



# Creswell Crags Limestone Heritage Area Management Action Plan

Non-technical Summary

March 2004

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## PREFACE

The Creswell Crags Limestone Heritage Area Management Action Plan was commissioned by English Heritage, and funded by the Aggregates Levy Sustainability Fund.

The project was commissioned in response to a project proposal from Creswell Heritage Trust who also prepared the brief for the work and managed the project.

The work on the project was undertaken by ARCUS, Groundwork Creswell and Creswell Heritage Trust. ARCUS undertook the archaeological and landscape history elements of the project. The access study was undertaken by Groundwork Creswell and Creswell Heritage Trust with Groundwork Creswell undertaking the study on the physical and visual access and Creswell Heritage Trust reporting on the intellectual access.



# NON TECHNICAL SUMMARY

## 1 Introduction

The Creswell Crags Limestone Heritage Area Management Action Plan outlines an innovative, integrated archaeological, palaeontological, ecological and access Management Action Plan for the main limestone vales and gorges within the Creswell Crags Limestone Heritage Area (the southern Magnesian Limestone Natural Area).

The Management Action Plan forms the second stage of a three stage programme that will result in major improvements to cultural and natural heritage conservation and access across the southern Magnesian Limestone.

### Stage 1

The first stage of the programme involved the production of the Creswell Crags Conservation Plan (2001) and the Creswell Limestone Strategy (2000). The current proposed Management Action Plan responds to policies and actions set out in these documents.

### Stage 2

The second stage is the production of the Management Action Plan. The Management Action Plan comprises several elements which are being undertaken in two phases.

Phase A, has been completed and forms the basis of this report. Phase A was concerned with archaeology, GIS, access and management action proposals were drawn up in relation to these issues.

Phase B will deal with the ecological study and revision of the access and the management action proposals to take into account the results of the ecological study.

### Stage 3

The third stage will involve the implementation of key action plan proposals through a range of mechanisms including local partnerships, community groups, and New Deal programmes.

## 1.1 Project Elements

The proposals for the Management Action Plan were divided into six main areas listed below:

- 1 GIS for the Creswell Heritage Area.
- 2 Outline archaeological/palaeontological sensitivity study.
- 3 Consolidation and stabilisation of the national collection and archive of Ice Age archaeological material from the Heritage Area.



- 4 An ecological potentiality study, to be undertaken in Phase B of the Management Action Plan.
- 5 An intellectual, physical and visual access study.
- 6 Production of integrated conservation statements and management action proposals.

## **1.2 Project co-ordination**

Phase A of the project was managed by Creswell Heritage Trust and was implemented by ARCUS, Groundwork Creswell and Creswell Heritage Trust.

## **1.3 Background**

### **1.3.1 Landscape, wildlife and habitats**

The Magnesian limestone runs in a narrow belt from Nottingham to the north east of England around Tynemouth. English Nature recognise the section from Nottingham to North Yorkshire as a distinct 'natural area'. The Creswell Crags Limestone Heritage Area and Creswell Limestone Strategy Area cover the southern third of this area.

Magnesian limestone is a relatively soft rock that weathers easily. In the Creswell Limestone Heritage Area weathering has formed a plateau with rounded hills and dry valleys, cut by a number of sharply defined vales and gorges with caves and crags. The steep valley sides with cliffs in association with narrow river corridors create a strong sense of visual confinement. Areas of unimproved pasture and grazing meadows, often with patches of wet grassland, are a recurring feature of the gorges.

Due to intense agricultural exploitation of the plateau, areas of wildlife interest are largely restricted to oases of high species diversity associated with the limestone gorges and vales. Because of their relative scarcity and high quality, it is particularly important that these sites are protected. The vales and gorges contain Magnesian limestone grassland, a nationally scarce habitat listed on the EC Habitats and Species Directive (1992) as a habitat type of Community Interest, and fine examples of semi-natural broadleaved woodlands recognised as being of national importance for their plants and animals.

Several of the limestone gorges that characterise the area are Regionally Important Geological Sites (RIGS), coinciding closely with the important Pleistocene sites, areas of rare Magnesian Limestone grassland and fine examples of semi-natural broadleaved woodlands.

### **1.3.2 Ice Age archaeology and palaeontology**

The area contains several Ice Age archaeological sites of which four are Scheduled Ancient Monuments. They represent a significant proportion of the Scheduled Ancient Monuments of this period in Britain. Archaeological exploration of the area began in the mid nineteenth century and has continued through to the present day.

For the purposes of this report Ice Age archaeology includes the archaeology of the Palaeolithic and Mesolithic periods. The Palaeolithic covers the period from the first human occupation in Britain through to the end of the last ice age around 10,000 years ago. The Mesolithic covers the period immediately after the last ice age. Both the Palaeolithic and Mesolithic periods are characterised by mobile hunting societies.



As well as the sites with human occupation there are several caves and rock shelters that containing palaeontological material from the ice age, these sites have no human input into them but they are also important as they contain the bones from the animals that lived in the area during the ice age including woolly mammoth, reindeer, bison, woolly rhinoceroses, hyenas, bears and wild horses. These palaeontological sites are important as they can be used to identify the animals that lived in the area during the ice age and so put the human activity in the area in context.

### **1.3.3 The modern cultural and organisational landscape**

The whole of the Heritage Landscape Area lies at the heart of the economically depressed former coalfield. Long term conservation and development of the Ice Age scientific and educational resource is threatened by the continuing poor economic, social and environmental conditions that many of the communities continue to face and by the limited understanding and appreciation of the distinctive cultural and natural heritage by local people and by decision makers.

These conditions affect external perceptions of the area, are a break on inward investment, encourage vandalism and neglect and provide conditions for inappropriate development and use. There is the potential for the natural and cultural heritage to act as a catalyst for a new vision of the future of the area, creating a high quality sustainable natural and cultural environment and encouraging inward investment.

Strategic planning is made difficult by the location of the Heritage Area on the boundaries of three County or Unitary Authority areas and the diversity of administrative units that result. Organisations such as the Groundwork and Heritage Trusts that work across these boundaries are of particular value in acting as catalysts for partnership working and strategic planning.

### **1.3.4 Extent of the Creswell Limestone Heritage Area**

There are 11 main vales and gorges within the Creswell Crags Limestone Heritage area and all of these have been included in the study of the management action plan except Creswell Crags which was covered in some detail in the Creswell Crags Conservation Plan. The main limestone vales and gorges are:

Roche Abbey Vale

Firbeck Valley

Anston Stones and Lindrick Vale

Red Hill Valley

Thorpe Common and Lob Wells Wood

Ash Tree Gorge

Markland and Hollinhill Grips

Creswell Crags

Elmton and Whaley Valleys

Langwith Vale

Pleasley Vale



## **2 A unified GIS for the Creswell Crags Limestone Heritage Area**

### **2.1 Introduction**

The location of the Creswell Heritage Area on the boundaries of three County or Unitary Authority areas and three District Councils has complicated strategic planning for conservation management, including landscape character assessment and nature conservation. To improve the conservation management of the Heritage Area and support natural and cultural heritage based regeneration projects a unified GIS index was developed. The partner organisations for the GIS are:

Nottinghamshire County Council

Derbyshire County Council

Rotherham Metropolitan Borough Council

South Yorkshire Archaeology Service

### **2.2 Aims**

The aims of the unified GIS were:

- to share information between the different local authorities that deal with the Creswell Crags Limestone Heritage Area.
- to enable the different local authorities to develop their management of the area based on knowledge and understanding of the whole of the Creswell Crags Limestone Heritage Area.

### **2.3 Methodology**

The production of a usable, integrated GIS index for the Creswell Crags Limestone Heritage Area comprised four elements:

- 1) construction of a demonstration system.
- 2) agreement of protocols for operating the system.
- 3) setting up the system.
- 4) maintenance of the system (ongoing).

Elements 1 to 3 have been completed and element 4 relates to the ongoing management and updating of the system.

Nottinghamshire County Council have taken on responsibility for developing and managing the GIS. Subject to the reliability of the data provided, Nottinghamshire County Council guarantee the integrity of the resultant index and maintain the confidentiality of the system to the participating organisations. They will distribute copies of the GIS to all the partner organisations, these being the only bodies who have access to the GIS under the currently agreed protocols.

#### **2.3.1 Structure of the system**

The GIS index is based on Mapinfo and has the following attributes:



- all sites will ideally be marked with as boundary polygons, but points will be included where boundary polygons are not available ;
- the index will have two layers, one for statutory designated sites and one for other types of sites.

Four fields are recorded for each site:

Site reference number – designated by originator

Site name – designated by originator

Type of site – e.g. SAM, SMR, SSSI, NNR

Contact – who to contact for further information, i.e. which partner organisations holds the full record.

## **2.4 Results**

The development of the unified GIS has produced a working system that can be used by all the partner organisations. The basic aims of the system were outlined above but further development of the system will depend on the value of the system to the partner organisations and potential further developments they identify.

## **2.5 Recommendations**

For the GIS to have continuing value it is necessary that it is updated regularly. This will be undertaken by Nottinghamshire County Council. It is proposed that annual updates to the system are organised by Creswell Heritage Trust and Nottinghamshire County Council who will contact the partner organisations for relevant new information.



### **3 Identification and assessment of management Issues relating to the known sites**

#### **3.1 Introduction**

The Creswell Crags Limestone Heritage Area is well known for its Ice Age archaeology and this chapter examines the condition and management of known and potential Palaeolithic and Mesolithic sites within the area. The sites examined are those in the vales and gorges that were identified in the Creswell Crags Conservation Plan and its gazetteer, and those sites identified in the survey undertaken here.

#### **3.2 Aims**

The aims of the identification and assessment of management issues were:

- through desktop research, supported by field visits, to identify and record information relating to ownership, condition, management (including habitat management), issues, threats and access.
- identify, agree and cost proposals to improve conservation, management and access.

#### **3.3 Methodology**

The methodology for this study involved two stages:

- identifying the condition of each site and its surroundings,
- making recommendations as to the management of the sites.

To identify the management issues relating to the sites required that the condition of each site was identified. This was undertaken by means of a sensitivity study following a methodology similar to that used on the study of Creswell Crags Gorge by Collcutt and Johnson (1999). The sensitivity study assesses the potential archaeological value of a site and its vulnerability to damage. These factors are then combined to give the overall the sensitivity of the site. There were two elements to the sensitivity study, a desk based study and a field survey. In the desk based study, archives and published works were searched for information relating to any of the known sites. In the field survey a walk-over survey was undertaken of all the vales and gorges, all rock faces were examined and all caves, rock shelters and rock faces were recorded and photographed. Maps were produced of all the valleys showing all the sites identifies. A database was produced describing each cave, rock shelter or section of rock face, this incorporated all relevant data recorded via the desk based study or the field survey.

On completion of the fieldwork and database the condition of each site was considered and strategies developed for the long term management of all the sites.

#### **3.4 Results**

In general most of the sites were in good condition with little evidence of ongoing damage to the sites. However, several different processes that had or could cause



damage were identified. These had operated in the past, were ongoing or had the potential to cause damage in the future.

quarrying - there was evidence of quarrying in several areas in the past.

vandalism –was ongoing in some areas, this included graffiti on rock faces and fires lit in caves or rock shelters.

rubbish dumping or littering – there were old rubbish dumped in some areas, and there were several caves or rock shelters where littering was currently taking place.

farming – ploughing was cutting close to the base a of a few rock faces, however, this was unusual as arable fields were rare in the vales and gorges.

erosion – visible erosion was not common but this could occur where footpaths ran along the base of rock faces.

animal activity – animal holes were present on some sites, these included badger setts, rabbit burrows and rat holes. Although not widely distributed they can be very damaging to individual sites where they exist.

root activity – Many of the vales and gorges contained woodland, particularly on or near the rock faces. The roots from trees and bushes can disturb and damage buried archaeology. In some vales and gorges the woodland is expanding as the bottoms of the vales and gorges are no longer used for pasture.

## **3.5 Recommendations**

The management recommendations were drawn up in the office following completion of the fieldwork. These recommendations fall into four groups,

### **3.5.1 Immediate Actions**

These are actions taken to remediate immediate threats to sites or specific problems that need special attention in the public education or monitoring programmes.

### **3.5.2 Public Education**

This involves informing the public about the importance of the sites and educating them as to what can damage the archaeological potential of a sites. This information will be aimed at land owners, councils, and visitors. It will also provide contact information where the public can report problems or get advice.

It is proposed that a short management guide is produced for each valley this will include the following sections:

1. Background to the Creswell Crags Limestone Heritage Area.
2. The nature and importance of Ice Age archaeology, this would describe the nature of the archaeology, the types of sites and what it can tell us.
3. A description of the sites in the valley.
4. An explanation of what processes could damage the archaeology and natural environment. This will cover such issues as natural erosion, land use, farming practices, rubbish tipping, informal footpaths, vandalism and fire lighting.



5. Recommendations for best practice in looking after the sites and their environment. This will cover such issues as maintenance (removal of rubbish and graffiti), site use, access and management. These recommendations will cover all sites whether on farmland, in a garden or in woodland.
6. Contacts to report damage or get further advice. This will include county archaeologists for concerns about planning issues, English Heritage for general advice on archaeology and Creswell Heritage Trust for reporting concerns about the condition of sites unless they are scheduled in which case it should be English Heritage. In some cases the contacts could include land owners or managers if they are councils or wild life trusts.

### **3.5.3 Monitoring**

This involves a long term programme of regular monitoring visits to look for changes to sites that will impact on the archaeological/palaeontological potential of site.

This long term monitoring will aim:

- to check up on any reports of damage received from members of the public,
- to identify any damage that has occurred to the sites since the last visit,
- to identify any human actions that may be detrimental to the sites through disturbing deposits or encouraging erosion,
- to identify any threats to the site from ongoing natural erosion,
- to identify any threats to the sites from animals or plant roots,
- to identify any other threats to the sites,
- to make recommendations for any actions required to protect the sites.

### **3.5.4 Protection through the planning process.**

Protection of archaeological sites from development is undertaken through the planning process. Planning Policy Guidance Note 16, Archaeology and Planning, provides the framework by which this is undertaken. Under this process the state of current knowledge is a key factor in informing the planning authorities deliberations. These determine whether evaluation is required before determination or whether mitigation is required before or during development. By providing copies of the Management Action Plan including the survey database and maps to the local council archaeological officers their knowledge of the Palaeolithic and Mesolithic archaeological potential of the vales and gorges in the Creswell Crags Limestone Heritage Area will be considerably enhanced. This will enable the council archaeological officers to give more informed advice to the planning authority on the caves and rock shelters and their archaeological potential. This in turn will enhance the protection and management of the cave and rock shelters to preserve them over the long term.



## **4 Predictive Modelling for the existence and location of other potential Palaeolithic/Pleistocene period sites**

### **4.1 Introduction**

There is a need to establish the potential of the Creswell Crags Limestone Heritage Area for further research, and to develop a coherent research framework within which such research can be carried out. By identifying the significance of the area for Quaternary, assessment of research potential will also help to protect the scientific resource by contributing to strategic planning and management and contribute to the significance of Creswell Crags as a centre for promoting awareness and understanding of Quaternary environments.

In order to develop a research framework it is first necessary to assess the character of the surviving sites. This chapter attempts to use predictive modelling to assess the archaeological and palaeontological research potential of the cave and rock shelter sites in the Creswell Crags Heritage area. In the model previously investigated sites are used as a control with which to compare previously uninvestigated sites.

The predictive modelling can not be used on open air sites as there are no control sites and no specific potential sites. Instead a more speculative approach based on desk-top research and consideration of the potential preservation of Pleistocene and early Holocene deposits in the valley bottoms was applied.

### **4.2 Aims**

The aim of the predictive model is to identify all the known and potential cave and rock shelter sites in the main limestone gorges and to assess the potential of these sites to contain archaeologically significant remains.

The predictive modelling has three aims:

- To assess what environmental/site characteristics can be used to assess the research potential of cave and rock shelter sites.
- To use the environmental/site characteristics to develop a predictive model that can be used to assess the archaeological and palaeontological research potential of cave and rock shelter sites.
- Through desk-top research to assess the potential for the existence of open air sites in and around the vales and gorges.

### **4.3 Methodology**

Data for the predictive model was collected from two sources a desk based study and a field survey. In the desk based study archives and published works were searched for information relating to any of the sites. In the field survey all caves and rock shelters were examined and various environmental and physical attributes relating to the sites were recorded. A database was produced describing each cave or rock shelter. The database was combined with the database from the sensitivity survey. These were combined for two main reasons:



- much of the data was duplicated in the two studies and combining the two databases minimised data inputting.
- management of the database is simplified, as any additions or alterations to the database will only have to be done once

The information in the database was then transferred to a standard statistical analysis program (SPSS) for analysis. The analysis involved two stages. The first stage was examination of the data to determine its integrity and to identify what attributes appeared to relate to possible human use of the sites. The second stage was to build the predictive model, this was undertaken using Discriminant analysis.

As there are no known open air sites from the ice age in the area the assessment of the potential for open air sites was undertaken through a desk based study that attempted to identify areas that had the potential to contain geological deposits that could contain ice age archaeological sites.

## **4.4 Results**

### **4.4.1 Statistical Analysis**

The field survey increased the number of known or potential cave and rock shelter sites from 50 to 163. The statistical analysis compared the sites that have been investigated by excavation with those that have not. This means that there were three groups of sites in the analysis, investigated sites with archaeology, investigated sites without archaeology, uninvestigated sites.

During the first stage of the statistical analysis, determining the integrity of the data and to identifying the attributes that appeared to relate to possible human use of the sites, the following observations were made:

- This comparison of archaeological, non archaeological and uninvestigated sites shows that there are few obvious major differences in the topographic or environmental location between those sites that are archaeological, non archaeological or uninvestigated.
- Archaeological cave sites tend to exclude the long deep caves. They also tend to have entrances around 5m<sup>2</sup>, avoiding the very large or small entrances.
- The archaeological rock shelters cover the full range of sizes identified whereas all the non archaeological rock shelters identified were small. This possibly suggests that large rock shelters were more likely to have been used by humans in the past.
- There is no identified relationship between the altitude of the site and human occupation though there may be relationships within valleys that are obscured by the varying altitudes of the valleys.
- Investigated archaeological and non archaeological caves tend to be high on the valley side. However, the highest number of uninvestigated sites are located at mid level on the valley side. This demonstrates that previous excavations have focused disproportionately on high level sites, possibly for reasons of easier access/visibility.



- There is the suggestion that for uninvestigated and non archaeological sites the site aspects tend to be towards the south while for archaeological sites it tends to be towards the north.
- There is no identified relationship between archaeological sites, non archaeological sites and light zone extent.
- There was no significant variation in the distribution of valley side slope angles for archaeological, non archaeological and uninvestigated sites, with the exception of slopes below sites where a difference between the slope angles for archaeological and uninvestigated sites was identified. The histogram for slope below for uninvestigated sites had peaks at 0° and 35° while the histogram for archaeological sites showed a spread over the whole range with a small peak at 35°. The small sample size of investigated sites should, however, be taken into consideration.
- As virtually all the sites are near to a water supply there is no identified relationship between water supply and site use.

#### **4.4.2 Predictive Model**

In the predictive modelling two models were developed, one just covering the caves and one incorporating all the caves and rock shelters.

In assessing the results of the predictive models one must take into account the problems with predictive modelling and the small sample size of investigated sites available to develop the models. However, despite these reservations, the results are very similar, with both models suggesting that the majority of sites, around 75-85%, have the potential to contain archaeology. This appears to be very high but is not dissimilar to the number of investigated sites known to contain archaeology (65%).

There were 17 sites in the analysis that were included in both the Caves Predictive Model and the All Sites Predictive Model. Of these, all but three were classified in the same way in both models which means that 82% received the same predicted group membership in both models. This demonstrates a high degree of agreement between the two models despite one model having four times as many cases in it and some of the variables differing between the models.

Overall it would appear from the results that most sites have a high potential to contain archaeology. The proportion of sites suggested as having the potential to contain archaeology is much higher than recorded in other surveys, where between 14% and 29% were found to contain archaeology. It is possible that this is partly due to a lack of reporting of sterile excavations by early. The excavated sites might also be a biased sample and not representative of all the sites, as excavators generally choose the most promising sites. However, it might be due to the character of the Magnesian Limestone where the caves generally occur in discrete groups in the vales and gorges, often in very close proximity. This may result in caves being used differently in this area resulting in a greater proportion of sites being used than in the rest of the country.

#### **4.4.3 Open air Sites**

From the study of the potential for open air sites it has been possible to identify which valleys contain drift geology that could bury archaeological remains. This, combined with the background archaeological information, has been used to produce a simple



model of the potential of each valley to contain open air sites. The model produced is qualitative rather than quantitative and should be seen as a guide to potential rather than as a predictive model.

The model assessed the potential for different types of open air sites on a scale from high to low. In assessing the potential for archaeological deposits or remains to survive the following principals were followed. If an appropriate location exists and finds are known from the locality the potential is deemed to be high. If an appropriate location exists but no finds are known from the locality the potential is deemed to be moderate. If no appropriate location exists the potential is deemed to be low. The potential preservation conditions within deposits were also considered as were potential human impacts on the valley bottom deposits.

The vales and gorges with the highest potential were assessed as Thorpe Common and Lob Wells Wood, Elmton and Whaley Valleys, and Langwith Vale, lesser though still significant potential was identified in Roche Abbey Vale, Ash Tree Gorge, Markland Grips and Pleasley Vale.

## **4.5 Recommendations**

To investigate the reliability of the predictive model it is necessary to test it by investigating some of the sites used in the model to see if their predicted group membership is correct. This would increase the sample size for investigated sites, allowing the model to be refined. It is proposed that a programme of test pitting is used to investigate a number of sites. These would help to establish the presence or absence of archaeology, and the date of any archaeological remains.

Due to the limited nature of the data on which the assessment for the potential for open air sites was undertaken this is currently a guide to the potential rather than predictive model. To take this study further deposit models would be required for each vale or gorge. These would describe the sequence of deposits in the valley bottom and identify those that have the potential to contain Ice Age archaeology. To undertake this further work more borehole data would be required for the vales and gorges.



## **5 The impact of later human activities on the vales and gorges**

### **5.1 Introduction**

This chapter examines the impact of human activity within the gorges, primarily from the medieval period onwards, although mention is made of human impacts from the prehistoric period. The study was undertaken through a combination of desk-based research and rapid field survey, and was designed to provide an general overview of the landscape development for the whole area, as well as a more detailed study of each gorge and vale.

### **5.2 Aims**

The aim of this study was to identify the principal agencies that have shaped the development and current landscapes of the gorges and vales. The study was designed to enable a series of landscape types to be characterised for each gorge, which would set the present land use and management into its historical context, and enable the impacts of these past and present land uses upon the prehistoric landscapes and features to be assessed.

### **5.3 Methodology**

The study was undertake through a combination of desk based study and field survey. The desk based study made use of the landscape characterisation studies previously undertaken by Derbyshire County Council and Nottinghamshire County Council. Further information was obtained from historic maps particularly on the Rotherham area where a landscape characterisation study has not been undertaken.

The desk-based assessment was enhanced through a programme of rapid field survey. The aim of the field survey was to gain a feel for the general character of the gorges, identify and illustrate particular instances of human impact of different types, and provide a baseline against which to assess the information gathered during the desk-based assessment.

### **5.4 Results**

A general overview of the landscape development for the Creswell Crags limestone Heritage Area was produced. This described the processes and land uses that have shaped the current landscape and how it has developed over time. This identified that the gorges and vales lie within a distinctive limestone landscape, the character of which has been shaped by its underlying geology and natural formation processes, as well as human activity from the Palaeolithic period onwards. A wide range of landscape types including ancient woodland, river meadowlands, agricultural land, designed parklands, settlements, transportation networks, minerals extraction and industrial complexes are present in the area.

On a smaller scale of analysis, the gorges themselves are remarkably diverse, containing between them a representative sample of all the land use types and impacts of human activity discussed above. The human impacts upon the gorges vary greatly, from those which appear relatively unchanged (except for variations in tree cover and the use of open land) to those which have been severely impacted by quarrying and the imposition of industrial infrastructure. Considered as a group, the gorges comprise a valuable amenity resource, comprising a palimpsest of the changing landscape through time, up to the present day.



More detailed analysis was undertaken for each vale or gorge with the main historical influences or items of historic interest highlighted.

Vale or Gorge	Main historical influences or items of historic interest.
Roche Abbey Vale	Rock shelters in Seed Hill Wood Roche Abbey ( <i>Cistercian monastery</i> ), associated designed landscape and ghost stories Nor Wood ( <i>limestone woodland</i> ) Stone Mill and Mill farm ( <i>possible medieval foundations</i> )
Firbeck	Part of designed parkland, including traces of water features. ( <i>link also to St Leger family, and gallops still preserved in field boundary nearby</i> ) Firbeck military airfield
Anston Stones Wood and Lindrick Dale	Rock shelters and caves in Anston Stones Limestone woodland in Anston Stones Railway in Anston Stones Rock shelters and landscaped gardens in Lindrick Dale Site of mill and ponds in Lindrick Dale
Red Hill	Possible Roman fort and road Chesterfield Canal
Thorpe Common and Lob Wells Wood	Moor Mill Farm and remnants of water power features
Ash Tree Gorge	
Markland Grips	Iron Age hillfort Limestone woodland Upper Mill Farm and water features Railway: site of viaduct across valley, and Clowne Linear Park
Elmton and Whaley Valley	Medieval settlement/farms and earthworks Scarcliffe Park ( <i>medieval earthworks, coppicing</i> ) Site of blast furnace Mill ponds
Langwith Vale	Possible medieval site Langwith Wood ( <i>medieval deer park</i> ) Railway cutting
Pleasley Vale	Pleasley Park ( <i>medieval deer park</i> ) Little Matlock Pleasley forges ( <i>sites of</i> ) Pleasley Mills ( <i>quarrying, mill buildings, water power</i> ) Pleasley Colliery and railway

## 5.5 Recommendations

It is proposed that the Historical Landscape Research is expanded to give more detail on the wider landscape. This aims to add flesh to the bones of the story of the landscape and to provide a resource for future management and interpretation.



## **6 Intellectual, physical, and visual access study**

### **6.1 Introduction**

Long term, high quality conservation of the natural, man-made and educational resource of the Heritage Area is dependent on those who have an impact on it understanding and appreciating its distinctive value. This applies to local people, visitors, land managers and decision makers alike. The high quality cultural and natural heritage is undervalued and this lack of appreciation can lead to neglect, vandalism and provide conditions for inappropriate development. The Heritage Area is further threatened by the continued poor economic, social and environmental conditions that much of the area faces.

Conversely there is enormous potential for the natural and cultural heritage of the area to act as a catalyst for a new vision for the future of the area, creating a high quality and sustainable environment that local people can be proud of and that visitors can enjoy and appreciate.

To maximise this potential there is a need to link management and improvement of the cultural and natural heritage with physical, visual and intellectual access opportunities. Identification of opportunities for interpretative and education use, together with the access improvements and the development of events, guides and teaching resources will enable local people and visitors to experience and value the Heritage Area.

### **6.2 Aims**

The aims of this part of the study were to Identify and assess opportunities for consolidating and improving intellectual, physical and visual access to the Palaeolithic/Pleistocene and other natural and man-made resource for local people and for visitors, for recreational and formal education purposes and including the potential for involving local people in management and interpretation

### **6.3 Methodology**

The study was undertake through a combination of desk based study and field survey. For physical and visual access, the desk study reviewed existing strategic policies, plans and networks; all existing rights of way and promoted/interpreted trails; and existing market research. The field survey involved walking all the existing promoted routes and many of the other rights of way within the limestone vales and along the Creswell Archaeological Way, recording condition and identifying potential for improvements or changes. A field survey of potential views and viewpoints was also carried out.

