these zones does reflect a high density of activity in this area in the Iron Age and Roman periods. However, there is limited data locally from excavation as to the dating, chronology, status or even function of these enclosures.

7.3.1.5 Severn Valley

Future Zones: 17 Dorrington and Condover; 18 Shrewsbury W; 20 Wroxeter; 24 Buildwas; 25 Bridgnorth

(i) The Severn Valley group of Future Zones lie in the valley of the River Severn and some of its tributary streams (the Rea, Cound and Mor Brooks) between Shrewsbury and Bridgnorth. There are more active sand and gravel extraction sites in this group than any of the other zone groups. These extraction sites include Condover Quarry, Gonsall Quarry, Buildwas (residual reserves), Morville Quarry and the Mor Brook (Bridgwalton) Quarry. The potential future zones in this group cover a total area of 37.4 km^2, and contain 229 HER monuments, giving a density of 6.12 mons/km^2.

(ii) The undefined prehistoric monuments in these zones include three pit alignments, and two other linear features. Four find spots of flint objects comprise two groups of flints (HER 00405 & 01923) from Bridgnorth Golf Course, a scraper (HER 01924) from Stanley Wood, Bridgnorth, and a flint scatter (HER 03355) of Neolithic and Bronze Age date from Cuckoo Pit Wood, Morville.

Photo 14: Cropmarks of prehistoric ring ditches, enclosures, field boundaries and a trackway at Cloud Coppice (HER 00477) in the Dorrington & Condover future zone (©Shropshire Council 2014)

(iii) A Neolithic polished stone axe (HER 01757) was found at Lower Cound Brickfield. Bronze Age monuments include 22 ring ditches, and a cropmark barrow cemetery (HER 00477) at Cloud Coppice, Berrington, five find spots, including a small hoard of late BA palstaves, a socketed axe and a chisel (HER 03218) from Eardington. Two middle Bronze Age burnt mounds have been identified at Grove Farm Condover (HER 04719) and at Bayston Hill (HER 21243). Unlike the Tern and Roden Valley Group, the cropmark ring-ditches in this group contribute to a significantly higher than average density of Bronze Age monuments for these zones. There are significant clusters of ring-ditches at Berwick, north of Shrewsbury (HER 00010, 00011, 00012, &00013) and at Bridgwalton (HER 00213, 00215, 00428, 00429, & 00430). The former group is under threat from possible road construction,

the latter from a more immediate threat from sand and gravel extraction, lying within or immediately adjacent to the operational Bridgwalton Quarry. There is a possible Iron Age hillfort (HER 00059) at Bomere Wood in the Dorrington and Condover Future Zone, and although this is a SAM (LE 1006251) there is some doubt as to whether it is in fact a hillfort.

(iv) There are 35 cropmark enclosures and six field systems of Iron Age to Roman date in these zones. As is the case in the NW Shropshire and the Tern and Roden Valleys groups, the cropmark enclosures in this group contribute to higher than average totals for Iron Age to Roman period monuments; again this may be a reflection of the amount of aerial photographic reconnaissance here, but may also reflect a higher level of occupation and activity on the sand and gravel soils along the terraces of the Severn valley. The Wroxeter Future Zone includes part of the extramural settlement (HER 06492, 06499 & 06500) on the northern side of the major Roman town of Wroxeter (HER 00026), although the zone does not overlap with the Scheduled area of the Roman city (LE 1003705). The zone also takes in part of a multi-period cropmark complex (HER 00030) on the northern side of the city. As well as the fort beneath the city there is also a fort (HER 00033, LE 1003713) to the immediate south of the city, and two temporary camps, Wroxeter A (HER 00128) and Wroxeter B (HER 00029) to the north, with another camp (HER 00469) across the River Severn in the Dorrington and Condover zone at Cound Hall. Roman roads running west (HER 00098) from Wroxeter to Forden Gaer and southwest (HER 00108) to Leintwardine run through these zones. There is a possible minor road (HER 02247) running south from Wroxeter along the east bank of the Severn, another minor road (HER 08494) of suggested Roman date (though probably of medieval date) between Allfield and Exfords Green in the Dorrington and Condover Future Zone, and another postulated but highly unlikely Roman road (HER 04076) meandering from Bridgnorth along Corvedale and through the Clun Forest, following modern roads and lanes. The presence of the Roman city in this area doubtless accounts for a higher density of Roman period monuments in this group than the county average. The environs of the Roman city were the subject of a three year Leverhulme-funded study, The Wroxeter Hinterland Project, carried out by Birmingham University in the mid-1990s (Gaffney, White, & Goodchild, 2007). This study highlights the importance of the lowland cropmark enclosures in understanding both the pre-Roman Cornovian society and the development of the Roman city (*op. cit.* pp280-6). Recent work by Wessex Archaeology on a pipeline project running through the Wroxeter Future Zone to the north of the Roman city has confirmed the survival and significance of the suburban complexes on this northern side of the city (Wessex Archaeology, forthcoming).

Photo 15: The ruins of the baths basilica complex at Wroxeter Roman city

(v) There are five moated sites in the Severn Valley zones, one of which at Betton Alkmere (HER 00056) is a SAM (LE 1019646); of the others, three at Allfield, Condover (HER 03430), Berwick (HER 03827), and Great Hanwood (HER 03897) are suggested from documentary sources only, and a supposed moat at Coton near Alveley (HER 03900) is hidden by garden terraces, and a manor house and manorial farm is documented at Cound Hall (HER 08576, 08577, & 08579) in the in the Dorrington and Condover Future Zone. Five deserted or shrunken settlements at Betton Alkmere, Lower Cound, Norton, Gonsal, and Wayford (HER 00056, 01269, 03623, 03626, & 03644), also the in the Dorrington and Condover zone. But as is the case in other zones (see section 7.3.1.3 iii, above) many of the post-medieval farmsteads in these zones could be described as shrunken settlements but simply are not recorded as such on the HER. A major medieval site in the Severn Valley group is Buildwas Abbey (HER 00311); the SAM here (LE 1015813) includes an associated extensive water management system, with water meadows, leats, fishponds, mills, and a fish weir, and a group of watermills (HER 08231). An operational sand and gravel quarry, Buildwas Quarry, lies adjacent to the SAM, though separated from it by the A4169 Much Wenlock Road.

(vi) There are 47 post-medieval farmsteads identified and classified by the desk-based Historic Farmsteads Characterisation Project in this group of zones. There are also 11 parks, 12 watermills (9 of these mill sites, including a textile mill, lie in the Bridgnorth Future Zone), and two forges.

(vii) 20th century monuments are represented by an airfield, RAF Atcham (HER 21415), the site of an early 20th century power station at Buildwas (HER 06710), and the Severn Valley Railway (HER 06024), a heritage steam railway which utilizes part of the 19th century Great Western Railway Severn Valley Branch line.

Photo 16: Buildwas power station; the site of the former power station (HER 06710) is at bottom left

7.3.1.6 E Shropshire (inc. Telford & Wrekin)

Future Zones: 12 Hinstock; 15 Childs Ercall; 22 Newport and Shifnal; 23 Kemberton and Chesterton

(i) This is group of zones that are all located along the eastern edge of the county, from Hinstock in the northeast down to Chesterton in the southeast, and includes the Telford and Wrekin Council area. The potential deposits here include both glacial sands and gravels and bedrock deposits. There are no currently active quarries in these zones. The potential future zones cover a total area of 50.1km^2, and contain 147 HER monuments, giving a density of 2.93 mons/km^2.

(ii) The undefined prehistoric monuments in these zones include two pit alignments in the Newport & Shifnal Future Zone, and one in the Kemberton & Chesterton Future Zone. There have been two find spots of flint scatters in Kemberton & Chesterton Future Zone, including one of over 400 flints from Alder Coppice near Claverley (HER 03817). This find spot may be significant as the assemblage contained over 60 cores and many microliths, and although it is recorded as a "prehistoric" site it may include Mesolithic material (see Chapter 8, section 8.2.2). A supposed Bronze Age perforated hammerstone (HER 01697) found in the Childs Ercall Future Zone may in fact be a loom weight or thatch weight. There is an Iron Age hillfort (HER 03446), or rather an enclosed farmstead, at Pave Lane, Chetwynd Aston in the Newport & Shifnal Future Zone. This site, a SAM (LE 1020275), is an unusual survival in the lowland areas of Shropshire of an earthwork Iron Age farmstead enclosure. There are four other Iron Age to Roman cropmark enclosures in this group, one in the Newport & Shifnal zone (HER 02499) and three in the Kemberton and Chesterton zone (HER 02322, 02363, & 28717). Roman sites include two Scheduled temporary camps (HER 01111, LE 1006249) beside Watling Street at Stoneyford Cottages, Shifnal, and two Roman roads which run through these zones, Watling Street (HER 00099), the London to Wroxeter Roman road and

a postulated Roman road (Pave Lane) from Watling Street to Chetwynd Aston (HER 01387).

(iii) The medieval castle and post medieval house Tong Castle (HER 01359) was largely destroyed during the building of the M54 motorway, though some parts of the castle and grounds do survive in the Newport and Shifnal Future Zone. There are two moated sites (HER 01581 & 01809) in these zones, and four granges – one (HER 02925) of Haughmond Abbey in the Childs Ercall Future Zone, and three in the Newport & Shifnal Future Zone - Ruckley Grange (HER 01814) Tong, (Buildwas Abbey), Neachley Grange (HER 01818) Tong (Whiteladies Abbey), and Burlington Grange (HER 02928) Sheriffhales (Lilleshall Abbey). There is the site of a chapel (HER 02505) at Rudge, a cross (HER 01726) at Sheriffhales, and a watermill (HER 01816) at Tong.

(iv) There are 69 post-medieval farmsteads identified and classified by the desk-based Historic Farmsteads Characterisation Project in this group of zones. Within these zones there are also three parks, eight watermills, a bonemill and a saw mill, two windmills, and four forges.

(v) A 20th century military depot (HER 08539), part of the RAF Cosford complex, lies in the Newport & Shifnal Future Zone.

7.3.1.7 Corve and Teme Valleys

Future Zones: 26 Ludlow

(i) This zone comprises two discrete areas, one running along the Corve valley north of Ludlow, the other on the west bank of the River Teme at Woofferton. There are no active extraction sites within these areas, but the Bromfield Sand and Gravel Quarry operates in the Teme valley just to the west of the southern end of the former area. The potential future zone covers a total area of 8.3km^2, and contain 46 HER monuments, giving a density of 6.75 mons/km^2.

(ii) There are 10 Bronze Age ring ditches within this zone, including part of the regionally (if not nationally) important necropolis at Bromfield, and another smaller cemetery at Stanton Lacy. Both of these lie towards the southern end of the Ludlow Future Zone, and account for the unusual density of Bronze Age features in this group. Three of the barrows at Bromfield are scheduled (HER 01173 & 03039, LE 1007709, and HER 03056, LE 1007710). Eight cropmark enclosures (HER 02059, 02060, 02150, 02153, 02154, 04139, 04179, & 04904) together with two linear features and one field system also of Iron Age to Roman date account for a high density of Iron Age to Roman period monuments in this zone. There is a Roman building (HER 03038), possibly a villa, at Stanton Lacy, and a postulated Roman road (HER 02613) has been suggested, running from Wooferton to Marshbrook, supposedly a continuation of Margary's Route 613 (Ariconium to Ashton).

Photo 17: A bowl barrow on Old Field, Bromfield (HER 01174; LE 1007708)

(iii) Medieval monuments again are typical of rural settlement in the study area, and this group has a higher density of monuments of this period than the other sand and gravel groups (also three times the density of the county average). There is a Scheduled motte and bailey castle (HER 00165, LE 1012855) and a fishpond (HER 08179) at Camp Ring, Stanton Lacy, and deserted settlements at Langley, Stanton Lacy (HER 00964), at Lawton, Diddlebury (HER 00966), and at Wooferton Court (HER 04650); there are also five ridge and furrow field systems and a watermeadow. A holy well, Rosamund's Well (HER 03203) is also recorded at Lawton, Diddlebury.

(iv) There are 11 post-medieval farmsteads identified and classified by the desk-based Historic Farmsteads Characterisation Project in this group of zones. There are also two watermills.

(v) The oval cropmark of a modern horse exercise rings (HER 00647) at Stanton Lacy were originally thought to represent prehistoric enclosures; other identical cropmarks can be seen adjacent to Bromfield racecourse on the 1999 GIS APs.

7.3.1.8 Scheduled Ancient Monuments in the Sand and Gravel Groups

(i) There are a total of 21 Scheduled Ancient Monuments (SAM) in the Future Sand and Gravel zones. The SAMs are spread throughout the future groups and range in date from the Bronze Age through to the post-medieval periods. Three of the Bronze Age barrows that form part of the Bromfield barrow cemetery are scheduled (LE 1007709 & 1007710) and lie at the southern end of the Ludlow Future Zone, and parts of the barrow cemetery (HER 02451) west of Baschurch are scheduled (LE 1016824). The two scheduled Iron Age sites are both hillforts, Pave Lane hillfort (LE 1020275) in the Newport & Shifnal Future Zone, and a possible hillfort in Bomere Wood (LE 1006251) in the Dorrington & Condover Future Zone.

(ii) There are three scheduled monuments of Roman date in these zones, all of them military sites – the Rhyn Park fort complex (LE 1003716) in the Selattyn & Gobowen Future Zone, and auxiliary fort (LE 1003713) at Wroxeter, and a temporary camp (LE 1006249) in the Newport & Shifnal Future Zone.

(iii) Nine of the scheduled sites are medieval in date, and include two stone castles, Shrawardine Castle (LE 1015707) and Moreton Corbet Castle (LE 1015317), and three mottes (LE 1020286, 1020289, & 1012855), three moated sites in the Whitchurch, Market Drayton NW and Dorrington & Condover Future Zones (LE 1017013, 1017010, & 1019646), and an abbey, Buildwas Abbey (LE 1015813). The scheduled area of Buildwas Abbey forms a substantial part of the Buildwas Future Zone, and limits possible westward extension of the existing Buildwas Quarry, although further potentially workable deposits lie to the west of the SAM.

(iv) The scheduled post-medieval sites include Thomas Telford's cast iron Longdon on Tern canal aqueduct (LE 1006275) in the Tern Valley Future Zone, a horse engine (LE 1003024) and an animal pound (LE 1020659).

Photo 18: Moreton Corbet Castle in the Roden Valley Future Zone

Table 7.5: Scheduled Ancient Monuments in the Sand and Gravel Future Zones

Group	Zone No	Future Zone	SAM: LE No	Mon Types	HER No	Period
NE Shropshire	4	Whitchurch	1020286	Motte and Bailey	01039	Medieval
	4	Whitchurch	1017013	Moat, Manor House, Moated Site	01040	Medieval
	10	Market Drayton NW	1019655	Round Barrow	03694	Bronze Age
	10	Market Drayton NW	1017010	Moat, Grange, Moated Site, Ridge and Furrow	01041	Medieval
NW Shropshire	5	Gobowen & St Martins	1003716	Vexillation Fort, Fort	00645	Roman
	6	Baschurch	1016824	Barrow Cemetery, Field System, Ring Ditch, Bowl Barrow, Inhumation	02451	Bronze Age
	8	Forton & Little Ness	1015707	Castle, Motte And Bailey, Shell Keep, Shrunken Village	00052	Medieval
	9	Ellesmere	1020289	Motte, Settlement, Deserted Settlement	01005	Medieval
Tern and Roden Valleys	16	Tern Valley	1006275	Aqueduct	01105	Post-medieval
	19	Roden Valley	1015317	Keep, Country House, Castle, Formal Garden	01133	Medieval, Post-medieval
	19	Roden Valley	1003024	Horse Engine	03392	Post-medieval
Severn Valley	17	Dorrington & Condover	1006251	Univallate Hillfort?	00059	Iron Age
	17	Dorrington & Condover	1019646	Moat, Deserted Settlement, Fishpond, Moated Site, Ridge and Furrow	00056	Medieval
	20	Wroxeter	1003713	Auxiliary Fort	00033	Roman
	24	Buildwas	1015813	Abbey, Cistercian Monastery, Savigniac Monastery	00311	Medieval
	24	Buildwas	1015813	Abbey, Monastic Dwelling, Infirmary, Country House, Dovecote, Farmhouse	04427	Medieval, Post-medieval
	24	Buildwas	1015813	Earthwork, Fishpond	02466	Medieval
	24	Buildwas	1015813	Water Meadow	03390	Medieval
	24	Buildwas	1015813	Watermill	08231	Medieval
	24	Buildwas	1015813	Charcoal Burners Site	08232	Medieval
E Shropshire	22	Newport & Shifnal	1020275	Hillfort, Farmstead	03446	Iron Age
	22	Newport & Shifnal	1006249	Temporary Camp	01111	Roman
	23	Kemberton & Chesterton	1020659	Pound	02506	Post-medieval
Corve and Teme Valleys	26	Ludlow	1012855	Motte and bailey castle	00165	Medieval
	26	Ludlow	1007709	Round Barrow	01173	Bronze Age
	26	Ludlow	1007709	Bowl Barrow	03039	Bronze Age
	26	Ludlow	1007710	Bowl Barrow	03056	Bronze Age

7.3.2 Stone

7.3.2.1 The stone zones have been grouped according to rock type, Sandstone (Longmyndian), Igneous, and Limestone, all of which provide crushed rock for roadstone and general aggregates, and Sandstone (Triassic) which provides building stone. The potential future stone extraction groups cover a total of 62.9km^2, slightly under 2% of the total area for the historic county. The zones contain a total of 415 monuments, or 3.5% of the total for the county.

Table 7.6: Monument numbers in the Stone Groups

Period	County		Stone Groups			
		Total Stone	S/stone (Longmnd)	Igneous	Limestone	S/stone (Triassic)
Prehistoric*	(1345)[a]	2	1	0	0	1
Palaeolithic	4	0	0	0	0	0
Mesolithic	40	2	0	1	0	1
Neolithic	152	3	1	0	1	1
Bronze Age	619	13	2	3	8	0
Iron Age	530	3	2	1	0	0
Iron Age to Roman	(620)[b]	16	8	1	7	0
Roman	901	10	6	1	3	0
Early Medieval	40	1	0	0	1	0
Medieval	2,052	29	17	4	8	0
Med to Post-med	(1,233)[c]	4	2	2	0	0
Post-medieval	6,171	330	49	47	223	11
Modern	1,346	1	1	0	0	0
Unknown	n/a	1	0	0	1	0
Totals	11,855	415	89	60	252	14

(a, b, & c: see notes to Table 7.2)

Table 7.7: Monument density in the Stone Groups (mons/km^2)

Period	County		Stone Groups			
		Total Stone	S/stone (Longmnd)	Igneous	Limestone	S/stone (Triassic)
Prehistoric*	0.39	*0.03*	*0.07*	*0*	*0*	**0.59**
Palaeolithic	0	0	0	0	0	0
Mesolithic	0.01	**0.03**	0	**0.13**	0	**0.59**
Neolithic	0.04	**0.05**	**0.07**	*0*	*0.03*	**0.59**
Bronze Age	0.18	0.21	*0.13*	**0.39**	0.21	*0*
Iron Age	0.15	*0.05*	0.13	0.13	*0*	*0*
Iron Age to Roman	0.18	**0.25**	**0.54**	*0.13*	0.18	*0*
Roman	0.26	*0.16*	**0.40**	*0.13*	*0.08*	*0*
Early Medieval	0.01	**0.02**	0	0	**0.03**	0
Medieval	0.59	0.46	**1.14**	0.53	*0.21*	*0*
Med to Post-med	0.35	*0.06*	*0.13*	*0.26*	*0*	*0*
Post-medieval	1.77	**5.25**	**3.29**	**6.18**	**5.76**	**6.47**
Modern	0.39	*0.02*	*0.07*	*0*	*0*	*0*
Unknown	n/a	0.02	0	0	0.03	0
Totals	3.40	**6.60**	**5.97**	**7.89**	**6.51**	**8.24**

High density values are bold (more than 25% above the overall county density)
Low density values are italic (more than 25% below the overall county density)

7.3.2.2 Sandstone (Longmyndian)

Future zones: 27 Haughmond; 28 Bayston Hill; 33 Lyth;

(i) The very hard Precambrian (Longmyndian) Greywacke rocks either side of Shrewsbury at Haughmond Hill and Sharpstones Hill have been exploited for roadstone since the 19th century. There are two active quarries in these zones, Haughmond Hill Quarry and Bayston Hill Quarry which both produce a high strength roadstone. There are no currently active quarries in the Lyth Future Zone. These three potential future crushed rock zones together cover a total area of 14.9km^2, and contain 89 HER monuments, giving a density of 5.97 mons/km^2.

(ii) In these zones there have been find spots of a prehistoric worked flint (HER 01743) from Westley, Lyth, a Neolithic flint axe (HER 02643) from Somerwood, Haughmond, and a Bronze Age axe hammer (HER 00111) from Sharpstone Hill. An Early Bronze Age pit circle (HER 02683) has been recorded at Haughmond Hill and the site of a Bronze Age barrow (HER 01744) at Exfords Green, Lyth.

(iii) There are two Iron Age hillforts in the Haughmond Future Zone, both of which are SAMs Haughmond Hill Camp (HER 00135, LE 1021282) and Ebury Hillfort (HER 00113, LE 1021283). Haughmond Hill Camp is sited on a promontory on the western side of Haughmond Hill with spectacular views across Shrewsbury to the west and the Severn Valley to the south. The single rampart survives as a discontinuous earthwork; this has led to the suggestion that the hillfort may not have been completed, but it is possible also that the ramparts were slighted or have been disturbed by forestry. The foundation remains of a late 18th century folly, Haughmond Castle (HER 14309), lie within the western end of the hillfort. Ebury Hill Camp is a sad little hillfort: 19% of the fort was lost to stone quarrying in the late 19th and early 20th centuries; during the Second World War it was used as military vehicle testing station and further breaches were made in its ramparts and tracks laid through its interior; and in the late 20th and early 21st century it has been used as a caravan site, with incremental damage being caused by the laying of further tracks and trenches for water pipes, cables and hook-up points. Nevertheless, 85% of the circuit of its defences survive well, and some parts of the interior have survived human disturbance – though extensive tree cover will have further compromised the below-ground archaeology. There are seven Iron Age to Roman cropmark enclosures (HER 00137, 00492, 02429, 02430, 02467, 04297, & 04918), one of which (HER 00137) is associated with a field system, in these three zones. A stone spindlewhorl (HER 02644) has also been found in the Haughmond zone close to one of these enclosures. The number of cropmark enclosures and field systems in these zones contributes to a density of Iron Age to Roman period sites that is three times higher than the county average (see table 7.7). A Roman pottery kiln (HER 08135) was excavated in the 1990s in the Bayston Hill Future Zone just to the south of the main Meole Brace Roman roadside settlement (HER 00002) on the Wroxeter to Forden Gaer Roman road, and four Roman roads (HER 00098, 04346, 08494, & 08632) run through these zones. As noted above (Severn Valley Future Zones) one of these (HER 08494) is more likely to be of medieval date; on the other hand, recent field work (Malim & Hayes, 2011) in advance of a quarry extension has suggested that another, the Wroxeter to Forden Gaer road (HER 00098), may have incorporated a length of Iron Age trackway on the east side of Sharpstone Hill. The higher than average density of Iron Age to Roman monuments (mainly cropmark

enclosures and field systems) may be accounted for in part because much of the bedrock underlies deposits of glacial sands and gravel that have been productive in terms of cropmarks. The cropmark enclosures have a more immediate context than those in some of the other Future Zones, having a close spatial association with several hillforts – Haughmond Hill and Ebury Camp in the case of the enclosures in the Haughmond zone and The Burgs hillfort for the three in the Lyth zone. The enclosures in the Lyth zone may also be associated with the Roman roadside settlement at Meole Brace which itself has given rise to a number of discrete Roman period monuments.

(iv) Haughmond Abbey (HER 00116) is a fine example of a medieval Augustinian abbey and is a SAM (LE 1021364). The abbey has an unconventional layout dictated by its location on the western scarp of Haughmond Hill. Despite the probable loss of archaeological deposits without record when the site was excavated in 1907 to recover the plan of the main buildings, further excavations in 1975-8 resulted in a relatively closely dated sequence for the development of the church, beginning with a small cruciform chapel which was in existence by about 1100, demonstrated the continuing archaeological potential of the monument. This was augmented by topographical survey in 2002 which resulted in a major reassessment of the course of the precinct, a secure identification of the location of the main gate, the outer court and associated buildings, and the remains of the monastic water management. On the north side of the precinct the survey recorded the remains of several monastic ponds and associated features. These features, together with a number of other earthworks, a garden (HER 08290), a well house (HER 04546), and a quarry (HER 08272), form a significant part of the monuments in the Haughmond Future Zone, and account for the higher than expected density of medieval monuments in this group of Future Zones as a whole.

Photo 19: The chapter house at Haughmond Abbey

Queen Eleanor's Bower Camp (HER 00134) on Haughmond Hill is thought to be a good example of a ringwork, a nationally rare form of stronghold usually dating to

within the late Anglo-Saxon and Norman periods, and is a SAM (LE 1021281). Other monuments of medieval date in the Sandstone (Longmyndian) group of Future Zones include seven fishponds and dams, three ridge and furrow field systems, two roads, and two boundary stones.

(v) There are 19 post-medieval farmsteads identified and classified by the desk-based Historic Farmsteads Characterisation Project in this group of zones. The remains of Haughmond Abbey also include the ruins of the short-lived Tudor mansion and formal gardens (HER 08235) which succeeded it. There are also eight parks, 16 post-medieval quarries, a ropewalk (HER 06832), and a folly, Haughmond Castle (HER 14309), part of the Scheduled hillfort of Haughmond Hill Camp.

(vi) There is one modern site, a rare, well-preserved World War II testing range (HER 08295) set up around a quarry in the hillfort Ebury Hill Camp (HER 00113) in early 1944 to test converted Bren Carriers through water in advance of the Normandy landings.

7.3.2.3 Igneous

Future zones: 29 Leaton; 32 Callow Hill; 34 Clee Hill

(i) The Igneous Group of potential future zones comprises three widely separated outcrops of igneous rock. The Leaton Future Zone is in central east Shropshire, and one active quarry here (Leaton Quarry) works the Precambrian (Uriconian) volcanic rocks for general aggregate. At Callow Hill, on the northern edge of the Shelve orefield in the southwest of the county, a thin dolerite dyke is exploited for roadstone at the Callow Hill Quarry. In the 19th century a small road stone quarry developed on Titterstone Clee Hill in south Shropshire, and the quarry grew in size considerably during the 20th century. In particular a hard black dolerite sill, known locally as "dhustone" was and still is quarried here. The zones in this rock group cover a total area 7.6km^2 and contain 60 HER monuments, giving a density of 7.89 mons/km^2.

(ii) A Mesolithic stone macehead or perforated hammer (HER 03359) has been recovered from Callow Hill among stones and rubbish in or near an old lead pit on the east side of the hill; this is one of only two identified Mesolithic sites (both find-spots) from any of the Future Zones, and one of only 40 from the county as a whole (see table 7.2 above). Two finds of Bronze Age objects have been made in the Clee Hill Future Zone: the Titterstone Clee Hoard (HER 00426) comprising a flat axe and a flanged axe, and a perforated stone axe hammer (HER 03234). At Hoar Edge a Scheduled group of Bronze Age monuments (HER 01260, LE 1008387) includes a ring cairn and two round cairns (survivors of an original group of up to five monuments). Two small stone (jet?) rings and some large amber beads were apparently recovered from one of these cairns in 1855.