For intellectual access the desk study reviewed the resources and issues that contribute to intellectual access (documentary sources, folklore etc), identified potential audiences, communication objectives and key messages and audited existing interpretative provision. The field survey was co-ordinated with that carried out for physical and visual access and identified opportunities for intellectual access and existing provision on the ground in relation to the interpretation plan.



## **6.4 Results**

An overview of the existing strategic and promoted routes network was produced. This helped identify opportunities for linkage between strategic and local promoted routes, the extent of existing physical access and how this is currently managed and promoted, and opportunities for extending, modifying or consolidating existing promoted routes. Roche Abbey, Anston Stones/Lindrick Vale, the Creswell Hub and Pleasley Vale were identified as 'Pilot Action Areas' for more in depth analysis because of the good access opportunities and wide range of interesting and accessible landscape features they contain. The 'hidden' nature of the many of the vales restricts the number of viewpoints that allow these landscapes to be appreciated from a distance although some opportunities were identified.

For intellectual access, an overview of potential was produced, audiences identified and an interpretation plan developed that identifies the key themes and stories. Local communities were identified as the primary focus for interpretative activity at present. There are significant opportunities for engagement with local communities, contributing to local sense of place and identity as well as providing educational and lifelong learning opportunities. The key interpretative themes include the geology, the ice age archaeology, the abbeys and great estates of the medieval and renaissance periods, the industrial sites of the 18<sup>th</sup> and 19<sup>th</sup> centuries and the habitats and wildlife of the landscape today.

For the area as a whole and for each Pilot Action Area, an overview of existing interpretative provision was produced. The Creswell Hub provides the best opportunity to present the story of the Heritage Area as a whole, to visitors and to local communities, maximising the opportunity presented by the local village company in developing a community cafe and interpretation point in the village. Other pilot action areas provide complementary opportunities. There is a need to provide a hierarchy of interpretation provision and for this to be monitored and its currency maintained.

## **6.5 Recommendations**

Key recommendations for physical access include extension of the Creswell Archaeological Way northwards to Anston Stones and Roche Abbey, creation of a strategic link between the Archaeological Way and the Robin Hood Way, renaming the route as the Limestone Heritage Trail (or similar), upgrading of car parks and interpretative panels, various minor amendments and improvements to the local routes promoted in the 'Walking in the Limestone Heritage Area' booklet.

Key recommendations for intellectual access include implementing a 'Pride of Place' community heritage project similar to that currently managed by Creswell Heritage Trust in the southern part of the Heritage Area, production of a quality guidebook that tells the story of the Magnesian limestone landscape, supported by a revised 'Walking in the Limestone Heritage Area' booklet and by short guides to each of the Pilot Action Areas, installation of a network of interpretation panels at key locations, production of an integrated interpretation and development plan for the Pleasley Vale area, networking with the key heritage attractions to promote the identity and story of the landscape to visitors, supporting the roles of the Groundwork and Heritage Trusts in co-ordinating, implementing and monitoring the proposals.



## **7. Conservation Statements and Management Action Proposals**

### **7.1 Introduction**

A Conservation Statement was produced for each limestone vale, providing a framework for action to conserve, to manage and to enhance their landscape, scientific, recreational and educational value. These statements are complemented by Management Action Proposals comprising recommended actions to preserve, manage and/or to enhance significance. These proposals can be implemented over a number of years by different groups or organisations working in partnership. Together with the Creswell Crags Conservation Plan and the Limestone Area Strategy, they are intended to provide a rationale and programme of action agreed and promoted by the stakeholders and partners of the Creswell Limestone Heritage Area through which to develop funding bids and opportunities as part of a rolling programme.

### **7.2 Aims and Methodology**

The Conservation Statements and Management Action Proposals are built on the work undertaken in the different elements of the Creswell Crags Limestone Heritage Area Management Action Plan. The Conservation Statements are intended to provide a framework for partnership activity to conserve, to manage and to enhance the landscape, scientific, recreational and educational significance of the limestone vales and gorges. The Management Action Proposals are designed to provide a clearly identified set of costed actions that will protect and enhance that significance.





# Creswell Crags Limestone Heritage Area Management Action Plan

Volume 1, Chapters 1-4

March 2004

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By Glyn Davies, Anna Badcock, Nigel Mills and Brian Smith



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# 1 INTRODUCTION

This document forms phase A of the Creswell Crags Limestone Heritage Area Management Action Plan. This report outlines an innovative, integrated archaeological, palaeontological, ecological and access Management Action Plan for the main limestone vales and gorges within the Creswell Crags Limestone Heritage Area (the southern Magnesian Limestone Natural Area).

The significance of the area's environmental and cultural heritage resource is affected by a number of issues that provide a framework for action within the remit of the Aggregates Levy Scheme. These issues were clearly identified in the Creswell Crags Conservation Plan and in the Creswell Limestone Strategy and provide a rationale for the various elements of the project.

The Management Action Plan for the Heritage Area complements the programme of site specific work in progress to improve heritage management and access at Creswell Crags and work in urban areas at Creswell (Creswell THI) and Bolsover (Bolsover CAP scheme).

The Management Action Plan forms the second stage of a three stage programme that will result in major improvements to cultural and natural heritage conservation and access across the southern Magnesian Limestone.

## Stage 1

The first stage of the programme involved the production of the Creswell Crags Conservation Plan (2001) and the Creswell Limestone Strategy (2000). The current proposed Management Action Plan responds to policies and actions set out in these documents.

## Stage 2

The second stage will be the production of the Management Action Plan. The Management Action Plan comprises several elements which were combined to produce a series of proposed management actions.

The production of the Management Action Plan is being undertaken in two phases.

Phase A, has been completed and forms the basis of this report. Phase A was concerned with archaeology, GIS, access and management action proposals were drawn up in relation to these issues.

Phase B will deal with the ecological study and revision of the access and the management action proposals to take into account the results of the ecological study.

The most important output of the Management Action Plan are the proposed actions. These include clearly identified, costed, practical and achievable action proposals to improve conservation, management and access with respect to archaeology, palaeontology, ecology and landscape.

## Stage 3

The third stage will comprise:

- Implementation of key action plan proposals through a range of mechanisms including local partnerships, community groups, and New Deal programmes.
- Rolling out the action plan to other parts of the Heritage Area including, in particular, a programme of landscape history research to inform the Landscape



Character Assessment process and to provide synergy with parallel initiatives in Sherwood Forest.

## 1.1 Project Elements

The proposals for the Management Action Plan were divided into six main areas with specific tasks and outputs identified for each element. These are listed below with the relevant section of this report highlighted.

### 1 GIS for the Creswell Heritage Area.

- Compile a unified GIS for the Creswell Heritage Area incorporating information from all the local authorities covered by the heritage area. The complex administrative boundaries and the lack of appropriate information currently limit the potential of the Landscape Character approach to provide a framework for strategic planning and management. Establishing a unified GIS is a significant step forward. **Section 2.**

### 2 Outline archaeological/palaeontological sensitivity study.

- Identify and assess management issues relating to the known and potential sites associated with the Palaeolithic/Pleistocene period. **Section 3**
- Produce a predictive model for the existence and location of other potential Palaeolithic/Pleistocene period sites. **Section 4.**
- Identify and assess the impact of later periods of settlement and land-use on the vales and gorges for management and landscape characterisation purposes. **Section 5.**

### 3 Consolidation and stabilisation of the national collection and archive of archaeological and palaeontological material of the Palaeolithic/Pleistocene period from the Heritage Area.

- Accession the national collection from sites within the Heritage Area onto a centralised database for access and monitoring. **Section 6.**
- Identify research priorities and produce an action plan for their implementation. **Section 7.**

### 4 An ecological potentiality study, to be undertaken in Phase B of the Management Action Plan.

- Identify, map and assess the management of existing areas of high quality habitats characteristic of the Heritage Area.
- Identify, map and assess the potential for linking and extending the areas of high quality habitat.
- Propose future landscape characterisation work that can identify the potential for wildlife corridor links or extensions to major biodiversity nodes.

### 5 An intellectual, physical and visual access study.

- Identify and assess opportunities for consolidating and improving intellectual, physical and visual access to the Palaeolithic/Pleistocene and ecological resource for local people and for visitors, for both recreational and formal education purposes including the potential for involving local people in management and interpretation. **Section 8.**

### 6 Production of integrated conservation statements and management action proposals.



- Produce a statement of management action proposals for each of the limestone vales and gorges covering Pleistocene archaeology and palaeontology, landscape history, landscape character, ecology and access. Include provision for appropriate physical, intellectual and visual access and for involving local people in management and interpretation. **Section 9.**

## 1.2 Project co-ordination

The Management Action Plan project was co-ordinated by Creswell Heritage Trust. As the project was originally conceived, it was proposed that the GIS, archaeology, ecology, and access studies would all be undertaken at the same time and integrated. However, due to a shortfall in funding for the ecology, this part of the project will be undertaken in a later phase. Phase A (reported here) incorporated the GIS, archaeology, access, and draft management action proposals. In Phase B the ecological study will be undertaken and revisions will be made to the access study and the management action proposals.

Phase A was managed by Creswell Heritage Trust and was implemented by ARCUS, Groundwork Creswell and Creswell Heritage Trust.

Phase B will be managed by Creswell Heritage Trust and implemented by appropriately qualified specialists.

On completion of the Management Action Plan the identified actions with their costs will be submitted to the Aggregates Levy and other potential funding bodies.

## 1.3 Background

### 1.3.1 Landscape, wildlife and habitats

The Magnesian limestone runs in a narrow belt from Nottingham to the north east of England around Tynemouth. Local conditions in the northern part of the belt support a distinctly different range of plants and animals from that further south. For this reason English Nature recognise the section from Nottingham to North Yorkshire as a distinct 'natural area'. The Creswell Crags Heritage Area and Creswell Limestone Strategy Area cover the southern third of this area.

Magnesian limestone is a relatively soft rock that weathers easily. In the Creswell Limestone Heritage Area weathering has formed a plateau with rounded hills and dry valleys, cut by a number of sharply defined vales and gorges with caves and crags. The steep valley sides with cliffs in association with narrow river corridors create a strong sense of visual confinement. Areas of unimproved pasture and grazing meadows, often with patches of wet grassland, are a recurring feature of the gorges.

The Landscape Character types identified by Derbyshire County Council Landscape Character Assessment of the area are:

- Limestone Farmlands - "A gently rolling, and in places urbanised agricultural landscape, characterised by large-scale open farmland, estate woodlands, and small limestone villages".
- Limestone Gorges - "Incised river corridors, characterised by steep rocky cliffs, woodland and grazed meadow".

Due to intense exploitation of the landscape areas of wildlife interest are largely restricted to oases of high species diversity associated with the limestone gorges and vales. Because of their relative scarcity and high quality, it is particularly important that these sites are protected.



Magnesian limestone grassland is the most distinctive habitat type. It is a nationally scarce habitat and is listed on the EC Habitats and Species Directive (1992) as a habitat type of Community Interest. It is one of only very few habitats in Britain which is so rare that almost all known examples warrant statutory protection through SSSI notification, though some fragments remaining in the strategy area are unlikely to meet the current criteria for designation. The limestone vales and gorges are the main refuges.

The area also contains fine examples of semi-natural broadleaved woodlands recognised as being of national importance for their plants and animals. The only remnants of woodland typical of the Magnesian limestone are those along the grips and crags exhibiting a rich mix of deciduous species and many yews, the latter being vulnerable to farmers who are fearful of poisoning stock. Examples include Langwith and Roseland woods near Scarcliffe and Pleasley Park.

Several of the limestone gorges that characterise the area are Regionally Important Geological Sites (RIGS), coinciding closely with the important Pleistocene sites, areas of rare Magnesian Limestone grassland and fine examples of semi-natural broadleaved woodlands.

The legacy of industry and mineral extraction has resulted in immature restored landscape features (e.g. pit tips) where reclamation schemes have been undertaken and large unreclaimed sites. These are either already valuable biodiversity nodes or have considerable potential for enhancement of their biodiversity value.

### **1.3.2 Palaeolithic/Pleistocene archaeology and palaeontology**

The area contains several sites associated with Palaeolithic (Old Stone Age) material of which four are Scheduled Ancient Monuments. They represent a significant proportion of the Scheduled Ancient Monuments for the Palaeolithic in Britain.

Archaeological exploration of the area began in the mid nineteenth century and has continued through to the present day. Prominent archaeologists who have worked in the area include Boyd Dawkins, Armstrong, Garrod, McBurney, Roe, Campbell, Mellars and White. Key sites include Creswell Crags, Ash Tree Cave, Langwith Shelter, Dead Mans Cave, Lob Wells Wood Rock Shelter and Thorpe Common Rock Shelter.

The finds and archives from these excavations are dispersed amongst a number of regional and national museums. The artefact assemblages from several of the caves have been assigned to the Middle and Upper Palaeolithic and the Mesolithic and the important faunal assemblages extend back to at least the Ipswichian interglacial.

### **1.3.3 The modern cultural and organisational landscape**

The whole of the Heritage Landscape Area lies at the heart of the former coalfield and most communities have been affected by economic decline. Long term high quality conservation of the Ice Age scientific and educational resource is threatened by the continued poor economic, social and environmental conditions that many of the communities continue to face and by the poor understanding and appreciation of the distinctive cultural and natural heritage by local people and by decision makers.

These conditions affect external perceptions of the area, are a break on inward investment, encourage vandalism and neglect and provide conditions for inappropriate development and use. The high quality cultural and natural heritage is undervalued. There is the potential for the natural and cultural heritage to act as a catalyst for a new vision of the future of the area, creating a high quality sustainable natural and cultural environment and encouraging inward investment.



Strategic planning for conservation management, including Landscape Character, nature conservation, and natural and cultural heritage based regeneration is made difficult by the location of the Heritage Area on the boundaries of three County or Unitary Authority areas and the diversity of administrative units that result. Organisations such as the Groundwork and Heritage Trusts that work across these boundaries are of particular value in acting as catalysts for partnership working and strategic planning.

### 1.3.4 Extent of the Creswell Limestone Heritage Area

The area covered by the Management Action Plan is shown in **Fig 1.1**. The main limestone vales and gorges are:

Roche Abbey Vale  
 Firbeck Valley  
 Anston Stones and Lindrick Vale  
 Red Hill Valley  
 Thorpe Common and Lob Wells Wood  
 Ash Tree Gorge  
 Markland and Hollinhill Grips  
 Creswell Craggs  
 Elmtun and Whaley Valleys  
 Langwith Vale  
 Pleasley Vale

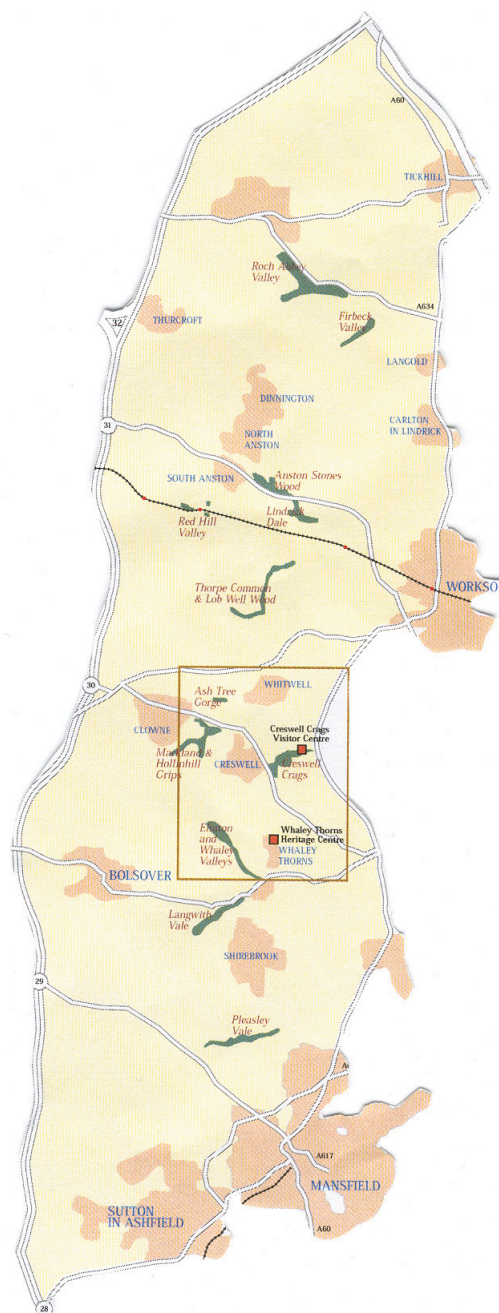


Fig. 1.1 The Limestone Heritage Area







## **2 CRESWELL CRAGS LIMESTONE HERITAGE AREA MANAGEMENT ACTION PLAN : A UNIFIED GIS FOR THE CRESWELL CRAGS LIMESTONE HERITAGE AREA**

### **2.1 Introduction**

The location of the Creswell Heritage Area on the boundaries of three County or Unitary Authority areas and three District Councils has complicated strategic planning for conservation management, including Landscape Character assessment and nature conservation.

To improve the conservation management of the Heritage Area and support natural and cultural heritage based regeneration projects a unified GIS index was developed. Derbyshire and Nottinghamshire County Councils and Rotherham MBC possess GIS for planning and management purposes, and access to the information contained in these systems was integrated for the Creswell Heritage Area to provide a framework for co-ordinated planning and management of the area's cultural and natural landscape assets. This information was supplemented with further information from the county Sites and Monuments Records of Nottinghamshire, Derbyshire and South Yorkshire.

### **2.2 Methodology**

The production of a usable, integrated GIS index for the Creswell Crags Heritage Area comprised four elements:

- construction of a demonstration system.
- agreement of protocols for operating the system.
- setting up the system.
- maintenance of the system (ongoing).

### **2.3 Demonstration system**

A demonstration system of the proposed GIS index was produced by Dave Wood of Nottinghamshire County Council. This was produced in Mapinfo and incorporated ecological data from Derbyshire, Nottinghamshire, Rotherham and Doncaster Councils. The preparation of this demonstration system showed that it was possible to incorporate data from the different local authorities, it also enabled potential problems with the methodology and allowed solutions to be developed.

### **2.4 System protocols**

Prior to developing the full unified GIS index for the Creswell Heritage Area it was necessary to agree a protocol for the development and management of such a system. This required reaching agreement with the partner organisations of the Creswell Crags



Heritage Area and organisations that hold information that will be incorporated within the GIS Index. The following organisations are partners in the GIS:

- Creswell Heritage Trust,
- Nottinghamshire County Council,
- Derbyshire County Council,
- Rotherham Metropolitan Borough Council,
- South Yorkshire Archaeology Service.

On completion of the Creswell Management Action Plan further information will be supplied by:

- ARCUS,
- Groundwork Creswell.

The following are the protocols for the Creswell Heritage Area GIS Index:

- data for the index will include information on natural history, history and archaeology,
- data for the index will be provided by the partner organisations,
- once the index is complete, copies will be provided on CD to all the partner organisations,
- the index will be updated annually,
- during updates the opportunity will be taken to review the system to consider whether additional information or data fields could be profitably added,
- data generated during the production of the Creswell Crags, Limestone Heritage Area Management Action Plan, will be incorporated into the GIS index when appropriate.

#### 2.4.1 Data provision

The information provided to the system from the partner organisations varied. **Appendix 1** includes a list of all the data sets that Nottinghamshire County Council have provided to the system, and similar data was provided by Derbyshire County Council. In South Yorkshire, Rotherham Metropolitan Borough Council provided data on natural history and the South Yorkshire Archaeology Service provided data on archaeology and history. The South Yorkshire Archaeology Service was unable to provide the full data set on archaeology and history, as they were undertaking a general programme of validation of data. This is being done as many of the records on the South Yorkshire SMR are known to be incomplete and to contain incomplete or inaccurate OS grid references. The South Yorkshire Archaeology Service therefore agreed to provide data on Scheduled Ancient Monuments and Sites and Monuments Records for earlier prehistoric sites (Palaeolithic and Mesolithic) at this stage. However, it is hoped that once the validation programme is completed that the additional data will be added to the system.



### **2.4.2 System access**

Access to the system will follow the following principals:

- the system will be distributed to all the partner organisations that contribute to the system.
- the system will not be passed onto any third parties without the written agreement of all the partner organisations the contributed to the system.

## **2.5 Setting up the system**

Dave Wood of Nottinghamshire County Council has offered to host and maintain the GIS index.

Subject to the reliability of the data provided, Nottinghamshire County Council guarantee the integrity of the resultant index and maintain the confidentiality of the system to the participating organisations.

To set up the system, metadata may be required on the sites. However, this will not be retained as part of the system and will be deleted once the index is compiled.

### **2.5.1 Transfer of data**

The data supplied by the participating organisations was, and is being, sent directly to Dave Wood at Nottinghamshire County Council, with data provided in Mapinfo base format or compressed in *.mid* and *.mif* files.

### **2.5.2 Structure of the system**

The GIS index is based on Mapinfo and has the following attributes:

- all sites will ideally be marked with as boundary polygons, but points will be included where boundary polygons are not available ;
- the index will have two layers, one for statutory designated sites and one for other types of sites.

Four fields will be recorded for each site:

Site reference number – designated by originator

Site name – designated by originator

Type of site – e.g. SAM, SMR, SSSI, NNR

Contact – who to contact for further information, i.e. which partner organisations holds the full record.

## **2.6 Maintenance of the index**

It will be necessary to update the index regularly; this will be undertaken by Nottinghamshire County Council. It is proposed that annual updates to the system are organised by Creswell Heritage Trust and Nottinghamshire County Council who will contact the partner organisations for relevant new information.

## **2.7 Output**

The output for this element of the project comprises:



- the GIS layers described above, into which further data from other elements of the Management Action Plan can be added. Layers will be provided in appropriate formats agreed with the participants,
- any documentation required to run and access the GIS, provided as a text file on the CD containing the GIS layers.



### 3 IDENTIFICATION AND ASSESSMENT OF MANAGEMENT ISSUES RELATING TO THE KNOWN SITES

#### 3.1 Introduction

This report examines the condition and management of known Palaeolithic and Mesolithic sites within the Creswell Limestone Heritage Area. The sites examined are those in the vales and gorges that were identified in the Creswell Crag Conservation Plan and its gazetteer, and those sites identified in the survey undertaken here. The gorge at Creswell Crag was excluded from the study as this had been the subject of a previous study and report (Collcutt and Johnson 1999).

The importance of this area for Palaeolithic and Mesolithic archaeology is demonstrated by Creswell Crag, the best known gorge in the magnesium limestone containing Palaeolithic or Mesolithic material. Creswell Crag is of international significance for the range and quality of archaeological and palaeontological evidence relating to the Middle and Upper Palaeolithic periods. The other gorges/vales have been less intensively studied than Creswell Crag, but even so the area, including Creswell Crag, contains four Scheduled Ancient Monuments. This represents a significant proportion of the Scheduled Ancient Monuments for the Palaeolithic in Britain.

Within the other vales/gorges several caves and rock shelter sites are known and add to the potential for discovering further Pleistocene sites. The research value of these sites and of the area was identified in the Creswell Crag Conservation Plan and in the Assessment Of The Pleistocene Collections (Wall and Jacobi 2000) from the cave and rock shelter sites in the Creswell Heritage Area.

The archaeological, palaeontological, and quaternary geological resource is highly sensitive to a variety of impacts including visitor pressure and vandalism, erosion and neglect through lack of awareness and understanding.

Many of the known sites are located within Sites of Special Scientific Interest, Conservation Areas or Sites of Interest for Nature Conservation and most are on the local Sites and Monuments Registers. Differing degrees of protection are therefore afforded but it is important to ensure that the particular sensitivities of potential Pleistocene archaeological and palaeontological sites are recognised and protected within habitat management plans.

##### 3.1.1 Aims

- *Through desktop research, supported by field visits, identify and record information relating to ownership, condition, management (including habitat management), issues, threats and access.*
- *Identify, agree and cost proposals to improve conservation, management and access.*



### 3.1.2 Study area

There are eleven vales/gorges within the study area. These contained varying numbers of caves or rock shelters. The eleven vales/gorges surveyed included those listed in the Pleistocene Site Gazetteer in the Creswell Crags Conservation Plan and three further vales/gorges, Roche Abbey Gorge, Red Hill and Firbeck. **Table 1** lists all the vales/gorges along with the number of known caves or rock shelters in each vale/gorge.

**Table 1 Gorges in the study area with number of known sites.**

Vale or Gorge	No. of known caves or rock shelters
Roche Abbey Vale	1
Firbeck	0
Anston Stones	4
Red Hill	1
Thorpe Common and Lob Wells Wood	4
Steetley Quarry Caves	2
Ash Tree Gorge	3
Markland Grips	11
Elmton and Whaley Valleys	9
Langwith Vale	6
Pleasley Vale	10

## 3.2 Methodology

The methodology for this study involved two stages:

- identifying the condition of each site and its surroundings,
- making recommendations as to the management of the sites.

The first stage, identifying the condition of each site was undertaken by means of a sensitivity study. This was undertaken following a similar methodology to that used by Collcutt and Johnson (1999) on their sensitivity study of Creswell Crags Gorge. The choice to use this technique was to enable a degree of comparability with the study of Creswell Crags and to use a proven methodology.



The main change in the methodology employed here compared to that used by Collcutt and Johnson was in the degree of detail used in defining the terrain units. These were defined more broadly in this study than in the study of Collcutt and Johnson (1999). This was due to the larger area involved in this survey compared to that of Collcutt and Johnson.

### **3.2.1 The Concept of Sensitivity**

Sensitivity is a subjective assessment of the potential scientific value of a site/deposit and its vulnerability. The scientific potential was assessed by combining information from previous research on the site/deposit with visual inspection of its current condition to assess the likelihood of significant archaeological and/or palaeontological/geological deposits surviving. Vulnerability was an assessment as to the ongoing degradation of the site/deposit, either due to natural processes or to visitor and management activities.

As with the Collcutt and Johnson (1999) study 'potential' (split between the various scientific interests) and 'vulnerability' will be recorded on a scale with seven ranks:

- low
- low to moderate
- moderate
- moderate to high
- high
- high to very high
- very high

The ranks were allocated in the field and were only subject to modification if additional information provided a cogent reason.

Sensitivity was then assessed on the same seven rank scale. Generally sensitivity equaled the same rank as whichever of the rankings for vulnerability or potential was the higher.

A point should be made concerning the meaning of the rankings. A low sensitivity ranking does not mean 'no' sensitivity, and given the potentially disastrous implication of wrong ranking allocations, a minimum care level should be adopted on all future works. Conversely a very high ranking does not preclude all future work but implies a need for great care.

### **3.2.2 Desk Based Survey**

The desk-top research built on the data already in the Creswell Crags Conservation Plan, specifically the Gazetteer of Pleistocene Sites, Creswell Crags Sensitivity Study and the Creswell Crags Pleistocene Collections Assessment. Much of the information required for this study had already been collated in these documents, however, further information was required and all the information required validating. Also the site in Roche Abbey Gorge was not included in the original gazetteer, so a full desk-top search relating to all issues was undertaken on the gorge.

The main areas which the desk-top research collected information on were:



- archaeological background potential
- ownership
- tenants
- management (including habitat management),

### 3.2.3 Field Survey

It had originally been proposed that two field surveys should be undertaken, one for the *identification and assessment of management issues* and the other for the *predictive modelling for the existence and location of other potential sites* (**Chapter 4**). When fieldwork started it was decided to combine the two surveys. This decision was made as it reduced travelling time, and limited the number of times access had to be arranged. It also enabled the terrain unit survey to be undertaken on the full length of each vale or gorge.

The field survey comprised a terrain analysis of the land in and around the known archaeological sites and new sites identified during the survey. The terrain analysis followed the same basic principals as that undertaken during the Creswell Crags Sensitivity study. However, due to the much more extensive scope of the study (over 20km of gorge compared to just over 1km) the terrain units were more broadly assigned.

The decision on the extent of survey around each site and the definition of terrain units was a balance between detail and extent. For the exercise to have value the terrain analysis had to be of reasonable detail. Within the valleys all rock faces were recorded and terrain units defined for them.

Terrain units were defined on basic geomorphological principles, taking account of sediment origin and sedimentation route. Visible discontinuities in the bedrock were also recorded (joints, faults, fissures and more horizontal discontinuities).

Terrain units were defined in the field. The location and extent of the terrain units defined were mapped onto O.S 1:2000 base maps. This was undertaken using a combination of GPS and topographic mapping.

The surface condition of each terrain unit defined was recorded. This covered both the visible surface sediment of the deposit and its vegetation cover. The terms used followed those used by Collcutt and Johnson in their sensitivity study. The following terms were used for the sediment type:

Table 2 deposit types

loam	clay/silt/fine sand mix
silt	powder-grade particles (often suggestive of wind-blown dust)
(dolomitic) fine sand	fine weathering residue of local limestone
stone	limestone clasts (angular fragments)
stony loam	<50% stone
loamy stone	>50% stone



coarse scree	stone commonly >15 cm, clast-support
blocks	individual stones >50 cm
matrix	fine sediment between stones/blocks
bedrock	<i>in situ</i> limestone
made ground	deliberate man-made deposits
tip	debris from past archaeological excavations
cave breccia	consolidated deposit of angular stones and sediment
hard standing	paths or roads with tarmac or hardcore surfaces

Table 3. Vegetation classes, based on dominant plant height used the following terms:

bare	sediment, often with loose organic litter
disturbed	colonisers (usually 30-50 cm) over new or disturbed surfaces
moss/lichen	(cover of rock surfaces, <5 cm)
grass	<10 cm
rough	<50 cm
bushes	<150 cm
wetland	(various, such as rush/reed bed)
saplings	commonly >150 cm
trees	(mature, diameter >20 cm)

A sensitivity survey has already been undertaken of Creswell Crags by Collcutt and Johnson (1999). A walkover survey was undertaken on the east side of the gorge to identify if any changes had occurred to the condition or management practices of the terrain locales identified. This served a two-fold purpose:

it enabled a check to be made as to the stability of terrains identified and any changes in their condition.

it enabled comparison to be made between old Creswell Crags survey and the new surveys.

The walkover of the east side of Creswell Crags identified that there were no significant changes to the terrain units described.



### **3.3 Results**

#### **3.3.1 Desk-based survey**

The collection of data for the desk-based survey was undertaken by Rowan May. The desk-top survey built on the data already in the Creswell Crags Conservation Plan, specifically the Gazetteer of Pleistocene Sites, Creswell Crags Sensitivity Study and the Creswell Crags Pleistocene Collections Assessment. For the desk based research the following sources were searched for information.

- South Yorkshire Sites and Monuments Record
- Derbyshire Sites and Monuments Record
- Nottinghamshire Sites and Monuments Record
- Local studies libraries
- Online databases ADS,
- Listings on Cave Archaeology and Palaeontology Research Archive (CAPRA),
- Local Journals
- National Journals
- University of Sheffield Library
- The Creswell Crags Conservation Plan
- Limestone Heritage Area Ecological Assessment of Key Sites (ECUS)

Relevant data from all the above sources was added to the terrain units database.

#### **3.3.2 Field Survey**

The field survey was conducted by Glyn Davies, Phil Jefferson and Rowan May, with two people on site at all times. The vegetation cover varied between the vales/gorges, at times this was very dense and this is described in the sections on each gorge. Where the vegetation was very dense it is likely to have interfered with the survey, as it made it difficult to find small rock faces, identify detailed topography and determine the surface sediment. In the case of Markland Grips the vegetation was so dense that the survey of part of the Gorge was undertaken in the autumn when the vegetation was less dense.

Access was arranged with the landowner and tenant before entering any private land. In almost all cases landowners and tenants were happy to give access. Any problems with access are described in the sections on each gorge.

The data from the survey was used to draw up maps of each gorge, these used O.S. data for the base of the maps. This was overlain with data from the field survey showing all rock edges, caves, rock shelters, fissures and terrain unit boundaries.



A database of all the terrain units was produced in Microsoft Access. This incorporated data from the field survey and data from the desk-based survey. All Terrain Units were numbered, The numbering system used was developed from that in the Creswell Crags Conservation Plan Site Gazetteer. In the gazetteer each vale/gorge had a two letter code followed by a number for each cave or rock shelter. The terrain unit numbers had a three letter code for each gorge, this included the two letters from the gazetteer code followed by a T to denote that this is a terrain unit, this was then followed by the terrain unit number. There were separate numbering sequences for each gorge. However, no attempt was made to relate numbers in the gazetteer with those in the sensitivity survey, this was because some gazetteer sites could contain several terrain units making direct correlation impossible. The addition of the extra letter T means that the records from the gazetteer and the sensitivity survey can immediately be told from each other.

### **3.3.3 Management Recommendations**

The management recommendations were drawn up in the office following completion of the fieldwork. These recommendations fall into three groups,

- Immediate Actions – these are actions taken to remediate immediate threats to sites or specific problems that need special attention in the public education or monitoring programmes.
- Public Education – this involves informing the public about the importance of the sites and educating them as to what can damage the archaeological/palaeontological potential of a sites. This information will be aimed at land owners, councils, and visitors. It will also provide contact information where the public can report problems or get advice.
- Monitoring – this involves a long term programme of regular monitoring visits to look for changes to sites that will impact on the archaeological/palaeontological potential of site.



## **3.4 Roche Abbey Vale**

### **3.4.1 Access and survey conditions**

Roche Abbey Vale lies at the northern end of the Creswell Crags Limestone Heritage Area just south east of Maltby. The vale has three arms, north western, south western and an eastern arm. These are all of approximately equal length, of about 1.25km each, giving a total length for the valley of about 3.75km. Most of the land in Roche Abbey Vale is owned by the Estate of the Earl of Scarborough, which provided access to all areas under its control. At the centre of the gorge, where the three arms meet, is the site of Roche Abbey, a Cistercian foundation now under English Heritage guardianship. The eastern arm runs from the abbey through pasture to the village of Stone, around which are patches of woodland. Most of this area had good survey conditions. The south west arm was generally wooded, though at its south west end there were some arable fields and rough grassland and there was a small reservoir at the north east end of the south western arm adjacent to the abbey. In the wooded areas of the south west arm the undergrowth was generally light although there were patches of dense undergrowth that made surveying difficult. The north west arm was wooded for most of its length with a sewage works at its northern end, which was not accessed. Here the undergrowth on the woodland was generally dense, especially on the south western side, which made examining some rock faces very difficult. In general survey conditions were reasonable.

### **3.4.2 Site condition**

#### **3.4.2.1 Caves**

There were four possible caves in Roche Abbey Vale, none of which were very large. Cave RAT25 was located on the north east side of the north west arm of the valley. This cave was 3m deep, 1.2m wide and 1.5m high, and had formed on a fissure. Inside the cave contained a stony loam sediment. At the entrance to the cave there was a step up in the sediment, this step was 0.15m high and appeared to be a section left during excavation of the cave entrance. Variation could be seen in the sediment in this section. This was seen as changes in the proportion of stones in the deposits. It appears that some small scale excavations had taken place at the face of the cave, but that this activity has not disturbed the internal deposits. This cave was on a rock face approximately 12m long and fine grained talus cones had formed at either end of the rock face with material washed down from above.

Also in the north west arm, in an area of former quarrying, was a possible buried cave entrance at the base of a rock face (RAT28). As the face has been cut back it is not known if this cave would have originally reached the surface. The current entrance is 1m wide and 0.1m high, extending back for at least 0.7m. As far as is visible the cave is full of scree, but it is not known if any finer grained sediments also exist in the cave. As it was not known if this possible cave had ever reached the surface it was not included in later analyses.

A second cave, RAT15, was located on the south east side of the south west arm of the valley. This had been exposed in a rock face that had been quarried back. As this was exposed in a quarried face it is not known whether this cave originally had an opening to the surface. The mouth of the cave had been quarried out, exposing 2 or 3 side chambers. It was not possible to enter the chambers as their openings were very small, being partially filled with rubble from the quarrying. There was some finer grained sediment in the side chambers which probably did not relate to the quarrying.



In front of this rock face was a rubble dump from the quarrying which spread part way down the slope of the valley.

The third possible cave, RAT4, was located close to the intersection of the three arms. It was on an 8m high north face, at the west end of the east arm of the valley. This appeared to have been a small cave, formed at the intersection of two fissures, that had collapsed. In the area of collapse there were significant deposits of an orange cave breccia spread over a width of 2m. Outside the cave was a moderate slope dropping down to the valley floor. Although the cave has collapsed in the past it appears to be stable now as the slope below is formed of a grassed over stony loam and there is no sign of deposits of the orange cave breccia on the slope below.

### **3.4.2.2 Rock shelters**

Roche Abbey Vale contains numerous rock shelter sites. As there has been little excavation of these features it is not known if these possible rock shelters have been occupied in the past.

There are three rock shelters in the north west arm of the valley. The most westerly of these was RAT27, which had a overhang 15m long and 1.5m deep on a mid level rock face. There was an informal foot path up to and along the rock face, despite this area being a SSSI and signs saying access was not allowed. The informal footpath was bare and some minor erosion was taking place.

South east of RAT 27 was RAT 23. This was part of a high level rock face with a rock shelter formed on two overhangs totalling 20m in length. At either end of the overhang were fissures, and the southern fissure was up to 0.4m wide with some sediment and rubble in it. This rock face also had an informal bare path up to it and along it, despite being in the same SSSI as RAT23, with the same risk of erosion. In this case there was evidence that climbers were using the rock face.

RAT21 was a mid level rock face with an overhang and fissure towards its north west end. The overhang formed a rock shelter 7m long and 2m deep. This contained the remains of a small former building constructed from stone and brick. The south end of the building ended in a brick wall perpendicular to the rock face. This wall had partially collapsed exposing a cave breccia like sediment. It appears that the rock shelter had been partially dug out to construct the building, but that some sediment survived. The building is abandoned and collapsing, and contains some rubbish, including garden waste. An associated fissure to the was north of the overhang was up to 0.4m wide, and at least 2m deep, with some breccia deposits inside.

At the intersection of the north west and east arms of the valley was a small overhang 3m long and 1.5m deep. This rock face extended down to the valley floor and would have provided a rock shelter on the floor of the valley. The site was just off the footpath that runs along the bottom of the valley, but the presence of scrub vegetation between the face and the path restricted access.

There were three areas along the east arm of Roche Abbey Vale where possible rock shelters were located. At the west end were two main rock shelters, RAT5 and RAT6, and one small rock shelter RAT7. RAT5 was a 12m long and 2m deep overhang. Several large stone blocks had fallen from the roof of this feature some of which have been cemented by flow stone. Aside from these large blocks, the floor of the putative rock shelter was covered with a coarse scree-sized rubble fill. The eroded edges of a narrow slot that had been excavated into this rubble fill in the past were still visible. A fire had also been made in the rock shelter in recent times. Just east of RAT5 was



RAT6, a second rock shelter, 7m long and 2.5m deep. This had a stony loam fill. Cows were taking shelter in this overhang, as demonstrated by the presence of cow pats and hoof prints inside. There was also extensive graffiti on the rock face within the rock shelter. These two rock shelters which were near the foot path along the base of the gorge were fairly vulnerable due to their location. RAT7, which was approximately 100m east of RAT6, was a 3m long a 1m deep overhang with an orange breccia fill which filled up much of the overhang.

Further west in Seed Hill Wood south west of Stone was a long rock face with an overhang for most of its length (RAT10), known as Stone Mill Shelter. The rock face was approximately 120m long and 8m high and the overhang was in three sections of 27m, 37m, and 40m. The overhangs were each of 4m and 5m in maximum depth. The ground surface within each overhang was made up of a fine grained matrix with occasional stones. The western overhang had a stone built fireplace within it. This had probably been constructed by the workers from the quarry (RAT9) to the west of the rock shelter. The central part of the eastern overhang was full of material, almost to the roof of the overhang. Excavations have been undertaken in the past that have confirmed the presence of Palaeolithic remains in the central overhang (Dolby 2001). Excavation also confirmed that the shelters appeared to have been used in the nineteenth century, during the life of the quarry (RAT9). A footpath runs along the rock face next to the rock shelter and the ground surface is bare in front of the central and western overhang.

There was a further rock shelter in the village of Stone at the west end of the west arm of the gorge. This was in the garden of Stoney Green House and was 15m long and 4m deep. At the west end a building had been built into the shelter, while to the east end a hardstanding surface had been constructed and the shelter was used as a car port. In front of the rock face was a garden which had been landscaped.

There were a few small rock shelters in the south west arm of the valley. Midway down the south west arm, on the south side, was a small gorge (RAT14) created on a large fault/fissure. This was 70m long, up to 6m wide, and approximately 2m deep. The fissure ran roughly north south, and contained a small overhang mid way along, the overhang was 7m long and 1m deep. This feature was in woods, and a forest soil covered any potential deposits in the overhang.

There were three further rock shelters on the north side of the south west arm. These were along the line of an intermittent rock face at mid level on the valley side. All of these faces and overhangs were on a wooded slope with patchy but generally dense undergrowth. RAT19 contained a 6m long and 1.5m deep overhang with a moderate, stony loam, slope below. RAT17 was 6m long and 2m deep. This contained the remains of a pheasant pen constructed from fragments of dry stone wall and wood. The floor of the rock shelter was a jumble of branches and disturbed loamy soil with a moderate, stony loam, slope below to the valley bottom. The disturbance of the rock shelter floor appears to have taken place in the past, there was no evidence of recent activity by animals. The final rock shelter was a 9m long and 2m deep overhang on a 120m long rock face, which was very overgrown and could only be partially investigated. The floor surface inside the cave was made up of scree, however, the dense vegetation on the moderate slope below precluded identification of its surface condition.

### **3.4.2.3 Fissures**

Within Roche Abbey Vale the majority of identified fissures with sediment were located at the intersection of the three arms of the valley close to ruins of the abbey.



These were on the north side of the valley between RAT23 and RAT3. All of these fissures were on low level rock faces near the bottom of the gorge. The fissures varied in size from 0.1m to 0.7m wide, and the fill ranged from loose sand to compacted breccia.

RAT23 contained two fissures one of which was open to 0.4m and contained sediment. In RAT21 there was only one fissure 0.4m wide with a breccia fill. RAT1 had two fissures, one 0.7m wide and one 0.5m wide. Both contained fills of orange sandy matrix with stones, and in both cases they were washing out to form small talus cones. There was only one fissure in RAT2 which was 0.4m wide and contained a breccia fill. RAT3 contained four narrow fissures, all about 0.1m wide, and all containing sediment. There was also one fissure 0.35m wide, in RAT3, with an orange sandy breccia fill that was washing out slightly. All of these fissures were near to the footpath or road that runs along the valley bottom and were easily accessible, although there was no indication of any damage other than from natural weathering.

#### **3.4.2.4 Rock faces and valley sides**

Most of the valley sides in Roche Abbey Vale were moderately sloping, with occasional rock faces, which were spread between high, mid and low level. The rock faces varied in height from 2m to 8m with occasional smaller outcrops. The rock faces were usually in short lengths, of less than 50m, with a few longer sections of 100m or more. Within the rock faces were numerous features of archaeological or palaeontological potential which have been described in greater detail in **sections 3.4.2.1 – 3.4.2.3**. On the eastern arm of the valley the valley sides were covered with a mixture of grass and trees, while in the two western arms the sides of the valley were mostly wooded. There were no scree slopes visible in the valley. However, there were a few small patches of bare talus slope, which occurred where erosion from footpaths had taken place.

#### **3.4.2.5 Valley bottom**

The valley bottom was generally flat, with a small river running through it. In the western arm the valley bottom was mostly open pasture, while in the other two it was generally wooded.

### **3.4.3 Management recommendations**

#### **3.4.3.1 Immediate Actions**

There are several sites that have been considered for immediate remedial action. These have a range of problems or threats against them. There is graffiti on the rock face in RAT6 and fires have been lit in RAT5 and RAT10. Although these are unsightly they were not causing significant damage to the archaeological potential of the sites as they only impinge on the surface of the rock face, or the deposits within, and it is considered that long term control of such activities is best undertaken through public education.

There are three sites, RAT10, RAT23 and RAT27 where footpaths are bare and erosion could take place. In RAT10 the bare footpath runs along the length of the rock shelter, but there is no evidence of significant erosion currently taking place, and this potential damage would be best dealt with through long term monitoring. In the cases of RAT23 and RAT27, both of these were informal paths across areas where access was not allowed. In one case the path went to a rock face used by climbers. In RAT23 and RAT27 erosion was taking place of surface deposits on the valley



slope below the rock faces. However, erosion did this did not appear to be impacting on the deposits in the rock shelters even though their ground surfaces were bare. It is therefore suggested that monitoring can be used to assess the erosion on the path and to assess if it is threatening the potential archaeology. Public education could also be used to deter people from using these informal paths. If this fails and erosion becomes a major problem it may be necessary to fence off the area and stabilise the paths by encouraging plants to recolonise them. However, it is worth remembering that neither of these sites have been investigated, and their archaeological potential is as yet unknown.

#### **3.4.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, local councils, wildlife groups/trusts, local schools and local groups. For more details see **section 3.15.2**.

#### **3.4.3.3 Monitoring**

Within Roche Abbey Vale there should be a programme of long term monitoring to regularly visit sites and compare conditions with the current condition of the sites, described in the terrain unit database. Details of how such monitoring should operate are outlined in **section 3.15.3**.

### **3.5 Firbeck**

#### **3.5.1 Access and survey conditions**

Firbeck valley runs for approximately 1km south west from the village of Firbeck. The land was privately owned. A river runs along the bottom of the valley, and this had been dammed to produce a series of ponds along it. The eastern end of the valley is a pasture field, with occasional trees in it, while the western end of the valley is wooded. The valley appears to have been subject to extensive landscaping, this includes the ponds on the river, and paths through the woods, an ice house, and a hermits cave. All of these features would seem to date from the time when the valley formed the grounds of the demolished Park Hill Hall. Although much of the area is wooded the undergrowth at the time of the survey was generally light to moderate, making survey conditions average to good.

#### **3.5.2 Site condition**

##### **3.5.2.1 Caves, rock shelters and fissures**

No natural caves were identified in the Firbeck valley. There is one feature on a section of rock face (FBT4) locally known as 'The Hermits Cave', however, it was clear that this is a Victorian folly, containing a window and fireplace, that had been constructed onto the rock face.

There was a small overhang on the rock face (FBT2), however, this only extended for a maximum of 0.5m at its greatest, and was not considered a prime location for a rock shelter. Also the base of this rock face was a 2m wide flat area, spread with rubble. This did not appear natural, and may be a further example of landscaping in the woods.



### **3.5.2.2 Rock faces and valley sides**

The rock faces in Firbeck Valley were restricted to an intermittent line on the south east side of the valley towards the south west end. Most of the rock face was about 2m high and vertical, although one small section did rise in a series of steps (FBT3). The rock faces were generally high up the slope on the valley sides, with the valley sides having moderate slopes to the base of the valley.

There were several areas on the south side of the valley, and in the woods, where the ground surface was covered with stony scree like deposits. However, in many places these deposits appeared to have resulted from human activity, either small scale quarrying or landscaping.

### **3.5.2.3 Valley bottom**

The base of the valley was largely obscured by the series of ponds that run along the bottom. These ponds had been created by the construction of dams, weirs and sluices. The ponds had partially silted up, particularly towards the south west end of the valley, and this has resulted in the deposition of an unknown depth of material in the valley bottom changing its profile.

### **3.5.3 Management recommendations**

As there are no known sites with archaeological or palaeontological potential in Firbeck Valley there are no management recommendations for the valley.



## **3.6 Anston Stones and Lindrick Dale**

### **3.6.1 Access and survey conditions**

Anston Stones and Lindrick Dale forms a continuous valley that runs south east from Anston for a total length of c.4.25km. Midway along its length the valley is bisected by the A57. From Anston to the A57, through Anston Stones, the valley is fairly straight, however, the section through Lindrick Dale changes direction, first at the A57 where it turns almost due south for about 1km, then had a T junction one arm runs west for 0.25km and the other runs east for 1km. Anston Stones Wood is mostly owned by Anston Parish Council and is a Country Park, with a railway line running through it. Most of the area is wooded, with occasional patches of open grassland in this area. The level of undergrowth in the wood varied from bare ground with leaf litter, to dense scrub, though generally light to moderate rough predominated. Survey conditions were generally reasonable, although in the dense scrub access was difficult. South and east of the A57 is Lindrick Dale. This is private land in the ownership of several different people. Running south from the A57, the dale contains several large houses and gardens, most of which gave access to their gardens to examine rock faces. Building work was taking place on one house which was empty so access could not be arranged. Extensive landscaping has been undertaken in many of these gardens and has altered the natural topography. The houses and outbuilding have often been built close to or directly up against the rock face. Beyond the T junction most of the land is wooded with a few fields of rough grass. In the wooded areas the undergrowth is usually light, which made for reasonable survey conditions, although there are a few denser patches of undergrowth.

### **3.6.2 Site condition**

#### **3.6.2.1 Caves**

A total of nine caves or caves were identified in Anston Stones Wood, two of which had been previously identified and listed in the Creswell Crags Heritage Area Pleistocene Site Gazetteer. All of the caves in Anston Stones Wood were in the north western half of the valley, in the first 500m of the valley with rock faces. This means that no caves are known for most of the centre and south east end of the valley.

There were three possible caves towards the western end of the valley, on the north side. These are in an area of disconnected rock outcrops and rock faces which extends from high up on the valley side down to the bottom. Two of these (AST9) and (AST12) are possible caves that have been exposed by the presence of badger setts. In both cases badger setts had been excavated at the base of rock faces, demonstrating the presence of buried voids, probably caves. In both cases the potential buried caves appear to be bigger than the area excavated by the badgers, suggesting that there may be further undisturbed deposits *in situ*. AST9 was high up on the valley side, while AST12 was mid-level on the steeply sloping valley side. There was a second badger hole next to AST12, which might indicate the presence of a second buried cave entrance at this location, or a buried overhang. Further down the valley side, just below AST12, was AST14 a small cave in a rock face up to 10m high. This cave had formed on a fissure and had an entrance 1.5m wide and 3m high (including the fissure). The entrance had been blocked with large stones, some of which were concreted together, possibly the work of cavers. Although from different sources, all three of these small caves at the west end of the valley had suffered damage.



On top of a rock face up to 10m tall were two small and adjacent cave entrances (AST18). These were about 4m apart and may well have been part of the same system. The first entrance was a vertical entrance, about 0.4m in diameter, while the second entrance was a horizontal entrance 0.9m wide and 0.3m high. However, inside the second entrance the cave turned sharply. Both caves were choked with rocks and it was not possible to determine the depth of the caves or to confirm that they were part of the same system. Although near a footpath, there was no evidence for any modern human activity in or around these caves.

The best known cave in Anston Stones Wood is Dead Mans Cave (AS4), AST20. This cave has been the subject of excavation and study since the 1960s (White 1970, Mellars 1969 and Wall 1990). The cave is located on a high level rock face on the north east side of the valley. It has a 2.5m wide entrance, which narrows to 1m, before opening up onto a 5m long and 4m wide chamber. The inside of the cave has a stony loam floor. There is a small flat area just outside the cave with a steep slope below. There is extensive graffiti both inside and outside the cave. Bottles and cans are scattered about, and fires have been lit in the cave recently, leaving ash deposits on the floor and black soot on the wall.

AST21 is on the same part of the valley, but below AST20. This cave is located on a mid level rock face 1.5m wide and 2m high. This cave was full of sediment, orange brown, sandy cave breccia, which was eroding from the entrance of the cave. The erosion appeared to be due to natural weathering. Below the cave is a steep slope where the material eroding from the cave might accumulate were it not for the fact that this was also suffering from erosion due to the informal footpath that crosses it.

The second cave that had been previously recorded in Anston Stones Wood is Fissure Cave (AS3) AST26. This cave, which is on a mid level rock face, is only 2m deep and 1.5m wide, and contains breccia sediments towards the rear. Immediately east of the cave is a large 2m wide fissure. This contained stone blocks and breccia, and had a talus cone below, trailing down the side of the valley. AST26 appeared to be little visited, and had no evidence of dumping or human disturbance. However, saplings growing above the site may have loosened material within the fissure.

AST33 is a cave with two entrances on a low level rock face next to the railway line. The cave had formed on two intersecting fissures leaving a small entrance, 1m high and 0.3m wide, facing north west and the main entrance, 1m by 1m, facing south west. It was not possible to determine the natural slope of the valley below the cave as this had been removed by the railway cutting. There was also some graffiti on the cave despite being well away from any paths.

The final cave in Anston Stones Wood is on the south side of the valley facing Fissure Cave AST26. This cave (AST40) is a small cave in the rear of a rock shelter. The cave is only 1.5m wide and 2m deep. However, collapsed stone that had formed a natural wall at the west end of the rock shelter had initially made the cave appear more substantial. This cave is located at the top of a gully on a high level rock face that runs for over 200m. Immediately outside the cave there is a steep slope down through the gully. There is some graffiti on the cave, but otherwise it is in good condition.

### **3.6.2.2 Rock shelters**

Within Anston Stones Woods there are 35 overhangs on rock faces that may have been used as rock shelters. These overhangs vary from a few metres in length to 30m long, and are distributed throughout Anston Stones Wood and Lindrick Dale.



These potential rock shelters vary in character along the length of the valley, and they may be subdivided into three groups. Towards the west end of the rock faces in Anston Stones Wood between AST1 and AST27, in an area of intermittent and generally short sections of rock face, the overhangs tend to be relatively short, with the exception of AST22. In the central and eastern part of Anston Stones Wood between AST36 and AST81, where rock faces tend to be larger, with long sections of continuous rock face, the rock shelters also tend to be larger and longer, although there are still some small overhangs. In Lindrick Dale there are generally fewer rock shelters and these have a mixture of small and medium sized overhangs.

In the western end of Anston Stones Wood there are a total of 8 rock shelters. Two of these, AST8 and AST10, are in a promontory of rock that outcrops on the top of the north side of the valley. This rock promontory also contains cave AST9. Both of the rock shelters have small overhangs, 1.5m and 4m long, and contain sediment. However, it is not clear if the deposits have been disturbed at any time by the badgers which had burrowed into AST9.

AST22 is the largest rock shelter in the western end of Anston Stones Wood. This overhang is 15m long and up to 4m deep forming a large potential shelter near the bottom of the valley below Dead Man's Cave AST20. This overhang, has a stony loam sediment inside it, and has suffered extensive damage. There is extensive graffiti on the rock face, and fires have been lit under the overhang, resulting in patches of soot blackened rock face and charcoal and ashes scattered around the site. People have also placed large stones within the rock shelter to form groups of seats around the fires.