There is an Iron Age hillfort, Callow Hill Camp (HER 01048, LE 1019828) situated on the southern end of the summit of Callow Hill. The hillfort is a small multivallate hillfort whose ramparts enclose an area of c. 0.3ha. There has been some damage to the monument in recent years caused by young bike riders digging into the ramparts to create jumps in the ditches. The monument is currently being considered for some scrub clearance by the "Helping Hillforts and Earthwork

Castles" project of the Stiperstones and Corndon Hill Country Landscape Partnership Scheme. There is one Iron Age to Roman period cropmark enclosure (HER 02354) in the Leaton Future Zone. Watling Street, the Roman road from London to Wroxeter (HER 00099), also runs through the Leaton zone.

(iii) There are two deserted medieval settlements near Wrockwardine, Burcot (HER 00705) and Nash (HER 00994) in the Leaton zone. There are documentary sources which suggest the presence of a medieval castle (HER 01735) within the earthworks of the Scheduled hillfort of Callow Hill Camp, though there are no traces of the castle on the ground. On Clee Hill, the site of a medieval cross (HER 03243) the "Three-Forked Pole" is shown on a map of 1575 standing at Random Farm Coreley and is supposed to mark the site of an earlier medieval cross; there are two standing stones or boundary markers thought to be of medieval or post-medieval date (HER 03242 & 03244).

(iv) Three post-medieval quarries, a brick kiln, a garden, one farmstead, and an inn are recorded in the Leaton zone, and there are four post-medieval quarries, a lead mine (HER 06809), one farmstead, and a railway within the Callow Hill zone. Clee Hill is the largest of the three igneous rock zones, and by far the largest number of monuments in this zone belong to the post medieval period. These include 14 quarries, five coal working and two ironstone working sites, two brickworks, a bloomery, an engine house, a reservoir, three railways or tramways, three farmsteads and a cemetery. The intensity of post-medieval industrial exploitation of the Clee Hill Future Zone in particular gives a much higher than average density for post-medieval monuments in these zones.

7.3.2.4 Limestone

Future zones: 30 Much Wenlock; 31 Craignant & Treflach

(i) These two potential future zones cover a total area 38.7km^2 and contain 252 HER monuments, giving a density of 6.51mons/km^2. There is one active quarry at Llynclys producing roadstone and aggregates, and some recently closed quarries around Much Wenlock. There is also one small quarry, Coppice Barn Quarry, at Diddlebury which produces a maximum of 500 tonnes per year of stone mainly for building repair work.

(ii) In the Much Wenlock Future Zone a Neolithic flint scraper (HER 00923) has been found at Stretton Westwood and two Bronze Age cropmark ring ditches have been recorded at Patton, Much Wenlock at Black Barn Farm (HER 00627) and at Patton House Farm (HER 02188). In the Craignant and Treflach Future Zone an early Bronze Age ring cairn (HER 00347) stands on Selattyn Hill; this monument is a SAM (LE 1017237). It produced at least 12 cremation urns when it was investigated in the 19th century prior to its reuse for the site of a tower commemorating a 6th century British prince killed in battle nearby; the tower was itself reused as an observation post by the Home Guard in World War II. There is also a possible barrow mound on Careg Y Big (HER 00349) in the Craignant and Treflach zone, which, if it survives, now lies in a dense conifer plantation. There are a number of standing stones of probable Bronze Age date at Careg Y Big (HER 00348) with another possible fallen stone (HER 00893) 750m to the west at The Springs, (though this latter is

considered more likely to be a glacial erratic). There is a further standing stone at Cynynion Fawr (HER 00894) and the site of another at Bwlch (HER 00342). Five Iron Age to Roman cropmark enclosures (HER 00595, 00922, 02187, 04490, & 28791) have been recorded in the Much Wenlock zone. A cropmark enclosure has been recorded at Bwlch (HER 03808) and a possible large earthwork enclosure (HER 04020) at Lower Fron, Selattyn in the Craignant and Treflach zone. Finds of a Roman brooch (HER 00326) and a hoard of 2000 coins of late 3rd – 4th century date (HER 01800) have both been made at Westwood Farm, Much Wenlock. The line of a Roman road (HER 00895) has been postulated running between Tan-y-graig Uchaf and Llawr-y-pant near Rhydycroesau but this road is considered to be dubious.

Photo 20: The ring cairn (HER 00347, LE 1017237) on Selattyn Hill

(iii) The Saxon boundary earthwork, Offa's Dyke (HER 01000) runs along the western part of this zone. Much of the earthwork in this zone is in a good state of preservation, and is Scheduled as a number of different sections (LE 1004765, 1006266, 1006238, 1006264, 1002933, 1006263, 1006250, 1004766, & 1003019).

(iv) The earthwork remains of a medieval deserted settlement surrounded by ridge and furrow stand at Arlescott, Barrow (HER 00656) and there are also well preserved earthwork remains including ridge and furrow, ponds, and possible building platforms (HER 04526) at The Marsh, Much Wenlock. Another field system (HER 00922) at Stretton Westwood has largely been destroyed by Lea Quarry. In the Craignant and Treflach Future Zone medieval remains comprise a number of field systems in the form of ridge & furrow and other earthworks at Cynynion Fawr (HER 21390), Nantygollen Farm (HER 28011), and Bwlch Farm (HER 28316), and field boundaries at Pentregaer Uchaf (HER 28013) and Cynynion Uchaf (HER 28899).

(v) The sites of two post-medieval watermills are known at Acklands Coppice, Much Wenlock (HER 07311) and at Farley (HER 15677) in the Much Wenlock Future Zone. There is a battery of three limekilns at Woodhouse Farm (HER 21376) Farley, and one of six lime kilns (HER 28248), which together with a possible shaft (HER 28247) and an engine base (HER 28249) form part of a former industrial landscape now enveloped in woodland at Benthall Edge Wood. There are a further 16 quarries in this zone (HER ref. nos. 07254, 07255, 07308, 21238, 21374, 21375, 28244, 28245, 28246, 29359, 29360, 29361, 29362, 29363, 29364, & 29821); 10 post-medieval farmsteads have been identified and classified by the desk-based Historic Farmsteads Characterisation Project in this zone. A barn and two railways are also recorded. In the Craignant and Treflach Future Zone there are four post-medieval parks and gardens, at Llanforda Hall (HER 07631), Sweeney Hall (HER 07637), Woodhill Park (HER 07643), and a Grade II Registered Park at Brogyntyn Hall (HER 07620). Two watermills at Llanforda (HER 06622 & 15518) and another four mill ponds and mill races (HER 21026, 21027, 21997, & 21998). The high number of former limestone quarries and kiln sites – there are 67 quarries and 14 lime kilns in the Craignant and Treflach zone – are indicative of the extensive use that was made of the local limestone in the post-medieval period. A group of bell pits (HER 04857) at Moelydd Farm near Nantmawr marks the site of post-medieval lead mining here, which should be seen in the context of the better-known post-medieval (and late Iron Age/Roman) lead, copper, and zinc mining on nearby Llanymynech Hill. Two industrial railways or tramways (HER 06630 & 07319) are associated with the former Gronwen Colliery near Trefonen. 77 post-medieval farmsteads have been identified and classified by the desk-based Historic Farmsteads Characterisation Project in the Craignant and Treflach zone, as well as an outfarm and two barns. Three areas of post-medieval ridge and furrow and lynchets have been recorded, as well as seven clearance cairns at Bryn and Allt y rhiw in Llanyblodwell. Other post-medieval sites include a racecourse (HER 04858) and grandstand building (HER 21025) at Oswestry racecourse, and an aqueduct, the Vyrnwy Aqueduct, (HER 21491) taking water from Lake Vyrnwy to Liverpool which passes through this zone.

7.3.2.5 Sandstone (Triassic)

Future zone: 35 Myddle & Grinshill

(i) At Grinshill Hill and at Webscott, Myddle, in north Shropshire outcrops of Triassic sandstone within the upper part of the Sherwood Sandstone Group, capped with Keuper Marl, are still exploited for building stone. Some of the sandstone has been altered by volcanic activity to produce a hard-wearing but easily worked freestone, known as Grinshill Stone. Grinshill Hill has been exploited for this high quality building stone since the 13th century, and there is still one working quarry here. This small potential future zone covers a total area 1.7km^2 and contains 14 HER monuments, giving a density of 8.24 mons/km^2.

(ii) Finds of a Mesolithic burin and other undefined prehistoric flints (HER 01629) in the first half of the 20th century, and a large Mesolithic flint assemblage (HER 04726) and a find spot of Neolithic flints (HER 08370) in the late 20th century have been made on the summit of Grinshill Hill. The hill top here provides excellent views south across the Severn Valley, east across the east Shropshire Plain and across the north Shropshire Plan to the Dee Valley in the north. The small proportion of tools and

worked artefacts and the lack of cores is at odds with other sites in the county, and the homogenous nature of the assemblage would also suggest a short time span for activity in the area (Burns, 1998). Some erosion of the soil deposits containing the flint assemblage was stabilized in 2009. And in spite of various intrusions (including an OS trig point, a toposcope, an aircraft warning light, and a small reservoir it is likely that much of this site remains intact. Two Neolithic flint arrowheads found a short way to the east of the summit suggest that remains of prehistoric human activity or occupation here may be more extensive.

Photo 21: One of the 19th century quarry faces at Grinshill Hill

(iii) Most if not all of the medieval quarry faces at Grinshill have been removed by later post-medieval quarrying (HER 06691), but the abandoned post-medieval to early 20th century workings are themselves an important record of the quarrying of this distinctive building stone. A post medieval copper and cobalt mine, Pimhill Mine (HER 03782) lies in the southwestern part of this zone; the copper mine at Clive falls outside of the zone. Nine post medieval quarries in this zone testify to the importance of the red sandstone as a local building material, and this is reflected in the local architecture. Just one post-medieval farmstead recorded by the Historic Farmsteads Characterisation Project lies in this zone.

7.3.2.6 Scheduled Ancient Monuments in the Stone Groups

There are 19 Scheduled Ancient Monuments (SAMs) in the Stone Future Zones. A ring cairn and two round cairns (LE 1008387) of Bronze Age date stand in the Clee Hill Future Zone, and a Bronze Age ring cairn with a post-medieval and belvedere tower in its centre (LE 1017237) stands in the Craignant & Treflach Future Zone. There are three Iron Age hillforts, Haughmond Hill Camp (LE 1021282), Ebury Hill Camp (LE 1021283), and Callow Hill Camp (LE 1019828). Nine of the SAMs in the Stone Groups are separately scheduled lengths of Offa's Dyke in the Craignant &

Treflach Future Zone. The medieval sites include Haughmond Abbey (LE 1021364) and a ringwork on Haughmond Hill (LE 1021281). And two areas of early post-medieval coal mining remains and a brickworks in the Clee Hill Future Zone are SAMs (LE 1014869 & 1018470).

Table 7.8: Scheduled Ancient Monuments in the Stone Groups

Group	Zone No	Future Zone	SAM: LE No	Mon Types	HER No	Period
Sandstone (Longmyndian)	27	Haughmond	1021364	Abbey, post-medieval house and formal garden remains	00116	Medieval
	27	Haughmond	1021282	Haughmond Hill Camp	00135	Iron Age
	27	Haughmond	1002953	Medieval fishpond	00138	Medieval
	27	Haughmond	1021283	Slight univallate hillfort and a World War II vehicle testing station	00113	Iron Age
	27	Haughmond	1021281	Ringwork	00134	Medieval
Igneous	32	Callow Hill	1019828	Small multivallate hillfort	01048	Iron Age
	34	Clee Hill	1008387	Ring cairn and two round cairns	01260	Bronze Age
	34	Clee Hill	1014869	Coal and ironstone mining remains, brick works, tramways, reservoirs and drainage adits	08039, 07098, 07115, 07116	Post-medieval
	34	Clee Hill	1018470	Coal mining remains (including a bloomery, tramways, reservoirs and drainage adits)	08037, 07104, 07112, 07114, 07115, 07116	Post-medieval
Limestone	31	Craignant & Treflach	1017237	Ring cairn and belvedere tower	00347	Bronze Age, Post-medieval
	31	Craignant & Treflach	1004765	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1006266	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1006238	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1006264	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1002933	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1006263	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1006250	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1004766	Boundary dyke (Offa's Dyke)	01000	Saxon
	31	Craignant & Treflach	1003019	Boundary dyke (Offa's Dyke)	01000	Saxon

7.3.3 Coal and fireclay

7.3.3.1 Any potential future extraction of coal in the study area is likely to be through open-cast quarrying. Coal-bearing strata with possible potential for working occur in the northwest of the county around Oswestry (the Oswestry Coalfield), Telford in the east (the Coalbrookdale Coalfield), and on the Clee Hills in the south (the Clee Coalfield). These groups cover a total area of 29.5km^2, or 0.9% of the historic county of Shropshire. There are a total of 212 HER monuments in these zones, representing 1.8% of the HER monuments for Shropshire. The former Shrewsbury and the Shropshire part of the Wyre coalfields are considered to have very limited potential for future opencast and are not considered in this assessment (although they have been reviewed in the past working analysis –see Chapter 6).

Table 7.9: Monument numbers in the Coal and Fireclay Groups

Period	County		Coal and Fireclay Groups		
		Total C&F	Oswestry Coalfield	Coalbrook-dale Coalfield	Clee Hills Coalfield
Prehistoric*	(1345)[a]	1	0	0	1
Palaeolithic	4	0	0	0	0
Mesolithic	40	0	0	0	0
Neolithic	152	1	0	0	1
Bronze Age	619	5	1	0	4
Iron Age	530	2	0	0	2
Iron Age to Roman	(620)[b]	2	2	0	0
Roman	901	0	0	0	0
Early Medieval	40	2	2	0	0
Medieval	2,052	16	14	0	2
Med to Post-med	(1,233)[c]	2	0	2	0
Post-medieval	6,171	179	76	19	84
Modern	1,346	0	0	0	0
Unknown	n/a	2	2	0	0
Totals	11,855	212	97	21	94

(a, b, & c: see notes to Table 7.2)

Table 7.10: Monument density in the Coal and Fireclay Groups (mons/km^2)

Period	County		Coal and Fireclay Groups		
		Total C&F	Oswestry Coalfield	Coalbrook-dale Coalfield	Clee Hills Coalfield
Prehistoric*	0.39	*0.03*	*0*	*0*	*0.10*
Palaeolithic	0	0	0	0	0
Mesolithic	0.01	0	0	0	0
Neolithic	0.04	*0.03*	*0*	*0*	**0.10**
Bronze Age	0.18	0.16	*0.06*	*0*	**0.40**
Iron Age	0.15	*0.07*	*0*	*0*	**0.20**
Iron Age to Roman	0.18	*0.07*	*0.12*	*0*	*0*
Roman	0.26	*0*	*0*	*0*	*0*
Early Medieval	0.01	**0.07**	**0.12**	0	0
Medieval	0.59	0.52	**0.82**	*0*	*0.20*
Med to Post-med	0.35	*0.07*	*0*	**0.61**	*0*
Post-medieval	1.77	**5.87**	**4.44**	**5.76**	**8.32**
Modern	0.39	*0*	*0*	*0*	*0*
Unknown	n/a	0.07	0.12	0	0
Totals	3.40	**7.15**	**5.67**	**8.18**	**9.31**

High density values are bold (more than 25% above the overall county density)
Low density values are italic (more than 25% below the overall county density)

7.3.3.2 Oswestry Coalfield

Future zone: 36 Oswestry Coalfield

(i) The Oswestry Coalfield is part of the Denbighshire Coalfield, and was worked from the end of the 16th century through to the second half of the 20th century. The resource potential of the Oswestry Coalfield is considered to be poor and open-cast extraction here is unlikely at present. This zone covers an area of 17.1km^2 and contains 97 HER monuments, giving a density of 5.67 mons/km^2.

(ii) In comparison with the adjacent Craignant and Treflach Future Zone (limestone) where there are six recorded monuments and find spots of Bronze Age date, there is just one in the Oswestry Coalfield zone, a find of a Bronze Age socketed axehead and axe mould (HER 04253) from Selattyn and Gobowen. Two Iron Age to Roman period cropmark enclosures have been recorded at Park Mill (HER 01300) and Bryn Aber, Coed y go (HER 04021). A carved stone of probable Saxon date, possibly part of a cross shaft, was recovered from the River Morda southwest of Oswestry in 1983 (HER 03779), and three Scheduled sections of the Saxon boundary dyke, Offa's Dyke (HER 01000, LE 1003019, 1004767, & 1006262) run through the southwestern corner of this zone.

Photo 22: Saxon carved stone (HER 03779) recovered from the River Morda

(iii) Castell Brogyntyn (HER 00350) at Brogyntyn Farm, Selattyn is a fine example of a medieval ringwork castle and is a SAM (LE 1013488), and there are three medieval moated sites at Pentre Kenrick (HER 02862) Little Pentredafydd (HER 03980) in Selattyn and at Underhill (HER 04591) near Oswestry. There is a group of possible medieval house platforms (HER 04627) at Maes-y-Llan near Oswestry, and an enclosure and toft (HER 04754) at Hen-plassey Cottage, Selattyn, and there are seven areas of medieval ridge & furrow ploughing in this zone (HER 04409, 04590, 04592, 20974, 20975, 20976, & 20977).

(iv) Seven post medieval parks and gardens (HER 07620, 07621, 07631, 07637, 07639, 07640, & 07643) lie in this zone; one of these, the parks and gardens at Brogyntyn Hall (HER 07620), is a Grade II Registered Park (LE 1001326). 39 post-medieval farmsteads and an outfarm have been identified and classified by the desk-

based Historic Farmsteads Characterisation Project here and four post-medieval ridge and furrow field systems have been identified (HER 20928, 04628, 20925, & 21587). As in the adjacent Craignant and Treflach Future Zone, post medieval water mills form a significant element of the archaeological resource of this period in this zone: seven water mills (HER 06531, 15519, 15521, 15585, 15805, 15806, & 15807) and a further six mill ponds, leats, mill races, and weirs (HER 21576, 21579, 04855, 21575, 21574, & 21578) are recorded in this zone. Five areas of coal workings (HER 04276, 04644, 04856, 06631, & 28315) are recorded as HER monuments in this zone, one of which, Trefarclawdd Collieries (HER 04276), is an unusually well-preserved survival of a typical late 18th century horse-powered lowland coal mine complex and has been Scheduled (LE 1016680). Other industrial remains in the zone include a brick works (HER 06532), a pottery (HER 04277), and a water works (HER 06533). A find of six post-medieval copper alloy cauldrons at was made at Ashfields, Llwynymaen (HER 02825).

(v) An enclosure (HER 04751) and an enclosure and drainage ditches (HER 04756) in this zone are of unknown date.

7.3.3.3 Coalbrookdale Coalfield

Future zone: 38 Caughley; 39 Benthall

(i) The Coalbrookdale Coalfield may have been worked since the Roman period, and there are documentary references to coal mining in the medieval period. The development by Abraham Darby I of the use of coke for smelting iron led to an increase in demand for coal in the iron industry in the 18th and 19th centuries. The Lower and Middle Coal Measures contain the more productive coal seams, ironstone, and fire-clay (Brown, 1999, p9). The coal seams were heavily worked underground in the post-medieval and early modern periods, and have continued to be worked by open cast methods to the present day, to the extent that most of the accessible deposits have now been worked out and the land reclaimed for development. Consequently the future potential of this coalfield is limited to number of relatively small pockets contained within two zones, the Caughley Future Zone and the Benthall Future Zone. These pockets comprise a total area of 2.3 km^2 and contain 21 HER monuments, giving a density of 6.36 mons/km^2.

(ii) There are no known sites of Prehistoric or Roman date in these two future zones. There is a deserted medieval and post-medieval settlement at Little Caughley (HER 21380), and a medieval and post medieval park (HER 07554 & 07556) at Willey Hall. There are a post-medieval park and gardens at Benthall Hall (HER 07506).

(iii) Industrial sites and monuments in these zones are represented by post-medieval potteries and associated features at Caughley (HER 04316, 08504, & 04002) and at Benthall (HER 03982 & 28241), and there are four coal working sites (HER 08501, 08502, 08505, & 28578) and early railways (HER 08506) serving the coalworkings at Caughley, and at Workhouse Coppice, Benthall the earthwork remains of early post-medieval ironstone and coal workings (HER ESA6213) were noted during a watching brief on a Severn-Trent pipeline. There are seven post-medieval farmsteads in these zones that have been recorded by the desk-based Historic Farmsteads Characterisation Project.

(iv) Much of the above-ground evidence for earlier post-medieval mining in the Coalbrookdale Coalfield has been removed by later post-medieval mining, 20th century open-cast extraction, and by subsequent reclamation and redevelopment. The early mining remains at Workhouse Coppice in Benthall and Bradleys Coppice (HER 08501 & 08502) then are a relatively rare survival in the coalfield of early post-medieval mining remains - similar remains at Little Wenlock have been scheduled and were largely excluded from the early 21st century open cast extraction at Huntington Lane (see Chapter 6, section 6.3.1.4).

7.3.3.4 Clee Hills Coalfield

Future zones: 37 Brown Clee; 41 Titterstone Clee

(i) The Clee Hills (Clee Hill or Titterstone Clee, and Brown Clee) have been mined for coal and ironstone since medieval or early post-medieval times. There are numerous remains of bell-pits and early mining remains surrounding the major stone quarries in these zones. The extent of former mining would suggest that the coal deposits in these zones have already been heavily worked probably to the point where future extraction would not be viable; nevertheless, there have been mineral applications for exploration here in the past 25 years or so, and so these zones have been included in this assessment. The zones cover a total area of 10.1km^2 and contain 94 HER monuments, giving a density of 9.31 mons/km^2

(ii) A Neolithic stone axe (HER 02600) was found on Brown Clee in 1939, and a Late Neolithic or Early Bronze Age large perforated stone axe hammer was found in 1908 about four miles west of Cleobury Mortimer on the hills overlooking Doddington. Some large amber beads (HER 03236) of possible Bronze Age date were found in 1851 at a depth of 1.5m at the back of St Johns Church, Doddington in the Titterstone Clee Future Zone. A cairn of probable Bronze Age date (HER 02586) was exposed in the 19th century in the northwest corner of Abdon Burf, but has since been quarried away, and there is the site of another possible cairn (HER 00599) on the east side of the later hillfort. There is the site of a possible standing stone, the 'Mere Stone' (HER 03292) on the borders of Wilmore Pool in the Titterstone Clee Future Zone. There were two hillforts on the summit of Brown Clee hill, Clee Burf (HER 00181) at the southern end of the hill and Abdon Burf hillfort (HER 00182) at the northern end of the summit. The defences of both were finally destroyed in the 20th century, though their interiors had been damaged by post-medieval coal and ironstone working.

(iii) "The Moat" (HER 08724) is a large enclosure on Brown Clee Hill that may be of medieval origin. There is a pond (HER 02591) within “The Moat” which may in fact be of post-medieval origin.

(iv) There is a late 18th century park, Burwarton Hall Park, (HER 07510) on the east side of Brown Clee Hill which is Grade II Registered (LE 1001116). There are 34 post-medieval farmsteads and two smallholdings recorded by the Historic Farmsteads Characterisation Project in these zones, and probable post-medieval field boundaries and ridge and furrow eart6hworks (HER 20823 & 20824) at Knowbury. The post-medieval industrial remains in these areas are of particular

significance and have been the subject of a number of surveys and studies (which of course has also led to a high number of HER records of monuments of this period for these areas). There are three areas of post-medieval coal workings (HER 06986, 06990 & 06996) in the Brown Clee Future Zone and 17 in the Titterstone Clee Future Zone (HER 04625, 07105, 07106, 07107, 07109, 07112, 07113, 07119, 07120, 07124, 07126, 08036, 08037, 08039, 28878, 28881, & 28882). Some of these workings are potentially early – bell pits are recorded amongst the coal workings on Abdon Burf (HER 06690 & 06986) and Clee Burf (HER 06696). Coal working around Titterstone Clee Hill and Catherton Common dates from the medieval period (mining is documented on the hill in the 1260s) through to the 20th century, and three areas of coal workings have been Scheduled, on the south side of Titterstone Clee Hill (HER 07106, LE 1018471), at Cornbrook (HER 08037, LE 1018470) and at Catherton Common (HER 07112, 07119, 07120 & 08039, LE 1014869). There is one area of iron working (HER 06992) on Brown Clee and two (HER 07112 & 07122) and an iron works (HER 07087) in the Titterstone Clee Future Zone. There are two further areas of unspecified mining remains in this zone (HER 20821 & 20822). Three quarries (HER 06987, 06997, & 30123) and an inclined plane (HER 08466) are recorded in the Brown Clee Future Zone, and three quarries (HER 07074, 07121, & 30414) in the Titterstone Clee Future Zone. Also in this zone are the sites of seven brickworks (HER 07080, 07081, 07082, 07085, 07088, 07092, & 08039), two potteries (HER 07083 & 07084), and a glass works (HER 07102).

(v) A more unusual monument is a set of stepping stones (HER 03241) at Knowlebank Farm; although these are recorded as being of post-medieval date, they are marked on a map of 1571, and so are likely to be of medieval in origin at least. The site of an ancient oak tree (no longer standing), the Mear Oak, is also recorded as a monument (HER 03239).

7.3.3.5 Scheduled Ancient Monuments in the Coal & Fireclay Groups

Three of the eight scheduled monuments in the Coal and Fireclay Groups are separate sections of Offa's Dyke in the Oswestry Coalfield Future Zone (LE 1003019, 1004767, & 1006262). Also in the Oswestry Coalfield zone is a medieval ring work castle, Castell Brogyntyn (LE 1013488). There is an area of medieval and post-medieval coal mining remains on Clee Hill (LE 1018471) which also includes a Bronze Age standing stone (the Mere Stone, HER 03292) and a post-medieval brickworks. The remaining scheduled monuments in these zones are all post-medieval coal mining remains, one (LE 1016680) in the Oswestry Coalfield zone, the others (LE 1014869 &1018470) in the Titterstone Clee coal zone.