There are three rock shelters in AST24. Here, several large blocks have become detached from the main rock face leaving a small sheltered enclave between the blocks and the face, and within this enclave there are two overhangs on the surviving rock face, both 5m long, and one 6m long overhang on one of the detached blocks. None of these overhangs contains sediment, with bedrock forming the floor surfaces in all of them. However, a fissure was noted at the rear of one that did contain sediment. The sheltered enclave between all of these rock shelters would also have acted as a sediment trap where any material from the rock shelters could have collected. There was a small amount of rubbish around and a fire had been built in one of the shelters, but damage was much lighter than in AST22, probably because AST24 is further away from, and hidden from the footpath. The origins of the shelters and detached blocks was not clear, although the blocks had probably separated from the main face due to the presence of faults/fissures. It is not clear if the rock shelters formed prior to or after the separation of the blocks. It is possible that the rock shelters were originally part of a cave that had fractured with the side collapsing off leaving a group of rock shelters facing each other.

The last potential rock shelter on the north side of the valley in the western end of Anston Stones Wood, is AST27 which has a 5m long overhang and contains a loamy fill. Although close to a footpath, there is no sign of any damage to this site.

On the south side of the valley there is only one potential rock shelter in the western end of Anston Stones Wood. This is in AST37, where large scale faulting has led to the development of a series of mini gorges. These are heavily overgrown and difficult to access, however, one overhang 7m long and 1m deep, was identified, and it was almost completely full of sediment. As this area was very overgrown at the time of the survey there was little sign of human activity and the current threat would appear to be limited to bioturbation from roots.



There are 18 potential rock shelters In the central and eastern parts of Anston Stones Wood. These are spread out over both sides of the gorge, from the top of the valley side to the bottom of the gorge next to the river.

On top of the north side of the valley a large scale fault has developed into a mini gorge running parallel to the main valley for approximately 250m. In this mini gorge two overhangs had formed possible rock shelters AST28, 5m long, and AST29, 15m long. Both of these sites appear to contain a significant depth of sediment, and there was no sign of any erosion or disturbance to either of the sites.

Running parallel to the mini gorge was a mid to high level rock face on the north side of the main valley. This contained 3 rock shelters AST32, AST34 and AST35. AST32 had a large 10m long and 3m deep overhang with stony loam sediment inside. There were extensive animal burrows in the sediment in this shelter and patches of ash, suggesting that fires had been lit in the past. AST34, which was 8m long had a stepped stone floor. Due to the absence of deposits in the shelter the site has limited potential, but a stony talus slope below could contain material, if the site had ever been used by humans. Adjacent to AST 34 was AST35, a 6m long and 4m deep overhang. This contained a breccia like sediment of red brown clay and angular stones and towards the rear of the overhang were large stone blocks, which appeared to have fallen off the roof. There was evidence that the site had been used as a drinking den with cans and bottles scattered around. There were no signs of fires having been lit.

East of AST35 was a further stretch of mid-level rock face which varied in height between 1m and 8m. This face contained two potential rock shelters, AST74 and AST75. The first, AST74 was a large, 20m long, overhang that contains a stony loam fill. This had been disturbed by animal burrows and several fires had also been lit in the shelter. AST75 was shorter at 12m, but is still a significant overhang. Although there was no evidence for fires in AST75 the fill had been heavily disturbed by animal burrowing activities.

At the eastern end of Anston Stones were three rock shelters on low level rock faces. Two were in Anston Stone Wood, and one was in the garden of Lindrick Hall Farm. AST79 appeared to be a small overhang, but this was full of alluvial sediments and it was not possible to determine its size. A badger sett extending under the rock face confirmed that an overhang was present, but also showed that at least some of the sediment must have been disturbed. West of AST79 is AST77, a large low-level rock shelter. This is 15m long and up to 8m deep, with a fill of red brown alluvial silty clay. The remains of a trench could be seen inside the shelter. This was approximately 1m wide and ran back towards the rear of the shelter. There are no recorded excavations on this site, so it is not known why or when this was excavated. There was also evidence of animal burrowing into the fill of the shelter. The final rock shelter on the north side of Anston Stones is a 12m long, low-level, overhang in the garden of Lindrick Hall farm, AST80. Two large slabs had fallen down from the roof of the shelter, covering the floor of the shelter. Below these slabs there appeared to be deposits of sediments, but it was not possible to identify their nature.

There were several rock shelters on high level rock faces on the south side of Anston Stones Wood. At the west end are AST38 and AST39, two overhangs of 12m and 4m length with a step slope below to the valley floor with occasional stone blocks on the slope. A couple of small fires had been lit in AST38, but apart from these there was little evidence of any activities that may have disturbed the deposits in these potential shelters.



AST40 is a, 4m long overhang with a small cave in the rear of the shelter, this was described in more detail in **section 3.6.2.1**. Just east of AST40 is AST41 an overhang split into two by a fissure. The fissure was 0.3m wide and contained a red brown silt which formed a small talus cone at the base of the fissure. The ground surface in the shelters was a stony loam deposit. There was some rubbish in the shelters, mainly beer cans, but no signs of disturbance.

AST42 is a large rock shelter on a high to mid level rock face up to 10m tall. The overhang is 30m long and up to 5m deep. The ground surface in the shelter was mainly bare exposing a brown loam soil, but at the east end a number of large stone blocks had fallen down from the roof of the shelter. These blocks had been reconnected to the roof by flowstone dripping down from the roof above. This site is near a path and some rubbish had been scattered around, and the remains of fires were observed.

Approximately 150m south east of AST42 is another large overhang AST71. This is 22m long and up to 2.5m deep. Talus cones sweep round either end of this rock face, possibly burying further overhang. A gully high up on the centre of the rock face had led to the development of a talus cone partially burying the centre of the overhang. The ground surface in this rock shelter is an orange brown stony loam. The only possible threat to this shelter appears to come from some animal burrows.

AST69 is an intermittent overhang totalling 15m in length. This is on a high level rock face with a moderate slope below. Bioturbation by roots appeared to be the main threat to this as there was little evidence of any other activity on this site.

The final rock shelters in Anston Stones are two small adjacent sections of overhang 8m and 4m long, the larger of which contains sediment while the smaller had a bedrock floor. There was evidence of climbers using this face, and fires had been lit in the rock shelters.

South of the A57 where the valley is known as Lindrick Dale there are 9 overhangs that form rock shelters. Lindrick Dale is quite different in character to Anston Stones. Here the valley contains several large houses and garden which has led to much greater landscaping of the valley sides and bottom. Lindrick Dale is also not as deep as Anston Stones, so many of the rock faces extend for the full height of the valley.

On the east side of Lindrick Dale, towards the north end, is a large rock shelter that runs for 22m in the gardens of Willow Green and Red Croft, with an overhang up to 5m high and 3.5m deep. For most of its length the rock shelter has been paved to make a patio in the garden, though in Red Croft part of the overhang has been incorporated into an old cottage, now used as a garden building. No information is available pertaining to the extent of any groundworks associated with the construction of the cottage and patio, it is therefore unknown if any deposits survive in the rock shelter.

Further south in Lindrick Dale on the west side of the valley are three overhangs next to each other, AST54. These rock shelters are 13m, 12m and 7m long with patches of flowstone on the rock face and sediment inside. On the slope below the rock face are some large stone blocks that had presumably fallen of the rock face maybe suggesting that the shelter line was once more continuous or extensive. As these shelters are in gardens there is the potential for disturbance of the top sediments in the shelters from gardening activities.



Almost opposite AST54 is AST55, in the garden of Lakeside House, which also contains three overhangs next to each other. These are smaller overhangs, only 5m, 6m and 3m long. These were in a more extensively landscaped garden and were therefore presumably subject to greater potential disturbance.

Also in the garden of Lakeside House is a further overhang on a separate rock face AST56. This overhang is 8m long, and had previously contained a small building, the remains of which could be seen on the rock face, more recently the garden had been extensively landscaped and the rock shelter had been paved with gravel and bricks. This final rock shelter would appear to have limited potential due to the extensive construction and gardening activities.

The final potential rock shelter in Lindrick dale is AST57 an overhang in the garden of Lakeside House. This overhang has been bricked up to create a garden shed, completely obscuring the shelter, and any deposits it contains.

### **3.6.2.3 Fissures**

Although there are several fissures in the rock faces in Anston Stones and Lindrick Dale few of these appear to have to have great potential. Most were either narrow or have a stony fill. However, there were 11 fissures that appeared to have moderate to high potential, mainly for palaeontology (AST2, AST10, AST24(x4), AST26, AST51, AST55, AST57, AST70) . These fissures all contain sediment and are generally over 0.5m wide. The fissures are distributed throughout the length of the gorge and are found on both large and small sections of rock face.

There are also 11 fissures that contained some sediment, and that had low to moderate potential, again mainly for palaeontology (AST4 (x2), AST5, AST19, AST41, AST44 (x3), AST51 (x2), AST62). These are generally narrower than the fissures with higher potential, and as with these they are found throughout the valley.

Five small fissures were recorded that had low potential. This is due to the absence of any observable deposits in the fissures. However, they all have small talus cones below suggesting they did once contain sediment, but that this has been eroded out (AST42 (x2) and AST43 (x3)). These are all located near to each other, and it may be that local conditions in this area were encouraging erosion in these fissures.

### **3.6.2.4 Rock faces and valley sides**

The nature of the rock faces and valley sides in Anston Stones and Lindrick Dale varies along its length. At the west end, for the first 0.7km, the valley has sloping sides with no rock faces. In this area the valley sides are generally a mix of moderate to steep slopes with the slopes becoming shallower towards the top of the valley sides. Further east the next part of the valley, which runs for up to 0.4km contains intermittent and scattered sections of rock face on a moderate to steep slope. These sections of rock face are distributed from high to low level and are generally between 1m and 3m high, though in one section, AST22, the rock face is about 10m high.

In the central and eastern parts of Anston Stones Wood the rock faces are generally in long continuous sections. On the north side of the rock faces are high level in the centre which gradually dropped down to become low and mid level faces further east. At the eastern end of Anston Stones Wood there are no faces on the north side, probably because they have been removed by the construction of the railway. On the top of the valley side at the west end of the central section are two further faces. These faced one another in a mini-gorge about 5m wide that has probably been



created on a large fault line. In the mini gorge the rock faces are generally about 2m high, while on the main rock faces of the valley they vary between 2m and 12m high. On the south side of the valley the rock faces vary between mid and high level. These are not as continuous as on the north side, but are still substantial and up to 10m high.

At the east end of Anston Stones beyond Anston Stones Wood there is an intermittent low level rock face, up to 4m high, in the garden of Lindrick Hall Farm.

South of the A57 in Lindrick Dale the valley is not as deep as in Anston Stones. For the first 0.15km at the north end of Lindrick Dale there are no rock faces on the valley sides which are steep. South of this there are long sections of rock face for the next 0.5km. These are not continuous, but are present for most of this section of the valley. These faces are up to 8m high, though usually less, and were high to mid level rock faces, with moderate slopes below to the valley bottom. In some areas the natural shape of the slope below the rock faces can not be determined. This was due to landscaping in the gardens in which these faces lie.

At the bottom end of the north south section of Lindrick Dale, in the garden of Dale House, the rock face, AST61, had been recently cut back during building work on the site. Access could not be gained to this area though from the road it appeared that there may have been archaeologically/palaeontologically sensitive features in this rock face.

On the east west section of Lindrick Dale there are intermittent sections of mid to low level rock face on the eastern arm. These are mainly on the south side of the valley, though there was one section on the north side. These faces are between 3 and 5m high. There are a number of talus cones on the south side of the valley below rock face AST64. These had formed where high level gullies are present on the rock face. Above these faces the valley sides are moderately sloped.

#### **3.6.2.5 Valley bottom**

Along the length of Anston Stones and Lindrick Dale the character of the valley bottom varies. The valley bottom is narrow in Anston Stones Wood, often little more than the width of the stream, while in Lindrick Dale there is a much wider flat valley bottom. The Anston Brook, runs along the length of the valley. The presence of the railway line and large embankment in Anston Stones has obscured much of the base of the valley, making accurate observation of the shape of the valley bottom problematic.

#### **3.6.3 Management recommendations**

Anston Stones Wood is a park owned by Anston Parish Council. The park is managed by a Management Committee made up of local councillors and representatives of English Nature and The British Geological Survey. However, there are no archaeological representatives on the management committee. The management committee has commissioned a management plan for the woods, this proposal is mainly concerned with the natural environment, but does include an archaeological component. The Management Plan is due to be completed by the end of June 2004. As this is being drawn up at the moment it provides an opportunity to consider an integrated approach to the management of the wood and its natural and archaeological resources.



Brian Davies, the English Nature member of the committee, has indicated that the plan will look at ways to improve management, and public access, while stopping vandalism. One of the ways this can be done is through public involvement and education.

Helen MacLean, the archaeologist for Bullens, the consultants drawing up the plan, said that they would be grateful for any information that could be provided to them. It is therefore proposed that a copy of the relevant sections of the management action plan should be forwarded to Anston Stones Wood Management Committee and Bullens as soon as it is finished, so that an integrated approach can be taken on the Anston Stones Wood Management Plan.

Anston Parish Council should also be approached with the aim of obtaining an archaeological presence on the Management Committee. This would be a most effective way of promoting the archaeological importance of the sites in the woods. The archaeological representative should add to the current specialist representatives on the committee from English Nature and the British Geological Survey.

### **3.6.3.1 Immediate Actions**

There are three main concerns regarding the integrity of the archaeological remains in Anston Stones Wood and Lindrick dale.

Recommendations related to Anston Stones Wood should be integrated into the Anston Stones Wood Management Plan that is currently being drawn up. They will be most effective if they become an integral part of the woods management, rather than an external responsibility.

In Anston Stones Wood there is a problem with vandalism which relates to the use of some of the caves and rock shelters as illicit drinking dens. This has resulted in bottles and cans being littered about the sites, graffiti on the rock faces, and fires being lit within the sites. This is unsightly and potentially dangerous due to the presence of broken glass bottles. However, it is not necessarily particularly damaging to any archaeological or palaeontological deposits, so long as these are not on the surface. However, adding large quantities of ash to the soil could have a potential impact on preservation of some remains through changes to the soil chemistry.

There are two proposals to deal with the problem of vandalism. The first covers public education, and will be aimed at promoting the importance and sensitivity of the sites. This will be undertaken through the public education programme. The second action should be to have a programme to clean litter debris from fires and graffiti off the sites. This will only work if it is carried out on a long term basis and should be part of the Management Plan being drawn up for Anston Stones Wood.

There are many paths both formal and informal in Anston Stones Wood. Some of these paths have been constructed, but others are simply bare earth. In the case of the constructed paths their construction may disturb any archaeological deposits that are close to the surface. With the unconstructed paths their surfaces could erode and this may disturb archaeological deposits, particularly where paths cross or run up and down steep slopes. There are a few very steep scramble like paths that have developed, and these show signs of significant erosion.

Problems with paths should be dealt with in two ways. In the case of constructed paths, and associated bridges and steps, further paths should only be approved and



constructed after assessing the archaeological impact of the paths. In most cases the likely archaeological impact will be low and path construction will not be a problem. However, where paths are constructed in the vicinity of sites or rock faces and where construction involves excavations beyond the topsoil there could be archaeological impacts. Informal paths that are leading to erosion should be discouraged through public education. Where erosion is taking place action should be taken to stabilise the slopes through regeneration of the vegetation. This should be part of The Anston Stones Wood Management Plan

The third area of concern relates to bioturbation from animals and plants. There are animal holes in several of the caves and rock shelters, these have been produced by a range of animals from rats to badgers. Some potential cave sites can only be identified through the presence of animal holes, particularly badger setts at the base of rock faces.

Disturbance by animals and plants is the most difficult issues to deal with as the woods are a SSSI and any management actions here will have to strike a balance between preserving the archaeology and not harming the natural environment. There are seven sites with animal holes in them, and two sites with animal holes nearby. However, all of these sites are potential sites, as none have been investigated to confirm if archaeology is present or not. Sites in Anston Stones Wood should be monitored to determine whether animal burrowing is restricted to the currently known sites, or is expanding. Numerous sites have plants, ranging from small shrubs to large trees growing in or near them. The roots from these plants may have disturbed the deposits within them. As the woods are a SSSI removal of plants is not an option, except in the most extreme of cases. The sites should be monitored through the monitoring programme to determine if the current situation is stable or subject to change. The monitoring of sites should be allied to a programme of small scale investigation to determine if the sites contain archaeologically/palaeontologically significant remains. If significant remains are present then small scale excavation should be considered to preserve the remains by record. This would have to be undertaken in a way that is sensitive to the natural environment and if badgers are involved an English Nature or DEFRA Licence to disturb badger setts would be required. This could be carried out following the procedures described in English Heritage Landscape Advice Note No.16 Badgers and The Historic Environment.

In Lindrick Dale the two main impacts to caves and rock shelters come from the construction of houses up against the rock face, and the incorporation of rock shelters as garden features. In the case of further construction these may be dealt with through the normal planning process, now that the potential of these sites has been identified. In the case of garden features that do not require planning consent the education programme should identify the potential of these site to the owners and suggest approaches that will minimise the potential threat to sites.

### **3.6.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, local councils, wildlife groups/trusts, local schools and local groups that may be interested. For more details see **section 3.15.2**. In Anston Stones Wood this should be undertaken in conjunction with Anston Parish Council through the Anston Stones Wood Management Committee and integrated with any programmes developed through the Anston Stones Wood Management Plan.



### **3.6.3.3 Monitoring**

Within Anston Stones Wood and Lindrick Dale there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database. Details of how such monitoring should operate are outlined in **section 3.15.3**. In Anston Stones Wood this should be undertaken in conjunction with Anston Parish Council through the Anston Stones Wood Management Committee and integrated with any programmes developed through the Anston Stones Wood Management Plan.



## **3.7 Red Hill**

### **3.7.1 Access and survey conditions**

Red Hill is a small triangular section of land between Kiveton Park and Kiveton Bridge, bounded by the B6059, the Worksop to Sheffield railway, and housing on the east end of Kiveton Bridge. It is 0.75km long and up to 0.25km wide at its widest point. The area contains the north side of an east west running valley. The south side of the valley, which is lower and more gently sloping, is covered by an industrial works and arable farmland and does not contain any known rock outcrops. This southern side of the valley was not surveyed. The east half of Red Hill Valley, adjacent to Kiveton Park is wooded with heavy undergrowth and shows signs of former quarrying activities. The western half is more open, covered in rough grassland with arable land in the valley bottom. The east half proved difficult to survey within the wood, and dense undergrowth, while the west half was easier in the rough grassland.

### **3.7.2 Site Condition**

#### **3.7.2.1 Caves**

Red Hill valley contains one known cave, RHT1, Red Hill Cave (AS1). There are no recorded excavations of the cave, which has a small, 1m square, entrance but then opens up inside and is approximately 2m high and 4m square internally. The floor of the cave is made up of a deposit of stony loam, however, it is not known how deep this is but it would appear to have some potential. The cave is been used as a den by local youths, and the inside is scattered with cans, bottles and other rubbish.

#### **3.7.2.2 Rock faces and valley sides**

The valley side (RHT2) in which Red Hill Cave is located varies in slope. At the top the slope was moderate, it then becomes steeper through the middle section, and is shallow at the base. There are a few small (less than 1m long) outcrops of bedrock scattered along the slope. A trackway has been cut from the B6059 across the site altering the shape of the valley to the east of RHT2.

#### **3.7.2.3 Valley bottom**

A railway runs along the bottom of the valley, and the construction of this has have changed the profile of the base of the valley. However, the bottom of the valley was probably never very wide.

### **3.7.3 Management recommendations**

#### **3.7.3.1 Immediate Actions**

No immediate actions are proposed. There is rubbish in the site but although this is unsightly it is not causing significant damage to the archaeological potential of the sites, and it is considered that long term control of such activities is best undertaken through public education.



### **3.7.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, local councils and local groups that may be interested. For more details see **section 3.15.2**.

### **3.7.3.3 Monitoring**

Within Red Hill Valley there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database. Details of how such monitoring should operate are outlined in **section 3.15.3**.



## **3.8 Thorpe Common and Lob Wells Wood**

### **3.8.1 Access and survey conditions**

Thorpe Common and Lob Wells Wood lie in the long and sinuous Bondhay Valley which runs for approximately 3.25km. From Lob Wells Wood the valley runs south west, for about 0.5km to the village of Top Hall. It then runs south south west for about 1.5km to Whitwell Wood. It then turns west south west to run along the northern side of Whitwell wood for 1.25km, including a short section which turns north west at its very end. All of the land is in private ownership, though there are a number of informal footpaths that run through parts of the valley giving access to some areas. Land owners gave permission to access areas where this was required. The northern end of the valley is wooded in Lob Wells Wood, this generally had light scrub undergrowth, and access and surveying conditions were reasonable. From the village of Top Hall down through Thorpe Common the valley is a patchwork of open fields and woods. Generally, the valley bottom contains fields, either pasture or arable, with woods along the valley edges, although this did vary with occasional patches of woodland in the valley bottom, and fields on the valley sides. The small woods in Thorpe Common generally have dense scrub along their edges, with lighter undergrowth in the middle. Where rock outcrops occur in fields they are usually covered by a small copse of trees. Surveying conditions were reasonable, with occasional difficult patches. Along the north edge of Whitwell Wood the south side of the valley is in the wood, while the north side of the valley was in fields. In Whitwell Wood the undergrowth is light to moderate and survey conditions are reasonable. However, in the fields, which were arable, the outcrops are left as small copses which are heavily overgrown and in one case had formed a dense thicket that could not be accessed.

### **3.8.2 Site condition**

#### **3.8.2.1 Caves**

No caves were known from Thorpe Common and Lob Wells Wood and none were identified during the survey.

#### **3.8.2.2 Rock shelters**

During the survey five rock shelters were identified. A sixth rock shelter (TL4) had been previously recorded, however, this was not visited as access could not be arranged.

At the north end of the Bondhay Valley in Lob Wells Wood there are two rock shelters (TLT17 and TLT18) on a mid to high level rock face on the south side of the valley. The largest of these TLT17 (TL2) is 7m long and up to 4m deep and is filled with a mixed coarse scree loam deposits. Below the rock shelter is a moderate slope to the valley bottom. Previous excavations by White produced flints one of which was possibly Palaeolithic in date. There have been no known excavations in TLT18, which is 7m long but only 1m deep. This shelter is partly buried by a talus cone which comes around the side of the rock face that contains the shelter. Both of these shelters are in good condition.

Just south of Lob Wells Wood is a rock face that could not be accessed. This probably contained a further rock shelter previously recorded as Lob Wells Rock Shelter 3 (TL4).



Approximately two thirds of the way down the valley, from Top Hall to Whitwell Wood is Thorpe Common Rock Shelter. This is on a high level rock face on the east side of the valley in a copse of trees and scrub, surrounded by an arable field. The rock face is 50m long and is divided into three terrain units, but should be viewed as one site. TLT5 at the south end has the largest overhang, 12m long and 2m deep, and some small trenches have been excavated at this end. Unfortunately the trenches had not all been backfilled and one was left open, plants had only started to re-colonise the trench, the sides of which are eroding and collapsing. It is not certain when the trench was excavated, the last known work on the site was by Jenkinson and Gilbertson in the mid 1980s, however, farm worker Tony Medlum said the excavations had been carried out only a few years ago. It would therefore appear to be possible that more recent unrecorded excavations may have been carried out on the site or that Mr Medlum was mistaken over the dates. TLT6 and TLT7 do not have major overhangs, but small sections of overhang are present. For the full length of the rock face there is a flat area at the base of the cliff with a slope below this. Ploughing in the field is cutting into the base of the slope below the cliff, potentially disturbing archaeological deposits.

Further south, where the valley turns west along the northern edge of Whitwell Wood is a small outcrop of bedrock 4m long, with a small overhang of 0.8m. There is an extensive badger sett below this rock face and at the base of the rock face one of the entrances to the sett appeared to be angling at least partially under the rock face suggesting that the overhang extended further back. If there were any archaeological/palaeontological deposits on this site the badger sett will have extensively disturbed it.

Within Whitwell Wood on the south side of the valley is a rock face that contains a 1m deep and 8m long overhang (TLT12). Although there are no trees up against the rock face, this is in a Forestry Commission Plantation, and the planting and felling of trees may have disturbed any deposits that extend down the slope beneath the rock face.

### **3.8.2.3 Fissures**

Fissures were identified in two areas, on the rock face of Thorpe Common Rock Shelter (TLT5 and TLT7) and on the rock face in Whitwell Wood (TLT13). There are two fissures on the Thorpe Common Rock Shelter rock face, one near the north end in TLT7 and one towards the south end in TLT5. The northern fissure, which is 0.3m wide, is full of sediment, while the southern fissure, 1m wide, contains sediment at its base. The northern fissure is near to an area of collapsing rock face, and a large block has fallen off the face, possibly from a former overhang.

On TLT13 a large rock face in Whitwell Wood there are three fissures and two gullies, these vary in width from 0.6m to 1m wide. None of these features contain substantial deposits, although there is a large talus cone below one of the gullies.

### **3.8.2.4 Rock faces and valley sides**

The Bondhay Valley is generally quite shallow, with only low valley sides along its length. The valley sides are usually moderately sloping, with occasional rock faces.

The nature of the rock faces vary along the length of the valley. At the northern end of the valley in Lob Wells Wood there are substantial lengths of rock face, although most were not very tall (less than 3m in height in general). The majority of these faces are located at mid level on the south side of the valley, with a couple of smaller



faces high up on the north side of the valley. In Lob Wells Wood the slopes below the faces are covered with a forest soil, but in some patches this includes a component of scree material, and it may be that there are further scree deposits buried under the forest soil.

South of Lob Wells Wood there are a number of small rock faces scattered along the east side of the valley. These were generally quite short (2m or less tall), and are located either high or mid slope on the valley side.

Within Whitwell Wood the valley sides are very similar to the section from Lob Wells Wood to Whitwell Wood, with occasional rock faces, generally at high or mid level and on the south side of the valley. There is one rock face on the north side of the valley (TLT14) which could not be accessed as it is so overgrown. For most of the rock faces the main threat was from bioturbation from root activity, as the rock faces are generally in woodland.

### **3.8.2.5 Valley bottom**

The base of the valley is flat with a small river running down it, and is generally fairly narrow, around 50m wide, although the width increases slightly as it runs north and east.

## **3.8.3 Management recommendations**

### **3.8.3.1 Immediate Actions**

One immediate action is proposed. This relates to Thorpe Common Rock Shelter which stretches across terrain units TLT5,6 and 7. Here some old archaeological trenches have been inadequately back-filled leaving sections exposed and open to the environment and eroding. These should be backfilled properly and made stable. It is estimated that this would take two people one day. Material from the partly surviving spoil heaps and the adjoining field should be used in the backfilling. This should be undertaken following agreement with the land owner (see **Appendix 3.3** for costs).

At the base of the slope below Thorpe Common Rock Shelter ploughing in the field is cutting into the slope and leaving a step in it. This is likely to be subject to erosion over time. Management of this problem will be dealt with through the proposed public education programme.

There are some large badger setts in Thorpe Common, but only one appears to be close to a rock face. The sites should be monitored through the monitoring programme to determine if the current situation is stable or liable to deteriorate. The monitoring of sites that are subject to bioturbation should be allied to a programme of small scale investigation to determine if the sites contain archaeologically/palaeontologically significant remains. If significant remains are present then small scale excavation should be considered to preserve the remains by. This would have to be undertaken in such a way as to be sensitive to the natural environment. If badger setts were involved an English Nature or DEFRA Licence to disturb badger setts would be required. This should be undertaken following the procedures described in English Heritage Landscape Advice Note No.16, Badgers and The Historic Environment.



### **3.8.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, tenant farmers, local councils, and local groups that may be interested. For more details see **section 3.15.2**.

### **3.8.3.3 Monitoring**

Within Thorpe Common and Lob Wells Wood there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database. Details of how such monitoring should operate are outlined in **section 3.15.3**.

## **3.9 Steetley Quarry Caves**

### **3.9.1 Access and survey conditions**

Steetley Quarry caves lie on the site of a former works. This has closed down and the site is starting to be redeveloped. The site consists of a series of large derelict industrial buildings surrounded by tarmac and hardcore surfaces. Some of the buildings have been constructed in what appears to be old quarries, and there are cut rock faces around the back of some of the buildings. Also next to the site is a large quarry. Access was gained to the site of the works to examine the rock faces. Access could not be gained to the quarry which was described as being in an unsafe condition. Within the area of the works conditions for survey were generally good, except where retaining walls had been built against the rock face. It is not known if there were any natural rock faces prior to the quarrying and construction activity on the site. The faces were examined as two caves with archaeological and palaeontological remains are known from the site, demonstrating that there must have been access to the caves from the surface. One of the caves was in the old works while the other was in the quarry. The fact that the quarry could not be entered was not a problem, as the cave within it is known to have been destroyed by quarrying activity.

### **3.9.2 Site condition**

#### **3.9.2.1 Caves**

The one small cave on the site, SCT1 (Steetley Cave ST1), is in a rock face behind a large industrial building. The rock face was clearly cut back when the building was constructed. There are two adjacent entrances, both blocked up with concrete blocks, which may originally have been parts of the same cave. However, it is not possible to confirm this. The cave must have originally had an entrance as extensive faunal remains have been recovered from the cave as has one Mesolithic flint. It is not known how far back the cave extends, although some *in situ* deposits do remain (Jenkinson 1980).

#### **3.9.2.2 Rock faces and valley sides**

As well as the rock face (SCT1) in which the cave survives there is a further face (SCT2) on the eastern edge of the site which has been created by quarrying. No caves or fissures are visible in this face, part of which has been obscured by a concrete retaining wall.



### **3.9.3 Management recommendations**

#### **3.9.3.1 Immediate Actions**

No immediate actions are recommended.

#### **3.9.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners and local councils. For more details see **section 3.15.2**.

#### **3.9.3.3 Monitoring**

As there is only one site, which is blocked up and has no access, no monitoring is recommended. The main threat to the site comes from the current redevelopment of the old industrial site, since the closure of Baker Refractories. The prime protection of the site will be through the planning process see **section 3.15.4**.



## **3.10 Ash Tree Gorge**

### **3.10.1 Access and survey conditions**

Ash Tree Gorge lies to the west of Whitwell, it is a small east west running valley over 0.3km long with rock outcrops for approximately 0.25km of its length. Side valleys enter the gorge from north and south approximately mid way along its length. The land is owned by the Chatsworth Settlement Trustees., and they and the tenant farmer allowed access to the land. The valley lies entirely within a pasture field and is mostly grass. However, trees and scrub have grown up along and on the rock faces. The sides of the gorge are divided into four different areas by the side valleys that enter the gorge and one of these, the north east area, has been fenced off and planted with saplings. As this area is not being grazed it is overgrown with scrub, obscuring parts of the rock face. Survey conditions were generally good except where saplings had been planted.

### **3.10.2 Site condition**

Ash Tree Gorge contains 3 sites recorded on the gazetteer. A total of 40 terrain units were defined in the gorge. There are currently no public footpaths through the gorge and the current usage is as a pasture field. At the time of the survey cattle were using the field, and there was evidence of cattle poaching at the base of some rock faces, and in some gullies.

#### **3.10.2.1 Caves**

The gorge contains one cave, Ash Tree Cave (ATT12), located on the south east section of rock face. The cave interior was generally in good condition, and contains deposits for its full length. There are known to have been extensive previous excavations. There are no spoil heaps outside and as the cave is largely full of sediment it must be assumed that extensive back filling has taken place. The internal height of the cave varies from near 4m near the entrance to less than 1m at the rear. Backfilling may have protected any surviving deposits, but the backfill will have to be removed prior to any further excavations. There appear to be *in situ* deposits still remaining on the side walls of the cave below flowstone deposits. These possible *in situ* deposits survive to a height of up to 0.3m above the main floor surface in the centre of the cave. It appears that the previous excavation involved a trench excavated down the centre of the cave leaving material up against the sides of the cave, and that the trench was subsequently backfilled. As the floor surface of the cave is now below the ground surface of the gorge outside a talus slope has developed with material washing into the cave from outside. The cave entrance is at the current floor of the gorge and contains what appears to be the remains of a wooden gate that has collapsed and broken up. Just outside the cave entrance is a pile of wood, including fallen trees and large branches placed there to stop livestock entering or falling into the cave (currently this is working). To the west of the cave entrance the rock face overhangs for up to 0.7m for the first 7m. Ash Tree Cave appears to have further research potential.

#### **3.10.2.2 Rock Shelters**

Ash Tree Gorge contains two previously recorded rock shelters. Both of these are close to Ash Tree Cave (ATT12) with one on either side of the valley.



Ash Tree Gorge Rock Shelter 2 (ATT8) is located on the south side of the gorge 20m west of Ash Tree Cave. This rock face was identified as a rock shelter (AT2) in the gazetteer. This section of rock face does not contain any overhangs and is less than 1m high. It is not immediately apparent why this section of rock face has been described as a rock shelter. The gazetteer recorded the presence of an old machine trench in the valley floor and it may be this that has resulted in this being recorded as a rock shelter. However, the former trench was not apparent in this area. A depression could be seen at the entrance of Ash Tree Cave, and old photographs showed a trench in front of the cave entrance. In its current state this site appears as a small outcrop of rock face 4m long, with a short shallow slope below to the valley floor. This rock face appears no more probable as a rock shelter than many other rock faces in the gorge.

The second rock shelter (ATT32) is opposite Ash Tree Cave, on the north side of the gorge, next to where the side valley enters the gorge. This is recorded as Ash Tree Gorge Rock Shelter 3 (AT3) in the gazetteer. This rock shelter has an overhang 4.7m long and 2.1m deep. The floor of the rock shelter is made up of a bare stoney loam that may have buried further overhang. As the deposits inside the rock shelter are bare with no vegetation to stabilize them they may be subject to erosion. Immediately in front of the rock shelter the ground is level, however, beyond that the ground slopes down to the valley bottom.

### **3.10.2.3 Fissures**

One large fissure (ATT3) was identified, this was not previously recorded, and was partially buried by a talus cone. The talus cone is formed of stone blocks covered by a wash of finer sediment from above. The upper part of the cone is bare and subject to continuing erosion and deposition. It is not possible to determine the full depth of the fissure but it is currently 1.2m deep and may extend further. It is possible that the fissure could open up further into a cave.

Several other fissures were also identified in the gorge mostly in the south east area. These are generally formed on faults and were often narrow. One fissure in ATT21 is up to 1m wide, but this does not contain any significant deposits of sediment. There are several narrower fissures up to 0.3m wide that do contain sediments and although these are of limited archaeological potential they may contain palaeontological remains of small animals.

### **3.10.2.4 Gullies**

Several gullies have developed on the rock faces, these appear to originate in two ways, either through erosion on a fault line, or through a block separating off the rock face where two large faults intersect. Those formed through erosion start as high level gullies and gradually increase in size and depth over time. It is less clear if the gullies formed by blocks separating have formed rapidly or slowly, although both are possible. Gullies often provide routes for material to wash down from above the rock faces, which has led to the formation of talus cones at the bases of many gullies. These talus cones are often quite small.

Several of the larger gullies (ATT13, ATT14, ATT22, ATT24 and ATT35) have been used by livestock to move from the bottom of the gorge on to the top of the gorge. Cattle poaching was evident in these gullies, which are often bare of vegetation and subject to erosion.



### 3.10.2.5 Rock faces and valley sides

As stated previously, the sides of the gorge are divided into four areas by the side valleys, and the rock faces in these varied in character.

The south west area (ATT1 – ATT6) mainly consists of a sloping valley side, with small intermittent outcrops of bedrock. The valley side generally has a moderate slope, although at the east end this is shallower, where the side valley enters the main gorge. Most of the slope is covered with grass or light scrub, that has developed over a stony loam soil. On top of the slope above ATT1, ATT3 and ATT4 is a bund formed from material imported onto the site (Blagg pers. comm.). There are stone blocks and patches of scree in ATT3 and ATT4 and some of the material in these may have originated in the bund. The rock outcrops are generally less than 0.5m high, with the exception of the rock face in ATT3 which is approximately 2m high. It is possible that further bedrock faces are buried under the general slope of the valley side in this area.

The south east area (ATT7 – ATT26) contains the highest and most continuous rock face in the gorge. At the east and west ends of this area the rock face is shallow and intermittent similar to the south west area. However, the central section, between ATT 10 and ATT 23 has a rock face approximately 2m high with a shallow to moderate slope down to the valley bottom from the base of the rock face. The rock face in this area contains several features including Ash Tree Cave (ATT 12) as well as gullies, small fissures and faults. Where these are of archaeological or palaeontological significance they have been discussed in **sections 3.10.2.1 – 3.10.2.4.**

In the north east area (ATT27 – ATT 33) the rock face and valley side are mostly obscured by the growth of saplings and scrub. This area has been fenced off and planted with saplings. Rock face was exposed at the east and west end of this area, beyond the planting and on one large promontory of rock in the centre, the rest of this area contained dense scrub that obscured the rock face. At the east end of this area ATT28 and ATT29 the rock face consists of a series of intermittent outcrops between 0.3 and 1.2m high. At the west end of this area was ATT32 which contains a rock face up to 2m high, and within this is Ash Tree Gorge Rock Shelter 3 (discussed previously). Through most of the north east area it was not possible to determine the nature of the rock face or valley slopes.

The final area surveyed was the north west area (ATT34 – ATT37). The north west area exhibited features seen in all the previous areas. At the east end are small intermittent rock faces up to 0.5m high on a moderate but uneven slope. In the centre of the area in ATT35 are promontories of rock face separated by gullies with a moderate to shallow slope below. At the west end of the rock face, ATT36, is a mostly continuous rock face up to 2m high. A large block has separated off this face leaving a narrow fissure behind. The slope below this face is shallow, with a patch of scree at the west end. Beyond the rock face is ATT37, which contains a moderate slope, becoming shallower near the bottom of the gorge. This slope appears to be slightly terraced in areas, and this may reflect aspects of the underlying bedrock.

The valley extends further west than the main gorge area with moderate to shallow slopes on both sides of the valley, but no bedrock outcrops. This area was not included in the survey.



### 3.10.2.6 Valley bottom

The valley bottom ATT38 is fairly flat with a general slope down to the east. On either side of the valley there is usually a slope from the rock faces to the valley bottom but this is either shallow, or did not normally extend far in the valley bottom. The bottom of the side valley on the south side ATT40 has a general shallow to moderate slope to the north and does not contain any rock outcrops. The side valley that enters the gorge from the north side ATT39 has a moderate slope, and contains a stone block or bedrock outcrop in the centre of it. However, this is only approximately 0.1m high and does not impede the uses of the two side valleys as a route across the gorge for farm vehicles. Although this route was grassed over slight ruts could be seen on the bottom of the south side valley.

## 3.10.3 Management recommendations

### 3.10.3.1 Immediate Actions

Ash Tree Cave has a dangerous entrance due to the steep slope down into it. This is currently controlled by piles of logs and tree stumps that have been placed in the entrance. In the long term it may be necessary to consider securely gating the cave.

Any further proposals to plant saplings on the rock faces, as has taken place on the north east section of the gorge, should be resisted unless it can be demonstrated that they will not damage the rock face or deposits. This should be promoted through the public education programme.

Cattle poaching has exposing bare ground surfaces in some of the gullies it is uncertain if this is an unusual event or an ongoing process. This situation should be monitored through the long term monitoring process to determine if this is resulting in erosion. If erosion is taking place ways to encourage the growth of vegetation in the gullies will have to be considered.

### 3.10.3.2 Public Education

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, tenant farmers and local councils. For more details see **section 3.15.2**.

### 3.10.3.3 Monitoring

Within Ash Tree Gorge there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database, details of how such monitoring should operate are outlined in **section 3.15.3**.



## **3.11 Markland and Hollinhill Grips**

### **3.11.1 Access and survey conditions**

Markland and Hollinhill Grips is a large valley with three arms which meet at the north east corner of the complex. The longest arm runs east from the centre of Clowne, where it was known as Clowne Grips, before turning into Hollinhill Grips. This is over 2km long in total. The other two arms are both known as Markland Grips. The first of these runs south west to north east, and joins to the long arm of Hollinhill Grips at its east end near Upper Mill Farm. This arm is almost 2km long. The final arm runs approximately south to north, for about 0.75km, and joins the main Markland Grips arm just south west of its intersection with Hollinhill Grips. The total length of the valleys within Markland and Hollinhill Grips is around 5km.

Access was gained to the majority of Markland Grips, most of the area is owned by the Chatsworth Settlement Trustees and they and their tenants gave access to all areas as did Mrs Prior of Upper Mill Farm. The west end of Hollinhill Grips, known as Clowne Grips, lies in the village of Clowne, where it runs through a linear park. The rock face is in a wooded area within the park with light to moderate undergrowth. This area is owned by Bolsover District Council. Beyond the village of Clowne Hollinhill Grips contains a sewage farm for about 0.25km, which was not accessed. The rest of the valley from the sewage works to Upper Mill Farm is woodland, managed as a nature reserve, with some agricultural land at its east end. The general pattern in this area and for the rest of Markland Grips is for the valley bottom to be pasture with wooded valley sides. However, in many areas the fields in the valley bottom are no longer being grazed, and have become overgrown, with tall dense scrub covering the valley bottom. These small field, in the valley bottom are not being used, partly due to their awkward size and location, but also due to the flies in the valley which irritate cattle kept in the fields. In the main arm of Markland Grips the south west end is open and grazed while the north east half is overgrown, with some land managed as a wildlife sanctuary. The second arm of Marklands Grips is overgrown, with ponds at the north end of the arm.

Aside from the fields that are still used as pasture, and the linear park in Clowne, most of Markland Grips is very overgrown and is difficult to access and survey. For this reason much of the survey of Markland Grips was left until the autumn to allow some of the vegetation to die down. This did improve access conditions but there were still areas that were very overgrown and inaccessible, particularly at the west end on the south side of Hollinhill Grips where a length of potential rock face 150m long could not be accessed.

### **3.11.2 Site condition**

#### **3.11.2.1 Caves**

A total of 12 caves were identified in the survey. This included 4 sites listed in the Creswell Crags Conservation Plan Gazetteer and 8 sites that were not recorded on this list. All of these caves occurred in Hollinhill Grips, or towards the north west end of the main arm of Markland Grips.

On the south side of Markland Grips is MGT54, this cave has formed on a fissure on a 10m high rock face, although the cave was 6m high, 6m deep and 1.5m wide this has low potential as the floor inside is bedrock which slopes down steeply to the outside. There is no slope below the rock face, just the flat valley bottom, along which



runs a public footpath a few meters away from the cave. Despite the presence of the footpath there is no evidence of rubbish around the site or damage to it. There are two other large fissures near by this site in MGT52 and MGT53 which will be discussed in section **3.11.2.3**.

Opposite MGT54 on the north side of Markland Grips are 4 further caves. The most westerly of these is MGT74, where there are two small cave entrances that have formed on the same fault line. These entrances are both about 0.5m across with one vertically above the other. The upper entrance does not extend far back, about 0.5m, before it is blocked by sediment. The lower entrance is partly buried by a talus slope, which obscurs the height of the entrance and partially fills the cave which extended back for over 1.5m before it is blocked by washed in material from the talus slope. It could not be determined if these two entrances connect further back although this is possible. Due to the difficulty in determining the size of the lower entrance it is not possible to say if this cave was big enough for human use, although it may have been used as an animal den.

Excavations at Sepulchral cave, MGT77 (MG5), have produced the remains of at least 5 human burials. The cave, which no longer contains any sediment is 1m wide and 2m high and extends back for 3m. This is located on a high level rock face, below which is a moderate to steep talus slope. The talus slope, which starts at the base of the cave entrance, appears to have buried a possible entrance to a lower chamber, a hand-sized hole extending back approximately 0.3m was all that was visible, so it was not possible to determine the size of any lower chamber if it existed. There was evidence of fires being lit in Sepulchral cave, with soot on the walls and ash on the floor. However, as this cave is devoid of sediment these fires will not be damaging any potential archaeology. There is an informal path up the talus slope below the cave and this could encourage erosion which might impact on any deposits in a lower chamber (if it exists).

Further east along the valley is MGT81 (Markland Grips Fissure 6/ Armstrongs A, MG8). This is a tube like cave with two entrances one on the side of the rock face and one on the top of the valley. The larger entrance 2m high and 1.2m wide is on the rock face and from here the cave extends back for 5m before opening out to the top of the valley through a smaller entrance 1m by 0.5m. This cave contains a little sediment, although former records record it as bare bedrock internally, suggesting that this sediment may have washed in recently. A steep talus slope runs down a gully in front of the cave.

The final cave on the north side of Markland Grips is MGT82. This cave is little more than a small recess 2m wide, 2m high and 1m deep containing a stony loam fill. The cave is located on a high level rock face with a steep scree slope below.

As the north side of Markland Grips does not contain any public footpaths the caves on this side are generally not visited as much as the rock faces on the south side, and with the exception of Sepulchral Cave (MGT77), the main threat to the sites on this side of the valley appears to be from bioturbation from roots, as this area is very overgrown with trees, saplings and dense scrub.

The 7 caves in Hollinhill Grips are distributed along the length of the valley, predominantly on the north side. At the east end are two possible caves, one MGT102 (Markland Grips Cave 9, MG 10) is a small recess, 2m wide, 2m high and 2m deep. This is on a high level rock face with a loose scree slope below which extends into the cave, with a road and Upper Mill Farm below it in the valley bottom. 20m east of this is an area of possible former quarrying where a deposit of breccia,



MGT101, was identified, partially set back into the rock face. This breccia deposit was obscured by vegetation and could not be fully defined or described. Next to this breccia deposit is a tube or small cave running parallel to the rock face which has been partially exposed. This also contains some sediment. It may be that these features represent the remains of a cave or cave system that has been cut through by the quarrying activities. The rock face on which this breccia and tube are located extends from low to high level and below it there are some sheds and a caravan, as well as the remains of concrete slabs on which other structures probably once stood. These features are vulnerable to any developments that take place in this area including the removal or construction of further sheds.

On the north side of Hollinhill Grips on top of the valley side is a small cave, MGT106. This has a north facing entrance and is located next to a footpath through a nature reserve. This cave has a 1m diameter entrance but opens out further back to form a 1.5m high 2m wide and 3m deep chamber. The floor of the cave consists of cave breccia, patches of which were also noted on the roof. Outside the cave is a small pile of rubble, possibly suggesting that some excavation has taken place here, although none is recorded. The proximity to the footpath and presence of a rubble pile suggests that this cave may be subject to disturbance.

A large cave MGT108 is located on a high level rock face on the north side of the valley, this has an entrance 3m high and 1.5m wide, opening up to 2.5m wide and 4m deep. Inside there are patches of bedrock and sediment, though the deposits that remain do not appear to be very extensive. This cave is accessed by walking up a moderate to steep slope from an informal path in the valley bottom and the presence of graffiti and the remains of fires demonstrated that this cave has been used in the recent past.

MGT113 is a small cave on a high level rock face in a wide gully. The cave entrance is part way up the face, with an entrance 1m high, 1m wide, and up to 2m deep. There is a small opening at the top with light entering, but the angle of access precludes full visibility of the inside of the cave. Little or no sediment could be seen inside but there is a large talus cove below.

The final cave on the north side of Hollinhill Grips is MGT118. This is a small recess-like cave 1m high, 2m wide and 2m deep on a small rock face. Fragments of flowstone are visible at the back of the cave and there is a mound of sediment in front of the cave. This sediment is possibly washed down from above, but it could be spoil from an unrecorded excavation in the cave. There were the remains of a small fire and some rubbish in the cave at the time of the survey.

MGT125 is the only cave on the south side of Hollinhill Grips. This is located on a small side valley that enters the grips from the south. This cave has two entrances, on open fissures, 0.5 and 0.8m wide, that intersect at the rear to form a chamber 2m high, 2m deep and 1.5m wide. This area is very inaccessible and there is no evidence of any human activity in the area that would impact on the cave.

Caves MGT106, MGT108, MGT113, MGT118 and MGT125 are all within the nature reserve that occupies most of Hollinhill Grips. There are no public footpaths through this area, but there are several informal paths, the main one of which runs along the top of the north side of the valley. Aside from the threats to sites mentioned above the main threat to sites in the nature reserve in Hollinhill Grips would seem to be from bioturbation from roots, as this area is very overgrown with trees, saplings and dense scrub.



### 3.11.2.2 Rock shelters

There are a total of 41 possible rock shelters in Markland and Hollinhill Grips, ranging in size from 3m long to 30m long. These are distributed throughout the Grips but are most common towards the eastern ends of Markland and Hollinhill Grips.

There is one rock shelter in Clowne Grips, MGT63 (Clowne Craggs Rock Shelter, MG11), this was 12m long and up to 3m deep. This is located in a linear park and is used by local youths as a drinking den. This has resulted in graffiti on the rock face, fires being lit, and rubbish being dumped in the shelter, which is therefore in a poor state and vulnerable to further damage.

In the western end of Hollinhill Grips there are 3 small rock shelters, MGT116, MGT117 and MGT126. MGT116 (Hollinhill Grips Rock Shelter 1, MG2) was 3m long and 1m deep, MGT117 was 4m long and 1m deep, and MGT126 was 10m long and 2m deep. All of these sites are difficult to access, MGT116 and MGT117 on the north side of the valley could be reached from informal footpaths but there are no paths to MGT126. Despite the inaccessibility of MGT126 a low stone bank has been constructed in front of it, fires lit inside and rubbish has been strewn around the site, all suggesting that the site has been used as a den or shelter by someone.

In the central and eastern half of Hollinhill Grips rock shelters are more common and often quite large. Along the north side of Hollinhill Grips there are 7 rock shelters, MGT115, MGT114, MGT112, MGT111, MGT109, MGT107, and MGT105, all of these overhangs are between 6m and 8m long except for MGT107 which is 22m long and MGT112 which is 30m long. The overhangs are located at either high or mid level with the mid level overhangs (MGT112 and MGT111) in the centre of this section of valley. Where they could be seen the surface deposits in the rock shelters were primarily stoney loams though there were a few small patches of scree like material. Although all of these sites are in the nature reserve there are no formal footpaths leading to them. However, all sites are accessible via informal paths that run through the nature reserve. Many of these paths are overgrown and little used, suggesting limited public use of these sites. Despite this, fires have been lit in MGT114 and MGT108, which also contains graffiti, and some bricks had been dumped in MGT105. There is little other evidence for damage through human activity, although there were a few patches of bare earth on informal footpaths at the base of rock faces, however, none of these showed significant signs of erosion. Damage to these sites through natural processes was mainly limited to bioturbation from root activity, although a pile of rubble in MGT115 is possibly from a rock fall that could have damaged any sensitive deposits near the surface.

On the south side of the central and eastern part of Hollinhill Grips there are 6 rock shelters MGT97, MGT119, MGT120, MGT121, MGT122 and MGT123, the last of which is in two parts on either side of a large gully. These vary in length from 7m (MGT119) to 30m (MGT121) with most nearer the former in size. Four of these sites are at mid level with only two, MGT120 and MGT97, at high level. Surface deposits in the rock shelters are usually stony loams with occasional scree deposits. Access to the sites on the south side of the valley is even more difficult than on the north side, with only a few very overgrown informal paths. One fire has been lit in MGT121 but other than this there is little evidence of recent human activity. This fire was next to a rather unusual structure, which is roughly rectangular in shape, 3.5m long and 1m wide, and runs along the back of the rock shelter. The structure is formed of large stones set on edge at an angle of about 60°. Two of the stones are cemented together with flowstone indicating the structure is of some antiquity. It is unclear if this structure is naturally formed, by stones collapsing off the rock face or if it is of human



origin. Generally, root bioturbation was the greatest threat to the integrity of the deposits in these rock shelters.

In Markland Gripps there are 17 rock shelters in the eastern section between the junction with Hollinhill Grips and the split of Markland Grips into two arms. Eight of these sites are on the north side of the valley and nine are on the south side.

The eight sites on the north side of the east end of Markland Grips, MGT95, MGT94, MGT93, MGT79, MGT78, MGT75, MGT70 and MGT69, vary in length from 3m to 10m long, these are either at mid or high level, with slightly more at high level. Again these sites can only be accessed using overgrown informal paths in the nature reserve. The surface deposits are generally stony loam, often with patches of scree or stone blocks. There is little evidence of current human activity at these sites, but four of them MGT70, MGT75, MGT79 and MGT94 have been disturbed by animal burrows. The last one most extensively. MGT95 has been disturbed by by cattle poaching.

The nine sites on the south side of the east end of Markland Grips, MGT92, MGT50, MGT52, MGT53, MGT55, MGT85, MGT87, MGT89 and MGT127, are generally quite small, with the rock shelters between 5m and 10m long. All of these rock shelters are at the base of a large rock face over 10m tall usually with a short shallow slope below to the valley bottom, locating them at mid level on the valley side. Access to these sites is via a public footpath that runs along the valley below the base of the rock face, between 1m and 10m from it. The surface deposits in this area are generally stony loams with some scree slopes towards the western end of this area. Several of these sites have patches of bare earth at the base of the rock face, although there was only one, MGT89, where the footpath runs along the rock face with erosion visibly taking place. The natural ground surface has been buried or removed by the construction of a farmyard surface and trackway in MGT92. There is some graffiti and dumping of brick and concrete rubble in MGT 85 next to the former railway bridge. Possible dumping is also present in MGT127, where there are large scree like slopes, however, the stones in these are much more rounded than usual, and the material appears to have come from over the top of the rock face suggesting that it may have been dumped. There is little sign of animal activity and bioturbation appeared to be primarily from roots which must have been extensive considering the density of the vegetation.

In the southern arm of Markland grips only two rock shelters were identified, MGT 47 and MGT128, on the west side of the valley. The lack of sites observed in this area is probably mainly due to the dense vegetation and fences that restricted access to the rock faces. Even though MGT128 was observed it could not be entered and properly recorded due to the presence of a fence. The difficult access suggests that it is unlikely to be damaged by human activity, although the dense vegetation means that bioturbation through root activity is likely. MGT47 is an 11m long overhang on a high level rock face with a surface deposit of scree. Root bioturbation is again the main threat to the site.

In the western end of the main arm of Markland Grips there are six rock shelters, two on the north side of the valley, MGT30 and MGT1, and four on the south side, MGT21, MGT12, MGT8 and MGT6. None of these sites are very large with the largest MGT1 being 9m long and the smallest MGT6 only 5m long. The sites are located at high or mid level, with the sites further west generally at mid level with a shallow slope below to the valley bottom. There are no paths through this area, but the valley bottom contains pasture fields making access easy, although the valley sides are usually wooded, often with dense undergrowth. Only limited observation



can be made of the surface deposits in these sites due to the vegetation growth, but where observation could be made the surface deposits were stony loams with some scree in MGT12 and occasional stone blocks in MGT1. There were no obvious signs of any activities or processes in progress that would damage the sites other than bioturbation from roots.