Table 7.11: Scheduled Ancient Monuments in the Coal and Fireclay Groups

Group	Zone No	Future zone	SAM	Mon Types	HER No	Period
Oswestry Coalfield	36	Oswestry Coalfield	1003019	Boundary dyke (Offa's Dyke)	01000	Saxon
	36	Oswestry Coalfield	1004767	Boundary dyke (Offa's Dyke)	01000	Saxon
	36	Oswestry Coalfield	1006262	Boundary dyke (Offa's Dyke)	01000	Saxon
	36	Oswestry Coalfield	1013488	Ringwork castle	00350	Medieval
	36	Oswestry Coalfield	1016680	Colliery remains	04276	Post-medieval
Clee Hills Coalfield	41	Titterstone Clee	1014869	Coal mining remains, brickworks, and tramways	08039, 07112, 07116, 07119, 07120, 07126	Post-medieval
	41	Titterstone Clee	1018470	Coal mining remains	08037, 07112, 07114	Post-medieval
	41	Titterstone Clee	1018471	Coal mining remains, Brickworks, Standing stone	08036, 03292, 07085, 07106, 28881	Bronze Age, Medieval, Post-medieval

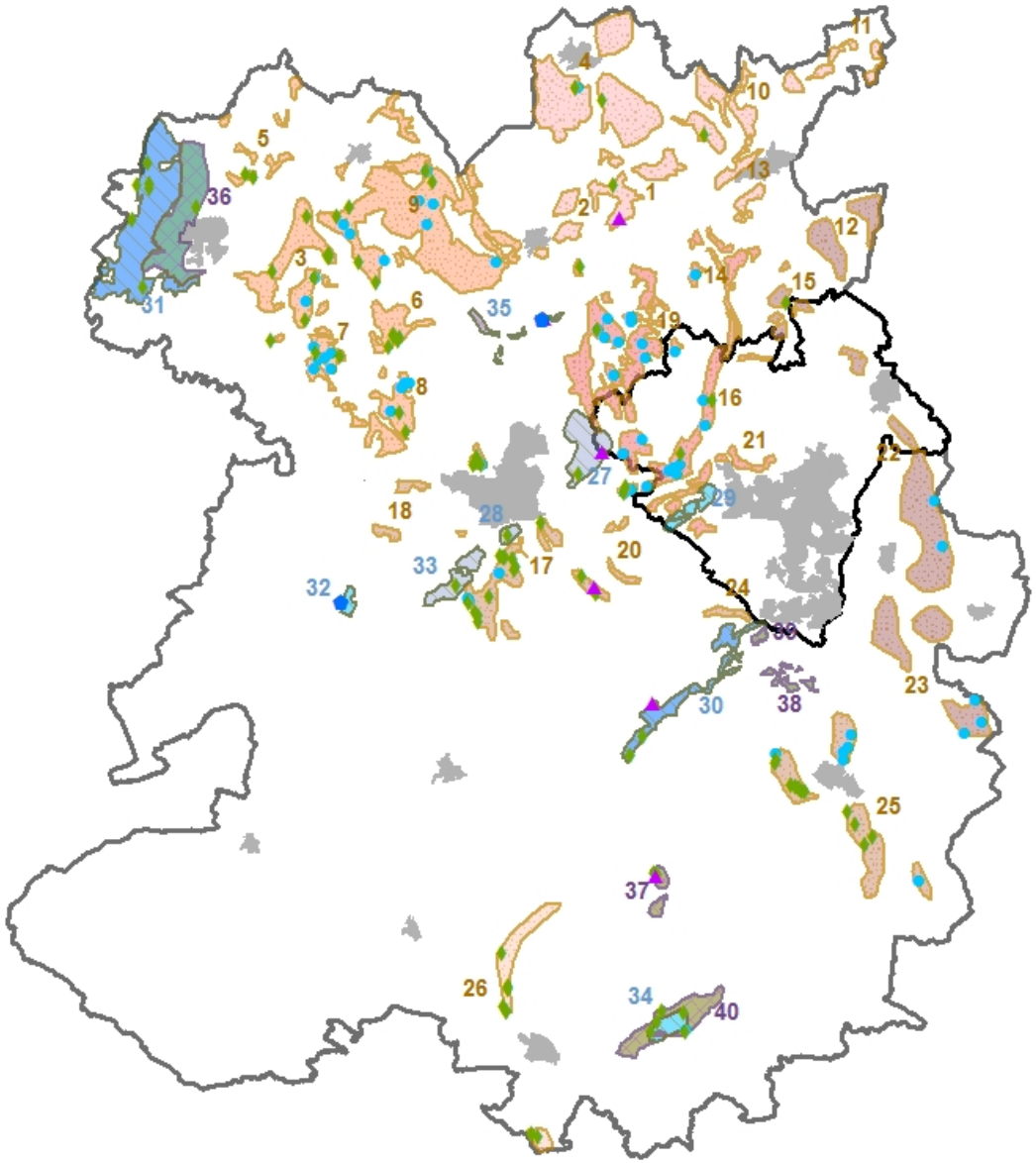


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Figure 8: Earlier prehistoric monuments in the Future Zones

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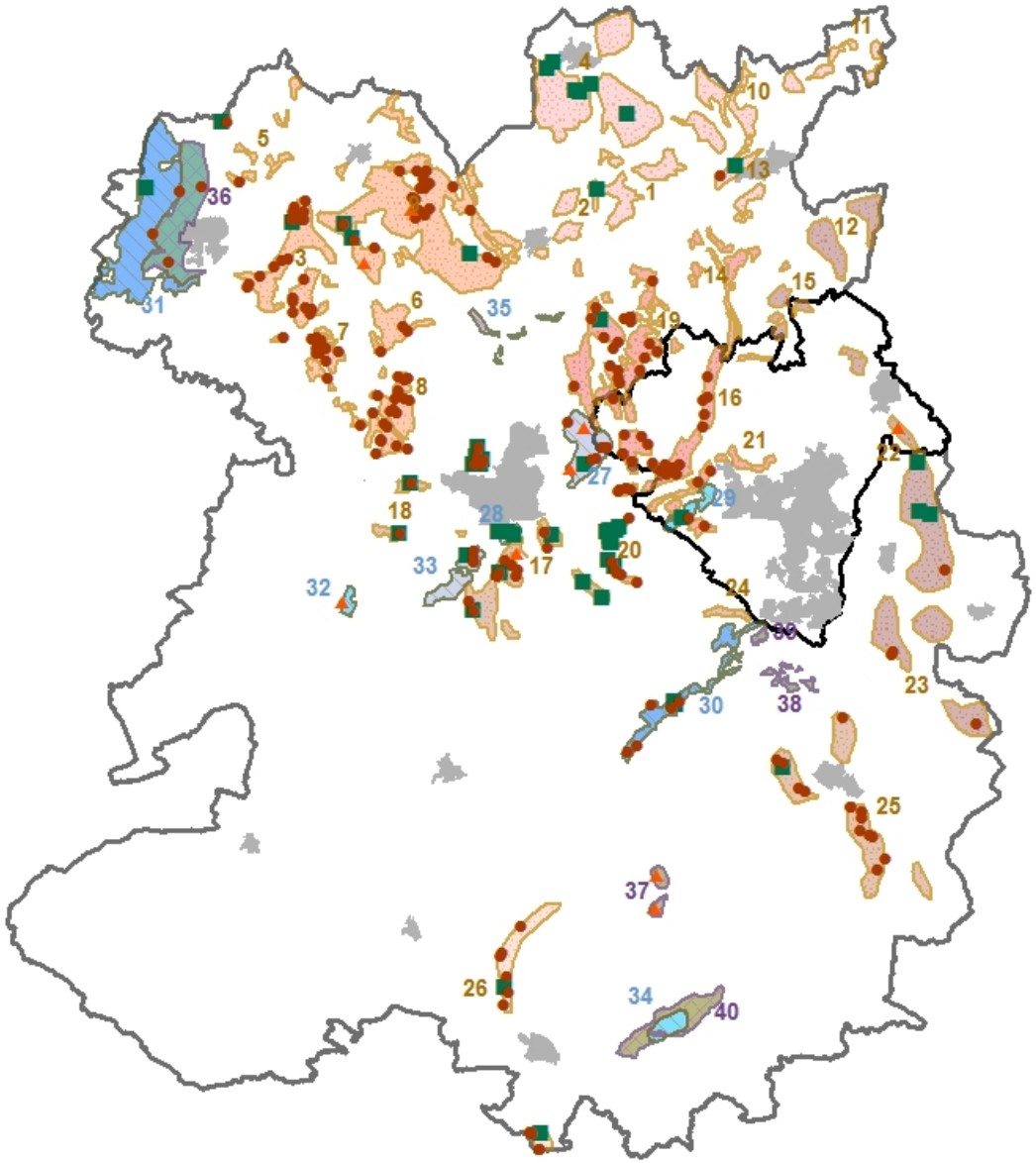
Scale: 1:500,000



N

Period

- Iron Age
- Iron Age to Roman
- Roman

Sand & Gravel Zones

1 Prees
2 Wem and Edstaston
3 West Felton
4 Whitchurch
5 Gobowen and St Martins
6 Baschurch
7 Knockin and Nesscliffe
8 Forton and Little Ness
9 Ellesmere
10 Market Drayton NW
11 Norton in Hales
12 Hinstock
13 Market Drayton S
14 Hodnet Heath
15 Childs Ercall
16 Tern Valley
17 Dorrington and Condover
18 Shrewsbury W
19 Roden Valley
20 Wroxeter
21 Wrockwardine and Weald Moors
22 Newport and Shifnal
23 Kemberton and Chesterton
24 Buildwas
25 Bridgnorth
26 Ludlow

Stone Zones

27 Haughmond
28 Bayston Hill
29 Leaton
30 Much Wenlock
31 Craignant & Treflach
32 Callow Hill
33 Lyth
34 Clee Hill
35 Myddle & Grinshill

Coal & Fireclay Zones

36 Oswestry Coalfield
37 Brown Clee
38 Caughley
39 Benthall
40 Titterstone Clee

0 5 10 20 Kilometers

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Figure 9: Iron Age and Roman period monuments in the Future Zones

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Scale: 1:500,000

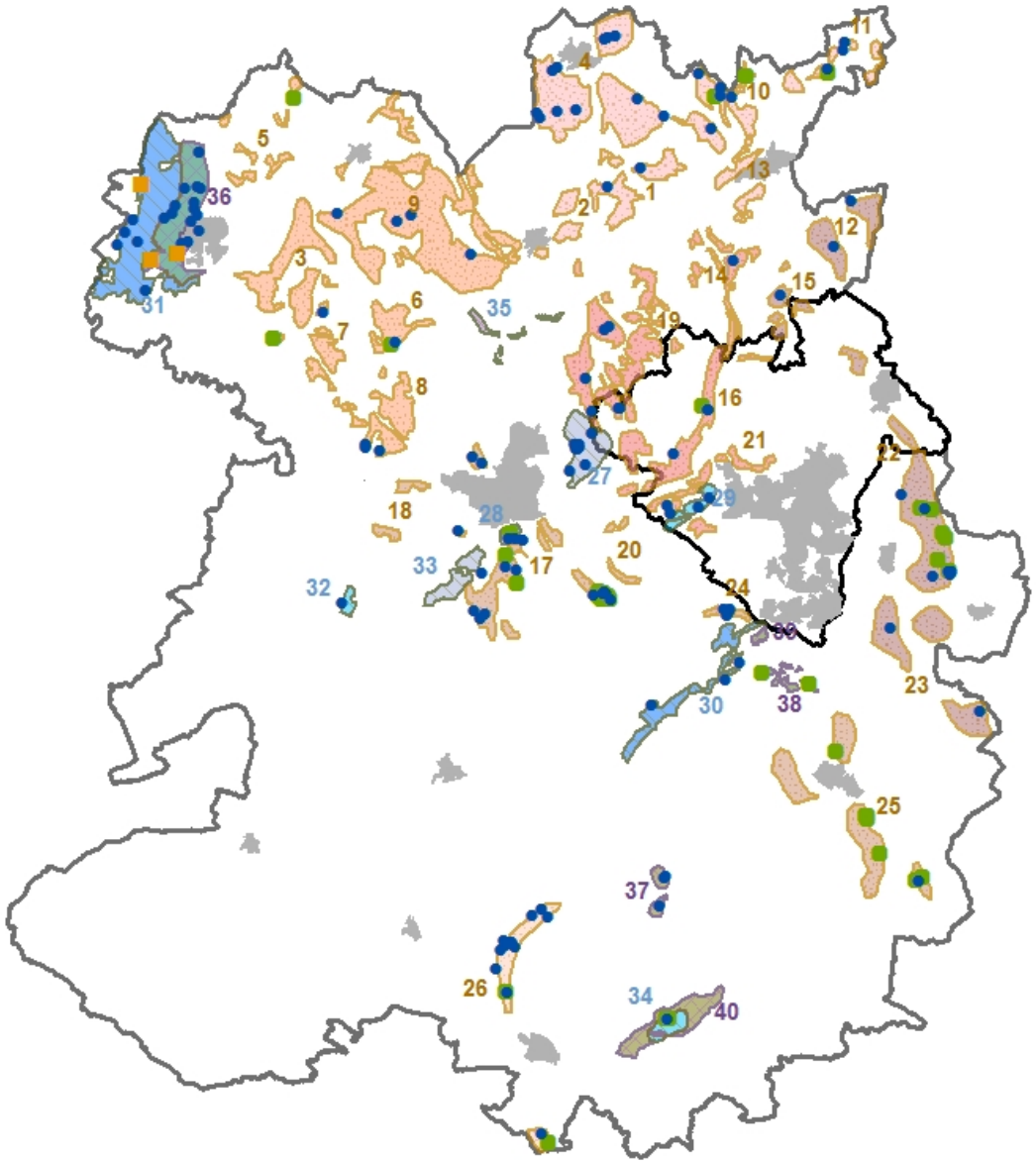

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Figure 10: Medieval period monuments in the Future Zones

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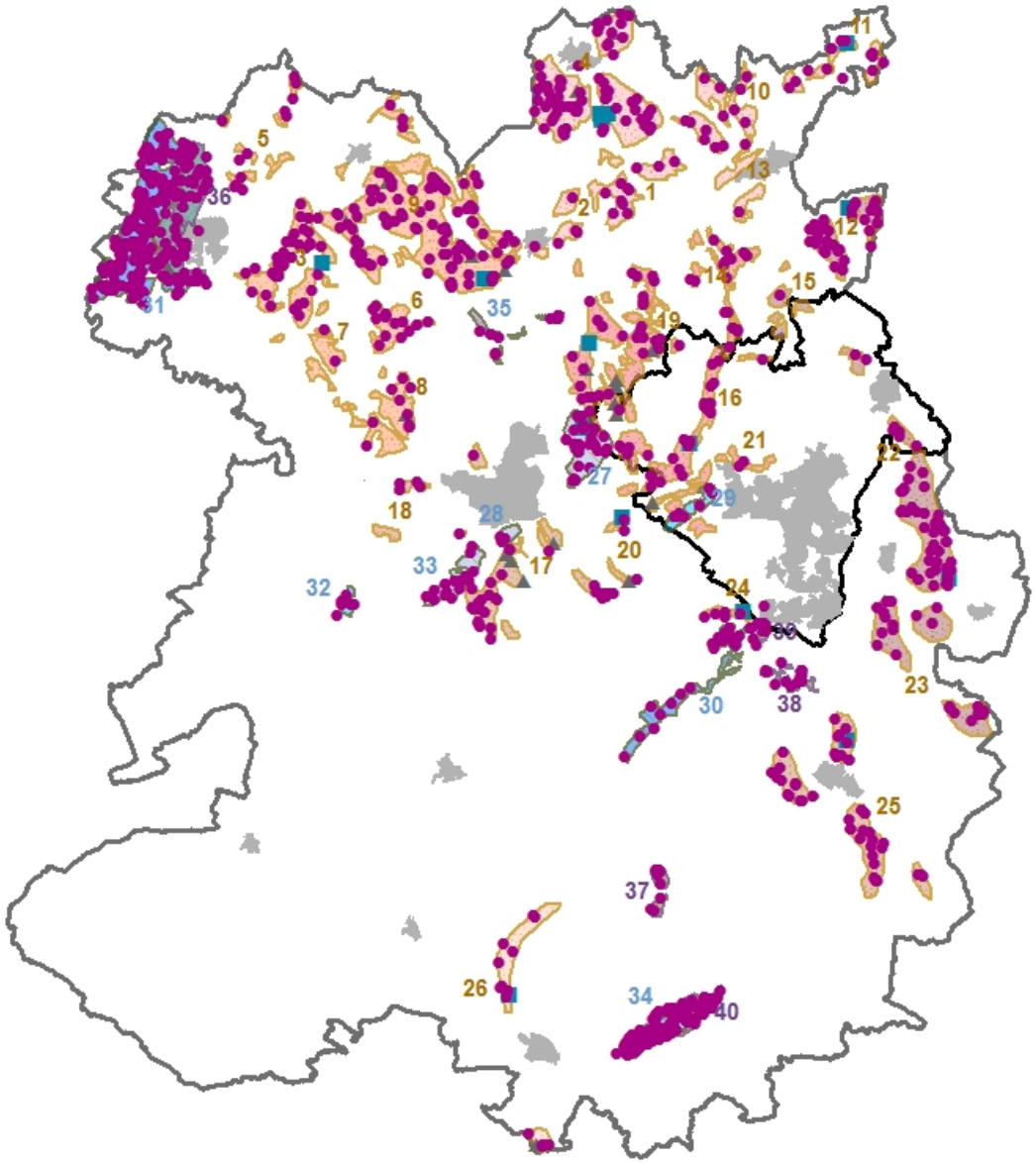
Scale: 1:500,000



N

Period

- Postmedieval
- Modern
- Unknown

Sand & Gravel Zones

1 Prees
2 Wem and Edstaston
3 West Felton
4 Whitchurch
5 Gobowen and St Martins
6 Baschurch
7 Knockin and Nesscliffe
8 Forton and Little Ness
9 Ellesmere
10 Market Drayton NW
11 Norton in Hales
12 Hinstock
13 Market Drayton S
14 Hodnet Heath
15 Childs Ercall
16 Tern Valley
17 Dorrington and Condover
18 Shrewsbury W
19 Roden Valley
20 Wroxeter
21 Wrockwardine and Weald Moors
22 Newport and Shifnal
23 Kemberton and Chesterton
24 Buildwas
25 Bridgnorth
26 Ludlow

Stone Zones

27 Haughmond
28 Bayston Hill
29 Leaton
30 Much Wenlock
31 Craignant & Treflach
32 Callow Hill
33 Lyth
34 Clee Hill
35 Myddle & Grinshill

Coal & Fireclay Zones

36 Oswestry Coalfield
37 Brown Clee
38 Caughley
39 Benthall
40 Titterstone Clee

0 5 10 20 Kilometers

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Figure 11: Post-medieval and modern monuments in the Future Zones

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Scale: 1:500,000

7.4 Significance and potential impacts

7.4.1 In this section it is intended to summarise some of the major themes in terms of significance and potential impacts arising from the discussion above of the groups of Future Zones. These themes are grouped on a period basis, and where relevant they have been cross-referenced to the research agenda highlighted in Chapter 8.

7.4.2 Palaeolithic and Mesolithic periods. There are just two Mesolithic HER records within the 40 Future Zones. One of these is the find spot of a mace-head from near Callow Hill, the other a find spot of a large flint assemblage from the summit of Grinshill Hill. The site of the Grinshill flint assemblage is not likely to form part of future quarrying operations. However, there is potential for undisturbed peat deposits in former kettle holes within areas sand and gravel quarries to hold archaeological and palaeoenvironmental evidence for the late Palaeolithic and Mesolithic periods, and this should be reflected in the assessments and mitigation strategies for aggregate extraction developments.

7.4.3 Neolithic and Early Bronze Age.

(i) There are just six Neolithic sites recorded on the HER within the 40 Future Zones, and all of these six sites are find spots. Four of these finds are of stone axes, two other flint finds. It is probable that a number of the flint find spots listed under the general “Prehistoric” period category are also Neolithic in date, but even so the density of sites of this period within the Future Zones is low compared to the county average. This is particularly the case in the sand and Gravel Future Zones. However, this is likely to be the result of Neolithic sites not being identified: few distinctively Neolithic monuments – causewayed enclosures or henges for example - have been identified by fieldwork or aerial photography. The relatively low levels of rural archaeology have nevertheless identified features and finds of Neolithic date within lowland areas and so the sites are likely to be there. The application of sampling strategies and the adoption of the “strip, map and sample” method of site investigation – as recommended by the West Midlands Regional Research Framework for Archaeology (WMRRF) (see Chapter 8, section 8.2.2.iii) – would improve the chances of locating features of this period during mitigation.

(ii) The earliest surviving monuments in the county date to the late Neolithic and early Bronze Age and comprise the remains of funerary monuments. Only exceptionally do barrows survive in the lowland sand and gravel zones; however their ploughed out remains frequently appear as cropmark ring ditches. These ring ditches often occur in clusters or cemeteries. Watson’s assessment of cropmark ring ditches along the upper Severn Valley and its tributaries in Shropshire suggested that the tendency for ring ditches to occur in clusters might reflect the presence of discrete Bronze Age communities (Watson, 1991). Watson advocated a policy of preservation and protection of these ring ditch sites, particularly where they form clusters or are associated with other features, such as cropmark enclosures or field systems. Barrow cemeteries are to be found in the Baschurch Future Zone around the west and north sides of Baschurch, in the Severn Valley Future Zone at Morville northwest of Bridgnorth and at Berewick north of Shrewsbury, and in the Ludlow Future Zone on opposite sides of the River Corve at Bromfield and Stanton Lacy. The cemeteries almost entirely comprise cropmark ring ditches, although there are

some upstanding barrows in the Bromfield cemetery. The western part of the extensive Bromfield cemetery was the subject of varying levels of archaeological rescue excavation in advance of sand and gravel extraction from the 1960s through to the 1990s (see Chapter 6, section 6.3.3.). The archaeological recording here revealed that the ring ditches were associated with cremation cemeteries, and that although they dated in the main from the late Neolithic to early Bronze Age periods, one of the barrows dated to the early Iron Age.

7.4.4 Middle to Late Bronze Age. Fifteen of the 78 Bronze Age sites from the sand and gravel Future Zones are find spots, seven of which are of metalwork, the others find spots are of flint and stone objects. In particular, Middle and Late Bronze Age activity in the Future Zones is mainly evidenced by find spots of metalwork. In the past these finds have been made during agricultural operations, less commonly during quarrying; more recently metal detecting has been a factor. Usually the circumstance of these finds has meant that there has been little in the way of context for the artefacts. A cluster of burnt mounds at Rednal (HER 28079, 28080, & 28081) in the West Felton zone and others in the Dorrington and Condover zone at Grove Farm, Condover (HER 04719) and Bayston Hill (HER 21243) comprise the few Middle and Late Bronze Age monuments in these zones. An increasing number of pit alignments are being recorded by aerial photography and 27 (out of the 30 recorded on the HER for the county as a whole) occur in the sand and gravel Future Zones. A lack of fieldwork on these sites locally mean that they can only provisionally be allocated a “Prehistoric” date, but by analogy with similar features identified beyond the county boundary they could date from the Neolithic period through to the Iron Age. The WMRRF drew attention to the need for more investigation of these sites (see Chapter 8, section 8.2.3).

7.4.5 Iron Age. Seven of the nine specifically Iron Age sites in the Future Zones are hillforts (the other two are 19th century finds of dug-out canoes from Bagley Moor (HER 00845) and Whattal Moss (HER 00888). Of the Iron Age hillforts two have been almost entirely lost (Clee Burf, HER 00181, and Abdon Burf, HER 00182) to mining and quarrying and another has been substantially damaged in the past by quarrying Ebury Hillfort (HER 00113) in the Haughmond zone. Two others lie immediately adjacent to operational stone quarries: Callow Hill Camp (HER 01048) and Haughmond Hill Camp (HER 00135). Pave Lane Hillfort (HER 03446) though not under any immediate threat still lies within a potential sand and gravel Future Zone, as do the banks and ditches of a possible hillfort in Bomere Wood (HER 00059) in the Dorrington and Condover zone. Of these, it is Haughmond Hill, Ebury Hill and Callow Hill that are under the most immediate threat from aggregate extraction due to their proximity to currently operational quarries extracting high quality roadstone.

7.4.6 Iron Age to Roman. The groups of sand and gravel Future Zones in the central and western parts of the county show a large number and relative high density of Iron Age to Roman period cropmark sites (see tables 7.3 & 7.4, above), in particular cropmark enclosure sites. Whilst these cropmark sites are not uncommon, there has been relatively little archaeological investigation of these sites in these

areas in terms of both fieldwork and typological studies since Rowan Whimster's study in the 1980s (Whimster, 1989). The cropmark enclosures are still relatively loosely dated, and while the Cotswold Archaeology/Reading University Roman Rural Settlement Project may now be re-visiting the typology of some of these sites, dating evidence and evidence for the function and status of these mainly Iron Age to Roman period rural settlements will only come from fieldwork. Future assessment of applications for mineral extraction in this group of Future Zones should take this into account, and adequate resources for dating (radio-carbon and other reliable techniques) should be embedded in any mitigation strategies for work on these sites (see Chapter 8, section 8.2.3). There should also be adequate resources for the investigation of internal features that will help to identify activities within the enclosures. The markedly below-average density for these sites in the NE Shropshire and E Shropshire sand and gravel Future Zones can perhaps partly be explained by a relative lack of aerial photographic survey along the eastern side of the county. Enclosure sites may thus be located by other means – as with a previously unknown enclosure at the Bridgwalton Quarry that was found through geophysical survey (see Chapter 10, section 10.4). It is a cliché, but absence of evidence (in this case in the form of cropmarks) is not necessarily evidence of absence.

7.4.7 Roman

(i) There are, naturally, clusters of Roman monuments and find spots in the Future Zones around the Roman towns of Wroxeter and Whitchurch. A find spot of Roman tile and pottery (HER 03437) at Dearnford Hall near Whitchurch may indicate the presence of a villa or high status farmstead outside the Roman town, and finds of Roman flue tiles, floor concrete, pottery, stones and mortar before 1911 associated with a cropmark enclosure (HER 03038) at Stanton Lacy in the Ludlow Future Zone probably marks another villa site. These are the only two higher status civil sites in the Future Zones. Part of the extramural settlement on the north side of Wroxeter lies within the Wroxeter Future Zone (HER 00030) and recent work by Wessex Archaeology on a water pipeline through this area has provided evidence for the potential of this zone to shed light on settlement and land use immediately outside the Roman city.

(ii) Eight Roman military sites lie within the Future Zones, all of them in the sand and gravel Future Zones. These comprise two forts, at Wroxeter (HER 00033) and Rhyn Park (HER 00645), and six marching camps at Wroxeter (HER 00029 & 00128), at Rhyn Park (HER 00645) Perry Farm (HER 00935) and Lower Hordley (HER 02449) in the NW Shropshire group of future zones, and at Stoneyford Cottages (HER 01111) just south of Watling Street in the Newport and Shifnal zone. The excavations at Bromfield in the early 1990s on the marching camp there demonstrated the potential for marching camps to provide important archaeological evidence - including dating evidence - for Roman military activity, particularly for the early period of the Roman occupation.

(iii) Whilst the investigation of Roman roads as part of mitigation strategies has in the past sometimes not been seen as a priority, the recent work on the section of the Roman Road (HER 00098) at Bayston Hill undertaken as part of the mitigation for an extension to the Bayston Hill quarry (Malim, 2011) has demonstrated the potential for

these monuments in understanding the development of infrastructure in the Roman period (and in this case possibly the late Iron Age too). 17 sections of Roman roads or trackways lie within the Future Zones.

7.4.8 Medieval.

(i) There is just one early medieval/Saxon monument in the Future Zones, and that is Offa's Dyke (HER 01000) which runs through the Craignant and Treflach stone and the Oswestry Coalfield Future Zones in the northwestern corner of the county. This is a particularly well-preserved section of the Dyke, and most of this length is Scheduled (see tables 7.8 & 7.11 for LE numbers). The only other HER Record for this period in the Future Zones is a find spot of carved masonry, also from the Oswestry Coalfield zone (see Photo 22 above).