### **3.11.2.3 Fissures**

There are numerous fissures in the valley, however, only those with archaeological or palaeontological potential will be discussed here.

MGT52 and MGT53 are large fissures on the south side of Markland Grips in the nature reserve and a few meters away from a public footpath. MGT52 (Markland Grips Rock Shelter and Fissure 1, MG3) is 2.5m wide and 5m deep while MGT53 is 2m wide and up to 10m deep though it narrows towards the rear. These are near to MGT54 a cave formed on a fissure, however, in these cases the fissures are open at the top so they do not form caves. These fissures may have provided shelter, although only MGT53 contains any deposits internally, a loam soil. Although the ground surface of MGT53 is bare inside there are no signs of disturbance or erosion.

### **3.11.2.4 Rock faces and valley sides**

The rock faces in Markland and Hollinhill Grips vary enormously, from continuous tall, 15m high, rock faces to small, 1m high, outcrops. In the central sections of the grips the faces tended to be tall and continuous, while towards the end of the valleys the rock faces tended to be smaller and more intermittent.

In Clowne Crag the rock face survives on one side only, and is up to 4m high, although it is generally around 2m to 3m. The face is quite fractured containing several gullies, a small hole has been excavated into the deposits filling one of the gullies, MGT61.

At the western end of Hollinhill Grips the valley sides are quite low and sloping with intermittent sections of low rock faces, mainly at mid to high level. Further east the valley becomes deeper, with taller and more continuous rock faces, some of which extend lower down the valley sides until some almost reached the valley bottom. At the eastern end of Hollinhill Grips the valley is shallower, as were the rock faces on the south side, while on the north side the rock faces are more broken up and intermittent.

In the eastern end of Markland Grips the valley is quite deep, with tall rock faces on both sides, and shallow low level slopes to the valley bottom below them.

In the south arm of Markland Grips the valley is deeper at the northern end, with taller rock faces. These are more continuous and extend further down the valley side at the north end, particularly on the east side. At the south end the valley has slopes with occasional outcrops of bedrock.

The western end of the main arm of Markland Grips is shallower at the west end where the rock faces are shorter and more intermittent than in the central or eastern end. The rock faces are also taller, and more continuous on the south side compared to the north side.



### 3.11.2.5 Valley bottom

The valley bottom is generally flat and streams run along all the valley bottoms. These will have deposited an known depth of alluvial sediment in the valley bottom. The presence of a pond at the north end of the south arm of Markland Grips, as well as abandoned and silted up ponds at the south end of Markland Grips and the east ends of Markland and Hollinhill Grips demonstrates that various water management regimes have operated over the years, possibly resulting in the deposition of significant depths of alluvial material.

One upper Palaeolithic blade was found by Roger Jacobi (pers comm.) at the west end of the nature reserve in Markland Grips. The presence of this find demonstrates Palaeolithic activity in the area, although no remains have been recovered from any of the cave or rock shelter sites previously investigated.

### 3.11.3 Management recommendations

#### 3.11.3.1 Immediate Actions

In Markland and Hollinhill Grips the sites are generally in good condition with the main threat to them from bioturbation from root activity, which should be assessed by monitoring. As large sections of the valley are nature reserves proposals to control bioturbation can only be considered in the last resort. The sites should be monitored to determine if the current situation is stable or subject to change. The monitoring of sites subject to bioturbation should be allied to a programme of small scale investigation to determine if the sites contain archaeologically/palaeontologically significant remains. If significant remains are present small scale excavation should be considered to preserve the remains by record if bioturbation is extreme. This would have to be undertaken in such a way as to be sensitive to the natural environment. If badger setts were involved an English Nature or DEFRA Licence to disturb badger setts would be required. This should be undertaken following the procedures described in English Heritage Landscape Advice Note No.16, Badgers and The Historic Environment.

In Clowne Grips the rock face lies on the edge of a park which is extensively used and there is rubbish dumping, graffiti and the remains of fires that could all damage the sites, as well as unofficial pathways that could cause erosion. There is also evidence of drinking and drug taking in and around the rocks, with attendant rubbish. These issues should be dealt with through the public education programme.

#### 3.11.3.2 Public Education

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, tenant farmers, local councils, wildlife groups/trusts, local schools and local groups that may be interested. For more details see **section 3.15.2**.

#### 3.11.3.3 Monitoring

Within Markland and Hollinhill Grips there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database, details of how such monitoring should operate are outlined in **section 3.15.3**.



## 3.12 Elmton and Whaley Valleys

### 3.12.1 Access and survey conditions

The Elmton and Whaley valley runs north west to south east for 4km from Elmton at its northern end through Whaley and down to Langwith. Most of the land in the valley is owned by the Chatsworth Settlement Trustees, and they and their tenants gave access to all the land that they owned. Small areas of land are also owned by other people, and they also allowed access when approached. From Elmton down for about three quarters of the length of the valley most of the land is fields of either pasture or arable. Where outcrops of bedrock occur in these fields they are often covered by small copses of trees or scrub as the land could not be ploughed. Most of this area was reasonable for survey except where the scrub growth on a couple of bedrock outcrops was very dense and difficult to access. Towards the southern end of the fields the valley bottom is very boggy and the west side of the valley is wooded as is the whole of the southern quarter of the valley. The woods in the southern quarter of the valley had variable undergrowth, and although this was generally moderate there were large patches with dense undergrowth that could have hidden any small outcrops. Surveying in this area was difficult in some areas, although most of the small outcrops marked on the O.S. maps were identified.

### 3.12.2 Site condition

#### 3.12.2.1 Caves

The Elmton and Whaley Valley contains two known caves, one at each end of the valley. At the north west end of the valley is a small cave (EWT21) in the garden of Grange Farm. Although previously recorded as EW1 this cave does not have a name. Its location in a garden provides protection from vandalism and damage by agricultural machinery. This cave is located on the north west facing rock face of a small side valley orientated north east to south west. The cave, which is formed on a fissure, was in the base of a 2.3m high rock face near the valley floor. The cave is narrower at its entrance (0.9m) than it is internally (1.4m), it is also quite small only extending back 3.3m. As the entrance the cave is 2.0m high with the roof formed by blocking of the fissure above, some of the blocking material appears unstable and is being disturbed by plant roots. The interior of the cave is flat with a stony loam soil. It appears that there has been some clearance or excavation of the cave as the fissure in the roof would have resulted in the formation of a talus cone, which is absent, also there are possible stone spoil heaps just outside the cave. There is no record of any excavation, so it is uncertain when this may have taken place or what was removed. *In situ* deposits survive inside the cave, there are tubes on the east side of the cave that still contain deposits and red cave earth was visible in the narrow remains of the fissure on the rear wall of the cave. In front of the cave was a shallow slope dropping down to the valley bottom. A battered barbed wire fence separates the cave from livestock in the pasture field which covered the valley bottom.

The second known cave (EWT37) in the Elmton and Whaley Valley is Aspley Grange Cave (EW8), this is located at the southern end of the valley in a small wood. The cave is on one of a series of small intermittent rock outcrops in the wood. The cave has two entrances, one from above and another from the side. Both entrances are about 1m across. Although they are known to join together a large boulder currently blocks access between the two parts of the cave. The side entrance allows access to a chamber 2.5m long while the upper entrance enters a chamber 3m long. The floors of the chambers are currently covered with washed in forest soil, but it is not known



what, if any, deposits lie beneath this washed in material. As this cave is right next to the road there is a footpath to it and there is some rubbish strewn around and graffiti on rock faces around the cave.

A third small cave (EWT46) is located near the southern end of the valley. This is located in Langwith Country Park near to EWT37. This cave has been exposed during landscaping in the park. The landscaping has resulted in the creation of an L-shaped rock face up to 4m high which contains a small cave. This has an entrance 0.7m in diameter and extends back for 1.5m before it is blocked by a deposit of coarse scree sized rocks in a matrix of red sandy material. As this had been exposed by modern excavation it is not clear if this cave originally opened to the surface.

### **3.12.2.2 Rock shelters**

There are several known and possible rock shelters in the valley, most of these do not have large overhangs. However, rock faces without overhangs have produced material in the valley.

The most northerly of the rock shelters is EWT17 (Oxpasture Lane Rock Shelter EW2). This consist of a series of small outcrops stepping up the valley side, with the largest outcrop 1m high. This has never been investigated, so it is not known if there are any significant deposits present, but there is some erosion taking place in association with cattle poaching.

South of EWT17 is EWT13 (Whaley Rock Shelter 2, EW4), and although this is only a vertical rock face 9m long and up to 1.5m high, excavation has recovered substantial remains from the Palaeolithic, Mesolithic, Neolithic, Bronze Age, Romano-British and Medieval periods. This site is in an arable field so it is possible that ploughing could disturb deposits on the site, but this will depend on how far the archaeologically significant deposits extend from the rock face as ploughing currently finishes 6m from the rock face.

On the edge of the village of Whaley lies the next rock shelter EWT6. This is Whaley Rock Shelter 1 (EW3) which has been subject to some excavation, although there is some confusion as to what was recovered (Jacobi pers. comm.). This shelter, which is 4.2m long and had a 2.2m deep overhang, is again on an isolated rock outcrop on the east side of the valley. Inside the overhang the ground was bare but the rock outcrop is heavily overgrown with trees and scrub. The vegetation limits access to the rock shelter protecting it from wear by people or animals, but root bioturbation is a potential problem

Rock shelter EWT1 (Whaley Rock Shelter 3, EW5) is the only rock shelter on the west side of the valley, has 6m long, 3m high, vertical rock face with a scree slope below. This site is in woods near the base of the slope of the valley side. The overlying scree deposit is likely to protect any buried deposits, however, tree roots may cause bioturbation, as would tree throws, of which there are a number in the woods.

Towards the south end of the valley there are three rock shelters in fields in the valley bottom. There are no records of excavations on these sites, although some may have been investigated in the past. The sites are near the bottom of the slope with the boggy valley bottom below. The most northerly of these sites is EWT34 which has been previously recorded as a possible rock shelter (Mill Farm Rock Shelter EW6). No rock edge is visible on this site which is covered by a pile of rubble.



The dumping of material on this site may well have damaged any rock face or sensitive deposits near the surface.

South of EWT34 are two outcrops of rock known as Scarcliffe Park Rock Shelters (EW7), a third has been previously recorded but this was not visible. However, there are a numbers of small thickets in the valley bottom which could have obscured a small outcrop. Of the two Scarcliffe Park Rock Shelters EWT30 is a small, 0.75m high and 4m long, rock face on a moderate slope, while EWT32 is a 5m long and 0.3m high face stepping up sharply. Both EWT30 and EWT32 have scrub and saplings growing on them which might cause damage through bioturbation.

### **3.12.2.3 Fissures**

There are no significant fissures or gullies in the valley. This is due to the limited nature of the rock faces (see **section 3.12.2.4**).

### **3.12.2.4 Rock faces and valley sides**

There are no substantial rock faces in the valley, only relatively small, 1m to 2m high, intermittent faces, mostly isolated outcrops. All except one of the rock faces are on the north east side of the valley and most are located at mid or high levels on the valley side. The valley sides are generally moderately sloped, this is clear in the centre and north west end, where the valley runs through fields, but is more difficult to see at the south east end which is wooded. Many of the rock faces have been previously described as rock shelters and as such are described in **section 3.12.2.2**.

### **3.12.2.5 Valley bottom**

The valley floor is gently rounded at its north west end while the south east end has a narrower boggy valley bottom.

## **3.12.3 Management recommendations**

### **3.12.3.1 Immediate Actions**

As most of the sites are in farmland without public access the main threats come from agricultural practices. Ploughing is taking place in the field which contains Whaley 2 Rock Shelter (EWT13) This could encroach into the deposits on the slope below the rock face. This should be raised with the farmer through the education programme and monitored through the monitoring programme to minimise the risk to archaeological deposits.

There is some graffiti and rubbish around Aspley Grange Cave (EWT37). This should be dealt with through the public education programme.

### **3.12.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, tenant farmers, local councils, wildlife groups/trusts, local schools and local groups that may be interested. For more details see **section 3.15.2**.



### **3.12.3.3 Monitoring**

Within the Elmtun and Whaley Valley there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database, details of how such monitoring should operate are outlined in **section 3.15.3**.



### **3.13 Langwith Vale**

#### **3.13.1 Access and survey conditions**

Langwith Vale is orientated south west to north east and runs for a length of approximately 2.75km. It runs from just south of Scarcliffe at its south west end to Upper Langwith at its north east end. Most of the land in the valley is owned by the Chatsworth Settlement Trustees and they and the Tenants gave access to the land. The north east third of the valley contains pasture fields while the south west two thirds is wooded. In the pasture fields survey conditions were good, The woods have moderate to dense undergrowth in which known rock faces were identified, but small unknown outcrops could well have been missed.

#### **3.13.2 Site condition**

##### **3.13.2.1 Caves**

At the east end of Langwith valley are three caves on the north side of the valley in a pasture field. One of these caves LBT7 (Langwith Bassett Cave LB1) was excavated during the first quarter of the twentieth century by Mullins (1907, 1913) and Garrod (1927). The other two caves (LBT2 and LBT4) were only known from geophysical survey (Sampson 1977) and have never been excavated. All of these caves are located where small bedrock promontories are exposed on the side of the valley.

Langwith Bassett Cave, LBT7, is a large cave which has a main chamber with a total of six side chambers and passageways off this. The main entrance is a horizontal entrance, 1.7m wide and 2m high, located in a rock face 7m long and 3m high. There are two further vertical entrances, one of these was blocked, with concrete and wood, but could not be identified on the surface while the other had been blocked, with concrete, but the blocking had collapsed and now lay in pieces on the cave floor. The floor of the cave is covered with rubble and pieces of concrete, there are also some cans and bottles and a fire has been lit inside the cave. Cattle appear to use the cave, possibly for shelter, as there were several cow pats in the cave. Although the cave has been extensively excavated there were patches of surviving deposit in some areas, also some of the side passages were small and were not entered, so it was not possible to determine if deposits are present in these. Outside the cave there are large spoil heaps (LBT8) from the previous excavations.

The two unexcavated caves are located west of LBT7 on the same side of the valley. LBT4 (LB2) is exposed on the surface as a 2.5m high rock face with a flat top. There are two faults on the face both of which are slightly open and it may be that one or both of these relates to the cave that has been identified by geophysics. In front of the rock face there are several stone blocks which have become detached from the face. At the base of the face is a 2m wide flat shelf which was covered with cattle tracks. LBT2 (LB3) also consists of a vertical rock face, 1.25m high, with a flat top. This face also contains a slightly open fissure which may relate to the buried cave.

##### **3.13.2.2 Rock shelters**

Approximately half way down the Langwith valley is a small side valley entering from the north and at the junction of the two is a rock face (LBT14) known as Gildwells Farm Rock Shelter (LB4). The rock face is 18m long and 2.5m high but does not have an overhang, below the rock face is a talus slope of coarse scree which has



some modern rubbish dumped on it. This site is in a wood with dense undergrowth and appears to be little visited despite the rubbish.

At the south west end of the Langwith Valley in Langwith Wood are two further rock faces, both of which have small overhangs. Neither of these possible sites have been excavated. The first of these rock shelters is LBT21 (Langwith Wood Rock Shelter 2, LB6), this has a 3m long and 1.5m deep overhang on a 20m long and 6m high rock face. The area at the base of the rock face is very overgrown so the site could not be examined in detail. The second site is LBT18 (Langwith Wood Rock Shelter 1, LB5), this has a 4m long and 1.5m deep overhang on a 40m long and 8m high rock face. Again the face and overhang could not be examined in detail due to the dense nature of the undergrowth.

### **3.13.2.3 Fissures**

The only significant fissures are on the two buried cave sites, where the narrow fissures may relate to the buried cave entrances. The low number of fissures is due to the limited nature of the rock faces (see **section 3.13.2.4**).

### **3.13.2.4 Rock faces and valley sides**

There are no substantial rock faces in the valley, only relatively small mostly isolated outcrops. Most are located on the valley sides at mid level. Where they are visible the valley sides are generally moderately sloped, although there are patches that are steeper. In much of the woodland it is difficult to judge the general shape of the valley due to the dense vegetation. Many of the rock faces have been previously described as rock shelters and as such are described in **section 3.13.2.2**.

### **3.13.2.5 Valley bottom**

At the east end the valley has a flat bottom with a small stream flowing through it. At the west end it is more difficult to determine the shape of the valley bottom as a railway line, now dismantled, has run along the base of the valley, obscuring the floor.

## **3.13.3 Management recommendations**

### **3.13.3.1 Immediate Actions**

The only site where immediate action needs considering is Langwith Bassett Cave (LBT7). This has some rubbish in the cave from youths using it as a den, but this should be dealt with through the public education programme.

The cave has two entrances, one of which is vertical (LBT6). This has been blocked with concrete in the past, but the blockage has collapsed. Although the open entrance does not endanger the archaeological remains within, it is a hazard. The cave is in a field with no public right of way, but people obviously do use the cave. The issue should therefore be raised with the landowner and farmer to see if they are aware of the risk. This could be done through the public education programme.

### **3.13.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, tenant farmers, local



councils, wildlife groups/trusts, local schools and local groups that may be interested. For more details see **section 3.15.2**.

### **3.13.3.3 Monitoring**

Within Langwith Bassett Valley there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database, details of how such monitoring should operate are outlined in **section 3.15.3**.



## **3.14 Pleasley Vale**

### **3.14.1 Access and survey conditions**

Pleasley Vale is an east west running valley about 3km long. Although orientated approximately east west the central section of the valley is sinuous with a few turns. The central section of Pleasley Vale is owned by Bolsover District Council, however, the eastern and western ends are in private ownership as are two houses and gardens in the centre of the valley. Tim Rogers of Bolsover District Council gave permission to access the land in council control. The west end of the valley has shallow sides and contains either fields or woodland.

In the central section of the valley the bottom of the gorge contains several old mills. The rock face has been cut back in the vicinity of many of these mills either to produce building stone or to make room for the mill buildings. The sides of the central section of the valley are wooded with some paths passing through parts of the woods. The woods has variable undergrowth, although this is generally light to moderate. On the south side, on top of the central part of the valley, is an old railway cutting, now used as a footpath, which is surrounded by woodland. This railway cutting cuts into the bedrock, exposing several features. In the central section of the valley most of the rock faces examined had been cut back or created by human activity over the last 200 years. However, these faces were examined and recorded as two caves exposed in these faces have been partially excavated and bones from large fauna have been recovered that demonstrated these caves would originally have had surface openings.

The east end of the valley is more like the west end of the valley with fields, woodland and the occasional house. Towards the east end of the valley, as with the west end the sides become shallower and lower. The valley bottom is generally pasture fields, with wooded sides. The land owners gave access to all areas except one field. This field contains one rock face, according to the O.S. map, however, the land owner said the face was small and overgrown. The owner did not want anyone entering this area as it contained several badger setts which he did not wish to see disturbed. The undergrowth in the woods at the east end of the valley is generally moderate, with occasional light or heavy areas.

In Pleasley Vale survey conditions were generally reasonable, with one or two difficult areas due to either access problems or heavy undergrowth.

### **3.14.2 Site condition**

#### **3.14.2.1 Caves and Fissures**

Several caves are known from Pleasley Vale including two which have been investigated. However, during the survey several new caves or possible caves, and large fissures were also identified. The caves were located in the central section of the valley and can be divided into two main groups based on their altitude, with one group at the base of the valley between 100m and 105m AOD, and one group at the top of the valley side between 125m and 130m AOD. Both of these groups of sites have been exposed through human actions cutting back into the bedrock. At the base of the valley a number of fissures and possible cave deposits are exposed when rock faces were cut back during construction of a number of mills and houses in the base of the valley. The group of caves at the top of the valley were exposed



when a cutting was made for the railway that ran along the top of the valley on the south side.

In the railway cutting there are 9 caves or possible cave sites. These are located on either side of the approximately east west orientated disused railway cutting. Some of these sites line up across the railway cutting and were probably parts of the same caves, with the original entrance on the south side of the main valley. It has not been possible to identify any of the original entrances as the area was wooded with a covering of soil with no rock faces visible. However, some of the caves must have originally opened to the surface as the bones of large animals have been found in one of the caves, Yew Tree Cave (PLT30).

At the west end of the railway cutting are three small caves (PLT20, 23 and 24) on the south face of the railway cutting. In this area there is no north face on the railway cutting due to the angle at which the railway had been cut into the rock face. This means that the original entrances for these caves were probably removed by the railway cutting. All three sites are relatively small with the current entrances around 1m in diameter. None of these sites have been archaeologically investigated, however, all of these caves contain deposits of unknown depth and extent. Due to the limited size of these caves they appear to have a greater palaeontological than archaeological potential, possibly having been used as animal dens.

East of these sites is Yew Tree Cave (PLT30) also on the south side of the railway cutting. This site was investigated in the nineteenth century (Ransom 1866, 1867) and produced an important faunal assemblage. This cave which is half way up the side of the cutting could not be entered as it is now gated. The area in front of the cave, including the probable spoil heaps from the original excavations is bare of vegetation, probably due to people walking over the area. As this is on a slope some erosion will be taking place. Directly opposite Yew Tree Cave, on the opposite side of the cutting, is a possible collapsed cave (PLT30), this may well have been a continuation of Yew Tree Cave with the original entrance on the south side of Pleasley vale at the north end of PLT29. This possible cave consists of a deposit of breccia overlain by large stones blocks that had collapsed down from above.

East of PLT29 is PLT31 which contains a small cave entrance. This extends back at least 6m but its full depth could not be determined as it is too small to crawl through, although it appears to open out further back. As with PLT29 its original entrance is probably on the south side of Pleasley Vale at the north end of the current exposed section. There is no obvious continuation of this cave on the south side of the railway cutting.

PLT32 contains a section of fractured and collapsed rock face containing a deposit of breccia. This is difficult to define as it is partially obscured by vegetation. This may be the remains of a collapsed cave, although it could also be a collapsed fissure. No continuation of this could be identified on the south side of the railway cutting.

The most easterly of the sites identified in the railway cutting is PLT33 on the north side of the cutting. This is similar to PLT32, containing an area of fractured and collapsed rock associated with breccia. On the south side of the railway cutting in PLT35, and opposite PLT32, is a small cave entrance 0.5m wide and 0.4m high.

The former railway line is now used as a footpath and as the caves are all accessible from the footpath there is the potential for human impact on the caves. However, there is no evidence of damage to the sites except for bare informal footpaths up to some of the caves that are subject to some erosion. The main damage to these sites



took place when the railway cutting was excavated, although without this activity it is likely that the sites may never have been discovered. There is some natural erosion taking place on these sites where breccia deposits are exposed to the surface.

Pleasley Vale Cave (PLT5) lies on the north side of the valley about half way up the side of the valley, at 110m AOD. This large cave is in a disused car park behind a derelict old house. The cave entrance is 2m high and up to 5m wide, inside the cave extends back 12m and rises to a height of 7m at the rear. The back of the cave ends in a vertical face of sediment. This appears to contain 4 major stratigraphic units, although cleaning the section could well increase this number. At the base of the sediment section there appeared to be an opening extending further into the cave but this is blocked by a deposit of sand that has been dumped in the cave, possibly to restrict access. The front of the cave contains various pieces of dumped machinery, as did the area outside the entrance. Generally this site was in poor condition and not being maintained. Work on the assemblage from this site by Roger Jacobi (pers comm.) has identified two components to the assemblage with very different appearances and it may be that the material was an agglomeration of material from two sites, one of which was Pleasley Vale Cave while the other is unknown. Part of the assemblage is heavily eroded and gnawed and appears to typify material from an animal den, probably Pleasley Vale Cave. The other part of the assemblage consists of an almost complete ungnawed bovid skeleton which may be from a pit fall feature.

In the base of the valley between 100m and 105m AOD are several deposits of breccia and sediment relating to fissures and possible caves. All of these sites are on rock faces that have been cut back exposing the deposits. Although the origin and formation of some of these sites is unknown, as is the presence or absence of any opening to the surface prior to cutting back, these sites represent a separate group of caves to those previously recorded and described in the valley.

On the north side at the base of the valley are a series of fissures spread over 0.2 km. These are located next to the road which runs along the base of the rock face, and are between 0.15 and 1m wide though most are about 0.6m wide. Within PLT1 there are 6 fissures 5 of which contain sediment, usually breccia deposits consisting of a yellow or orange brown sandy silt and angular coarse scree to block sized stones. In two of these fissures the lower part of the fissure is open with the upper part closed possibly forming small caves. As these fissures are generally full of sediment it is impossible to determine how deep the majority of them are. However one of the fissures, the largest and most westerly, may extend a long way back. This fissure lines up with a fissure of similar size that was observed in PLT2 extending over 10m of rock face. This fissure (PLT2), which is located in a garden, was exposed when a slab of rock fell off the cliff face exposing a longitudinal section of this fissure. Flowstone has deposited at the interface of the bedrock and breccia fill of this fissure. The large fissure in PLT1 and the fissure in PLT2 are very similar in size, shape and fill and line up with each other, if they are the same fissure it must be at least 40m long. Although these fissures and possible small caves have been damaged in the past, when the rock face was cut back, they do not appear to be under any threat now as long as no further widening of the gorge takes place. As these fissures mostly contain sediment erosion of the deposits is possible, although there is no significant erosion visible at present.

On the south side of the valley an access road for deliveries runs underneath the central mill, Mill 2, and the bedrock is exposed on the south side of this road. Deposits of breccia were identified adhering to the rock face in 4 places. Three of these deposits are large over 10m long and 2m high and up to 1m deep. There is also a small fissure entering the rock face containing a breccia fill. It is not known if



all these deposits are related, but they could have been the remains of a large fissure or cave system that had been mostly removed during the cutting back of the rock face during the construction of the mill. These deposits are vulnerable as they are exposed on the surface and are covered in pollution from the vehicles that use the road. There is also some evidence of the deposits eroding, with loose material at the base of some of them.

West of PLT17 is a section of rock face ,PLT15, that had flowstone and sediment adhering to it over an area of 2m by 2m. This appears to have been exposed when the rock face was cut back and is presumably originally in a cave or fissure, though it is impossible to tell now. The surviving deposits are no more than a thin skim and have little or no potential.

Behind Mill 3 is a large face formed from a mix of bedrock and retaining wall. Most of the top of the face is retaining wall while the bottom half is mainly bedrock. There are sections of retaining wall in the bottom half (2 main sections) and these appeared to block gaps in the rock face. These would presumably have been fissures or caves, but as they were blocked up it is impossible to tell if there is any surviving sediment in these features.

Just west of Mill 3 the rock face has been cut even further back and a large deposit of breccia (PLT13) has been exposed in the rock face at the corner of a right angled turn in the rock face. The main face of the deposit is on the west facing section of rock face and is 8m wide and 4m high, the height of the rock face. On the north facing section of rock face there are fragments of deposit still adhering to the rock face over a length of about 12m. In the main, west facing, section the deposit is an orange brown breccia containing a number of large stone slabs angled down towards the north. On the north facing rock face there are fragments of flowstone associated with the adhering sediment, including the remains of a possible flowstone floors. The main orientation of this structure would appear to be east west and it is possible that it extends further back behind the main face of the deposit. It is not possible to determine if this site is the remains of a large fissure or a collapsed cave. Some of the deposit in the main face is eroding with patches of unweathered sediment in the face where sediment has collapsed away. The main threat to this site appeared to be from erosion, though there was some dumping of brick and stone rubble at the base of the rock face in this area and this could have brought contaminants onto the site.

None of the low level fissures or possible caves have been investigated in the past so it is not known if the deposits in these features were contemporary or what date they may be. There was also no evidence as to whether these features had openings to the surface prior to the rock faces being cut back. They are therefore something of an enigma in regards to there archaeological and palaeontological potential.

There are further fissures in the valley bottom, although these are further east near Little Matlock, where the valley sides are much lower. One group (PLT40) is on the south side of the valley on a rock face behind some houses near the War memorial. This group contains four fissures, one which has been block up with stone work, one small narrow fissure with sediment and two larger (0.5m wide) fissures with sediment to the rear and small talus cones in front. These two larger fissures may connect together behind the rock face. Further east and on the north side of the valley are two final fissures in PLT43. However, neither of these contained sediment and are therefore of limited interest. The main threat to these fissures appears to be natural erosion removing sediment from them.



### 3.14.2.2 Rock shelters

There are three rock shelters on rock faces at the east end of the valley and two towards the west end of the valley. Two of the rock shelters at the east end of the valley have overhangs of 2m, one PLT41 was 5m long, while the other PLT44 was 32m long. Both of these are on a long rock face almost 0.2km long and up to 16m high. Under the overhang of PLT41 (Stuffyn Wood Rock Shelter 1) is a depression 5m long and 2m wide, possibly where a trench had been excavated, although no excavations are recorded from this site. There is evidence of climbers using the whole rock face from PLT42 to PLT 45 and in some areas there are patches of chalk and some fixed bolts in the rock face. Below this rock face there is a moderate slope down to the bottom of the valley floor. The third rock shelter at the east end of the valley is Stuffyn Wood Rock Shelter 2 (PLT47). This is 4m long and 1.25m high and has an overhang of 0.3m. This is in a wooded area close to but set back from the path and the rock face itself was too small to attract climbers.

Of the two rock shelters towards the west end of the valley, one (PLT10) is on a mid level rock face and one (PLT8) is on an outcrop of rock on the top of the valley side. PLT10 is a small, 3m long and 1.5m deep, overhang on a 12m high rock face. At the base of the rock face, which was located at mid level on the valley side, is a small terrace which continues on to the west where the derelict house in front of Pleasley Vale Cave has been built on it. The overhang is partially filled with material washed down from above and may extend further to form a small cave. Although there are no obvious threats to the site at present this area may be impacted when the derelict house is either demolished or refurbished.

PLT8 has an 8m long and 1m deep overhang and is located in a wood on the top of the valley side. There is some evidence that the woodland around has been landscaped in the past but there appear to be no activity at the present.

With all the rock shelter sites in Pleasley Vale it is difficult to assess their potential as no work in the valley has produced archaeological remains from the Palaeolithic or Mesolithic Periods from these types of sites. This may be due to the limited nature of the archaeological work undertaken in the valley or it may be an absence of any sites of the appropriate period.

### 3.14.2.3 Rock faces and valley sides

Pleasley Vale is divided into three sections based on the shape of the valley and the nature of rock faces in it. The west end of the valley does not contain rock faces and has fairly low, moderately sloping sides.

The central section has substantial rock faces distributed between the mid and low levels with moderate high level slopes above. The valley sides are quite deep in this central section. Many of the low level rock faces in this area have been cut back in the past obscuring their original appearance and shape. As the rock faces have been cut back in many places there are often no slopes below them and one section of rock face appeared to contain the remains of a quarry (PLT12). Also in the central section is the cutting of a disused railway, where small rock faces are exposed. The features within this cutting are discussed in **section 3.14.2.1**.

The sides of the valley are shallower towards the east end. There are sections of rock face in the east end of the valley and these tend to be mid to high level and are intermittently distributed on the south and north sides of the valley. There is one terrain unit in the east end of the valley that appears to be a former quarry (PLT46).



However, the rock face here is very weathered, and if this was a quarry this was probably not recently.

All the slopes at the east and west ends of the valley are covered in vegetation, either grass or woodland, and it is therefore not possible to identify whether any scree slopes are present.

#### **3.14.2.4 Valley bottom**

The valley bottom is generally undeveloped towards the west end and most of the east end, although there is the small settlement of Little Matlock at the east end of the valley. However, these areas probably retain much of their original shape, having a narrow flat bottom.

In the central section the valley is heavily industrialised, containing three large mills with associated mill ponds. This, in conjunction with the cutting back of rock faces, meant that it is not possible to determine the original shape of the valley bottom in this section, or to determine whether any *in situ* deposits survive that predate the construction of the mills.

#### **3.14.3 Management recommendations**

Pleasley Vale is unusual among the valleys in this study in being so heavily developed. Bolsover District Council, the owners of the mills in the valley bottom, are currently developing the old mills as a Business Park. The current development plan for the business park is only concerned with heritage in relation to the mills and their reuse (Roger pers. comm.) Bolsover and Mansfield District Councils jointly commissioned Anthony Short and Partners to produce and a report the *Pleasley Park and Vale River Corridor Study*. This attempted to put the redevelopment of Pleasley vale into context and make recommendations for the management of the site. However, the section on History and Archaeology was short, confused and demonstrated a lack of understanding of archaeology, history and geology. The report contains so many omissions and factual mistakes that the recommendations relating to archaeology should be disregarded.

##### **3.14.3.1 Immediate Actions**

Of immediate concern is the condition of Pleasley Vale Cave PLT5. This is in poor condition being surrounded by rubbish and has a 6m high exposed sediment section inside it of unknown stability. The land that this site, and Vale House, is located on is subject to a legal dispute between between Bolsover District Council and a former developer of the site. However, Bolsover District Council should be encouraged, as responsible land owners, to clean up the site, and stop further dumping and storage of material on the site. This should be done through the education programme.

The breccia deposits exposed in the bottom of the valley near the mills are a cause of some concern, due to their exposed state, particularly PLT17. These can be protected through the monitoring programme and the planning process, but as of yet it is not known if they contain any deposits of archaeological/palaeontological potential. Exploratory work on these deposits should be a priority of future research work as the exposed state of these deposits makes them highly vulnerable and future developments on the business park could threaten them. If the deposits are confirmed to contain archaeological/palaeontological material then their long term future should be better managed.



### **3.14.3.2 Public Education**

Public education should be achieved by the production of short information guides to be circulated to interested parties including land owners, local councils, wildlife groups/trusts, local schools and local groups that may be interested. For more details see **section 3.15.2**.

### **3.14.3.3 Monitoring**

Within Roche Abbey valley there should be a programme of long term monitoring to regularly visit the sites and compare the current condition of the sites in the terrain unit database, details of how such monitoring should operate are outlined in **section 3.15.3**.

The monitoring should take particular care with the exposed sections of breccia in the cut back rock faces around the mills, one of which (PLT13) has patches of fresh surface exposed probably due to collapses. These breccia deposits have high archaeological/palaeontological potential are potentially of great importance.

Long term protection of the breccia deposits on the cut back rock faces will also be provided through the planning process under Planning Policy Guidance note 16, Archaeology and Planning.



### **3.15 General management Recommendations**

In general, monitoring of sites allied with some tidying up of graffiti, rubbish and discouragement of fires, while accepting that this will be difficult to enforce. In a few cases where sediments are eroding it may be worth stabilising these, however, in many cases we do not know if these sites contain archaeologically or palaeontologically important deposits so it may be worth determining this prior to undertaking stabilisation measures.

There is also a general recommendation that all proposed development in the gorges should involve an archaeological assessment under PPG16 prior to planning being approved. This is particularly important in Roche near the village of Stone, Lindrick Dale, in the villages of Elmtun, Whaley and Langwith as well as Pleasley Vale.

#### **3.15.1 Immediate Actions**

These are actions taken to remediate immediate threats to sites.

#### **3.15.2 Public Education**

Public Education involves informing the public about the importance of the sites and educating them as to what can damage the archaeological/palaeontological potential of a sites. This information will be aimed at land owners, public bodies, and visitors.

This is the preferred method, as persuading landowners and visitors to look after sites is both cost effective and in the long term the best option as it is the people that have day to day dealings with sites that can most effectively manage them. Sending in workers to undertake remedial actions can clean up a problem (e.g. remove graffiti) but it does not necessarily remove the underlying cause of the problem (e.g. youths creating the graffiti). The problem can only be removed by effective long term management by landowners and regular visitors. This can result in remedial actions to clean a site, but this will only have a long term impact if this is followed up by monitoring and management.

It is proposed that a short information guide is produced for each valley this will include the following sections:

1. Background to the Creswell Crags Limestone Heritage Area.
2. The nature and importance of Ice Age archaeology, this would describe the nature of the archaeology, the types of sites and what it can tell us.
3. A description of the sites in the valley.
4. An explanation of what processes could damage the archaeology and natural environment. This will cover such issues as natural erosion, land use, farming practices, rubbish tipping, informal footpaths, vandalism and fire lighting.
5. Recommendations for best practice in looking after the sites and their environment. This will cover such issues as maintenance (removal of rubbish and graffiti), site use, access and management. These recommendations will cover all sites whether on farmland, in a garden or in woodland.



6. Contacts to report damage or get further advice. This will include county archaeologists for concerns about planning issues, English Heritage for general advice on archaeology and Creswell Heritage Trust for reporting concerns about the condition of sites unless they are scheduled in which case it should be English Heritage. In some cases the contacts could include land owners or managers if they are councils or wild life trusts.

Sections 1, 2, 4 and 5 can be largely generic while sections 3 and 6 will be valley specific. Section 5 may need focussing for each valley taking into account current land use and possible future developments. It is intended that the guides are not long documents but will be short and accessible. The guide will not be guide to the sites but a guide to the importance and management of the sites. It is therefore envisaged that it will be used as a reference work for people to consult when they have concerns or are looking for advice. As such large numbers of the guides will not be needed, maybe 30 copies of each guide will suffice.

In all cases the guides will be sent to land owners, tenant farmers and local councils, in areas where public access exists the guides will also be sent to bodies promoting the access such as wild life trusts, local societies and groups that use the land and local schools. Copies of all the guides should be sent to the local offices of national organisations such as English Nature, the Countryside Commission and the Department for Environment Food and Rural Affairs.

### **3.15.3 Monitoring**

Management recommendations for some valleys have included the development of a programme of long term monitoring. This will aim to provide specialist archaeological assessments of site conditions to supplement any information received from members of the public through the public education programme. Monitoring is required for the site due to the rarity of Palaeolithic remains in the archaeological record. Many of the sites are only potential sites and the presence of archaeological/palaeontological remains has not been confirmed, this can only be done through excavation. Further research on the area may well extend our current knowledge of these potential sites but until this exists the more prudent strategy will be to monitor all sites with archaeological/palaeontological potential until they are proved to be sterile. It is proposed the Creswell Heritage Trust act as the coordinating body for the monitoring and act as the first point of call for members of the public wishing to report damage to sites.

This long term monitoring will aim:

- to check up on any reports of damage received from members of the public,
- to identify any damage that has occurred to the sites since the last visit,
- to identify any human actions that may be detrimental to the sites through disturbing deposits or encouraging erosion,
- to identify any threats to the site from ongoing natural erosion,
- to identify any threats to the sites from bioturbation by animals or plants,
- to identify any other threats to the sites,
- to make recommendations for any actions required to protect the sites.



Monitoring will be undertaken on a valley by valley basis with the frequency of monitoring visits determined by the perceived threat of damage to the sites. This is a subjective assessment based on the current condition of the sites, the degree of public access and use of the sites, potential developments in the valleys and the archaeological potential of the sites in the valley.

In general monitoring visits are recommended every 4 years but in the case of three valleys more frequent visits are recommended every 2 years. More frequent visits are recommended for Roche Abbey Vale, Anston Stones and Pleasley Vale. In Roche Abbey this is due to the presence of informal bare footpaths through areas without public access, in Anston Stones it is due to this being the most visited valley where sites were most likely to contain rubbish fires and graffiti, and in Pleasley Vale it is due to this being the most developed valley with exposed breccia deposits on cut back rock faces.

Table 4 Valleys to be Monitored

<b>Vale or Gorge</b>	<b>Period between visits</b>	<b>No. of sites</b>	<b>Expected time duration of monitoring visits (days)</b>
Roche Abbey Vale	2	17	1
Anston Stones	2	38	2
Red Hill	4	1	0.5
Thorpe Common and Lob Wells Wood	4	5	1
Ash Tree Gorge	4	5	0.5
Markland Grips	4	58	2
Elmton and Whaley Valleys	4	10	1
Langwith Vale	4	6	1
Pleasley Vale	2	22	1

When a valley is monitored all the terrain units identified as caves or rock shelters will be visited and checked. Rock faces without any cave or rock shelter sites will be scanned for obvious damage while passing but will not be checked in detail.

The current survey has provided baseline data which will be used in the monitoring programme to check for any changes in site condition. The description of the terrain units from the sensitivity survey will be compared to the condition during the monitoring visit and any changes noted. A guideline of the expected duration of monitoring visits is given in Table 4.



On completion of the monitoring survey for a valley a short report will be prepared this will note any damage or increased threats to sites and make recommendations if action is required. Each report is likely to take between a half and one day to produce unless damage requiring complicated actions are required.

#### **3.15.4 Protection through the planning process.**

Protection of archaeological sites from large scale development is undertaken through the planning process. PPG16, Archaeology and Planning, provides the framework by which this is undertaken. Under this process the state of current knowledge is a key factor in informing the planning authorities deliberations. These will determine whether evaluation is required before determination or whether mitigation is required before or during development. By providing copies of the Management Action Plan including the survey database and maps to the County Sites and Monument Records for South Yorkshire, Derbyshire and Nottinghamshire their knowledge of the Palaeolithic and Mesolithic archaeological potential of the vales and gorges in the Creswell Crags Limestone Heritage Area will be considerably enhanced. This will enable the council archaeological officers to give more informed advice to the planning authority on the caves and rock shelters and their archaeological potential. This in turn will enhance the protection and management of the cave and rock shelters to preserve them over the long term.



## **4 PREDICTIVE MODELLING FOR THE EXISTENCE AND LOCATION OF OTHER POTENTIAL PALAEOLITHIC/PLEISTOCENE PERIOD SITES**

### **4.1 Introduction**

Previous research, whilst effective in identifying the significance of the vales and gorges for Palaeolithic and Mesolithic archaeological research, and for Pleistocene and early Holocene palaeontological research, has often been poorly recorded or published. There is a need to establish the potential of the area for further research, and to develop a coherent research framework within which such research can be carried out. This will help to promote the significance of the area for Palaeolithic and Mesolithic research, and contribute to strategic planning and management. This will also contribute to the significance of the Creswell Crags Limestone Heritage Area as a centre for promoting awareness and understanding of Quaternary environments.

The vales and gorges also contain archaeological remains from later periods from later prehistory through to the industrial revolution and this is discussed in chapter 5.

In order to develop a research framework it is first necessary to assess the character of the surviving sites. This report attempts to use predictive modelling to assess the archaeological and palaeontological research potential of the cave and rock shelter sites in the Creswell Crags Heritage area. In the model previously investigated sites are used as a control with which to compare previously uninvestigated sites.

The predictive modelling can not be used on open air sites as there are no control sites and no specific potential sites. Instead a more speculative approach based on desk-top research and consideration of the potential preservation of Pleistocene and early Holocene deposits in the valley bottoms was applied.

#### **4.1.1 Aims**

The aim of the predictive model is to identify all the known and potential cave sites in the main limestone gorges and to assess the potential of these sites to contain archaeologically or palaeontologically significant remains. The caves that are known to contain archaeological or palaeontological remains together with those known to be devoid of such remains act as a control with which to compare the unknown sites.

The predictive modelling has a number of aims:

- To assess what environmental/site characteristics can be used to assess the research potential of cave and rock shelter sites.
- To use the environmental/site characteristics to develop a predictive model that can be used to assess the archaeological and palaeontological research potential of cave and rock shelter sites.
- Through desk-top research to assess the potential for the existence of open air sites in and around the vales and gorges.

To achieve these aims a number of objectives must be met:

- Establish integrated reference databases of caves in the study area, incorporating information from national mapping, caving organisations, archaeological and environmental records, museum records and walkover field survey.



- Use the reference databases to investigate factors favouring preservation of archaeological and palaeoenvironmental deposits, and develop a multivariate predictive model based on current knowledge, using standard statistical procedures.
- Attach estimated potentials to all caves in the database, and estimate the extent of the currently unidentified cave archaeological resource.

#### 4.1.2 Study area

The study areas for this research are the eleven vales and gorges in the Creswell Crags Limestone Heritage, excluding Creswell Crags. This is the same study area as was covered in the report on the Identification and Assessment of Management Issues Relating to the Known Sites. The vales and gorges in the study are, Roche Abbey Vale, Firbeck Valley, Anston Stones, Red Hill Valley, Thorpe Common and Lob Wells Wood, Steetley Quarry Caves, Ash Tree Gorge, Markland and Hollinhill Grips, Elmton and Whaley Valleys, Langwith Vale, and Pleasley Vale.

## 4.2 Methodology for predictive modelling

### 4.2.1 Definition of a cave for the purposes of the study

For the purpose of this study the term *cave* was used to refer to all caves, rock shelters and similar features, as defined below, however, in general terms a *cave* is:

*An enclosed but accessible natural void within a rock formation which has dimensions minimally sufficient to accommodate a person.*

Although there are several different types of sites that could be called caves, using the definition above, three types were recorded in the survey:

- **Caves** have an entrance and up to five structural surfaces (roof, floor, walls on either side and a back/end wall).
- **Rock shelters** are caves of restricted depth which have a roof, a floor and a back wall but the side walls of a shelter are poorly defined or absent.
- **Fissures** are horizontal or vertical entry caves which lack a well-defined roof, while potholes are vertical entry caves with limited horizontal development of passageway.

Cave deposits include both consolidated and unconsolidated sediments and clastic deposits that have accumulated within a cave or at the entrance to a cave. As cave entrances are subject to erosion, some deposits that were previously contained within a cave can eventually end up outside the cave, as can spoil excavated from within the cave by human or animal agents. For this reason, external talus deposits adjacent to cave entrances also have the potential to contain archaeological and palaeontological remains. These remains are considered part of the cave site when it can be shown that there is spatial continuity with deposits contained inside and outside the cave.

### 4.2.2 Inclusion criteria

The audit covered the caves types mentioned above but excluded the following types of caves from the study, when encountered in the survey:

- Hidden, natural cave systems which have been intersected by ground works such as mines, tunnels and quarries: these were excluded if the intersected



caves could not be demonstrated to have or to be likely to have had a natural entrance other than that created by recent human activity.

- Artificial caves and grottoes, except where these represent a modification of a pre-existing natural cave system.

## **4.3 Data Acquisition**

Data on which to base this study were derived from both desk-top study and field survey. The data were used to identify the location of all known caves and potential caves in the search areas.

### **4.3.1 Desk-top study**

The following were the main sources of data for the desk-top study.

*Creswell Crags Conservation Plan:* The Creswell Crags Conservation Plan contains a gazetteer of all known Pleistocene sites with archaeological or palaeontological remains in the gorges in the Limestone Heritage Area other than Creswell Crags. It also contains an *Assessment of the Pleistocene collections from the cave and rock shelter sites in the Creswell Area*, (Appendix 2). These provide data on the known archaeological and palaeontological cave sites in the area and this provided the control data for the predictive modelling.

*Archaeological records:* The Derbyshire, Nottinghamshire and South Yorkshire Sites and Monuments Records were consulted to locate any cave sites within the search areas which have been added since the Conservation Plan Gazetteer was produced and gather any additional information held on the known sites.

*Online databases:* including the Gazetteer of English Caves, Fissures and Rock Shelters Containing Human Remains on the CAPRA (Cave Archaeology and Palaeontology Research Archive ) web site, the CBA radiocarbon database, and Oxford Radiocarbon Accelerator Unit database.

### **4.3.2 Field survey**

Following the desk-top study a programme of field survey was undertaken, this was combined with the survey on management issues. All of the known and previously unrecorded caves and rock shelters were visited and information collected on the sites.

The main part of the field survey was a walkover survey of all the gorges within the study; this included any potential cave sites identified by the desk-top study and looked to locate any unknown caves and rock outcrops that may have contained caves.

The walkover survey mainly took place in the summer (July and August, 2003) which meant that the vegetation was a problem in some of the gorges, particularly Markland Grips. All landowners and tenants were contacted before entering private land.

Due to the dense vegetation, particularly tree growth, the walkover strategy outlined in the project design had to be modified as in most cases it was found to be impossible to view one side of the valley from the other. It was found that the only effective strategy was to identify all known or possible rock faces or outcrops and then to walk along the base of the rock face examining it for openings and overhangs.

Where caves were identified these were entered to identify their size and the nature of any surviving and exposed deposits. The recording of individual caves was based on visible surface features and did not involve any ground disturbance or entry into



narrow underground passages. Particulars were recorded on proforma and photographs taken. The data recorded was directly related to the fields in the cave database.

## 4.4 Results of the Survey

### 4.4.1 Survey maps

The data from the survey was used to draw up maps of each gorge. These maps were the same as those produced for the Identification and Assessment of Management Issues. O.S. data obtained from Digimap was used as the base for the maps; this was overlain with data from the field survey showing all rock edges, caves, rock shelters, fissures and terrain unit boundaries.

### 4.4.2 The cave database

A database of all the cave and rockshelter sites was produced in Microsoft Access, this incorporated data from the field survey and from the desk-based survey. This database was a combined database with the proposed Terrain Unit database. The two databases were combined for two main reasons:

- much of the data was duplicated in the two studies and combining the two databases minimised data inputting.
- management of the database is simplified, as any additions or alterations to the database will only have to be done once

The numbering of sites followed that used in the Identification and Assessment of Management Issues with the terrain unit numbers being used. This meant that there were gaps in the numbering system but it avoided the possibility of confusion from two numbering systems.

*Structure of research archive:* the research archive consists of the Microsoft Access database with associated map files. An outline data structure is provided below:

Terrain Unit Number	Management
Site Name	Location/Landscape Description
Site Number (Creswell Crags Conservation Plan Gazetteer)	Site Description
NGR	Site Condition
SMR No.	Land Use on Site
Description (terrain unit)	Land Use Around Site
Surface Condition	Site Type
Vegetation Cover	Rock shelter length (m)
Archaeological Potential (plus notes)	Rock shelter Depth (m)
Palaeontological Potential (plus notes)	Rock Shelter Height (m)
Vulnerability (plus notes)	Cave Shape
Sensitivity	Cave entrance height (m)
Action (proposed management action)	Cave entrance width (m)
Access	Cave Depth (m)



Cave internal height (m)  
Cave internal width (m)  
Fissure width (m)  
Fissure Height (m)  
Fissure Depth (m)  
Aspect (deg)  
Altitude (m)  
Light zone extent (m)  
Grouping with other sites  
Ground slope inside (deg)  
Ground slope outside (deg)  
General Slope Above (deg)  
General Slope Below (deg)  
General slope Left (deg)  
General Slope Right (deg)  
Bedrock Geology  
Deposit Geology Inside  
Deposit Geology Outside  
Notes Comment (from gazetteer)  
Notes Potential (from gazetteer)  
Planning Designation  
Excavation (History)  
Collections/Archive  
Publications  
Stratigraphy  
Categories of Finds  
Phasing of Cave Usage  
Dating Evidence  
Deposits Status  
Owner  
Tenants  
Catchment  
District



Parish

The data in the database was then exported to SPSS to enable statistical analysis and predictive modelling to be undertaken.

## 4.5 Statistical Assessment of the Data

Prior to constructing the Predictive Model the data was assessed using basic graphical statistical techniques. This was undertaken to assess the suitability of the data for predictive modelling and to understand the nature of the variability of the data.

In all the figures below the valleys are arranged in order from north (Roche Abbey Vale) to south (Pleasley). The valleys are identified using their three letter terrain unit code:

rat – Roche Abbey Vale

ast – Anston Stones and Lindrick Dale

rht – Red Hill

tlt – Thorpe Common and Lob Wells Wood

sct – Steetley Caves

att – Ash Tree Gorge

mgt – Markland and Hollinhill Grips

ewt – Elmton and Whaley Valleys

lbt – Langwith Bassett Valley

plt – Pleasley Vale

### 4.5.1 Numbers and types of sites

The field survey has significantly increased the number of recorded sites, with a threefold increase on the number recorded in the Creswell Crags Conservation Plan Gazetteer, from 50 to 163. The number of possible caves has doubled from 22 to 42 while the number of rock shelters has increased fourfold from 28 to 108 (**Table 1 and Fig.1**). Fissures had not been listed on the Creswell Conservation Plan Gazetteer so the 13 large fissures with sediment listed were all new.

The numbers of sites in each valley varies enormously from none in Firbeck valley to 58 in Markland Grips (**Fig.1**). This variation in number is the result of a number of factors including size of valley, length of exposed rock faces, local geology and survival. The increase in numbers of sites also varied greatly between the different valleys. Roche Abbey Gorge, Anston Stones and Markland Grips had large increases, and to a lesser extent Pleasley Vale. With the other valleys the number of sites remained relatively unchanged.



**Table 1 Number of sites per valley**

Vale or Gorge	No. of previously recorded caves	No. of previously recorded rock shelters	No. of caves in the survey	No of rock shelters in the survey	Large fissures with sediment
Roche Abbey Vale	0	1	2	14	1
Firbeck Valley	0	0	0	0	0
Anston Stones Wood and Lindrick Dale	2	2	7	29	2
Red Hill	1	0	1	0	0
Thorpe Common and Lob Wells Wood	0	4		5	0
Steetley Quarry Caves	2	0	1*	0	0
Ash Tree Gorge	1	2	1	3	1
Markland and Hollinhill Grips	3	8	13	41	4
Elmton and Whaley Valleys	2	6	3	7	0
Langwith Vale	3	3	3	3	0
Pleasley Vale	8	2	11	6	5
Total	22	28	42	108	13
	<b>50</b>		<b>163</b>		

\* - Steetley Quarry Cave no longer exists as it has been quarried away.

The relative proportions of the different types of sites is difficult to see in the raw counts (**Fig.1**) so a percentage histogram (**Fig.2**) was produced of caves and rock shelters by valley. Valleys with less than 5 sites were excluded so as to avoid skewing the pattern with small samples.