(ii) The medieval sites in the Future Zones provide a cross-section of what might be expected of English rural medieval settlement, ranging from high status monuments such as rural monasteries and stone castles through to low status monuments such as cropmarks of ploughed-out ridge and furrow ploughing.

(iii) Two of the county's best preserved rural medieval monasteries, Haughmond Abbey and Buildwas Abbey, lie within Future Zones. Buildwas Abbey is separated from the operational Buildwas Quarry by the A4169 Buildwas to Much Wenlock road and is not considered to be under immediate or medium term threat of direct or indirect impact from mineral extraction. However, an EIA Scoping Opinion for a possible northern extension to Haughmond Quarry was requested in 2013 (13/00167/SCO) that would butt onto the boundaries of the Scheduled areas of both Haughmond Abbey and Ebury Hillfort. This proposal was not taken forward at the time.

(iv) Composite and earthwork castles are a highly visible and characteristic component of the Shropshire landscape, particularly along the western border of the county. However, despite the archaeological and landscape importance of the stock of major castles and earthwork castle sites in the county, it has attracted only very limited detailed archaeological investigation. This lack of past systematic and comparative study and investigation of these castles means that the significance of the different kinds of site remains poorly understood. There are a number of sites of composite castles in the Future Zones. Shrawardine Castle (HER 00052, LE 1015707) in the Forton & Little Ness zone and Moreton Corbet Castle (HER 01133, LE 1015317) in the Roden Valley zone both have ruinous remains of stone and earthwork castles. Both of these are SAMs. Both are associated with shrunken medieval settlements, and Moreton Corbet also includes the remains of a post-medieval house. Another castle, Tong Castle (HER 01359), on the eastern edge of the Newport and Shifnal zone was largely destroyed by the construction of the M54 motorway, and what remains of this monument are now bisected by this road. Two other possible castles sites recorded on the HER lie within future zones; these are a possible castle (HER 01735) known from documentary sources inside the Scheduled hillfort on Callow Hill in the Callow Hill zone (though no earthwork remains of this castle survive), and another site suggested by a field name at Castle Hayes, Prees (HER 01663) in the Prees zone. There are five motte and bailey castles and ringwork castles in the future zones out of 122 recorded on the HER for the whole

county. Three of the motte and bailey castles Pan Castle, Whitchurch (HER 01039, LE 1020286), the motte (HER 01005, LE 1020289) overlooking Crosemere, and Camp Ring at Culmington Farm (HER 00165, LE 1012855) in the Ludlow zone are Scheduled, as are the two ringwork castles, Queen Eleanor's Bower on Haughmond Hill (HER 00134, LE 1021281) and Castell Brogyntyn (HER 00350, LE 1013488) in the Oswestry Coalfield zone. Although located in Future Zones, none of these castle sites is under immediate threat from mineral extraction, and the statutory protection given by Scheduling that this group of monuments has should ensure that this remains the case.

(v) Medieval moated sites are one of the principal types of medieval field monuments surviving in the Shropshire landscape. Watson undertook a survey of the moated sites in Shropshire and produced a gazetteer in the 1980s (Watson 1981 & 1987). There are 194 moats or moated sites recorded for the county on the HER, of which 18, a significant proportion lie in the Future Zones. 15 of these are from the sand and gravel zones, 3 from the coal and fireclay zones. There are none in the mainly higher ground of the stone zones, which accords with the findings of Watson's 1981 survey. Three of the moats in the future zones are SAMs: Blakemere Castle (HER 01040, LE 1017013) in the Whitchurch zone, Middle Morrey (HER 01041, LE 1017010) in the Market Drayton NW zone, and Betton Alkmere (HER 00056, LE 1019646) in the Dorrington & Condover zone. Although located in Future Zones, none of these monuments is under immediate threat from mineral extraction.

(vi) The medieval monuments most at risk from future mineral extraction are lower status rural sites, such as field boundaries, trackways, and former field systems, including areas of earthwork or cropmark ridge and furrow ploughing. Although not of great individual significance, they have a cumulative potential for enhancing understanding of rural medieval settlement in the county, and as such merit adequate mitigation measures when included in mineral extraction areas.

7.4.9 Post-medieval and Modern

(i) Post-medieval monuments make up by far the largest component of the HER monuments within the Future Zones; there is a density of 2.73 mons/km^2 for the Future Zones as compared with 1.77 mons/km^2 for the county as a whole. This higher density can at least partly be explained by a number of surveys – particularly in former mining zones - that have generated a large number of individual HER records.

(ii) The industrial of medieval and post-medieval coal mining, iron workings, quarrying and associated features around Titterstone Clee Hill is set against a background of features of Bronze Age and Iron Age date. Elements within this complex have been Scheduled, but the complex as a whole is of regional if not national importance. The area falls within the Clee Hills stone and the Clee Coalfield coal and fireclay Future Zones ,and there is an operational stone quarry here. And although there is not considered to be an immediate threat from open-cast mining, there have been mineral applications for exploration here in the past 25 years or so.

(iii) The desk-based Historic Farmsteads Characterisation Project mapped 6194 historic farmsteads across the county of Shropshire (including Telford & Wrekin).

The farmsteads were mapped using GIS software, with the farmsteads identified from digitised 2nd edition 25" Ordnance Survey maps. There are altogether 490 historic farmsteads in the Future Zones and these have been counted among the post-medieval monuments. These farmsteads make up a considerable proportion (45%) of the post-medieval monuments in the Future Zones. Some of these farmsteads may well be medieval farms that continued into the post-medieval period, surviving to be mapped by the 2nd ed. OS. A few of these farmsteads also had ceased to exist as such during the 20th century. These historic farmsteads are an integral part of an historic pattern of dispersed as opposed to village-based settlement within the county. The Historic Farmsteads Characterisation Project found that some of the highest densities of historic farmsteads were evident in the Oswestry uplands, across parts of the Shropshire Hills, and within the north eastern part of Shropshire. Small scale farmsteads predominate in these areas, often comprising just one or two farm buildings. This is reflected in the numbers of farmsteads in the Future Zones that lie within these areas – for example, there are 77 historic farmsteads in the in the Craignant and Treflach Future Zone which sits in the limestone uplands to the west of Oswestry. While not under threat as a group, individual farmsteads – particularly former or abandoned sites, might be vulnerable to quarry extensions, as was the case with a number of farmsteads around the Whitehaven quarries (see Chapter 6, section 6.3.4.3).

(iv) One of the few monuments that is under direct threat from known potential future aggregate extraction is the WWII airfield at Sleap (HER 29116) in the Ellesmere sand and gravel Future Zone. RAF Sleap was a satellite field for RAF Tilstock and was used for training Whitley bomber crews in WWII. There are a number of WWI period features surviving on the airfield including what's thought to be the unique remains of a building where rear turret training was performed. There is currently permission for gravel extraction here, though work has not yet started. Cropmarks of 19th century field boundaries in the areas between the runways indicate that earlier pre-airfield features survive.

CHAPTER 8: REGIONAL RESEARCH AGENDAS

8.1 Regional research agenda and strategies

The Shropshire Mineral Resource Assessment has been informed by national and regional research frameworks for the historic environment, including the work undertaken by the West Midlands Regional Research Framework for Archaeology (WMRRF) and the National Association of Mining History Organisations' (NAMHO) *"A Research Framework for the Archaeology of the Extractive Industries in England: Mining and Quarrying"* project. The policies and strategies set out in Chapter 9 of this report have been formulated in the light of these projects, as well as the over-arching themes and agendas identified by English Heritage in the National Heritage Protection Plan (NHPP) and its Thematic Research Strategies.

8.2 West Midlands Regional Research Framework (WMRRF)

8.2.1 In the early 2000s English Heritage funded a series of conferences under the umbrella of the WMRRF. The aim of the Research Framework was "to produce an archaeological research framework for the region that would provide a viable, realistic and effective academic basis for undertaking archaeological intervention, either as a result of development-related operations or to underpin future research designs".

The WMRRF project held seven seminars across the region with papers delivered by leading academic, curatorial and field archaeologists from the region. The seven seminars were based around the following seven period themes:

1: Earlier Prehistory: the Palaeolithic to the Early Bronze Age
2: Later Prehistory: the Middle Bronze Age and Iron Age
3: Research Issues in the Roman Period in the West Midlands: LPRIA to sub-Roman
4: Post-Roman to Conquest
5: Medieval Period
6: Early Post-Medieval (to c.1750)
7: Later Post-Medieval (after c.1750)

The majority of the papers produced for the research framework are accessible online on the University of Birmingham's website at:
http://www.birmingham.ac.uk/schools/historycultures/departments/caha/research/arch-research/wmrrfa/index.aspx
and have resulted in the publication in 2011 of "The Archaeology of the West Midlands: A Framework for Research" (Watt, S, ed).

A number of the principal research agenda from the relevant conference papers and from the resulting syntheses (Garwood, 2007, and Watt, 2011) have been summarized by period below. The research agenda identified below have been selected on the basis of their relevance to the Shropshire MRA in particular.

8.2.2 Earlier Prehistory: Palaeolithic to the Early Bronze Age

(i) Palaeolithic

"The remains are not found because they are not looked for, and they are not looked for because it is believed they are not to be found" (Lang & Buteux, 2007). This is particularly true for Shropshire. There has in the past been a low level of interaction between the Palaeolithic and Quaternary research community and practising curatorial and contract archaeologists, and this remains true for the study area, which lay outside the remit of recent studies such as the Shotton Project.

During the coldest phases of the Devensian glaciation, Shropshire was covered by thick ice sheets as recently as 18,000 years BP. Evidence for boulder clay at heights of 300m OD on the northern Long Mynd and the sides of the Church Stretton valley in central/south Shropshire indicates that the ice must have been this thick over northern Shropshire (Toghill, 1990, pp169-70). The generally perceived view has been that the Devensian glaciation is likely to have removed most of the evidence for earlier human occupation, particularly in the northern half of the county. Moreover, the major river system in the county, that of the River Severn, is a young system resulting from the Devensian glaciation, and so does not have the older higher terraces on which Lower and Middle Palaeolithic deposits are found elsewhere.

Although the West Midlands region is considered to lie at the northern limits of Lower to Middle Palaeolithic settlement, Garwood (in Watt, 2011) suggests it is an important area for exploring early human adaptations in extreme environment for human occupation, and he highlights the potential for significant new discoveries that could transform understanding of human occupation in Britain. Garwood also identified the potential for discoveries of Upper Palaeolithic open-air sites as being particularly important for developer-funded archaeology (Garwood, 2011, p22-4).

Four find-spots in Shropshire are listed on the HER as being of Palaeolithic date (a fifth "site" is a natural feature), and in addition there are two Palaeolithic finds recorded by the PAS from the county (see section 5.3.2). The potential for peat deposits to hold artefactual and palaeoenvironmental material of late Palaeolithic date is demonstrated by the Porth-y-waen point (see section 5.3.2) and the find in 1986 of the Condover mammoths (dated to 14,000 years BP) at Norton Quarry, Condover.

(ii) Mesolithic

The WMRRF has identified the need to refine the period definitions of lithic assemblages from the region, and suggests that studies of museum collections - such as the recent work on collections held by Clun Museum (Wragg, 2004) - might identify Mesolithic artefacts in larger collections. The full integration of the find spots of earlier prehistoric lithic material made by the North West Wetlands Survey into the county's HER (see section 5.3.3) would help to improve the current distribution map for the period. One of the key questions for the Mesolithic period is whether the region was sparsely inhabited during all or part of the period. Garwood suggests that well-preserved Mesolithic sites with stratified artefact assemblages, structural remains, and/or high quality environmental and dating evidence are of primary research importance at regional, national and even international levels. There is one probable such site known in Shropshire at Grinshill Hill (HER 01629 &04726), in the Grinshill Quarries past zone and the Myddle and Grinshill future zone. (Garwood,

2011, p30-1). The North West Wetlands Survey has indicated that there may be some potential for further finds of this period from undisturbed peats and underlying sediments in the study area, particularly in the northwest of the county around Baggy Moor and around the Weald Moors. Undisturbed peat deposits in former kettle holes within areas sand and gravel quarries will also have the potential to hold archaeological and palaeoenvironmental evidence for the late Palaeolithic and Mesolithic periods. This potential should be reflected in the assessments and mitigation strategies for such aggregate extraction developments.

(iii) Neolithic

Early Neolithic monuments are sparsely distributed across the West Midlands region, but there are some early ceramic assemblages and extensive lithic finds and assemblages come from across the region. The available air photographic record for the region needed reviewing to identify potential sites; the increasing availability of Lidar data was seen as a potential source for identifying new sites, particularly in upland areas and areas of permanent pasture. The development of fieldwork strategies to investigate early Neolithic sites in all kinds of landscape was seen as a priority, and in particular, the significance of lithic scatters should be recognised. Sample investigation of cropmark sites where there were reasonable grounds to suspect that the monuments concerned might be early was also seen as a priority. It was suggested that evaluation by trial trenching for earlier prehistoric sites required a minimum 6-10% sampling level, but that extensive open area excavation was key to identifying sites of this period, and the 'strip map and sample' (Hey & Lacey, 2001, 55-7) method appeared to be the most effective. The recognition and interpretation of structured, purposeful deposition of artefacts was another key area of concern. Where well defined Neolithic sites are identified, it was recommended that areas to be lost to development should be totally excavated, and that depositional features within these areas needed 100% sampling. (Garwood, 2011, p43-4 & 61-3)

(iv) Early Bronze Age

The Early Bronze Age in the West Midlands region is characterised in particular by funerary monuments – barrows in upland areas and areas of permanent pasture, and cropmark ring ditches in arable areas. In Shropshire in particular, these latter tend to cluster on the sands and gravels of the county's river terraces – many of which contain areas of potential future sand and gravel extraction. The WMRRF recommended that opportunities for investigating round barrows and ring ditches should be pursued, with full resources made available for excavation and post-excavation analysis. Studies of these monuments in the West Midlands region have a potential for major contributions to research into the Early Bronze Age at a national level. Greig has also drawn attention to the potential for environmental archaeology on sand and gravel extraction sites, where there is a potential for environmental sampling (Greig, 2007). Fieldwork strategies should be similar to those recommended for Neolithic period sites (above). (Garwood, 2011, p79-80)

8.2.3 Later prehistoric: Middle Bronze Age to Iron Age

The location of Bronze Age settlements in the region is problematic. There is a need to investigate more of the smaller enclosures in the county, and to examine more 'non-settlement' features such as field systems and, as a matter of priority, other forms of land divisions such as pit alignments. All these monument types are to be

found in Shropshire in areas of possible future sand and gravel extraction. It was recommended that during the excavation of such sites there should be a minimum 20% sample from enclosure ditches and hut gullies, and this should be combined with a detailed investigation of the intersections between key features. A similar strategy for locating these sites was recommended as for the Neolithic/Early Bronze Age sites, i.e. evaluation by trial trenching with a minimum 6-10% sampling level, but 'strip map and sample' (Hey & Lacey, 2001, 55-7) method was the most effective. Scientific dating and environmental sampling should be routinely carried out. The importance of scientific dating for site chronologies should mean that this formed an essential part of project brief and design. Greater use could also be made of palaeoenvironmental and geoarchaeological evidence to provide a better understanding of landscape change in the later prehistoric period. (Garwood, 2011, p119-121)

8.2.4 Roman

The archaeology of much of the West Midlands region through the Roman period has much in common with that of 1st millennium BC – a poorly visible archaeology of a predominantly rural landscape operating apparently at local levels (Esmonde Cleary, 2011). The papers from Seminar 3 of the WMRRF ("Research issues in the Roman period in the West Midlands: LPRIA to sub-Roman") and in particular the contribution on Roman Shropshire (White, 2002) highlight a number of research priorities. More evidence is needed on the question of continuity or change in rural settlement from the Iron Age to the early Roman period, and for understanding the broader patterns of land use and the scale and depth of Romanisation. Evidence for rural industry in the Roman period in this region is sparse, both in terms of the exploitation of resources and manufacturing (Esmonde Cleary, 2011, p130). And there is also currently little evidence for late Roman or sub-Roman rural occupation and activity. Investigation of cropmark enclosure sites may provide some of this evidence, and the previous section of this report (Chapter 7) has shown that there is a high density of these monuments in many of the potential future sand and gravel extraction zones with the potential for addressing these questions.

8.2.5 Sub-Roman / Early Medieval

One of the main research questions raised by the WMRRF for this region in the sub-Roman period was that of what happened to the rural population in the late Roman period, and in particular whether a decline of arable agriculture in favour of pastoral caused unemployment and population decline. Environmental evidence, for example soil micromorphology, might help to determine 5th- to 9th-century occupation or land use; a re-examination of burial evidence together with strontium isotope and DNA testing might help to determine population make-up in this period. A priority was seen as being the continued search for evidence of all forms of early medieval rural settlements, and particular attention should be given to sites where Roman and medieval settlements are juxtaposed. (Hooke, 2011)

8.2.6 Medieval

(i) At WMRRF seminars Shropshire was considered to be among the more under researched of the English counties in terms of its medieval archaeology (Stamper, 2003). A number of themes emerged from the medieval seminar. In particular it was suggested that the medieval agricultural economy of the region has sometimes been overlooked. For example, relatively few excavations have taken place on rural mill sites, and industrial activity in general in the countryside is elusive. The Shropshire MRA has identified a relatively small number of medieval rural industrial sites in the potential future mineral extraction zones.

(ii) Castles and the setting of these monuments within their landscapes were seen as a research priority. Recent work on features such as designed landscapes and pleasure gardens associated with larger castles such as Clun, Whittington, and possibly Wattlesborough needs extending to more sites. Moated sites too needed to be looked at in the wider context of their hinterland and not be regarded as isolated features in the medieval landscape. Monasteries were identified as areas of potential research, particularly in the light of recent earthwork surveys that had been carried out on two Shropshire rural monastery sites – Haughmond Abbey and Buildwas Abbey – both of which lie in potential future mineral extraction zones. The identification granges and monastic farms and their composition, and the dating of rural nucleated settlements in general were also seen as areas where further study was needed. (Hunt, 2011)

8.2.7 Post-medieval

(i) The WMRRF devoted two seminars to the Post-medieval period. The first (seminar 6) looked at the earlier, “pre-industrial” part of this period, the second (Seminar 7) at the later part (post 1750).

(ii) Shropshire has a wealth of parks and gardens which are considered of special significance, both nationally and locally, and estate landscapes were seen by the WMRRF seminars as an area for further research. In 22 out of the 42 potential future mineral extraction zones there are 54 former and surviving parks and gardens (of which seven are listed as Grade II on the English Heritage Register of Parks and Gardens of Special Historic Interest in England). The enclosure of medieval field systems, the role of Estates in agricultural improvement, particularly during the Napoleonic War period, the introduction of new agricultural industries and processes and the impacts that these had on the landscape and on farming practice, and the adaptations of marginal lands were also all seen as areas for research in understanding the rural economy.

(iii) There was a call for more emphasis on the exploration of the region’s earlier and smaller-scale industries, for which physical traces and documentary records are relatively slight, and the inter-relationship between industries and the various communication means and routes needed more work. And as regards the extractive industries themselves, whereas the lead industry was seen as being a relatively well-understood phenomenon within Shropshire, the barites industry and the inter-relationship between the coalfield and the lead mining areas were seen as being less well studied. It was recommended that further removal of tips and waste should take into account the potential for buried archaeology. (White, 2003; Belford, 2011).

8.3 NAMHO Research Agenda (Draft)

8.3.1 The NAMHO has recently consulted on its draft Research Agenda. The draft document is accessible online (at: http://www.namho.org/download.php?doc=research/SECTION_16_Agenda_20140121.pdf&title=The+Research+Agenda&from=The+Research+Framework&pageht=1100) and sets out research aims agreed through widespread discussion, including at two seminars in 2012. A selection of the research aims of particular relevance to Shropshire is included below, but this list is by no means exhaustive, and the county's past extractive industries have much to contribute to many of the national agenda identified by the NAMHO. The full Research Framework is expected to be published later in 2014.

8.3.2 Selected NAMHO (Draft) Research Aims

The NAMHO Research Aim 3 considers that archaeological and historical research should explore the reasons for variations within past extractive industries, including the sources of power (water, steam, horse, other), varying demands in consumption (locally and nationally), and environmental variation in geology and natural resources.

In particular, NAMHO Research Aims 4, 10, and 14-17 call for more comprehensive and detailed recording of past mining and quarrying remains, particularly when these remains are being treated, altered or effaced for safety reasons. Measured survey, digital photography and other digital techniques should be used for data capture and archiving, and Lidar and other aerial reconnaissance methods should be used where possible to record surface remains. In this regard too, Research Aim 54 calls for the development of research approaches and techniques for the landscape investigation of the quarrying industry in England.

Research Aim 45 calls for further research into iron extraction in England during the medieval, post-medieval and modern periods. Recent work by the Four Parishes Project in SE Shropshire (which includes part of the SMRA Billingsley coal workings past extraction zone) has shown that this area has the potential to respond to this research aim (Young, 2007, 2008, & 2011; Chapman, 2011).

And Research Aim 64 echoes one of the WMRFF research aims, calling for more research into the importance of mines and quarries with regards transport systems and industrial infrastructure.

9 POLICIES AND STRATEGIES

9.1 Introduction

9.1.1 This chapter sets out existing national policy regarding mineral extraction and the historic environment as set out in the National Planning Policy Framework, and the local policies as contained in the Shropshire Local Development Framework: Adopted Core Strategy and Telford and Wrekin Council's Core Strategy Development Plan Document. It also details the guidance that has been produced by English Heritage, Minerals and Historic Environment Forum, and the Institute for Archaeologists.

9.1.2 During the course of the Shropshire Minerals Resource Assessment, Shropshire Council's Historic Environment Team has reviewed its existing, strategies and methods for safeguarding heritage assets in connection with strategic mineral planning. These have been developed in the light of past and existing casework and have been revised and refined accordingly. It is intended that these policies and strategies will support the Shropshire and Telford & Wrekin Minerals Local Plan 1996 – 2006 (Adopted Plan April 2000), the Shropshire Local Development Framework: Adopted Core Strategy (March 2011), and mineral policies of Shropshire Council's emerging Site Management and Allocation of Development document ('SAMDEV').

9.1.3 The project has formulated preferred options and mitigation strategies in response to applications for future extraction and exploitation of the mineral resource in Shropshire and Telford and Wrekin. Appropriate guidelines/methodologies have been developed for pre-determination archaeological evaluation and post-determination mitigation, which have been based on the data sets produced by the project.

9.1.4 A case study at the end of the chapter provides an example of how the strategy that has been developed during the life of this project has been put into effect in the assessment of a planning application for mineral extraction, and the development and implementation of an appropriate mitigation strategy.

9.2 National Policy

9.2.1 The National Planning Policy Framework

(i) Following its publication by the Government on 27th March 2012, the National Planning Policy Framework (NPPF) sets out national planning guidance concerning both the historic environment (including archaeological remains) and minerals planning. Although PPS5 was rescinded when the NPPF was launched, the NPPF is supported by the PPS5: Planning for the Historic Environment Practice Guide (English Heritage, 2012 rev.) which remains valid.

(ii) Paragraph 17 of the NPPF sets out 12 core land-use planning principles that should underpin both plan-making and decision-taking. Included in these is the principle that planning should conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations.

9.2.2 NPPF Section 12 Conserving and enhancing the historic environment

Section 12 (paragraphs 126-141) of the NPPF concerns planning and the historic environment. The first paragraph of section 12 (para 126) states that local planning authorities should adopt a positive strategy for the conservation and enjoyment of the historic environment, and should recognise that heritage assets are an irreplaceable resource, conserving them in a manner appropriate to their significance.

The Shropshire Minerals Resource Assessment Project follows the advice given in paragraphs 128 and 129 of the NPPF which state that:

> 128. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.
>
> 129. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.

9.2.3 NPPF Section 13 Facilitating the sustainable use of minerals

The NPPF replaces the former Minerals Policy Statement 1 [MPS1] (DCLG 2006). Section 13 (paragraphs 142-149) of the NPPF concerns minerals planning. The first paragraph of section 13 (paragraph 142) sets out the importance of minerals to sustainable economic growth, recognising that they are a finite natural resource and can only be worked where they are found. It emphasises the importance of making the best use of minerals in order to secure their long-term conservation.

9.2.4 The Shropshire Minerals Resource Assessment Project contributes to the implementation of paragraphs 143 & 144 of the NPPF which state that:

> 143. In preparing Local Plans, local planning authorities should:
> set out environmental criteria, in line with the policies in this Framework, against which planning applications will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health, including from noise, dust, visual intrusion, traffic, tip- and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the site; and take into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality;

144. When determining planning applications, local planning authorities should: ensure, in granting planning permission for mineral development, that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality;

9.2.5 English Heritage have also provided a commentary on the NPPF as it concerns the historic environment: "English Heritage Commentary on the National Planning Policy Framework, 27th March 2012"

9.3 Shropshire Local Development Framework: Adopted Core Strategy, March 2011

9.3.1 Core Strategy Development Plan Document

The Core Strategy Development Plan Document (DPD) is the principal document of the Shropshire Local Development Framework (LDF). The LDF is a set of documents setting out policies relating to the use and development of land in Shropshire. The Core Strategy sets out the Council's vision, strategic objectives and the broad spatial strategy to guide future development and growth in Shropshire during the period to 2026.

CS17 Environmental Networks

Section CS17 of the Core Strategy concerns the environment, including the historic environment. It states that:

"Development will identify, protect, enhance, expand and connect Shropshire's environmental assets, to create a multifunctional network of natural and historic resources."

Measures to achieve this will include ensuring that all development:

- Protects and enhances the diversity, high quality and local character of Shropshire's natural, built and historic environment, and does not adversely affect the visual, ecological, geological, heritage or recreational values and functions of these assets, their immediate surroundings or their connecting corridors;
- Does not have a significant adverse impact on Shropshire's environmental assets and does not create barriers or sever links between dependant sites;

(Shropshire Core Strategy 2006-26, CS17, p108-110

CS20 Strategic Planning for Minerals

Section CS20 of the Core Strategy concerns mineral planning. It states that:

"Shropshire's important and finite mineral resources will be safeguarded to avoid unnecessary sterilisation and there will be a sustainable approach to mineral working which balances environmental considerations against the need to maintain an adequate and steady supply of minerals to meet the justifiable needs of the economy and society." CS20 is current policy and will remain so.

Measures to achieve this will include:

- Maintaining landbanks of permitted reserves for aggregates consistent with the requirements of national policy guidance. Shropshire will provide for an

appropriate contribution to the sub-regional apportionments for sand and gravel and crushed rock and proposes to maintain the current level of production and current percentage regional contribution, unless and until robust evidence is available which indicates that higher levels of production are required….Sites capable of helping to deliver the subregional target for sand and gravel will be allocated within these areas in the SAMDev DPD;

- Only supporting proposals for sand and gravel working outside these broad locations and existing permitted reserves, where this would prevent the sterilisation of resources, or where significant environmental benefits would be obtained, or where the proposed site would be significantly more acceptable overall than the allocated sites;
- Supporting environmentally acceptable development which facilitates the production of other mineral resources such as crushed rock, clay and building stone to meet both local needs, including locally distinctive materials, and to help meet cross boundary requirements. Environmentally acceptable proposals for the exploration, appraisal and production of hydrocarbon resources, including coalbed methane, will be supported as a contribution to meeting the requirements of national energy policy;
- Priority will be given to environmentally acceptable restoration and aftercare proposals which can deliver targeted environmental or community benefits consistent with Policies CS8, CS17 and CS18. More detailed policies against which applications for mineral development can be assessed will be provided in the SAMDev DPD.

(Shropshire Core Strategy 2006-26, CS20, p120-125)

9.3.2 Small scale or temporary mineral working

Shropshire Council will support environmentally acceptable small scale or temporary mineral working to provide specific construction materials which would make a strong positive contribution to maintaining and enhancing the distinctiveness of local areas. (Shropshire Core Strategy 2006-26, CS20, 7.31, p123). This is of particularly relevant for the Shropshire Hills Area of Outstanding Natural Beauty (AONB). Whilst there is strong policy protection for the AONB it is also recognised that minerals can only be worked where they are found. The working of small-scale vernacular stone quarries can assist in promoting local distinctiveness, particularly in the repair and maintenance of historic structures. This is line with the guidance contained in NPPF, 13, section 144. (See also section 10.5.1, below).

9.3.3 Shropshire Hills AONB Management Plan 2014 – 2019

The Shropshire Hills Area of Outstanding Natural Beauty Management Plan 2014 – 2019 recognises that:

"Mineral extraction is a unique form of temporary, but long term development which can only take place in the location where the mineral is actually found, which is sometimes in areas of landscape sensitivity. Restoration proposals should take this into account by requiring former mineral sites within the AONB to be restored in a way which recognises the environmental characteristics and potential of the site alongside any economic or social benefits that restoration may deliver. Mineral site restoration may provide valuable opportunities to encourage greater biodiversity through the retention of rock faces, scree and bare ground, and through the creation of valuable habitats such as heathland or unimproved grassland. The National Planning Policy Framework highlights that as with other

forms of major development, there should be a preference for new mineral extraction sites outside AONBs."

9.4 Shropshire Council's Site Allocations and Management of Development (SAMDev) Plan

9.4.1 Shropshire Council's Site Allocations and Management of Development (SAMDev) Plan sets out proposals for the use of land and policies to guide future development in Shropshire up to 2026. It is intended to sit alongside the Core Strategy, contributing to the Shropshire Local Development Framework. It covers the whole of the administrative area of Shropshire Council (excluding Telford & Wrekin).

9.4.2 SAMDev draft policy MD16 Managing the Development and Operation of Mineral Sites

The SAMDev draft policy MD16 is concerned with Managing the Development and Operation of Mineral Sites. Section 1 of the policy states that:

> Applications for mineral development will be supported where applicants can demonstrate that potential adverse impacts on the local community and Shropshire's natural and historic environment can be satisfactorily controlled.

Section 2 of the explanation of the policy states that:

> The National Planning Policy Framework also requires us to set out environmental criteria against which planning applications for mineral working will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health;

9.4.3 SAMDev Plan Document Technical Background Paper March 2014

The SAMDev Plan Document Technical Background Paper March 2014, Section 7 outlines the plan's approach to planning for mineral resources:

> 7.1 The mineral resources currently worked in Shropshire are aggregates (sand and gravel and crushed rock), building stone, brick clay, fire clay and coal. The aggregates industry is the most active. These resources supply both local markets and a wider area, particularly in the case of crushed rock and fire clay where materials supply regional and national markets;
>
> 7.2 National policy guidance requires Shropshire to maintain an adequate and steady supply of aggregates during the Plan period, taking account of the existing production guidelines established by the Aggregate Working Party. The Core Strategy (2011) establishes that sufficient crushed rock aggregate resources are already available from permitted sites, but that additional sand and gravel resources need to be allocated to provide for flexibility and local competition during the period up to 2026.

9.4.4 The SAMDev draft policy is supported by the Shropshire Council and Telford & Wrekin Council: Draft Shropshire Local Aggregates Assessment 2013

9.4.5 The Historic Environment Team, Shropshire Council has provided strategic input to the evolution of the Shropshire Council Core Strategy and the Site Allocations and Management of Development (SAMDev) Plan in respect of the

historic environment and mineral planning. These documents both emphasise the importance that Shropshire Council places on the historic environment. English Heritage have also been involved as a statutory consultee in the formulation of these documents.

9.5 Telford and Wrekin Council

9.5.1 Core Strategy Development Plan Document Adopted December 2007

The Core Strategy sets out the borough's 'spatial development strategy' (i.e. what development should take place and where) and planning policies to deliver this strategy. The Core Strategy covers the period up to 2016. For the period beyond 2016, Telford & Wrekin Council is preparing a new Local Plan to replace the Core Strategy. The new Local Plan is called “Shaping Places”.

The Spatial Development Objectives in the strategy relevant to the historic environment are:

16. To create a high quality built and natural environment that recognises, respects and enhances local distinctiveness;
17. To protect and enhance our historic environment and cultural and built heritage, particularly the Ironbridge Gorge World Heritage Site;

9.5.2 Policy CS 14 Cultural, Historic and Built Environment

The relevant policy in the Core Strategy is no. CS14 Cultural, Historic and Built Environment, which states:

> The Borough's cultural, historic and built environmental assets will help underpin the overall quality of life for the community and visitors alike. These assets help deliver our wider economic, social, and environmental objectives and along with the natural environmental assets, they create the Borough's local character and distinctiveness. The aim of this policy is to protect and enhance the Borough's existing, unique built and cultural assets and to deliver new development to support a rich cultural fabric by:
>
> - Protecting and enhancing the historic environment, cultural and built heritage within the Borough to maintain and improve quality of life;
> - Conserving and enhancing the cultural and heritage assets of the Ironbridge Gorge World Heritage Site;
> - Supporting the creation of a cultural quarter and night time economy in Telford Town Centre;
> - Encouraging sustainable tourism related development in the Borough;
> - Locating new cultural activities and facilities in accessible locations;
> - Using public art to further enhance local distinctiveness.

(Telford & Wrekin Council Core Strategy 2007, p48)

9.5.3 Shropshire, Telford & Wrekin Minerals Local Plan 1996 to 2006 (Adopted Plan - April 2000)

Currently planning applications for waste and minerals and related development in the Telford and Wrekin Council area are determined based on relevant national planning guidance, saved policies of the Shropshire and Telford & Wrekin Joint Structure Plan, the Shropshire and Telford & Wrekin Minerals Local Plan, and the Wrekin Local Plan. It is anticipated that the new Shaping Places Local Plan will contain waste and minerals policies.

9.5.4 Shropshire and Telford & Wrekin Minerals Local Plan: Saved Policy M6 Protecting Archaeological Remains

Saved Policy M6 Protecting Archaeological Remains states that:

> Applicants will be required to demonstrate that the impact on sites of archaeological interest has been fully taken into account. Where the County Sites and Monuments Record or other reliable source of archaeological information indicate the likely presence of archaeological remains, developers will be required to undertake an archaeological assessment, including any preliminary geophysical work and / or archaeological evaluation to help determine the importance of any remains prior to the planning application being determined. There will be a presumption in favour of the physical preservation in situ of nationally important archaeological remains whether scheduled or not, and their settings. Where it is decided that a site, or part of a site, is not sufficiently important to merit physical preservation in situ, planning permission may be granted subject to the applicant having made appropriate and satisfactory provision for the assessment, including any excavation if needed, recording, analysis, publication and curation of the remains.

9.6 Guidance

9.6.1 The guidance for the protection of the historic environment in planning provided by English Heritage to support the former Planning Policy Statement 5 (PPS5) remains valid and supports the NPPF:

> **PPS5: Planning for the Historic Environment Practice Guide (English Heritage, 2012 rev.)**

9.6.2 National guidance for the protection of the historic environment in the mineral extraction industry has been provided by English Heritage in two publications:

> **Mineral Extraction and the Historic Environment (English Heritage, 2008)** sets out the English Heritage position on mineral extraction and the high-level policies that form the basis for responses and views put forward by English Heritage on any matter relating to the winning, working and safeguarding of minerals
>
> **Mineral Extraction and Archaeology: A Practice Guide (MHEF, 2008)** This practice guide was prepared by the Minerals and Historic Environment Forum as an aid to planning authorities, mineral planners, mineral operators, archaeologists and consultants.

The latter document, “Mineral Extraction and Archaeology”, provides guidance specifically for dealing with archaeological remains as part of mineral development through the planning process. The Practice Guide carries the endorsement of all the organisations represented on the Forum and each is committed to promoting the practices it contains. The Minerals and Historic Environment Forum includes:

> Association of Local Government Archaeological Officers: England
> British Aggregates Association
> Confederation of British Industry Minerals Group
> English Heritage

Institute of Field Archaeologists
Mining Association of the UK
Planning Officers Society
Quarry Products Association
Standing Committee of Archaeological Unit Managers

9.6.3 The Setting of Heritage Assets

English Heritage has also provided guidance on the assessment of the setting of heritage assets in the planning process:

The Settings of Heritage Assets: English Heritage Guidance (English Heritage, 2011) This document sets out English Heritage guidance on managing change within the settings of heritage assets, including archaeological remains and historic buildings, sites, areas, and landscapes.

Seeing the History in the View (English Heritage, 2011) This document presents a method for understanding and assessing heritage significance within views, one of the elements that can contribute to the setting of a heritage asset..

9.6.4 Site Specific Advice

The Historic Environment Team, Shropshire Council provide advice in respect of specific proposals for mineral extraction. The Historic Environment Team may also give advice on the scoping of Environmental Impact Assessments.

9.7 Process

9.7.1 Consultation

Prior to an application being made for mineral extraction, pre-application advice should be sought from the Council's Development Management (Minerals Planning) section, who will in turn consult with the Council's Historic Environment Team. The HET curatorial archaeologist will agree the scoping or the content regarding archaeology and the historic environment of the Environmental Statement or Environmental Impact Assessment that would accompany the formal application. This consultation would also determine the extent of the buffer area around the application site which should be considered regarding impact on the setting of Designated and Non-designated Heritage Assets

Quarries over 25 hectares require an Environmental Impact Assessment in all cases; smaller mineral workings require Environmental Impact Assessment where they are considered likely to have significant environmental effects. (Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended)).

The archaeological curator will assess the threat to any known archaeology and the risk of unknown archaeological remains being present in the application area. This assessment may lead to a requirement for further information on, or evaluation of, the application area.

9.7.2 Assessment

The archaeological assessment of the application area would be expected to include a Desk-based Assessment and a Walk-over Survey.

The aim of archaeological assessment is to:

- Provide a description of the significance of the heritage assets (designated or otherwise) that will be affected by the proposed application.
- Assess the contribution made by their settings to their significance and thus determine what impact the proposed application will have upon their significance.
- Assess, and if necessary evaluate, the archaeological interest of the application site itself.

It should also include an assessment of the impact on the setting of any Designated Heritage Assets in accordance with English Heritage's guidance on setting as detailed in 'The Settings of Heritage Assets' (October 2011).

The desk-based assessment should examine and assess all appropriate sources, which might include:

- Archaeological databases
- Historic documents
- Cartographic documents
- Pictorial documents
- Aerial photographs
- Geotechnical information
- Secondary and statutory sources.

The size of the study area for the desk-based assessment might vary depending on the size and scale of the application area, but as a guide it should comprise a 500m buffer centred on the application site to ensure that the documentary and cartographic sources provide sufficient information about the proposed site and its setting to enable an assessment of the potential impacts on the heritage resource. The potential impact of the application (including the impact on setting) should be assessed on non-designated heritage assets within a 500m radius of the development site, and on designated heritage assets within a wider area to be determined in consultation with English Heritage.

9.7.3 Site Evaluation

The results from the desk-based assessment and walkover over survey should be used to make recommendations, if appropriate, for any further field investigations that may be required in order to produce a mitigation strategy.

The IfA Standard and Guidance for archaeological field evaluation defines this as:

> "a limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site….If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate." (IfA, 2013).

The purpose of the field evaluation is to provide further information to enable an informed and reasonable planning decision to be made. The evaluation will also reduce the risk of significant unexpected discoveries being made during the course of development and/or the loss without record of archaeological remains.

Field Evaluation may comprise one or (more usually) a combination of the following techniques:

- Field walking survey,
- Geophysical survey,
- Metal detector survey,
- Earthwork survey,
- Test-pitting,
- Trial trenching.

9.7.4 Mitigation

The curatorial archaeologist will then make recommendations for mitigation based the results of the desk-based assessment and any field evaluation. The recommendations will take into account the national and local guidance, and the potential contribution to national and regional research agendas.

Mitigation measures might include:

- Preservation *in situ* of all or part of site.
- Preservation by record. Depending on the nature of the archaeological resource to be recorded, this might range in scale from: full-scale excavation, a strip, map, and sample strategy, selective or sample excavation, earthwork survey, drawn or photographic recording (e.g. of past stone quarrying), palaeoenvironmental sampling.
- Archaeological watching brief.
- Other mitigation; this might include screening to protect the setting of a monument, or the restoration after extraction to protect the setting.
- No further action.

Guidance for the management of archaeological projects and guidance and standards on archaeological assessments and fieldwork are provided by English Heritage and the Institute for Archaeologists.

Management of Research Projects in the Historic Environment, (English Heritage 2006) http://www.english-heritage.org.uk/publications/morphe-project-managers-guide/

Institute for Archaeologists (IfA) standards and guidance: http://www.archaeologists.net/codes/ifa

The Institute for Archaeologist also provides a list of archaeological contractors registered with the Institute:

IfA's list of Registered Organisations: http://www.archaeologists.net/ro

10 CONCLUSIONS

10.1 Archaeological outcomes from past mineral extraction

10.1.1 The archaeological evaluation and rescue excavation in advance of sand and gravel extraction has led to a much greater understanding of the physical remains of the buried archaeology in lowland Shropshire that has been revealed by aerial photography over the last half century. At Bromfield extensive investigations of the sand and gravel quarrying on the site to the east of the River Onny has taken place since the mid-1950s. A mixture of amateur and professional excavations, with the full co-operation of the landowner and the quarry operators, has allowed the recording of part of a late Neolithic to Iron Age necropolis, an Iron Age farmstead enclosure re-used as a cemetery in the sub-Roman/early Saxon period, and a Roman marching camp (HER 00192). (Stanford, 1970, 1982, & 1995; Hughes et al, 1995). Evaluation and excavation of an Iron Age/Romano British enclosure (HER 04564) at Hay Farm, Eardington (ESA4928) made a useful addition to the small number of Iron Age and Romano-British cropmark farmstead enclosures in the county subject to excavation (Hunn, 2000). Salvage recording of an Iron Age burial (ESA6508) at Bridgwalton Quarry, Morville in 2003 (Hannaford, 2011) has contributed the only Iron Age skeletal remains from the county. And although not, strictly speaking, an archaeological find, the discovery, conservation, interpretation and display of the remains of the Shropshire Mammoths from Norton Quarry at Condover have led to international appreciation of the importance of this find.

10.1.2 Rescue excavations in advance of open-cast working at Newdale in Telford allowed for the recording of parts of this 18th and 19th century iron-working settlement (Cable et al, 1987), and monitoring of opencast mining and restoration at Lawley Furnace (Hannaford, 1994) in Telford made possible the preservation of part of an early 19th century blast furnace. At Caughley, desk based assessment and site evaluation in the 1980s and 90s in advance of open-cast extraction for clay confirmed the site of the 18th century Caughley Saggar Works (Clark & Macleod, 1988; Hayman, 1998; Frost, 2004). At Lodge Coppice in Barrow (nr Broseley) the IGMTAU recorded a number of bell pits as part of an evaluation of an opencast working site (IGMTAU, 1993), and at Huntington Lane (a.k.a. Dawley Road) desk-based assessment, evaluation and a watching brief accompanied opencast working in another area of early post-medieval mining remains.

10.1.3 At Sharpstone Hill (Bayston Hill Quarry) pre-quarrying evaluation and subsequent excavation of a Roman road has led to the identification of pre-Roman features, including possible Iron Age origins for the section of the Roman road within the study area (Malim, 2011). At Llynclys Quarry, a Level 1/2 assessment and survey was carried out of a post medieval farmhouse and a section of mineral railway carried out in advance of a quarry extension.

10.2 Present knowledge

10.2.1 Aerial photographic reconnaissance has probably been the most prolific contributor to our knowledge of prehistoric and Roman period monuments in the county. However there are a number of biases in the data produced by this method.

Past flying has tended to favour the area around Wroxeter Roman city and the areas of sand and gravel soils in central Shropshire.

10.2.2 The analysis of the potential future Sand and Gravel Groups has shown that all these groups, except for the NE Shropshire and E Shropshire Groups, have a considerably higher density of Iron Age to Roman period monuments than the average for the county. The principal monument types contributing to this are cropmark enclosures and field systems. On the one hand, the sand and gravel soils are more conducive to cropmark production in favourable conditions, and there is also a bias here to arable agriculture, which also gives rise more readily to cropmarks than pasture land. However, it is also probable that these areas of sand and gravel subsoils producing a lighter, more easily worked topsoil, were more heavily farmed and settled in the Iron Age and Roman periods, and the density of the cropmarks is a real reflection of density of settlement. The relative paucity of cropmark evidence in the NE and E Shropshire Group areas may be accounted for in part by the presence of military airfields at Shawbury and Ternhill which have restricted archaeological aerial reconnaissance in these areas. Whether the paucity of cropmark sites in these two areas is a reflection of past settlement activity or just an artificial bias in the archaeological aerial reconnaissance is still untested.

10.2.3 Other apparent biases in the monument densities within the studied areas have been produced by particular thematic or area-based studies. For example, there have been a number of studies of the mining and quarrying remains on the Clee Hills, particularly the area around Titterstone Clee hill and this has given rise to a high density of post-medieval monuments in this zone.

10.3 Future mineral extraction

10.3.1 This assessment has identified the principal areas of potential future mineral extraction for sand and gravel, stone (road aggregate and building stone), and possible areas for coal extraction.

10.3.2 Policies and procedures for ensuring the protection of the Historic Environment in the Shropshire and Telford and Wrekin areas have been developed during the lifetime of this project, and are detailed in Chapter 9. Existing national and local guidance and policies were used to develop these procedures. These policies and procedures recommended in Chapter 9 have been tested and shown to be robust and to produce satisfactory outcomes, safeguarding the historic environment during the exploitation of the mineral resource.

10.4 Case study: Bridgwalton Quarry (Morville)

In 2012 an application was submitted to Shropshire Council for an extension to Bridgwalton Quarry, (Planning Reference: 12/04824/MAW). Bridgwalton is situated about 1.5km southeast of Morville, near Bridgnorth, in southeast Shropshire. The present sand and gravel quarry has been operating since the late 1990s. An archaeological evaluation had been undertaken of the original quarry area (Ford, 1992) and again for an application for an extension in 1999 (Hurst & Bretherton, 1999). The land to the south-west of the lane from Morville Heath to Cross Houses contains a number of archaeological cropmark features, which include several ring

ditches believed to represent the remains of Late Neolithic – Early Bronze Age funerary monuments, forming a complex that appears to represent a former barrow cemetery. (HER 00213, 00215 & 00428). In 2003 an Iron Age inhumation burial was discovered during quarrying operations which hinted that the barrow cemetery could have continued to formed a focus for activities in the 1st millennium BC and beyond, as happened at other such complexes in Shropshire and elsewhere (Hannaford, 2011).

An Environmental Statement (Alliance Planning, 2012) accompanied the 2012 application and included a section on the archaeological interest of the proposed application area. It acknowledged the presence of some of the archaeological features described above and also outlined the previous archaeological assessment and evaluations that were undertaken in 1992. However, the 1992 field evaluation was focused on the land within the immediate vicinity of current quarry buildings and plant and did not examine the features in parts of the new application area. These therefore had not previously been subject to field evaluation and as such their full archaeological significance remained untested, and so a consideration of the impact of the proposed extraction in these areas was not included in the Environmental Statement. The Environmental Statement also did not take account of the remains of the Iron Age inhumation burial that was discovered within the existing quarry in 2003. It was considered that the information provided by the Environmental Statement had not taken account of recent work in the area, and did not to take full account of the extent of the proposed extraction within the current application.

The view of the curatorial archaeologist was that there was a high to very high potential for archaeological remains of Late Neolithic – Early Bronze Age date to be present on the proposed development site, and a moderate to high potential for remains of later Bronze Age to Iron Age date to be present. It was advised that a revised desk based assessment should be prepared, and pre-determination field evaluation of the site should be carried out prior to determination of the application. The evaluation was required to comprise a geophysical survey together with targeted evaluation trenching of the features visible on aerial photographs and anomalies revealed on the geophysical survey. In making these recommendations, the curatorial archaeologist took account of the guidance in the document “Mineral Extraction and Archaeology: A Practice Guide (2008)” produced by the Minerals and Historic Environment Forum.

A revised desk-based assessment was accordingly commissioned (Cottam, 2013), and a geophysical survey of the quarry extension area was undertaken which revealed a number of anomalies, including two ring ditches resembling later Neolithic to Bronze Age funerary monuments, and a rectilinear enclosure, together with a number of other features which it was considered might be of archaeological interest (GSB, 2013).

The geophysical survey was followed by trial excavation. The two sub-circular anomalies identified by the geophysical survey were confirmed by the evaluation trenching as archaeological features. The evaluation trenching of the rectilinear enclosure uncovered evidence of Romano-British activity in the form of an enclosure ditch of Roman date. The enclosure ditch fills produced substantial quantities of late 3rd century pottery, together with hobnails possibly representing the remains of one

or more shoes or sandals, and environmental evidence for possible hearth sweepings. Other possible archaeological features were shown to be non-archaeological in origin (Wood, 2013). The results of the field evaluation also indicated that the past intensive arable regime across the site was likely to have removed some of the less substantial archaeological features. It was considered that the state of preservation of the surviving features means that they were not of sufficient significance to merit preservation in situ.

Photo 23: Shropshire Council's Principal Archaeologist monitoring the evaluation at Bridgwalton

Planning permission was subsequently granted for the quarry extension, with a condition that each phase of extraction should be accompanied by a programme of archaeological work in accordance with a written scheme of investigation (WSI) approved in writing by the Planning Authority prior to the commencement of work on the relevant extraction phase. The mitigation measures would comprise full excavation within the areas of highest archaeological interest and archaeological watching briefs within the other extraction areas of lower archaeological interest.

10.5 Other outcomes

10.5.1 The identification of stone sources used in the historic buildings can help in the preservation of the historic environment. Grinshill Quarry still provides high quality freestone both for new build and for restoration work. Recently a source for Harnage Stone, used extensively for roof slates in the medieval period in a wide area around Shrewsbury and central Shropshire, was re-opened to provide slates for repairs to Pitchford Hall and Church. At the Coppice Barn Quarry at Diddlebury, the upper Ludlow shale is extracted on a small scale for use in various conservation works, for example, the bridge at Clun and the weir at Ludlow. This quarry has averaged production of around 300 tonnes of stone per annum and does not anticipate that future demand would exceed 500 tonnes per annum. The original planning permission granted in 1995 (ref ML95/5428/SS) established the principle of re-opening a disused quarry within the Area of Outstanding Natural Beauty for small scale stone production for a temporary (four year) period, subsequently for a further extension of time (5yrs) for quarrying operations to 3rd October 2016. When

proposals are made for re-working former stone quarries, the importance of recording the evidence of past workings should be taken into consideration. In particular evidence of tool marks on rock faces should be recorded where they cannot be preserved.

10.5.2 The Shropshire Geological Society carried out the Building Stones and Tiles Survey on behalf of English Heritage in 2006 and the Society maintains a web-based guide to building stones in Shropshire: (http://www.shropshiregeology.org.uk/building_stones/default.htm).

10.5.3 The potential for interpretation of the historic environment as part of the recreational use of former mineral extraction sites has been demonstrated on a number of historic mineral extraction sites in Shropshire. Several of the county's former stone quarries are now curated by Shropshire Council as Countryside Heritage Sites, such as the former quarries at Grinshill Hill and Nesscliffe Hill. At the former site, a Local Heritage Initiative-funded project in 2006-8 included an archaeological survey and a variety of interpretation initiatives. At the Llanymynech Limeworks Heritage Site, the remains of an entire limeworking industry site from quarry face via limekilns to transport networks has been preserved by a cross-border partnership of the Montgomeryshire and Shropshire Wildlife Trusts, Shropshire Council, and British Waterways, and has recently seen conservation and interpretation work grant-aided by the Heritage Lottery Fund. Snailbeach Lead Mine in the Shelve orefield and parts of the former Highley and Alveley Colliery sites are also owned by Shropshire Council and managed as Countryside Heritage sites. And conservation work on a number of former mine buildings in the Shelve orefield is enabling public appreciation and enjoyment of these remains.

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Shropshire Mines Trust: http://shropshiremines.org.uk
Welcome to Whixall/The Bog Bodies: http://myweb.tiscali.co.uk/whixallweb/bogbodies.htm

ABBREVIATIONS

BAR	British Archaeological Reports
BGS	British Geological Survey
BUFAU	Birmingham University Field Archaeology Unit
EH	English Heritage
HER	Historic Environment Record, Shropshire Council
IGMTAU	Ironbridge Gorge Museum Trust Archaeological Unit
NAMHO	National Association of Mining History Organisations
OS	Ordnance Survey
RCHME	Royal Commission on the Historical Monuments of England
SA	Shropshire Archives, Castle Gates, Shrewsbury
SAS	Shropshire Archaeological Society
SCAS	Shropshire Council Archaeology Service
SCCAS	Shropshire County Council Archaeology Service
SCMC	Shropshire Caving and Mining Club
TSAS	Transactions of the Shropshire Archaeological Society
TSAHS	Transactions of the Shropshire Archaeological and Historical Society
WMA	West Midlands Archaeology, Council for British Archaeology Group 8
WMRRF	West Midlands Regional Research Framework for Archaeology

Appendix I

This appendix contains a list of the data sets identified and assessed at the outset of the project - see Chapters 3 & 4

HER data sets

- The Shropshire Historic Environment Record (HER) which includes c.810 Monument Records that will provide the starting point for the Mineral Resource Assessment dataset.
- Mapping Shropshire's Industrial Heritage project (MSIH) (Reid, M, 1996)
- The Shropshire Historic Landscape Characterisation Project (2001-2004)
- 1983 RCHME Clee Hill Survey (CHS) of the SE Shrops coalfield;
- the Ironbridge Institute's Nuffield Survey of the Ironbridge Gorge (NSIG) (Clarke and Alfrey, 1986-8);
- The Marches Upland Survey (MUS) of the mid-1990s; which included a supplementary report on the West Shropshire Mining District
- The Marches Uplands Mapping Project (MUMP), a National Mapping Programme project carried out as part of the Marches Uplands Survey.
- The Ironbridge Institute study of the Mining and Quarrying Landscape of the Clee Hills (2004-2008)
- The South Shropshire Mine Safety Surveys of mine shafts, adits and workings etc carried out by South Shropshire District Council for public safety purposes from 1999 to 2007.
- The Building Stones and Tile Stones Survey (EBSPits) carried out by the Shropshire Geological Society in collaboration with English Heritage;
- Various studies and publications over the last forty years of the Shropshire orefields and coalfields;

Other sources:

- GIS data for minerals, mines and quarries captured by Grahame French, Shropshire Council Senior Planner (Minerals and waste),
- Existing digital (raster format) 1st edition 6” Ordnance Survey maps (*c* 1880) supplied to SC under licence by Landmark Information Group.
- Copies of 1st edition 25” Ordnance Survey maps (*c* 1880) held at the Shropshire Archives (SA).
- Existing digital (raster format) 2nd edition 25” Ordnance Survey maps (*c* 1900) supplied to SC under licence by Landmark Information Group.
- Existing georeferenced Tithe Award Maps with field name transcriptions by H.D.G Foxall
- Existing digital National Mapping Programme Marches Uplands Survey 1:10,000 overlays supplied to SC under licence by the National Monument Record.
- Existing rectified vertical aerial photography supplied to SC under licence by GetMapping.
- Data captured by the Shropshire Aerial Survey project.
- “A Research Framework for the Archaeology of the Extractive Industries in England: Mining and Quarrying” The National Association of Mining History Organisations
- Other relevant NRHE data

Appendix II

This appendix contains tables supplementing the data presented in Chapter 7

Table App II.1: Totals for HER Monument Types in Future Sand & Gravel Zones

Period	Category	No in Future S&G Zones	Total for HER Class
Meso to BA	Findspot, Flint scatter	10	479
PH (Neo to IA)	Pit alignment	27	30
PH (Neo to IA), Rom	Linear feature	28	28
Neo	Findspot	3	128
PH (BA/IA)	Crannog	1	1
PH (BA/IA), Rom	Field system	31	58
BA	Funerary and ritual:		
	Ringditch	44	204
	Barrow	10	181
	Cinerary urn, Urnfield	1	6
	Barrow cemetery	2	10
BA	Burnt mound	6	37
BA	Findspot	15	531
IA	Hillfort	2	30
IA	Findspot	2	7
IA to Rom	Enclosure (Enclosure, Circular enclosure, Oval enclosure, Rectangular Enclosure, Rectilinear enclosure, Trapezoidal enclosure)	165	540
IA to Rom	Trackway	9	20
IA to Rom	Corn drying kiln	1	1
Rom	Military:		
	Vexillation fort, Fort	1	21
Rom	Auxilliary fort	1	1
	Temporary camp	6	28
Rom	Settlement:		
	Enclosure	1	7
	Building, Rom villa	1	34
	Settlement	4	42
	Town	1	4
	Field system	2	57
Rom	Road	12	39
Rom	Findspot	7	147
Med	Military and manorial:		
	Castle	3	45
	Fortified manor house	1	8
	Motte and Bailey, Motte, Ringwork	3	122
	Moat, moated site	17	195
	Manor house	2	83

Period	Category	No in Future S&G Zones	Total for HER Class
	Manor farm	1	1
	Fishpond	7	115
	Park, Deer park	3	159
Med	Religious:		
	Abbey	2	12
	Church	3	73
	Chapel	3	118
	Cross	1	68
	Grange, Monastic grange	5	34
	Tithe barn	1	8
	Holy well	1	26
	Human remains, Inhumation cemetery	2	9
Med	Rural settlement and agricultural:		
	Deserted settlement, shrunken settlement	11	204
	Field system, Ridge and furrow, Open field	24	539
	Watermeadow	2	18
	Pillow mound, Rabbit warren	1	17
	Field boundary, Linear feature	1	200
	Transport:		
	Road	4	267
	Trackway	1	66
Med	Industrial:		
	Kiln	1	3
	Watermill	2	220
	Charcoal burners' site	1	1
Med	Findspot	4	36
Med, PMed	Park	5	243
Med, PMed	Agricultural:		
	Deserted settlement, shrunken settlement	3	206
	Field system, Ridge and furrow, Open field	3	519
	Common land	2	4
	Rabbit warren	1	7
	Fishpond	1	116
	Fish weir	2	39
	Pool	1	15
Med, PMed	Transport:		
	Road	5	118
	Bridge	1	288
Med, PMed	Industrial		
	Watermill	2	320
Med, PMed	Religious:		
	Chapel, Private chapel	2	543
PMed	Buildings:		
	House	4	6,478

Period	Category	No in Future S&G Zones	Total for HER Class
	Farm Labourer's Cottage	1	6
	Inn	1	188
	Malt house	1	96
	Workhouse	1	25
	Pumphouse	1	7
	Squatters cottage	2	48
	Building (remains of)	1	207
	Wall	1	497
	Well	1	63
PMed	Parks and Gardens:		
	Park, Garden	32	326
	Ice house	1	36
	Prospect mound	1	7
	Tree avenue	1	
PMed	Industrial features:		
	Lime kiln	2	118
	Watermill, Mill, Corn mill	36	453
	Leat, Mill race	5	79
	Pond bay, Mill pond	7	70
	Weir	1	22
	Textile mill	1	3
	Saw mill	2	39
	Bone mill	1	1
	Forge, Iron works	9	77
	Sand pit, Marl pit, Quarry	8	1,525
	Windmill	4	57
	Brick works, Brickfield	4	175
	Other industrial sites	2	-
PMed	Agricultural		
	Squatter settlement	1	14
	Farmstead	391	6,372
	Outfarm	1	43
	Barn	2	996
	Horse engine	1	3
	Pound	1	41
	Sheep fold	1	3
	Water pipe, Drain	2	14
	Field system, Ridge & furrow, Lynchet	8	90
	Field boundary, Ditch	3	22
	Watermeadow	1	44
	Decoy pond	1	2
	Pond	3	249
PMed	Transport		
	Road	3	272
	Bridge	3	287
	Canal, Canal features	16	42
	Railway	14	40
	Toll gate	1	8
PMed	Findspot	1	72

Period	Category	No in Future S&G Zones	Total for HER Class
20th C	Military sites:		
	Airfield, Military airfield	4	26
20th C	Other military site	3	-
	Aircraft crash site	1	1
	Pillbox	1	10
20th C	Industrial:		
	Saw Mill	1	36
	Power station	1	5
20th C	Transport:		
	Railway	1	3
	Trackway	1	1
20th C	Horse exercise ring	1	2

Table App II.2: Totals for HER Monument Types in Future Stone Zones

Period	Category	No in Future Stone Zones	Total for HER Class
Unknown	Mound	1	48
PH	Findspot	7	552
Meso	Findspot	1	28
Neo	Findspot	1	128
Neo, BA	Pit circle	1	2
Neo, BA	Findspot	2	323
BA	Funerary and ritual:		
	Ringditch	2	204
	Barrow, Cairn	4	181
	Standing stone	4	30
BA	Findspot	2	531
IA	Hillfort	3	30
IA; Rom	Enclosure (Inc Enclosure, Circular enclosure, Oval enclosure, Rectangular Enclosure, Rectilinear enclosure, Trapezoidal enclosure)	14	540
IA; Rom	Field sytem	1	
IA; Rom	Findspot	1	160
Rom	Road, Trackway	5	62
Rom	Kiln, Pottery works, Tile works	1	5
Rom	Findspot	3	147
Saxon	Findspot	1	4
Med	Military and manorial:		
	Castle	1	45
	Motte and Bailey, Motte, Ringwork	1	122
	Fishpond, pond, dam	7	87
	Garden	1	3

Period	Category	No in Future Stone Zones	Total for HER Class
Med	Religious:		
	Abbey	1	12
	Cross	1	68
	Well house	1	2
Med	Rural settlement and agricultural:		
	Deserted settlement, shrunken settlement	2	204
	Field system, Ridge and furrow, Open field, Lynchet, Enclosure	9	580
Med	Transport:		
	Road, Trackway	1	180
Med	Industrial:		
	Quarry	1	2
Med	Findspot	1	36
Med, PMed	Standing stone, Boundary stone, Boundary marker	4	35
PMed	Buildings:		
	House	1	6,478
	Inn	1	188
PMed	Parks and Gardens:		
	Park, Garden	13	326
	Tree enclosure ring	1	2
PMed	Industrial features:		
	Lime kiln	16	118
	Watermill, Mill, Corn mill	4	453
	Pond bay, Mill pond, Leat, Mill race	5	149
	Forge, Iron works, Bloomery	1	77
	Brick works, Brickfield	2	175
	Reservoir, Aqueduct	2	22
	Sand pit, Marl pit, Quarry	129	1,525
	Mine, Shaft etc., Bell pits	4	77
	Coal workings	5	103
	Ironstone workings	2	13
	Rope walk	1	11
	Other industrial features	2	-
PMed	Agricultural		
	Farmstead	112	6,372
	Outfarm	1	43
	Barn	3	996
	Field system, Ridge & furrow, Lynchet	3	90
	Pond	2	249
	Mound, Clearance cairn	7	66
PMed	Transport		
	Road, Trackway	1	180
	Canal, Canal features	1	42
	Railway	4	40
	Tramway	3	15
PMed	Racecourse	2	3

Period	Category	No in Future Stone Zones	Total for HER Class
PMed	Cemetery	1	33
20th C	Other military site	1	-

Table App II.3: Totals for HER Monument Types in Future Coal & Fireclay Zones

Period	Category	No in Future C&F Zones	Total for HER Class
Unknown, PH	Findspot	4	552
Neo	Findspot	1	128
BA	Funerary and ritual:		
	Barrow, Cairn	2	181
	Standing stone	1	30
BA	Findspot	2	531
IA	Hillfort	2	30
IA; Rom	Enclosure (Enclosure, Circular enclosure, Oval enclosure, Rectangular Enclosure, Rectilinear enclosure, Trapezoidal enclosure)	5	540
Saxon	Boundary dyke	1	2
Saxon	Findspot	1	4
Med	Military and manorial:		
	Motte and Bailey, Motte, Ringwork	2	122
	Moat, moated site	3	195
	House platform	1	9
	Fishpond, pond, dam	1	87
	Park, Deer park	1	159
Med	Rural settlement and agricultural:		
	Field system, Ridge and furrow, Open field, Lynchet, Enclosure	8	580
Med	Transport:		
	Road, Trackway	1	180
Med, PMed	Park	1	243
Med, PMed	Deserted settlement, shrunken settlement	1	206
PMed	Buildings:		
	Stepping stones	1	1
PMed	Parks and Gardens:		
	Park, Garden	9	326
PMed	Industrial features:		
	Watermill, Mill, Corn mill	7	453
	Pond bay, Mill pond, Leat, Mill race	4	149
	Weir	2	22

Period	Category	No in Future C&F Zones	Total for HER Class
	Forge, Iron works, Bloomery	2	77
	Brick works, Brickfield	10	175
	Pottery, Pottery works	5	15
	Waster tip	2	5
	Glass works	1	3
	Water works	1	5
	Sand pit, Marl pit, Quarry	6	1,525
	Mine, Shaft etc., Bell pits	2	77
	Coal workings	30	103
	Ironstone workings	3	13
	Other industrial sites	2	-
PMed	Agricultural		
	Farmstead	81	6,372
	Outfarm	1	43
	Smallholding	2	76
	Field system, Ridge & furrow, Lynchet	6	90
	Pond	2	249
PMed	Transport		
	Road	2	272
	Canal, Canal features	1	42

Table App II.4: Scheduled Ancient Monuments in the Future Zones

Future Zone No.	Future Zone Name	HER PRN	SAM	Name	Period
4	Whitchurch	01039	34912	Pan Castle	Medieval
4	Whitchurch	01040	32313	Moated site SE of Blake Mere (Blakemere Castle)	Medieval
5	Gobowen and St Martins	00645	Salop 349	Roman Military site at Rhyn Park	Roman
6	Baschurch	02451	32297	Barrow cemetery W of Baschurch	Bronze Age
8	Forton and Little Ness	00052	19209	Shrawardine castle and settlement remains	Medieval
9	Ellesmere	01005	34915	Motte Castle on the N Bank of Crose Mere	Medieval
10	Market Drayton NW	03694	33831	Round Barrow 330m S of Oldfields	Bronze Age
10	Market Drayton NW	01041	32310	Moated Site at Middle Morrey	Medieval
16	Tern Valley	01105	Telford & Wrekin 208	Canal aqueduct over River Tern (Longdon Aqueduct)	Post-medieval
17	Dorrington and Condover	00059	Salop 270	Earthworks (possible hillfort) in Bomere Wood	Iron Age
17	Dorrington and Condover	00056	33822	Moated site and deserted settlement at Betton Alkmere	Medieval
19	Roden Valley	01133	27557	Moreton Corbet Castle	Medieval, Post-medieval
19	Roden Valley	03392	Salop 348	Site of edge runner mill	Post-medieval
20	Wroxeter	00033	Salop 200	Wroxeter Fort A	Roman
22	Newport and Shifnal	03446	34908	Enclosed Iron Age farmstead (Pave Lane Hillfort)	Iron Age
22	Newport and Shifnal	01111	Salop 318	Two Roman camps SW of Stoneyford Cottages	Roman
23	Kemberton and Chesterton	02506	34919	Old Pound, 335m SW of Rudge Hall	Post-medieval
24	Buildwas	00311	27545	Buildwas Abbey	Medieval
24	Buildwas	04427	27545	Abbey House and dovecote. Wenlock Road	Medieval, Post-medieval
24	Buildwas	02466	27545	Water Meadows W of Buildwas Abbey	Medieval

Future Zone No.	Future Zone Name	HER PRN	SAM	Name	Period
24	Buildwas	03390	27545	Water Meadows W of Buildwas Abbey	Medieval
24	Buildwas	08231	27545	Buildwas Abbey mill sites	Medieval
24	Buildwas	08232	27545	Charcoal hearths at Buildwas Abbey	Medieval
26	Ludlow	01173	19118	Northern of two barrows, Old Field, 600m ESE of Ludlow Golf Course Club House	Bronze Age
26	Ludlow	03039	19118	Southern of Two Barrows, Old Field, 600m ESE of Ludlow Golf Course Club House	Bronze Age
26	Ludlow	03056	19119	Barrow on Old Field, 620m ESE of Ludlow Golf Course Club House	Bronze Age
27	Haughmond	00116	27548	Haughmond Abbey, post-medieval house and formal garden remains	Medieval
27	Haughmond	00135	Salop 129	Haughmond Hill Camp	Iron Age
27	Haughmond	00138	Salop 259	Medieval fishpond reservoir NE of Haughmond Abbey and SW of the hamlet of Haughton	Medieval
27	Haughmond	00113	35856	Slight univallate hillfort and a World War II vehuicle testing station on the summit of Ebury Hill, 550m west of Haughton Farm	Iron Age
27	Haughmond	00134	34949	Queen Eleanor's Bower: a ringwork, 710m north east of Bridge Farm	Medieval
31	Craignant & Treflach	01000	Salop 83	Offa's Dyke: section two miles 780yds (3930m) long, from the stream W of Brook Cottage, Selattyn, to footpath crossing dyke W of Bron-y-Garth - Also in Clwyd: Wales	Saxon
31	Craignant & Treflach	01000	Salop 86	Offa's Dyke: section 550yds (500m) long, on Bakers Hill	Saxon
31	Craignant & Treflach	01000	Salop 87	Offa's Dyke: section one mile 1000yds (2520m) long, N of Llanforda Mill	Saxon
31	Craignant & Treflach	01000	Salop 239	Offa's Dyke: section 300yds (270m) long, N of Pentre-Shannel	Saxon
31	Craignant & Treflach	01000	Salop 240	Offa's Dyke: section 410m long, E of Llawnt	Saxon

Future Zone No.	Future Zone Name	HER PRN	SAM	Name	Period
31	Craignant & Treflach	01000	Salop 241	Offa's Dyke: section 250yds (230m) long, S of Careg-y-Big	Saxon
31	Craignant & Treflach	01000	Salop 243	Offa's Dyke: section 1300yds (1190m) long, N from Careg-y-Big	Saxon
31	Craignant & Treflach	01000	Salop 320	Offa's Dyke: section 400yds (370m) long, E of Llawnt	Saxon
31	Craignant & Treflach	00347	32314	Ring cairn and Selattyn Tower on Selattyn Hill	Bronze Age, Post-medieval
31	Craignant & Treflach	01000	Salop 346	Offa's Dyke: section 200yds (180m) long, at Careg-y-Big	Saxon
32	Callow Hill	01048	33838	Callow Hill Camp: a small multivallate hillfort	Iron Age
34	Clee Hill	01260	19133	Ring cairn and two round cairns, Hoare Edge, 550m south east of Nine Springs Farm	Bronze Age
34	Clee Hill	08039	21664	Coal mining remains and brick works on Catherton Common	Post-medieval
34	Clee Hill	08037	31762	Coal mining remains at Cornbrook on Clee Hill	Post-medieval
36	Oswestry Coalfield	01000	Salop 88	Offa's Dyke: section 230yds (210m) long, SE from Pentre-Shannel	Saxon
36	Oswestry Coalfield	00350	19220	Castell Brogyntyn ringwork castle 300m north east of Brogyntyn Farm	Medieval
36	Oswestry Coalfield	01000	Salop 238	Offa's Dyke: sections 100yds (90m) and 350yds (320m) long, NE of Fron	Saxon
36	Oswestry Coalfield	01000	Salop 239	Offa's Dyke: section 300yds (270m) long, N of Pentre-Shannel	Saxon
36	Oswestry Coalfield	04276	31751	Trefarclawdd colliery remains immediately north of Pottery Cottages	Post-medieval
41	Titterstone Clee	08039	21664	Coal mining remains and brick works on Catherton Common	Post-medieval
41	Titterstone Clee	08037	31762	Coal mining remains at Cornbrook on Clee Hill	Post-medieval
41	Titterstone Clee	08036	31763	Coal mining remains immediately north east of Horseditch House on Clee Hill	Post-medieval

Table App II.5: Zone summaries: Monuments (PRNs) and Events (ESAs)

1 PREES

Period	Category	No. in Zone	PRNs
Neolithic	Findspot	1	02666
Bronze Age	Findspot	1	01660
Roman	Road	1	00066
?Medieval	Castle	1	01663
Medieval	Field system (Ridge and Furrow)	1	20937
Post-medieval	Saw mill	1	06573
Post-medieval	Sand-pit	1	20938
Post-medieval	Farmstead	9	24940, 25114, 26637, 26638, 27315, 26712, 26713, 26714, 26716
	Total	**16**	

ESA Ref	Report
ESA6000	2005 Archaeological Assessment of A41 Sandford Bypass by SCCAS

2 Wem and Edstaston

Period	Category	No. in Zone	PRNs
Post-medieval	Farmstead	4	26673, 26674, 26686, 27324
	Total	**4**	

ESA Ref	Report
None	

3 West Felton

Period	Category	No. in Zone	PRNs
Bronze Age	Findspot	2	00897, 02797
Bronze Age	Burnt mound	3	28079, 28080, 28081
Bronze Age	Ringditch	2	02402, 04035
Prehistoric, Bronze Age, Iron	Pit alignment	2	02402, 28759

Age,			
Iron Age to Roman	Enclosure	14	02102, 02114, 02284, 02287, 02411, 02104, 04912, 02165, 04222, 04260, 04217, 04246, 04323, 28758
Iron Age to Roman	Enclosure and field system	4	00934, 02103, 02113, 02164
Iron Age to Roman	Field system	3	02432, 04445, 04446
Roman	Temporary Camp	1	00935
Medieval	Ridge and Furrow	1	02391
Post Medieval	Canal and Canal features	5	08358, 00927, 02813, 02703, 03464
Post Medieval	Industrial		
Post Medieval	Lime kilns	2	08346, 08348
Post Medieval	Sand & Clay pits	1	08349
Post Medieval/20th century	Other works	2	06660, 06661
Post Medieval	Watermills	3	06658, 15512, 15824
Post Medieval	Windmills	1	06659
Post Medieval	Field system and boundaries	5	04324, 08345, 08352, 08354, 08356
Post Medieval	Decoy pond	1	08355
Post Medieval	Parks and gardens	4	07618, 07633, 07638, 07644
Post Medieval	Railway	1	08444
Post Medieval	Barn	1	28076
Post Medieval	Farmsteads	17	26786, 27053, 27060, 27061, 27082, 27083, 27112, 26252, 27958, 26760, 26761, 27467, 27469, 27519, 27540, 27542, 27543
20th century	Airfield	1	28078
Unknown	Unidentified structures	1	28757
	Total	**77**	

ESA Ref	**Report**
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5050	1995-1996 archaeological recording of Phase 2 works along the Montgomery Canal
ESA5051	1994 evaluation of the Montgomery Canal between the River Perry and Aston Upper Lock
ESA5527	2003 Landscape archaeology assessment of the Montgomery Canal (English section)

ESA5699	North West Wetlands Survey
ESA6317	2003 built heritage assessment of the Montgomery Canal (English section) by Michael Eaton
ESA6395	1993 field observation of damage to the Montgomery Canal's heritage by G. Deamer
ESA6553	2010 DBA and site visit of Land at Abbots Moor, West Felton
ESA6582	1997 photographic record of the Montgomery Canal
ESA6584	2007 DBA and site visit to Pradoe, West Felton by Mary King
ESA901	1973 excavation

4 Whitchurch

Period	Category	No. in Zone	PRNs
Prehistoric	Findspot	1	02615
Bronze Age	Findspot	2	02614, 03436
Bronze Age	Cinerary urn, Urnfield	1	00919
Roman	Road	1	01029
Roman	Findspot	4	00917, 01593, 01653, 03437
Roman	Settlement	1	04288
Medieval	Motte and Bailey	1	01039
Medieval	Moated site, Manor House,	2	01040, 01022
Medieval	Fishpond	2	02826, 02853
Medieval	Park, Deer park	3	00570, 02851, 07566
Medieval	Chapel	1	01655
Medieval	Deserted settlement	1	02987
Medieval	Ridge and Furrow	1	08720
Post Medieval	Ridge and Furrow	4	08721, 20791, 20793, 20794
Post Medieval	Squatter settlement	1	21593
Post Medieval	Houses	2	00512, 01654
Post Medieval	Sand & Clay pits	1	21895
Post Medieval	Canal and Canal features	1	03414

Post Medieval	Railway	2	05501, 05892
Post Medieval	Barn	1	28074
Post Medieval	Farmsteads	56	22814, 22790, 22791, 22794, 22796, 22797, 22798, 22799, 25098, 25101, 25116, 25117, 25131, 25132, 25133, 25134, 26515, 26516, 26517, 26518, 26519, 26520, 26521, 26527, 26528, 26529, 26530, 26537, 26538, 26540, 26541, 26542, 26543, 26544, 26545, 26546, 26547, 26548, 26549, 26550, 26551, 26553, 26579, 26580, 26581, 26582, 26583, 26584, 26585, 26586, 26590, 26591, 26592, 26600, 26601, 26602
20th century	Military airfield	1	21549
20th century	Military sites	2	21590, 21591
20th century	Trackway	1	21592
Unknown	Pond	1	02349
Unknown	Earthwork	1	03717
	Total	**95**	

ESA Ref	**Report**
ESA1081	1916 Excavation at Pan Castle, Whitchurch
ESA1088	1957 Excavation at Blake Mere, Whitchurch
ESA1089	1963 Excavation at Blake Mere, Whitchurch
ESA5699	North West Wetlands Survey
ESA6406	2007 DBA and site visit to land at Prees Heath Common, Whitchurch by Cotwold Archaeology

5 Gobowen and St Martins

Period	**Category**	**No. in Zone**	**PRNs**
Bronze Age	Pit Circle?, Enclosure?, Ring ditch	2	02158, 02288
Iron Age / Roman	Enclosure	2	02156, 04052
Roman	Vexillation fort, Fort	1	00645

Medieval/ Post Medieval	Field Boundary, Ridge and furrow	1	08263
Post Medieval	Park	3	07622, 07624, 08303
Post Medieval	Farmstead	2	26888, 26939
Post Medieval	Pond, Mill Pond?	2	06544, 06547
Post Medieval	Watermill, Corn Mill	1	15814
Post Medieval	Leat	2	20832, 20833
Post Medieval	Iron Works	1	06550
	Total	**17**	

ESA Ref	**Report**
ESA6203	2005 DBA and field survey of the area around the Pontcysyllte and Chirk aqueducts by Dr David Gwyn
ESA627	1977 - 1978 Excavations at Rhyn Park Roman Fortress
ESA628	1984 excavation by English Heritage
ESA629	1988 excavation by BUFAU
ESA632	1991 WB on sewage pipeline
ESA6376	2009 DBA & walkover survey along proposed pipeline, Old Marton by Oxford Archaeology North
ESA6495	2010 WB replacing footpaths at the Roman Military site at Rhyn Park
ESA6742	2010 DBA and walkover assessment along proposed Vyrnwy pipeline (Oswestry to Penley) by Oxford Archaeology North

6 Baschurch

Period	**Category**	**No. in Zone**	**PRNs**
Bronze Age	Ring ditch	4	02396, 02397, 02398, 04086
Bronze Age	Barrow cemetery	1	02451
Iron Age / Roman	Enclosure	3	04922, 04923, 04326
Medieval	Road	1	05091
Medieval/ Post Medieval	Road	1	05081

Post Medieval	Park	3	07567, 07568, 07591
Post Medieval	Farmstead	9	27019, 27020, 27021, 27022, 27023, 27655, 27656, 27657, 27661
Post Medieval	House	1	12162
Post Medieval	Railway	1	08444
Post Medieval	Natural feature, ring ditch?, Marl pit	1	04924
	Total	**25**	

ESA Ref	**Report**
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5699	North West Wetlands Survey
ESA5756	2002 evaluation of land by Ruyton Road, Baschurch

7 Knockin and Nesscliffe

Period	**Category**	**No. in Zone**	**PRNs**
Bronze Age	Findspot	1	00858
Bronze Age	Ring ditch, Barrow	2	00857, 02170
Prehistoric/Bronze Age/Iron Age	Linear features,	3	02383, 02431, 04300
Prehistoric/Bronze Age/Iron Age	Pit alignments	3	04031, 04212, 04254
Iron Age / Roman	Enclosure	13	00862, 02382, 02393, 02100, 04397, 02099, 02178, 02433, 04213, 03964, 02297, 02479, 04150
Medieval/Post Medieval	Rabbit warren	1	03722
Post Medieval	Farmstead	2	27665, 27900
	Total	**25**	

ESA Ref	Report
ESA4736	1992 Nesscliffe Bypass Archaeological Assessment, 1992
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5699	North West Wetlands Survey

8 Forton and Little Ness

Period	Category	No. in Zone	PRNs
Bronze Age	Ring ditch	2	00684, 02101
Prehistoric/Bronze Age/Iron Age	Linear features,	2	02211, 04450
Prehistoric/Bronze Age/Iron Age	Pit alignments	3	02065, 04449, 04450
Iron Age / Roman	Enclosure	17	00481, 00483, 00484, 00485, 00683, 02210, 02211, 02413, 02427, 04155, 04235, 04244, 04570, 04571, 04572, 04921, 28654
Iron Age / Roman	Field system	5	00001, 00487, 04029, 04573, 04921
Medieval	Castle and Shrunken settlement	1	00052
Medieval	Deer park	1	00596
Medieval	Kiln	1	04646
Post Medieval	Farmstead	5	04645, 27008, 27046, 27047, 27466
Post Medieval	Watermill	1	15593
Post Medieval	Park	1	07647
Post Medieval	Brick works	2	00926, 06725
Unknown	Linear features	1	02415
	Total	**42**	

ESA Ref	Report

ESA3430	1994 Evaluation of site proposed for redevelopment at Shrawardine Farm by SCCAS
ESA4222	1991 Evaluation in advance of proposed redevelopment of part of Shrawardine Farm by SCCAS
ESA4224	1992 Excavation of a bank and ditch at Shrawardine Farm by SCCAS
ESA4744	1989-91 WBs/ Small Excavations, A5 Shrewsbury Bypass
ESA4755	2001 Archaeological Survey at Shrawardine Castle by CPAT
ESA4756	2001 Geophysical Survey at Shrawardine Castle by Archaeophysica
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4933	1987 Assessment of SCC landholdings at Shrawardine (Shrawardine Special Project)
ESA495	1978 -79 excavations at Bromfield Gravel Quarry
ESA5011	1997-1998 Assessment and building recording prior to consolidation work at Shrawardine Castle
ESA5545	1994-1995 evaluation at Wood Farm, Adcote, in advance of proposed landfill
ESA5932	2004 WB on groundworks at Castle Croft, Shrawardine by Castlering Archaeology
ESA6787	1994-5 field walking survey at Adcote (Wroxeter Hinterland Project Location 31)

9 Ellesmere

Period	Category	No. in Zone	PRNs
Prehistoric/Bronze Age	Findspot	1	03602
Bronze Age	Findspot	3	00902, 02647, 03600
Bronze Age	Ring ditch, Barrow	3	02487, 04271, 04344
Prehistoric/Bronze Age/Iron Age	Linear feature,	4	00933, 02166, 02487, 04041
Prehistoric/Bronze Age/Iron Age	Pit alignment	2	01006, 04574
Prehistoric/Bronze Age/Iron Age	Crannog	1	00881
Iron Age	Findspot	2	00845, 00888
Iron Age / Roman	Enclosure	20	00843, 01007, 01365, 01404, 02166, 02222, 02384, 02390, 02447, 02487, 04023, 04032, 04033, 04041, 04411, 04272, 04273, 04464, 04925, 28765
Roman	Findspot	1	00878

Roman	Temporary Camp	1	02449
Roman/Medieval	Findspot	1	00847
Medieval	Motte, Settlement		01005
Medieval	Deserted settlement, ridge & furrow	1	00993
Medieval	Church	1	00877
Post Medieval	Park, Garden	4	04872, 07590, 07597, 07605
Post Medieval	Ditch	1	00930
Post Medieval	Sheep fold	1	08360
Post Medieval	Marl pit	1	20836
Post Medieval	Squatters Cottage	2	20835, 21457
Post Medieval	Watermill	4	06561, 15651, 15653, 15811
Post Medieval	Toll gate	1	00887
Post Medieval	Canal	1	00927
Post Medieval	Railway	1	05892
Post Medieval	Well	1	00886
Post Medieval	Farmstead	87	22042, 22229, 22232, 22237, 22280, 22281, 22282, 22283, 22288, 22289, 22290, 22291, 22779, 26610, 26611, 26612, 26614, 26616, 26639, 26640, 26647, 26648, 26649, 26650, 26663, 26667, 26668, 26692, 26696, 26699, 26700, 26702, 26703, 26704, 26705, 26706, 26740, 26743, 26744, 26745, 26749, 26750, 26753, 26755, 26756, 26757, 26758, 26759, 26775, 26776, 26777, 26778, 26779, 26791, 26792, 26793, 26794, 26795, 26802, 26803, 26805, 26806, 26837, 26838, 26839, 26840, 26841, 26842, 27361, 27368, 27552, 27553, 27554, 27556, 27557, 27571, 27616, 27617, 27618, 27619, 27620, 27621, 27623, 27624, 27625, 27626, 27628
Unknown	Non antiquity, Unknown	4	00882, 00850, 04117, 04414

	Total	**149**	

ESA Ref	**Report**
ESA5527	2003 Landscape archaeology assessment of the Montgomery Canal (English section)
ESA5699	North West Wetlands Survey
ESA6293	2009 Building survey at the Commonwood Farm, Commonwood, Wem by Pat Frost
ESA6324	2009 Historic building recording of the barns at Lower Pool Farm by Pat Frost
ESA6974	2013 Building survey at the Coach House, Woodgate, Loppinton, Wem
ESA977	19th century excavation (c1894?)

10 Market Drayton NW

Period	**Category**	**No. in Zone**	**PRNs**
Bronze Age	Ring ditch	1	03694
Iron Age / Roman	Enclosure	1	02296
Roman	Findspot	1	01664
Medieval	Moat	2	01041, 02279
Medieval	House	1	01674
Medieval	Chapel	1	01675
Medieval	Field system	1	28350
Medieval, Post Medieval	Park	2	07561, 07602
Post Medieval	House	1	16164
Post Medieval	Park	1	07575
Post Medieval	Watermill	1	06579
Post Medieval	Saw mill	1	15813
Post Medieval	Railway	1	08029
Post Medieval	Farmstead	10	22039, 24850, 24853, 24871, 24872, 24873, 24875,

			24878, 24884, 24887
	Total	**25**	

ESA Ref	**Report**
ESA6295	2007 EIA on the nothern extension to Muller Dairy, Market Drayton by SLR Consulting

11 Norton in Hales

Period	**Category**	**No. in Zone**	**PRNs**
Medieval	Moat	2	01595, 02790
Medieval	Field system	1	08593
Medieval, Post Medieval	Park	1	07564
Post Medieval	Park	1	07563
Post Medieval	Field boundary	2	08595, 21604
Post Medieval	Pond	1	06518
Post Medieval	Quarry, clay pits	2	08594, 21603
Post Medieval	Railway	1	08449
Post Medieval	Farmstead	6	22018, 22025, 22028, 22032, 24824, 24825
20th century	Aircraft crash site	1	21331
	Total	**18**	

ESA Ref	**Report**
ESA5056	1997 assessment of the proposed Audley to Alrewas gas pipeline
ESA5058	1997 field survey and geophysical survey along the Audley to Alrewas gas pipeline route
ESA5060	1998 WB on Audley to Alrewas gas pipeline
ESA5063	1997-1998 works associated with Audley to Alrewas gas pipeline
ESA5885	2002 assessment of Woore to Vyrnwy water pipeline
ESA6208	2000 geophysical surveys near Woore by Keele University students

ESA6407	2009 DBA of ancient parish of Mucklestone, Shropshire/Staffs by Michael Fradley
ESA6410	2005 earthwork survey around Pool Hall Farm, Pipe Gate, Woore by Michael Fradley
ESA6414	2008/9 earthwork survey around Pool Hall Farm, Pipe Gate, Woore by Michael Fradley

12 Hinstock

Period	Category	No. in Zone	PRNs
Medieval	Moat	1	01581
Medieval	Field system	1	20867
Post Medieval	Watermill	2	06608, 15638
Post Medieval	Millpond	2	03707, 06707
Post Medieval	Canal & Canal features	2	03411, 06708
Post Medieval	Park	1	07572
Post Medieval	Water pipe (drain)	1	03774
Post Medieval	Farmstead	28	24961, 24962, 24963, 24964, 24965, 24966, 24967, 24969, 24970, 24971, 24972, 24975, 24976, 25021, 25036, 25037, 25038, 25039, 25040, 25044, 25139, 25140, 25141, 25142, 25143, 25144, 25153, 25154
20th century	Saw mill	1	06606
	Total	**39**	

ESA Ref	Report
None	

13 Market Drayton S

Period	Category	No. in Zone	PRNs
Post Medieval	Farmstead	1	25012
	Total	**1**	

ESA Ref	Report
ESA6616	2011 DBA and site visit for Tern Hill Quarry extention, Stoke-Upon-Tern
ESA6693	2011 Fieldwalking survey at Tern Hill Quarry extention, Stoke-Upon-Tern

14 Hodnet Heath

Period	Category	No. in Zone	PRNs
Prehistoric	Pit alignment	1	02303
Post Medieval	Railway	1	08029
Post Medieval	Brickfield	1	06696
Post Medieval	Farmstead	1	25206
	Total	**4**	

ESA Ref	Report
ESA4697	2000 A53 Hodnet Bypass Desk Based Assessment
ESA4842	2002 WB on Hodnet Bypass construction

15 Childs Ercall

Period	Category	No. in Zone	PRNs
Bronze Age	Findspot	1	01697
Medieval	Grange	1	02925
Post Medieval	Farmstead	1	25257
	Total	**3**	

ESA Ref	Report
ESA4787	1994-1999 Wroxeter Hinterland Project

16 Tern Valley

Period	Category	No. in Zone	PRNs
Prehistoric (Neolithic/Bronze Age)	Findspot	1	01376
Bronze Age	Ring ditch	2	00040, 04938
Prehistoric/Bronze Age/Iron Age	Linear feature	2	02009, 04937
Iron Age / Roman	Enclosure	10	00039, 00471, 02009, 02246, 02358, 28735, 04522, 00038, 02355, 04937
Iron Age / Roman	Pit alignment	5	00038, 00044, 02353, 02355, 04937
Iron Age / Roman	Field system	5	00038, 00463, 02352, 02353, 02355
Medieval	Moated site	2	01147, 01721
Medieval	Chapel	1	01719
Medieval	Field system (Ridge & Furrow)		
Medieval, Post Medieval	Marl Pit, Deserted settlement, Field system?	1	01379
Post Medieval	Watermill	7	00508, 01720, 07140, 15636, 15643, 15649, 15715
Post Medieval	Windmill	1	01377
Post Medieval	Forge	1	01692
Post Medieval	Brickworks	1	07139
Post Medieval	Bridge	3	03467, 03468, 01717
Post Medieval	Canal, Canal features	2	03410, 01105
Post Medieval	Railway	1	08029
Post Medieval	Park	1	07596
Post Medieval	Farmstead	19	22341, 22342, 22761, 22762, 22763, 22764, 25179, 25211, 25329, 25468, 25496, 25498, 25535, 25536, 25546, 27796, 27833, 27834, 40528
Post Medieval	Wall	1	01148
20th century	Pillbox	1	03471

Unknown	Mound	1	01701
	Total	**68**	

ESA Ref	**Report**
ESA1507	1964 watching brief
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5699	North West Wetlands Survey
ESA6288	2009 building survey at Heathcote Farmhouse and barn, Stoke-on-Tern
ESA6721	2012 Historic building recording at Barns at The Lees, Walcot, Witherington, Shrewsbury
ESA6763	1994-5 field walking survey at Longden-upon-Tern, North-East Transect (Wroxeter Hinterland Project Location 11)

17 Dorrington and Condover

Period	**Category**	**No. in Zone**	**PRNs**
Neolithic	Findspot	1	01757
Bronze Age	Findspot	3	00828, 02846, 21247
Bronze Age	Ring ditch, Barrow	9	00824, 00438, 00479, 02197, 04483, 04927, 28724, 21245, 00477
Bronze Age	Burnt mounds	2	04719, 21243
Bronze Age	Barrow cemetery	1	00477
Prehistoric/Bronze Age/Iron Age	Pit alignments	3	00440, 02196, 28766
Iron Age	Hillfort	1	00059
Iron Age / Roman	Enclosure	9	00439, 00440, 00478, 00480, 02123, 02196, 02205, 02709, 04928
Iron Age / Roman	Field system,	2	00440, 02412
Roman	Temporary Camp	1	00469
Roman	Road	3	00098, 00108, 08494
Roman, Medieval	Enclosure, Inhumation cemetery	1	02709

Medieval	Moated site	2	00056, 03430
Medieval	Manor House, Manor farm	3	08576, 08577, 08579
Medieval	Deserted settlement, shrunken settlement	5	00056, 01269, 03623, 03626, 03644
Medieval	Field system - open field	1	08574
Medieval, Post Medieval	Field system	1	21246
Medieval, Post Medieval	Fishpond	1	08578
Medieval, Post Medieval	Watermill	2	00523, 03627
Medieval, Post Medieval	Road	5	08563, 08564, 08567, 08568, 08572
Post Medieval	Park, Garden	5	07666, 08569, 08580, 07663, 07709
Post Medieval	Tree Avenue	1	08582
Post Medieval	Mill	1	01745
Post Medieval	Buildings (Workhouse; Inn; Building remains; Pumphouse)	4	00823, 04457, 04463, 08581
Post Medieval	Water pipe	1	02900
Post Medieval	Railway	2	05407, 06024
Post Medieval	Toll road	1	08571
Post Medieval	Gravel pit	1	06845
Post Medieval	Farmstead	14	24797, 26087, 26089, 26328, 27127, 27133, 27134, 27143, 27144, 27169, 27174, 27175, 27574, 27576
Unknown	Non antiquity, Unknown	4	02013, 03999, 04579, 21244
	Total	**90**	

ESA Ref	**Report**
ESA4620	1993 Geophysical survey on Shelton-Uckington link main pipeline route
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA479	1993-1994 evaluation in advance of proposed gravel extraction
ESA4834	2002 Assessment of 19 Bridges in Shropshire by SCCAS
ESA4919	2003 Photographic survey in advance of Gonsall Lane Bridge replacement by SCCAS

ESA492	1993 WB and trial trenching along Shelton-Uckington link main pipeline route
ESA4930	1988-1995 Survey of Attingham Park by the National Trust
ESA5027	1996 Evaluation prior to extension of Condover Quarry by LUAU
ESA5380	2003 evaluation trenches at Cound Hall
ESA5890	1990 assessment of Cound Hall
ESA6251	2008 DBA at Condover Quarry, western extension, Bayston Hill, Shropshire, by A Richmond
ESA6779	1994-5 field walking survey at Grove Farm, Condover (Wroxeter Hinterland Project Location 26)
ESA6810	2012 DBA and site visit along the Shrewsbury resilience scheme pipeline, nr Wroxeter, by Wessex Archaeology
ESA6889	2010 management survey on the Longner Estate, Atcham, Shropshire

18 Shrewsbury W

Period	**Category**	**No. in Zone**	**PRNs**
Bronze Age	Ring ditch	4	00010, 00011, 00012, 00013
Prehistoric/Bronze Age/Iron Age	Linear feature	1	00010
Iron Age / Roman	Enclosure	7	00010, 00011, 00012, 02124, 02189, 02209, 02215
Iron Age / Roman	Field system	2	00011, 00012
Medieval	Findspot	1	00068
Medieval	Moated site	2	03827, 03897
Post Medieval	Park, Garden	2	07654, 07697
Post Medieval	Watermill	1	15619
Post Medieval	Railway	1	08453
Post Medieval	Farmstead	2	27848, 27849
	Total	**23**	

ESA Ref	**Report**

ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4836	2002 assessment of proposed Shrewsbury North West Relief Road
ESA5587	1995+ Shrewbury Urban Archaeological Database Project
ESA5846	2004 Stage 2 assessment of Shrewsbury North West Relief Road by SCCAS
ESA5888	2000 - 2003 buildings at risk survey,SABC
ESA6074	2006 Geophisical Survey as part of Shrewsbury North West Relief Road proposals by Archaeophysica
ESA6225	2007 archaeological evaluation of the Shrewsbury North West Relief Road by Kristina Krawiec

19 Roden Valley

Period	Category	No. in Zone	PRNs
Prehistoric	Findspot	1	01605
Bronze Age	Ring ditch	4	00100, 02261, 04473, 04510
Bronze Age/Iron Age	Field system	1	00100
Bronze Age	Burnt mound	1	01610
Prehistoric/Bronze Age/Iron Age	Pit alignments	4	00600, 02270, 04390, 04935
Prehistoric/Bronze Age/Iron Age/Roman	Field system	6	00100, 02245, 02264, 02265, 02273, 02456
Prehistoric/Bronze Age/Iron Age/Roman	Linear feature	4	02261, 02263, 02268, 04933
Iron Age / Roman	Trackway	4	02245, 02264, 02265, 02273
Iron Age / Roman	Enclosure	25	00103, 02266, 02274, 04167, 08099, 02231, 02300, 01134, 04934, 02228, 02232, 02233, 02257, 02260, 02262, 02267, 02272, 04933, 08033, 02268, 04510, 02275, 28729, 02456, 02245
Roman	Road	1	00066
Medieval	Castle	1	01133
Medieval	Chapel	1	01363
Medieval	Grange	1	08292
Medieval	Deserted settlement	2	00951, 02867

Medieval	Linear feature, trackway	1	02225
Post Medieval	Canal	1	03410
Post Medieval	Buildings (Cottage; Horse engine; Malt house)	3	03392, 06787, 21983
Post Medieval	Farmstead	36	22045, 25198, 25200, 25201, 25274, 25275, 25291, 25292, 25293, 25294, 25295, 25296, 25313, 25319, 25321, 25324, 25371, 25374, 25377, 25477, 25531, 25557, 25587, 25590, 25591, 25592, 25593, 26998, 27419, 27446, 27447, 27448, 27449, 27450, 27763, 27764
20th century	Military airfield	1	21982
Unknown	Road, trackway, site	6	01628, 02226, 02255, 02461, 02227, 02230
	Total	**104**	

ESA Ref	**Report**
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5030	1993 evaluation of land to N of Moreton Corbet
ESA5699	North West Wetlands Survey
ESA6777	1994-5 field walking survey at Withington (Wroxeter Hinterland Project Location 22)
ESA6943	2013 WB at St Bartholomew's Church, Moreton Corbet
ESA6993	2013 Historic building recording and photographic survey of barns at Byngs Heath Farm, Astley, Shrewsbury: heritage assessment

20 Wroxeter

Period	**Category**	**No. in Zone**	**PRNs**
Iron Age / Roman	Enclosure	7	02378, 02489, 04407, 04575, 00078, 00079, 00077
Roman	Temporary camp	2	00029, 00128
Roman	Fort	1	00033
Roman	Town	1	00026

Roman	Road	1	02247
Roman	Settlement	3	06492, 06499, 06500
Roman	Field system	2	00030, 08102
Post Medieval	Road	2	00028, 21420
Post Medieval	Farmstead	1	27179
20th century	Military airfield	1	21415
Unknown	Pool	1	21041
	Total	**22**	

ESA Ref	**Report**
ESA4200	1960 excavation
ESA4202	1947 Excavation of auxiliary fort at Wroxeter
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4930	1988-1995 Survey of Attingham Park by the National Trust
ESA4938	Central Marches Historic Towns Survey
ESA6810	2012 DBA and site visit along the Shrewsbury resilience scheme pipeline, nr Wroxeter, by Wessex Archaeology
ESA6814	2012 WB at Wroxeter Roman Fort by SCAS

21 Wrockwardine and Weald Moors

Period	**Category**	**No. in Zone**	**PRNs**
Iron Age / Roman	Enclosure	3	00720, 01786, 04511
Medieval	Field system	1	04682
Medieval	Rabbit warren	1	00036
Post Medieval	Park	1	07767
Post Medieval	Canal	1	03410

Post Medieval	Farmstead	1	22026
Unknown	Unknown site	1	04406
	Total	**9**	

ESA Ref	**Report**
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4930	1988-1995 Survey of Attingham Park by the National Trust
ESA5518	1995 WB on test pits and boreholes along route of proposed Uckington to Cluddley link main
ESA5634	1995 Assessment and feasibility study for the development of the Trench Branch of Shropshire Union Canal
ESA5699	North West Wetlands Survey
ESA6764	1994-5 field walking survey at Admaston, North-East Transect (Wroxeter Hinterland Project Location 12)

22 Newport and Shifnal

Period	**Category**	**No. in Zone**	**PRNs**
Iron Age	Hillfort	1	03446
Iron Age / Roman	Enclosure	1	02499
Prehistoric/Bronze Age/Iron Age	Pit alignment	2	02318, 02319
Roman	Temporary camp	1	01111
Roman	Road	2	00099, 01387
Medieval	Castle	1	01359
Medieval	Grange	3	01814, 01818, 02928
Medieval	Cross	1	01726
Medieval	Watermill	1	01816
Medieval, Post Medieval	Pool	1	28856
Medieval, Post Medieval	Fishpond	1	28855
Medieval, Post Medieval	Park	1	08522

Medieval, Post Medieval	Road	1	08524
Medieval, Post Medieval	Common land	2	08528, 08531
Post Medieval	Watermeadow	1	03795
Post Medieval	Watermill	4	08525, 08526, 15686, 15687
Post Medieval	Pond bay	4	01730, 01822, 01823, 01827
Post Medieval	Forge	2	01822, 01823
Post Medieval	Windmill	2	01828, 07292
Post Medieval	Canal	1	03407
Post Medieval	Road	1	08532
Post Medieval	Bone mill	1	07290
Post Medieval	Park	6	07533, 07539, 07543, 07551, 07765, 07781
Post Medieval	Icehouse	1	04005
Post Medieval	Prospect mound	1	01813
Post Medieval	Railway	1	05371
Post Medieval	Farmstead	27	25438, 25558, 26117, 26118, 26119, 26120, 26207, 26208, 26218, 26219, 26221, 26222, 26223, 26224, 26225, 26226, 26231, 26233, 26234, 26235, 26236, 26238, 26255, 26256, 26257, 26258, 26282
20th century	Military depot	1	08539
Unknown	Unknown site	1	02364
	Total	**73**	

ESA Ref	**Report**
ESA1365	Undated excavation
ESA1916	1976-1981 excavations by Tong Archaeological Group at Tong Castle
ESA1916	1976-1981 excavations by Tong Archaeological Group at Tong Castle
ESA2581	Undated excavation
ESA3287	1980-1983 excavation, dismantling and reconstruction of the ice house at Tong Castle

ESA4725	1990 Investigation
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5848	2003-2004 assessment of RAF Cosford
ESA5959	1999 Environmental Impact Assessment of Woodcote Wood, Shropshire
ESA6030	2005 Evaluation at Woodcote Wood, Shropshire by Cotswold Archaeology
ESA6078	1984 Investigation of Limestone Mines in the Wrekin area by Wardell Armstrong
ESA6080	1986 Survey of Limestone Mines in the Wrekin Area Report by Ove Arup
ESA6198	1970 walkover survey of the Church Aston - Lilleshall Mining area, near Newport, Shropshire, by D R Adams and J Hazely
ESA6904	2011-12 DBA and walkover survey of hillforts in Shropshire
ESA6926	2011 DBA and walkover survey at RAF Cotford

23 Kemberton and Chesterton

Period	Category	No. in Zone	PRNs
Mesolithic to Bronze Age	Flint scatter	2	02503, 03817
Iron Age / Roman	Enclosure	3	02322, 02363, 28717
Prehistoric	Pit alignment	1	04488
Medieval	Moated site	1	01809
Medieval	Chapel	1	02505
Post Medieval	Watermill	2	00770, 15693
Post Medieval	Millrace	1	28811
Post Medieval	Forge,	2	00770, 01810
Post Medieval	Park	3	07515, 07525, 07544
Post Medieval	Pound	1	02506
Post Medieval	Outfarm	1	28698
Post Medieval	Farmstead	13	26050, 26051, 26052, 26054, 26055, 26155, 26312, 26313, 26314, 26349, 26350, 26355, 26356
Unknown	Findspot	1	02811

	Total	**32**	

ESA Ref	**Report**
ESA2691	1840 excavation
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5562	1972 Site investigation of charcoal blast furnaces, Shifnal and Kemberton
ESA5848	2003-2004 assessment of RAF Cosford
ESA6833	1998 historic and cultural land use and landscape assessment of Ironbridge and Coalbrookdale.
ESA6926	2011 DBA and walkover survey at RAF Cotford

24 Buildwas

Period	**Category**	**No. in Zone**	**PRNs**
Medieval	Abbey	1	00311,
Medieval	Abbots lodging	1	04427
Medieval	Fishpond	1	02466
Medieval	Watermeadow	1	03390
Medieval	Watermill	1	08231
Medieval	Charcoal burners' site	1	08232
Medieval	Tithe barn	1	00298
Post Medieval	Watermill	1	15678
Post Medieval	Park	1	07658
Post Medieval	Railway	3	06024, 08061, 08464
Post Medieval	Farmstead	2	22213, 22315
20th century	Power station	1	06710
	Total	**15**	

ESA Ref	**Report**

ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4804	2002 Dendro Dating at Abbey House, Buildwas Abbey by English Heritage
ESA4872	2002 Earthworks survey at Buildwas Abbey by RCHME
ESA5362	1984 photographic survey of the Ironbridge A Power Station
ESA5888	2000 - 2003 buildings at risk survey,SABC
ESA6348	1997 Building recording at Abbey House, Buildwas Abbey
ESA6554	2009 building recording at Hill View Farm by Richard Morriss
ESA6822	1999 Student Building survey and photographic record of stations of the Severn Valley Railway & its associated routes

25 Bridgnorth

Period	Category	No. in Zone	PRNs
Mesolithic to Bronze Age	Findspot	4	00405, 01923, 01924, 03355
Bronze Age	Findspot	2	03218, 03219
Bronze Age	Ring ditch, Barrow	9	00201, 00213, 00215, 00428, 02094, 00207, 00429, 00430, 00212
Prehistoric, Roman	Lynchet, Settlement, Findspot	1	00400
Bronze Age/Iron Age / Roman	Field system	2	00202, 02088
Bronze Age/Iron Age / Roman	Linear feature	1	00428
Iron Age / Roman	Enclosure	12	00202, 00204, 00207, 00211, 00212, 00214, 00429, 00430, 02087, 02195, 04263, 04564
Iron Age / Roman	Trackway	1	00202
Roman	Road	1	04076
Prehistoric? Medieval?	Human remains	1	03228
Medieval	Findspot	1	03225
Medieval	Moated site	1	03900
Medieval	Road	2	05128, 05164
Medieval			
Medieval to Post Medieval	Field system	1	28876

Medieval to Post Medieval	Fish weir	2	02939, 02941
Post Medieval	Watermill	8	06918, 15700, 15703, 15708, 15709, 15711, 15712, 15713
Post Medieval	Textile Mill	1	15700
Post Medieval	Millrace	1	15708
Post Medieval	Pond,	1	07022
Post Medieval	Weir	1	15708
Post Medieval	Forge	2	03800, 03801
Post Medieval	Park	3	07520, 07528, 07548
Post Medieval	Findspot	1	00399
Post Medieval	Farmstead	28	20895, 22366, 22367, 23334, 25820, 25854, 25855, 25856, 25858, 25859, 25860, 25873, 25890, 25891, 25891, 25892, 25892, 25927, 25932, 25933, 25935, 25936, 25937, 25938, 25939, 25993, 26036, 26059
20th century	Railway	1	06024
	Total	**88**	

ESA Ref	**Report**
ESA3402	1992 Geophysical survey in advance of aggregate extraction at Hay Farm, Eardington by GSB
ESA3403	1992 Evaluation in advance of aggregate extraction at Hay Farm, Eardington by Tempus Reparatum
ESA466	1993 Evaluation at Bridgwalton Farm and East Farm, Underton
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4834	2002 Assessment of 19 Bridges in Shropshire by SCCAS
ESA4928	1993 Excavation in advance of gravel extraction at Hay Farm, Eardington by Tempus Reparatum
ESA4931	1996 Archaeological Survey of Dudmaston by the National Trust
ESA5228	1998-1999 assessment of Morville Quarry extension
ESA5447	1982 Survey of farm buildings on the Dudmaston Estate by National Trust
ESA5476	1992 Desk-based Appraisal of Bridgwalton and Underton Farms in advance of proposed gravel extraction
ESA5477	1992 Fieldwalking Survey at Underton Farm, Bridgnorth in advance of proposed gravel extraction

ESA5532	1992 Fieldwalking Survey at Bridgwalton Farm, Bridgnorth in advance of proposed gravel extraction
ESA5834	2003 inspection of pipeline works at Bridgewalton
ESA6164	2006 Archaeological and historic landscape survey of Morville Hall, Morville, by Archenfield Archaeology Ltd
ESA6508	2003 WB at Bridgwalton Quarry, Morville, by SCCAS
ESA6853	2013 evaluation at Bridgwalton Quarry by Allen Archaeology
ESA6953	2012 DBA & walkover survey on land near Meadowley, Bridgnorth

26 Ludlow

Period	Category	No. in Zone	PRNs
Bronze Age	Ring ditch, Barrow	10	01173, 02036, 02059, 02152, 02153, 03039, 03056, 04056, 04795, 04796
Iron Age / Roman	Field system	1	02150
Iron Age / Roman	Enclosure	8	02059, 02060, 02150, 02153, 02154, 04139, 04179, 04904
Iron Age / Roman	Linear feature	2	02154, 04797
Roman	Building, Roman villa	1	03038
Roman	Road	1	02613
Medieval	Motte & Bailey	1	00165
Medieval	Enclosure	1	08178
Medieval	Church	2	00976, 00980
Medieval	Deserted settlement, field system (R&F)	2	00964, 00966
Medieval	Field system (R&F)	5	04362, 04363, 04649, 04674, 08180
Medieval	Fishpond	1	08179
Medieval	Holy well	1	03203
Medieval	Watermeadow	1	04356
Medieval to Post Medieval	Deserted settlement	1	04650
Medieval to Post Medieval	Bridge	1	03458

Post Medieval	Watermill	2	07058, 15785
Post Medieval	Canal	1	03413
Post Medieval	Railway	2	05093, 05407
Post Medieval	Farmstead	11	22127, 22128, 24029, 24049, 24124, 24138, 24154, 25401, 25405, 25406, 25407
20th century	Horse exercise ring	1	00647
Unknown	Linear feature	1	02151
	Total	**57**	

ESA Ref	**Report**
ESA1580	1884 excavation of Barrow B3, Old Fields, Bromfield, by Charles Fortey
ESA2632	1993 evaluation of the A49 Woofferton Bypass route
ESA2779	1884 excavation of Barrow B4, Old Fields, Bromfield, by Charles Fortey
ESA2804	1884 excavation of Barrow B2, Old Fields, Bromfield, by Charles Fortey
ESA4834	2002 Assessment of 19 Bridges in Shropshire by SCCAS
ESA5083	1997 WB on the Orleton/Wooferton water rising main
ESA5382	2003 WB on a drainage trench at St Peter's Church, Stanton Lacy
ESA6118	2006 tree-ring analysis of roof timbers at All Saint's Church, Culmington
ESA6154	2003 Historical landscape restoration of Bringewood Chase and the surrounding countryside by David Lovelace
ESA6210	2008 field survey of historic farmsteads in the Shropshire Hills area
ESA6313	2009 WB at Lawton Farm, Stanton Lacy, Shropshire by Archaeological Investigations Ltd

27 Haughmond (Stone)

Period	**Category**	**No. in Zone**	**PRNs**
Neolithic	Findspot	1	02643
Neolithic, Bronze Age	Pit circle	1	02683
Iron Age	Hillfort	2	00113, 00135
Iron Age, Roman	Enclosure	3	00492, 02467, 04297

Iron Age, Roman	Findspot	1	02644
Iron Age, Roman	Field system	1	00137
Roman, Medieval	Findspot	1	02682
Medieval	Ringwork	1	00134
Medieval	Abbey	1	00116
(Medieval	Abbey component	8	08267, 08268, 08270, 08271, 08273, 08285, 08286, 08287)
Medieval	Well house	1	04546
Medieval	Garden	1	08290
Medieval	Fishpond, pond, dam	7	00138, 03942, 04092, 08234, 08275, 08276, 08277
Medieval	Field system, Ridge & furrow	1	08274
Medieval	Quarry	1	08272
Post Medieval	Park, Garden	7	04705, 07679, 07706, 08233, 08280, 08282, 08289
Post Medieval	House	1	08235
Post Medieval	Tree enclosure ring	1	01503
Post Medieval	Pond	2	08279, 08281
Post Medieval	Farmstead	10	25588, 25589, 26953, 26955, 26956, 26957, 26958, 26959, 27000, 27001
Post Medieval	Quarry	10	29569, 29570, 29571, 29583, 29584, 29590, 29594, 29597, 29598, 29599
20th century	Military site	1	08295
	Total	**63**	

ESA Ref	**Report**
ESA3446	1994 WB on dredging works at fishpond S of Abbey Precinct, Haughmond Abbey by SCCAS
ESA3446	1994 WB on dredging works at fishpond S of Abbey Precinct, Haughmond Abbey by SCCAS
ESA4292	1944 excavation
ESA4293	1977 excavation

ESA4309	1907 excavations at Haughmond Abbey
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4990	1997 WB on test pits for new amenity block at Camping and Caravanning Club, Ebury Hillfort by SCCAS
ESA4990	1997 WB on test pits for new amenity block at Camping and Caravanning Club, Ebury Hillfort by SCCAS
ESA5022	1999 WB on groundworks at the Camping and Caravanning Club, Ebury Hillfort by SCCAS
ESA5022	1999 WB on groundworks at the Camping and Caravanning Club, Ebury Hillfort by SCCAS
ESA5025	2000 WB on cable trenches for the Camping and Caravanning Club, Ebury Hillfort by SCCAS
ESA5026	1999 Evaluation of proposed works at the Camping and Caravanning Club, Ebury Hillfort by SCCAS
ESA5530	1997 Condition Survey and Archaeological Management Plan for the garden remains at Haughmond Abbey
ESA5749	2002 survey of Haughmond Abbey by English Heritage
ESA5750	1980 survey of Haughmond Abbey ruins
ESA5751	1855 excavations in Haughmond Abbey church
ESA6527	2011 WB at Haughmond Hill Camp by SCAS
ESA6889	2010 management survey on the Longner Estate, Atcham, Shropshire
ESA6904	2011-12 DBA and walkover survey of hillforts in Shropshire

28 Bayston Hill (Stone)

Period	**Category**	**No. in Zone**	**PRNs**
Neolithic, Bronze Age	Findspot	1	00111
Roman	Kiln	1	08135
Roman	Road, trackway	2	00098, 08632
Medieval	Road, trackway	2	01268, 08140
Medieval	Field boundary, Ridge & furrow	2	08146, 08492
Medieval, Post-medieval	Boundary stone	2	08144, 08145
Post-medieval	Quarry	2	08142, 29633
Post-medieval	Farmstead	1	27575

	Total	**13**	

ESA Ref	Report
ESA4737	1976-90 A5 Shrewsbury Bypass Archaeology
ESA4742	1988 Evaluation, A5/A49 Shrewsbury Bypass
ESA4744	1989-91 WBs/ Small Excavations, A5 Shrewsbury Bypass
ESA4762	2001 Desk Based Assessment of proposed extension to Bayston Hill Quarry
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5943	2001 evaluation of proposed quarry extension at Bayston Hill
ESA5944	2001 geophysical survey at Bayston Hill Quarry
ESA6216	2005 archaeological evaluation at Bayston Hill, Nr Shrewsbury, by Laurent Coleman
ESA6261	2008 archeaological earthwork survey at Bayston Hill Quarry, Shrewsbury, by Alan Williams

29 Leaton (Stone)

Period	Category	No. in Zone	PRNs
Iron Age, Roman	Enclosure	1	02354
Roman	Road	1	00099
Medieval	Deserted settlement	2	00705, 00994
Post-medieval	Inn	1	01372
Post-medieval	Garden	1	07763
Post-medieval	Brick kiln	1	03934
Post-medieval	Quarry	3	29622, 29624, 29625
Post-medieval	Farmstead	1	26085
	Total	**11**	

ESA Ref	Report
ESA4280	1962 Overley Hill Sections (Watling St)

ESA4737	1976-90 A5 Shrewsbury Bypass Archaeology
ESA4742	1988 Evaluation, A5/A49 Shrewsbury Bypass
ESA4744	1989-91 WBs/ Small Excavations, A5 Shrewsbury Bypass
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5518	1995 WB on test pits and boreholes along route of proposed Uckington to Cluddley link main
ESA6659	2011 WB at Leaton Quarry, Telford, Shropshire
ESA6858	2012 WB at Leaton Quarry, Telford, Shropshire

30 Much Wenlock (Stone)

Period	**Category**	**No. in Zone**	**PRNs**
Neolithic, Bronze Age	Findspot	1	00923
Bronze Age	Ringditch	2	00627, 02188
Iron Age, Roman	Enclosure	5	00595, 00922, 02187, 04490, 28791
Roman	Findspot	2	0032601800,
Medieval	Deserted settlement	1	00656
Medieval	Field system, Ridge & furrow, Lynchet	2	00922, 04526
Post-medieval	Watermill	2	07311, 15677
Post-medieval	Lime kilns	2	21376, 28248
Post-medieval	Shaft	1	28247
Post-medieval	Engine base	1	28249
Post-medieval	Quarry	16	07254, 07255, 07308, 21238, 21374, 21375, 28244, 28245, 28246, 29359, 29360, 29361, 29362, 29363, 29364, 29821
Post-medieval	Farmstead	10	22215, 22216, 22217, 22218, 22220, 23070, 23075, 23099, 23295, 23960
Post-medieval	Barn	1	21886
Post-medieval	Railway	2	08061, 08447

	Total	**48**	

ESA Ref	**Report**
ESA578	1980 survey by the Ordnance Survey
ESA898	1977 survey by Shropshire County Council
ESA2313	1977 excavation by Shropshire Archaeological & Historical Society
ESA3725	1977 geophysical survey by Shropshire Archaeological & Historical Society
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5172	1996 archaeological survey of Severn Gorge Countryside Trust landholdings
ESA5697	The Nuffield Survey
ESA6078	1984 Investigation of Limestone Mines in the Wrekin area by Wardell Armstrong
ESA6080	1986 Survey of Limestone Mines in the Wrekin Area Report by Ove Arup
ESA6157	1990 Much Wenlock outbuildings survey by Judith Alfrey
ESA6833	1998 historic and cultural land use and landscape assessment of Ironbridge and Coalbrookdale.

31 Craignant & Treflach (Stone)

Period	**Category**	**No. in Zone**	**PRNs**
Unknown	Mound	1	03807
Bronze Age	Standing stone	4	00342, 00348, 00893, 00894
Bronze Age	Ring cairn, Barrow	2	00347, 00349
Iron Age, Roman	Enclosure	2	03808, 04020
Roman	Road	1	00895
Saxon	Boundary dyke	1	01000
Medieval	Field system, Ridge & furrow, Field boundary	5	21390, 28011, 28013, 28316, 28899
Post-medieval	Park, Garden	4	07620, 07631, 07637, 07643
Post-medieval	Trackway	1	00341

Post-medieval	Watermill	2	06622, 15518
Post-medieval	Mill pond, Mill race	4	21026, 21027, 21997, 21998
Post-medieval	Lime kiln	14	21029, 21363, 21364, 21365, 06639, 28455, 28499, 29305, 29311, 29313, 29444, 29445, 29446, 29458
Post-medieval	Quarry	67	06639, 28455, 28499, 29305, 29311, 29313, 29444, 29445, 29446, 29458, 21028, 21366, 21367, 28015, 28522, 28804, 28805, 28806, 28807, 28808, 29300, 29301, 29302, 29303, 29304, 29306, 29307, 29308, 29309, 29310, 29312, 29314, 29315, 29316, 29317, 29318, 29319, 29322, 29323, 29324, 29442, 29443, 29447, 29457, 29469, 29470, 29471, 29475, 29476, 29477, 29478, 29487, 29492, 29493, 29494, 29495, 29496, 29497, 29507, 29509, 30292, 30293, 30515, 30517, 30528, 30529, 3053
Post-medieval	Bell pits	1	04857
Post-medieval	Railway, tramway	2	06630, 07319
Post-medieval	Clearance cairn	7	28328, 28329, 28330, 28331, 28332, 28333, 28334
Post-medieval	Ridge & furrow, Lynchet	3	28012, 28335, 28809
Post-medieval	Racecourse	2	04858, 21025
Post-medieval	Aqueduct	1	21491
Post-medieval	Farmstead	77	21392, 22222, 22223, 22224, 22225, 22228, 22249, 22250, 22251, 22252, 22253, 22254, 22255, 22256, 22257, 22260, 22261, 22263, 22264, 22335, 22336, 26267, 26268, 26373, 26374, 26376, 26377, 26378, 26379, 26380, 26381, 26382, 26383, 26384, 26385, 26386, 26387, 26388, 26389, 26390, 26391, 26392, 26393, 26394, 26395, 26396, 26401, 26402, 26403, 26414, 26415, 26416, 26426, 26430, 26431, 26432, 26433, 26434, 26446, 26447, 26479, 26480, 26481, 26482, 26483, 26484, 26485, 26486, 26487, 26488, 26489, 26495, 26496, 26497, 27980, 27981, 27982
Post-medieval	Outfarm	1	28014

Post-medieval	Barn	2	28327, 28922
	Total	**204**	

ESA Ref	**Report**
ESA3365	1992 evaluation in connection with proposed Pant/ Llanymynech bypass
ESA4823	1998 Evaluation at Selattyn Hill by SCCAS
ESA4823	1998 Evaluation at Selattyn Hill by SCCAS
ESA4828	2002 Stage 1 DBA of Llanymynech - Pant Bypass
ESA5079	1996-1997 excavation and WB on route of Llanforda to Pant pumping main by SCCAS
ESA5080	1995 assessment of the route of the Llanforda-Pant water main by SCCAS
ESA5687	1999 WB on removal of rubble and debris from inside Selattyn Hill Tower
ESA5698	Marches Uplands Survey
ESA5869	2004 WB on extension footings at Craig Forda, Oswestry by CPAT
ESA6166	2002 Stage 2 DBA and walkover survey of Pant - Llanymynech bypass, by Vicki Priest and Patrick Clay
ESA6373	2009 WB on Offa's Dyke by SCAS
ESA6384	2003 WB on Offa's Dyke by Ian Babty
ESA6475	2010 historic building assessment of Pentre Isaf, Trefonen by Nigel Barker
ESA6504	2010 field and condition survey of Brogyntyn Hall parkland and walled garden, nr Oswestry
ESA6591	2006 historical assessment of Pant Glas
ESA6604	1922 Excavation of Offa's Dyke, Baker's Hill, Oswestry
ESA6605	Excavation of Offa's Dyke, Carreg-y-big, Selattyn
ESA6606	Excavation of Offa's Dyke, Orseddwyn, Selattyn
ESA6903	2012 DBA and building recording of Pentre Issa, Trefonen, Shropshire

32 Callow Hill (Stone)

Period	**Category**	**No. in Zone**	**PRNs**
Mesolithic	Findspot	1	03359
Iron Age	Hillfort	1	01048

Medieval	Castle	1	01735
Post medieval	Lead mine	1	06809
Post medieval	Railway	1	01344
Post medieval	Quarry	4	29688, 29794, 29795, 30548
Post medieval	Farmstead	1	22451
	Total	**10**	

ESA Ref	**Report**
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5105	1998 Condition Survey and Archaeological Management Plan for Callow Hill Camp
ESA5105	1998 Condition Survey and Archaeological Management Plan for Callow Hill Camp
ESA5173	1977-1979 survey of mines in South Shropshire mining area, with later updates
ESA5698	Marches Uplands Survey
ESA6904	2011-12 DBA and walkover survey of hillforts in Shropshire

33 Lyth (Stone)

Period	**Category**	**No. in Zone**	**PRNs**
Prehistoric	Findspot	1	01743
Bronze Age	Barrow	1	01744
Iron Age, Roman	Cropmark enclosure	3	02429, 02430, 04918
Roman	Road	2	04346, 08494
Post medieval	Dam	1	01742
Post medieval	Rope walk	1	06832
Post medieval	Park	1	07691
Post medieval	Quarry	4	29666, 29667, 29682, 29683

Post medieval	Farmstead	8	27130, 27146, 27147, 27148, 27149, 27163, 27165, 27219
	Total	**22**	

ESA Ref	**Report**
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA6519	2005 archaeological survey of Lyth Hill Countryside Heritage Site, Shrewsbury, Shropshire

34 Clee Hill (Stone)

Period	**Category**	**No. in Zone**	**PRNs**
Bronze Age	Findspot	2	00426, 03234
Bronze Age	Ring cairn	1	01260
Medieval	Cross	1	03243
Medieval, Post medieval	Standing stone, Boundary marker	2	03242, 03244
Post medieval	Cemetery	1	04734
Post medieval	Brickworks	2	07098, 08039
Post medieval	Bloomery	1	07104
Post medieval	Engine house	1	07086
Post medieval	Reservoir	1	07115
Post medieval	Coal workings	5	07108, 07112, 07114, 08037, 08039
Post medieval	Ironstone workings	2	07108, 07112
Post medieval	Railway, Tramway	3	06264, 07116, 07117
Post medieval	Quarry	14	07074, 07075, 07076, 07078, 07121, 30430, 30434, 30435, 30436, 30437, 30438, 30439, 30440, 30549
Post medieval	Farmstead	3	23007, 23008, 23307
	Total	**39**	

ESA Ref	Report
ESA5371	1983 RCHME Clee Hill Survey
ESA6197	2005-07 DBA and walkover survey of archaeological remains, in particular the mining and quarrying landscape of the Clee Hills, by Jenny Marriot et al

35 Myddle & Grinshill (Stone)

Period	Category	No. in Zone	PRNs
Prehistoric	Findspot	1	01629
Mesolithic	Findspot	1	04726
Neolithic	Findspot	1	08370
Post medieval	Copper mine	1	03782
Post medieval	Quarry	9	06691, 28477, 29521, 29522, 29523, 29526, 29534, 29535, 29542
Post medieval	Farmstead	1	27402
	Total	**11**	

ESA Ref	Report
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA6319	2008 archaeological field survey of Corbet Wood and Grinshill, Shropshire by SCCAS

36 Oswestry Coalfield Coal

Period	Category	No. in Zone	PRNs
Bronze Age	Findspot	1	04253
Iron Age, Roman	Cropmark enclosure	2	01300, 04021
Saxon	Findspot	1	03779
Saxon	Boundary Dyke	1	01000
Medieval	Ringwork	1	00350

Medieval	Moat	3	02862, 03980, 04591
Medieval	House platform	1	04627
Medieval	Enclosure, Field Boundary and Toft	1	04754,
Medieval	Ridge & furrow	7	04409, 04590, 04592, 20974, 20975, 20976, 20977
Medieval	Road	1	05785
Post medieval	Findspot	1	02825
Post medieval	Park, Garden	7	07620, 07621, 07631, 07637, 07639, 07640, 07643
Post medieval	Pond	1	06623
Post medieval	Water mill	7	06531, 15519, 15521, 15585, 15805, 15806, 15807
Post medieval	Mill pond, Leat, Mill race, Weir	6	21576, 21579, 04855, 21575, 21574, 21578
Post medieval	Field system, Enclosure, Ridge & furrow	4	20928, 04628, 20925, 21587
Post medieval	Road	2	05844, 21581
Post medieval	Pottery	1	04277
Post medieval	Brick works	1	06532
Post medieval	Coal workings	5	04276, 04644, 04856, 06631, 28315
Post medieval	Water works	1	06533
Post medieval	Farmstead	39	26397, 26421, 26422, 26423, 26424, 26425, 26435, 26436, 26437, 26438, 26439, 26440, 26441, 26442, 26443, 26453, 26459, 26460, 26461, 26474, 26475, 26476, 26477, 26478, 26491, 26492, 26493, 26505, 26506, 26507, 26510, 26511, 27094, 27095, 27096, 27098, 27099, 27106, 27107
Post medieval	Outfarm	1	28824
Unknown	Enclosure	1	04751,
Unknown	Enclosure, drainage ditches	1	04756
	Total	**97**	

ESA Ref	Report
ESA3421	1993 evaluation in advance of proposed housing development by SCCAS
ESA5079	1996-1997 excavation and WB on route of Llanforda to Pant pumping main by SCCAS
ESA6203	2005 DBA and field survey of the area around the Pontcysyllte and Chirk aqueducts by Dr David Gwyn
ESA6464	1992 Field survey and excavation of Wat's Dyke by Gifford & Partners
ESA6465	1992 WB on the Whittington-Oswestry water main installation
ESA4828	2002 Stage 1 DBA of Llanymynech - Pant Bypass
ESA5079	1996-1997 excavation and WB on route of Llanforda to Pant pumping main by SCCAS
ESA5080	1995 assessment of the route of the Llanforda-Pant water main by SCCAS
ESA5698	Marches Uplands Survey
ESA6166	2002 Stage 2 DBA and walkover survey of Pant - Llanymynech bypass, by Vicki Priest and Patrick Clay
ESA6504	2010 field and condition survey of Brogyntyn Hall parkland and walled garden, nr Oswestry
ESA6742	2010 DBA and walkover assessment along proposed Vyrnwy pipeline (Oswestry to Penley) by Oxford Archaeology North
ESA6876	2012 DBA & walk-over survey at Oswestry Low Level Service Reservoir
ESA6886	2011 DBA and building recording at Nant Farm, Morda, Shropshire

37 Brown Clee (Coal)

Period	Category	No. in Zone	PRNs
Neolithic	Findspot	1	02600
Bronze Age	Cairn	2	00599, 02586
Iron Age	Hillfort	2	00181, 00182
Medieval	Enclosure	1	08724
Medieval	Park	1	07510
Medieval	Pond	1	02591
Post medieval	Coal working	3	06986, 06990, 06996
Post medieval	Iron working	1	06992

Post medieval	Inclined plane	1	08466
Post medieval	Quarry	3	06987, 06997, 30123
Post medieval	Farmstead	1	23701
	Total	**17**	

ESA Ref	**Report**
ESA4485	1928 excavation
ESA6904	2011-12 DBA and walkover survey of hillforts in Shropshire

38 Caughley (Coal, Fireclay)

0Period	**Category**	**No. in Zone**	**PRNs**
Medieval, Post medieval	Deserted settlement	1	21380
Medieval, Post medieval	Park	1	07554
			07556
Post medieval	Park	1	
Post medieval	Pottery	1	04316
Post medieval	Waster tip	1	08504
Post medieval	Earthwork	1	04002
Post medieval	Coal working	4	08501, 08502, 08505, 28578
Post medieval	Pond	1	28575
Post medieval	Railway	1	08506
Post medieval	Farmstead	5	26108, 26109, 26110, 26142, 26144
	Total	**17**	

ESA Ref	**Report**
ESA3283	1979 survey by the Ordnance Survey
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5137	1987 evaluation of the saggar works in advance of opencast extension
ESA5149	1998 Assessment of Caughley Quarry in advance of quarry extension by IGMT

ESA6078	1984 Investigation of Limestone Mines in the Wrekin area by Wardell Armstrong
ESA6080	1986 Survey of Limestone Mines in the Wrekin Area Report by Ove Arup
ESA6086	1990 DBA of limestone workings in the Wrekin area: Caughley by Ove Arup
ESA6345	2003 excavation at the Saggar Works, Caughley, by Chris Robinson
ESA6535	1997 DBA and site visit of Broseley and its environs
ESA6833	1998 historic and cultural land use and landscape assessment of Ironbridge and Coalbrookdale.

39 Little Wenlock (Coal)

Period	Category	No. in Zone	PRNs
Post medieval	Farmstead	1	22314
	Total	**1**	

ESA Ref	Report
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA6080	1986 Survey of Limestone Mines in the Wrekin Area Report by Ove Arup
ESA6833	1998 historic and cultural land use and landscape assessment of Ironbridge and Coalbrookdale.

40 Benthall (Coal)

Period	Category	No. in Zone	PRNs
Post medieval	Park	1	07506
Post medieval	Pottery	1	03982
Post medieval	Waster tip	1	28241
Post medieval	Farmstead	1	27726
	Total	**4**	

ESA Ref	Report
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA5697	The Nuffield Survey

ESA6078	1984 Investigation of Limestone Mines in the Wrekin area by Wardell Armstrong
ESA6080	1986 Survey of Limestone Mines in the Wrekin Area Report by Ove Arup
ESA6172	2007 DBA, walkover survey and evaluation at Morris Corfield & Co. Ltd, Benthall, by Mercian Archaeology
ESA6213	1998 WB on the Broseley to Much Wenlock rural mains pipeline, by H Hannaford & P Williams
ESA6254	2008 Excavation and test pitting at Morris Corfield & Co. Ltd, Benthall, by Mercian Archaeology
ESA6535	1997 DBA and site visit of Broseley and its environs
ESA6550	2008 Photographic recording at Morris Corfield & Co. Ltd, Benthall, by Mercian Archaeology
ESA6833	1998 historic and cultural land use and landscape assessment of Ironbridge and Coalbrookdale.

41 Titterstone Clee (Coal)

Period	**Category**	**No. in Zone**	**PRNs**
Unknown; Prehistoric	Findspot	1	03236
Bronze Age	Findspot	1	03237
Bronze Age	Standing stone	1	03292
Post medieval	Field system; Field boundary; Ridge & furrow	2	20823, 20824
Post medieval	Tree	1	03239
Post medieval	Stepping stones	1	03241
Post medieval	Pottery	2	07083, 07084
Post medieval	Glass works	1	07102
Post medieval	Brickworks	7	07080, 07081, 07082, 07085, 07088, 07092, 08039
Post medieval	Iron works	1	07087
Post medieval	Iron stone working	2	07112, 07122
Post medieval	Coal working	17	07112, 04625, 07105, 07106, 07107, 07109, 07113, 07119, 07120, 07124, 07126, 08036, 08037, 08039, 28878, 28881, 28882
Post medieval	Mound, mining remains	2	20821, 20822
Post medieval	Quarry	3	07074, 07121, 30414

Post medieval	Smallholding	2	21357, 28682
Post medieval	Farmstead	33	22949, 22951, 22952, 22953, 22955, 22996, 22999, 23000, 23001, 23002, 23003, 23006, 23076, 23077, 23078, 23079, 23080, 23081, 23082, 23121, 23129, 23130, 23131, 23223, 23226, 23229, 23309, 23324, 23547, 23551, 23559, 23561, 23562
	Total	**77**	

ESA Ref	Report
ESA3420	1993 evaluation in advance of proposed coal extraction
ESA5004	1997 survey of land at Knowbury by SCCAS
ESA5092	1999 WB on drainage works at St Paul's Church, Knowbury by Marches Archaeology
ESA5371	1983 RCHME Clee Hill Survey
ESA6197	2005-07 DBA and walkover survey of archaeological remains, in particular the mining and quarrying landscape of the Clee Hills, by Jenny Marriot et al

42 Granville (Coal)

Period	Category	No. in Zone	PRNs
Post medieval	Canal	1	03407
Post medieval	Iron works	1	03898
Post medieval	Brickworks	2	07218, 07220
Post medieval	Farmstead	1	27888
	Total	**4**	

ESA Ref	Report
ESA4787	1994-1999 Wroxeter Hinterland Project
ESA4863	1998 condition survey and archaeological statement for Granville Nature Reserve
ESA5129	1988 WB and building recording during landscaping of Granville Park
ESA5130	1987 assessment and field survey of Granville Country Park in advance of landscaping
ESA6039	2004 DBA of land at Granville Woodhouse Landfill Site by Archaeological Solutions

ESA6078	1984 Investigation of Limestone Mines in the Wrekin area by Wardell Armstrong
ESA6080	1986 Survey of Limestone Mines in the Wrekin Area Report by Ove Arup