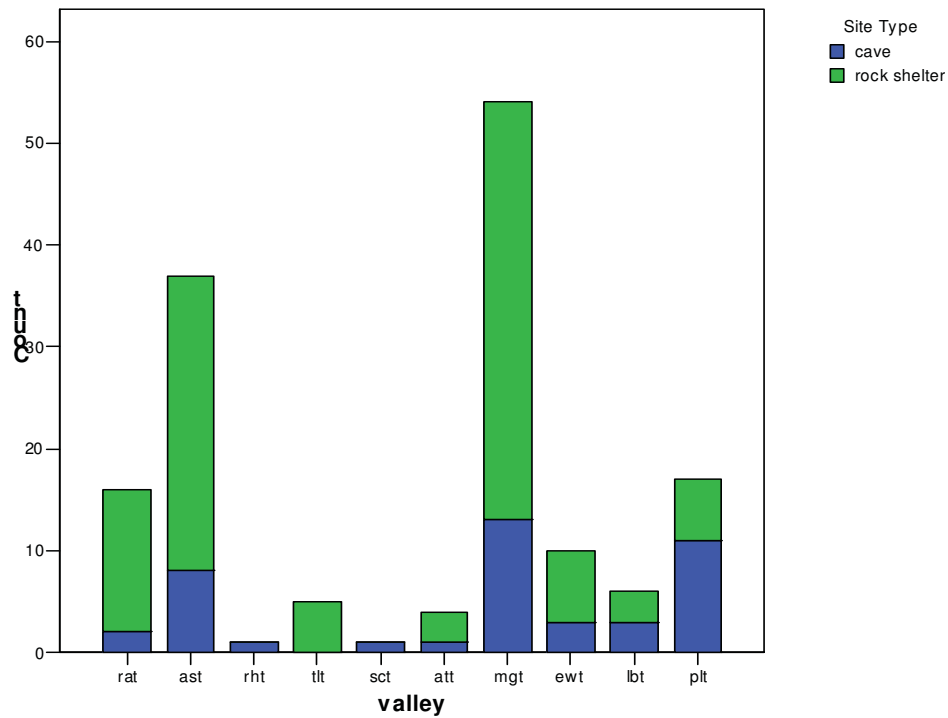
The percentage figures for caves, as a total of known sites, varied from around 15% in Roach Abbey Vale to 60% in Pleasley Vale. **Fig.2** also shows that there is a general trend from north to south with an increasing proportion of caves and a decrease in rock shelters.

This variation and trend could be due to variation in geological factors, which influence the creation of sites, and/or factors related to the destruction and survival of sites, which may operate differently on different types of sites. Factors related to destruction and survival could be a factor in the proportion of caves and rock shelters in Pleasley Vale; here the rock faces have been cut back, possibly resulting in a selective preservation of caves which are likely to extend further back from the original rock face than rock shelters. However, this does not hold true for Elmton and Whaley Valley or for Langwith valley where there is no obvious evidence for the cutting back of rock faces. It would therefore appear that the most important factor in



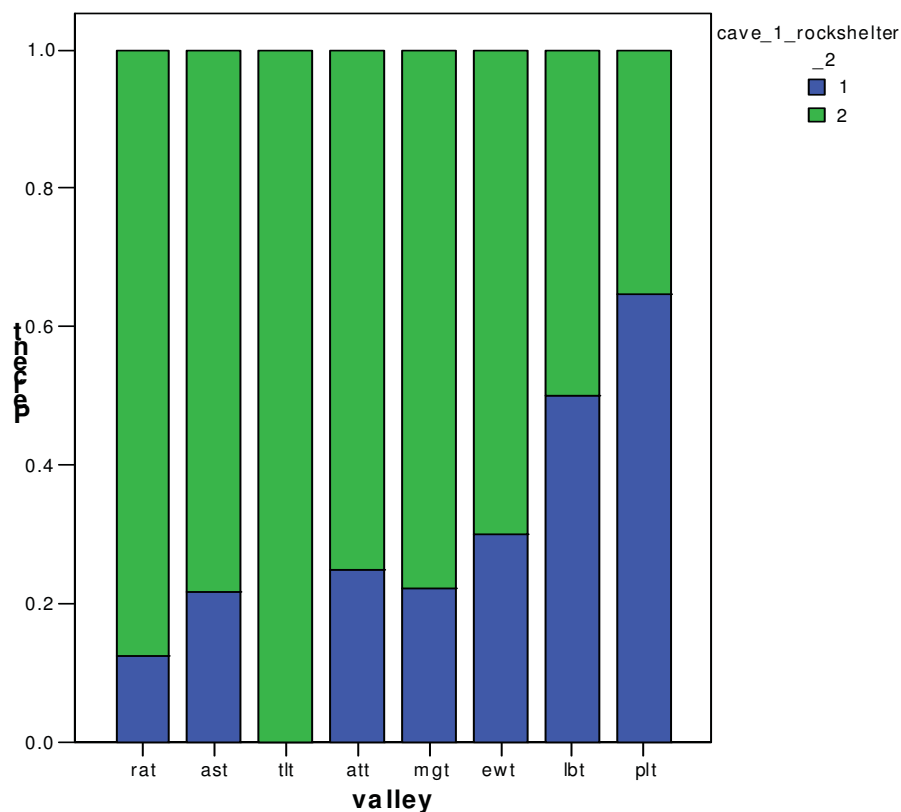
the variable proportion of different types of sites is geological variation. There must be some variation in the bedrock geology which influences the development of different types of features and that these factors vary across the Magnesian Limestone from north to south.

**Fig.1 Site counts by valley**





**Fig.2 Percentage of site types by valley**



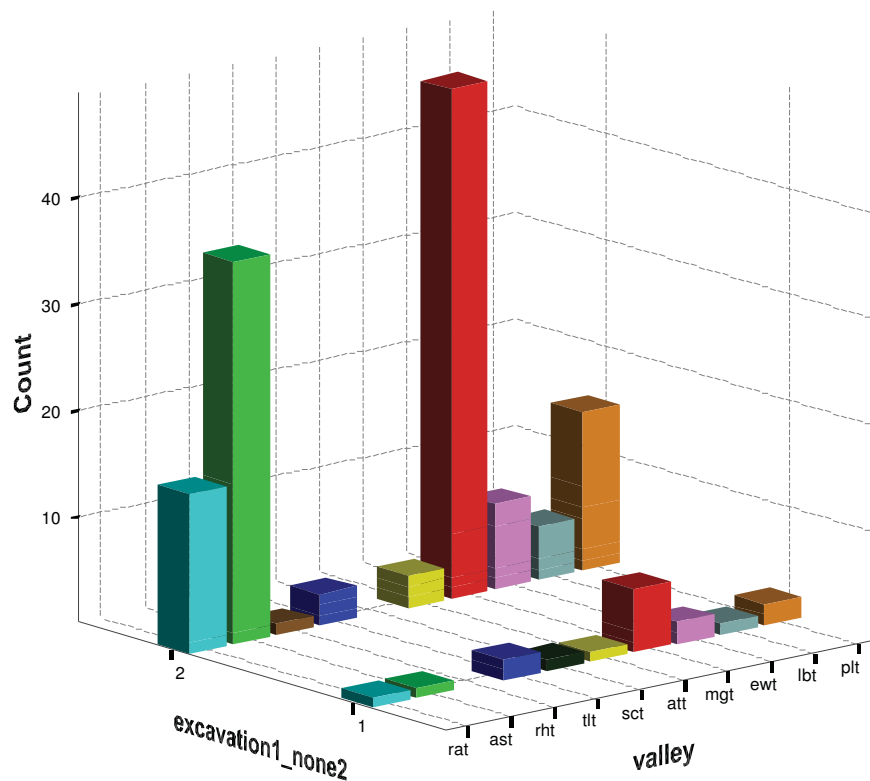
#### 4.5.2 Excavated sites

The number of sites that have been excavated is very small compared to the total number of sites now known. The number of sites that have been excavated in each valley is a small proportion of the total number of sites in each valley. The relative proportion of sites that have been excavated in each valley is difficult to see in the raw counts (**Fig.3**) so a percentage histogram (**Fig.4**) was produced to show the percentage of sites excavated in each valley. Valleys with less than 5 sites were excluded from the analysis so as not to skew the pattern with small samples.

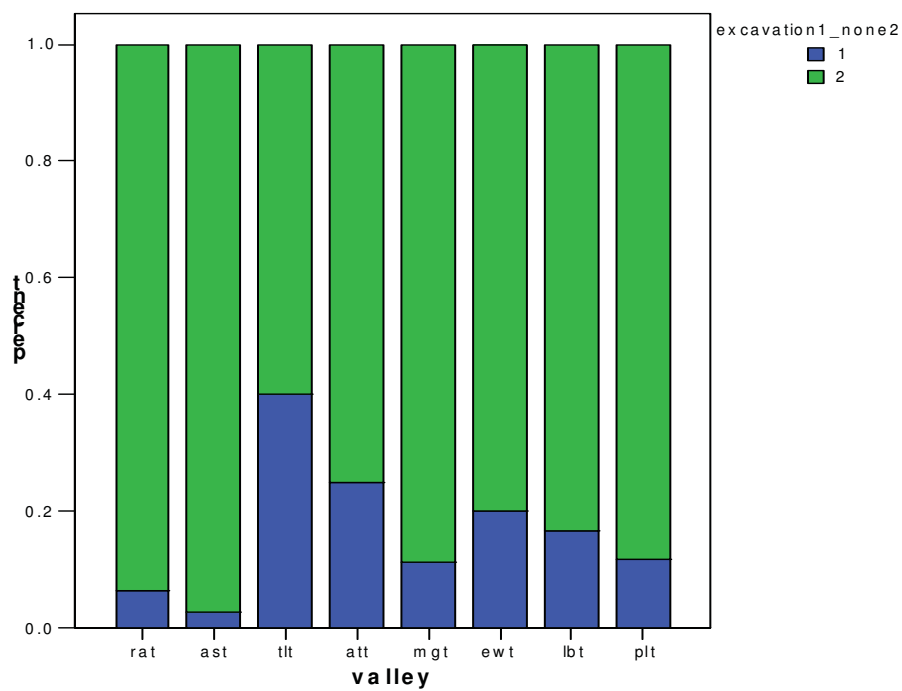
The percentage of sites that have been excavated in each valley varies from 2.5% to 40%. The valleys with the greatest proportion of excavated sites are those with the smallest number of sites, Thorpe Common and Ash Tree Valleys, while the valleys with the lowest proportion of excavated sites are in the valleys with the largest number of sites, Anston Stone, Markland Grips, Roche Abbey Vale and Pleasley Vale. In reality, excavation has been unusual in all of these valleys and the apparent focus of excavation on the valleys with fewer sites is the result of the disproportionate impact of a few excavations in small populations of sites.



**Fig.3 Numbers of sites excavated by valleys**



**Fig.4 Percentage of excavated sites by valley**



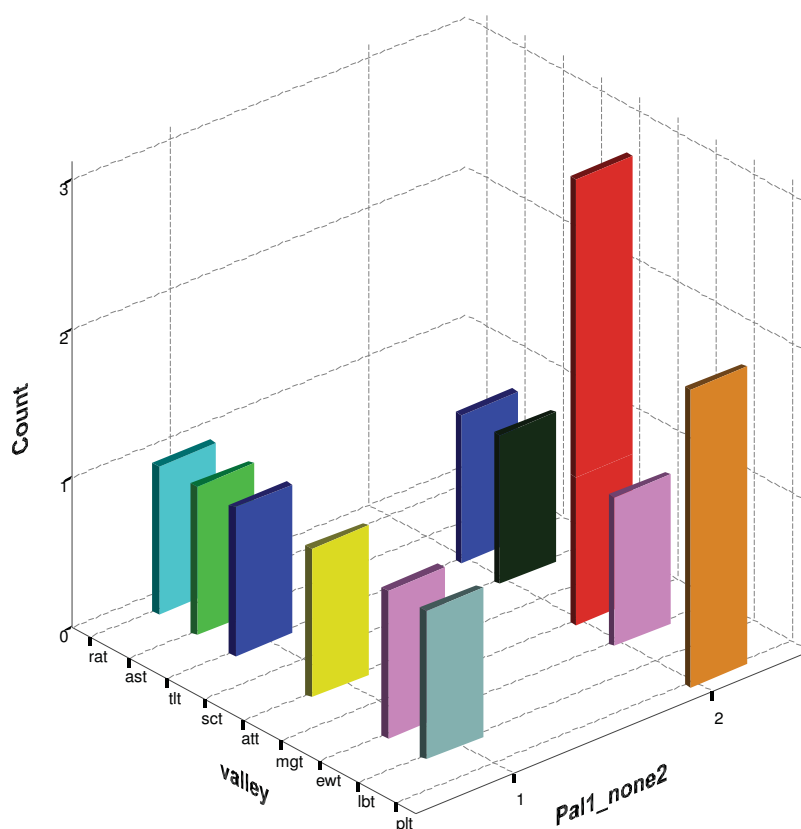


### 4.5.3 Archaeology and palaeontology recovered during excavations

As stated, the number of sites that have been excavated is relatively few, and there are only 14 recorded excavations known from the study area for which we have details. This represents only 8.5% of the 163 possible sites identified in the survey.

Of the 14 sites, six contained Palaeolithic material (**Fig.5**), with one site each in Roche Abbey, Anston Stones, Thorpe Common, Ash Tree, Elmtun and Whaley, and Langwith valleys. In two of the larger valleys, Markland Grips and Pleasley, excavation has recovered no Palaeolithic material despite three excavations in the former and two in the later.

**Fig.5 Number of excavated sites containing Palaeolithic remains by valley**



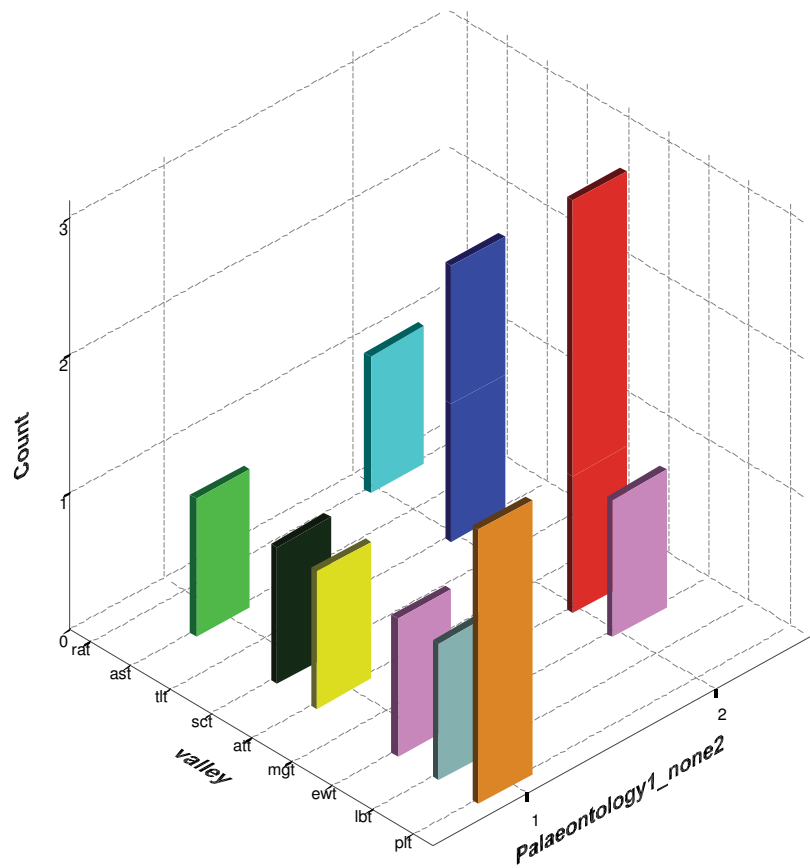
N.B. It is unclear how many sites, or which sites, Armstrong excavated in Markland Grips so the figure of three sites excavated may be an underestimate.

Material of palaeontological interest has been recovered from 7 of the sites, including some such as Ash Tree that also produced archaeological material (**Fig.6**). However, the main difference with the distribution of Palaeolithic material was in the Pleasley Vale where the two sites produced large assemblages of palaeontological material.



Palaeontological material was absent from Markland Grips, and also from Thorpe Common and Roche Abbey valleys.

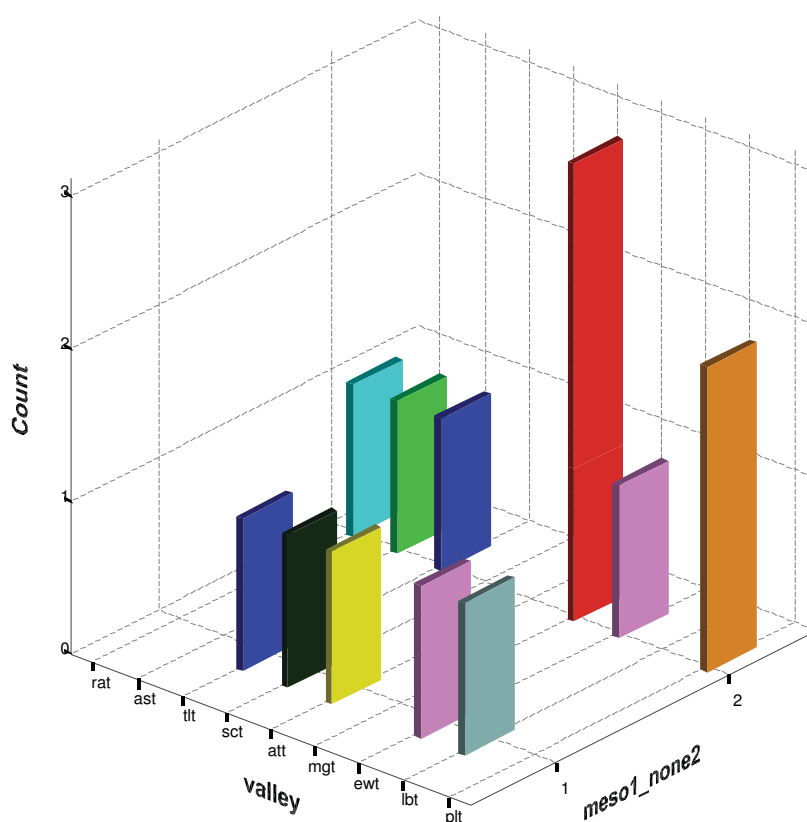
**Fig.6 Number of excavated sites containing palaeontological remains by valley**



The distribution of Mesolithic material was similar to that for the Palaeolithic, although in this case it was slightly more restricted being found on only five sites (**Fig 7**). Pleasley and Markland Grips again lacked any material and in this case Roche Abbey and Anston Stones did not contain any Mesolithic remains from the excavated caves.



**Fig.7 Number of excavated sites containing Mesolithic remains by valley**



For later prehistoric periods (Neolithic to Iron Age) material was recovered from most valleys (**Fig.8**). Again there was no archaeological material of this date from Pleasley, and none from Anston Stones, though in the later case Roman material was recovered from Dead Man's Cave.

Considering the number of excavations that have been undertaken, and what they represent as a proportion of all the potential sites, one must be cautious in extrapolating from the data available and not over interpreting it. However, there are two valleys, Markland Grips and Pleasley, that are notable for the absence of either Palaeolithic or Mesolithic material. In both cases it is worth considering whether this is an accurate picture of human use of these valleys and their sites, or a reflection of the limited sample of excavated sites available.

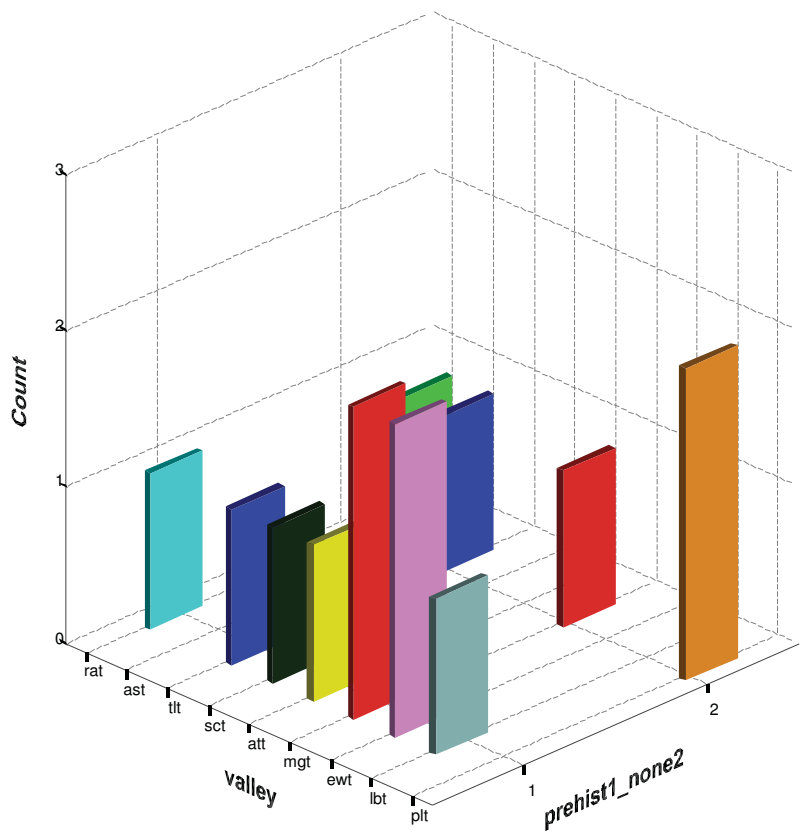
In Markland Grips the sites excavated were relatively small caves and rock shelters with some later prehistoric material but nothing earlier. The three sites excavated represent a tiny proportion of the 58 possible sites identified in the survey. There are several sites that demonstrate a human presence in the vicinity as Creswell Crags is just over 2km to the east and Ash Tree Cave 1km to the north, also one upper Palaeolithic flint blade has been recovered from the valley bottom (Jacobi pers. comm.). There is therefore extensive human activity in the area during the Palaeolithic and this combined with the very small number of excavations means it is



impossible to discount the possibility that other sites within Markland Grips could contain Palaeolithic or Mesolithic material.

At Pleasley the two excavated caves have produced large assemblages of palaeontological material, one with Pleistocene material and one with early Holocene material, but no archaeological material of any date has been recorded. However, previous field walking in the area has produced both Mesolithic and Neolithic flint scatters on the top of the limestone plateau, and both scatters were within 300m of the valley. This demonstrates the presence of human groups in the area in the Holocene but not during the Pleistocene. The nearest Palaeolithic cave to Pleasley is Langwith Bassett which is over 4km away. With the likely low population levels in Britain during the Palaeolithic it is possible that the caves and rock shelters in Pleasley were not used, however, further investigation of some of the 20 other sites in the valley would be required to confirm this.

**Fig.8 Number of excavated sites containing later prehistoric remains by valley**



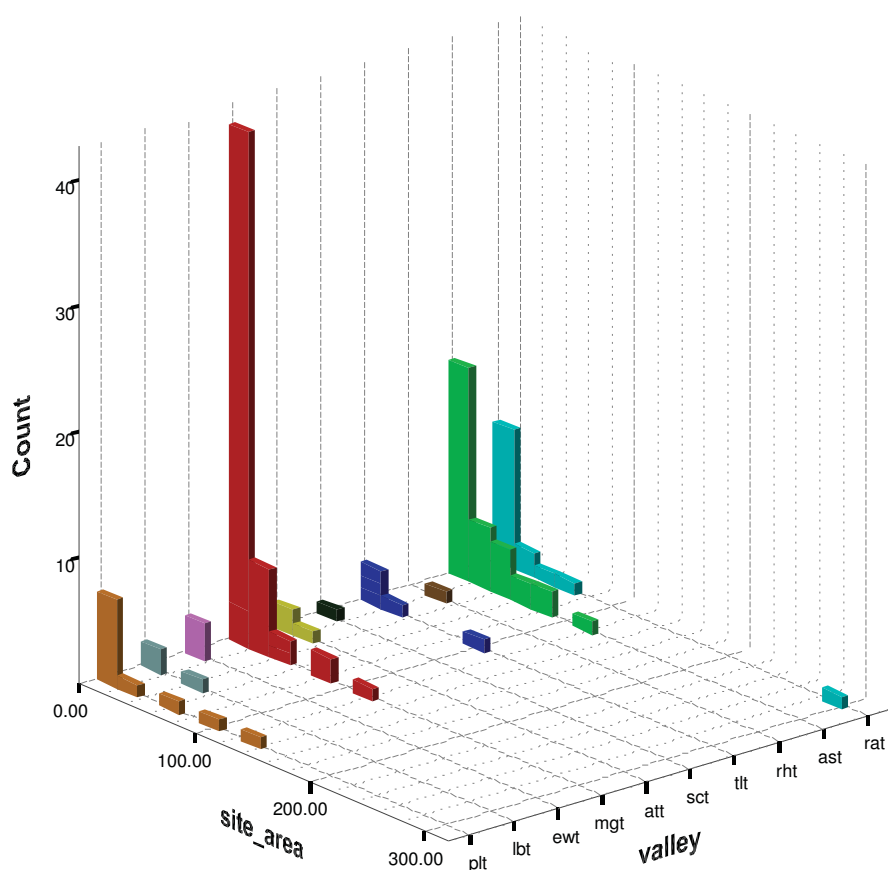


#### 4.5.4 Size of sites

The area of each site was calculated to enable comparisons to be made. Figures were produced multiplying the length by the depth of overhang for rock shelter and the depth by width for caves. This only produces an approximate figure as it does not take into account irregularities in the shape of caves and rock shelters. It also does not take into account the area of the site that is buried and therefore inaccessible. However, it does enable the relative sizes of the sites to be assessed.

Generally most sites were fairly small with the majority of sites having an area of less than 20m<sup>2</sup> (**Fig 9**). There were a few sites that had areas of up to 140m<sup>2</sup> and one very large site with an area of 300m<sup>2</sup>.

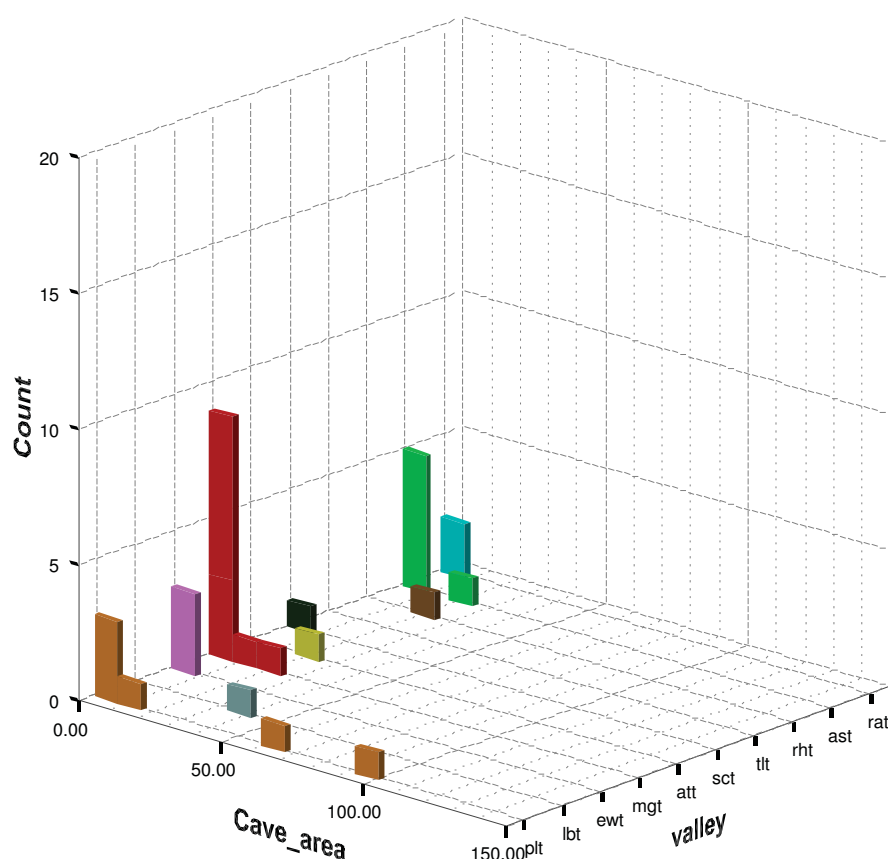
**Fig.9 Size of sites by valley**



In general the pattern for the histograms of site sizes for all the valleys was for a peak at 0-20m<sup>2</sup> with a rapid tail off up to 140m<sup>2</sup>. However, this pattern oversimplifies the picture as can be seen in **Fig.10** and **Fig.11**.



**Fig.10 Size of cave sites by valley**

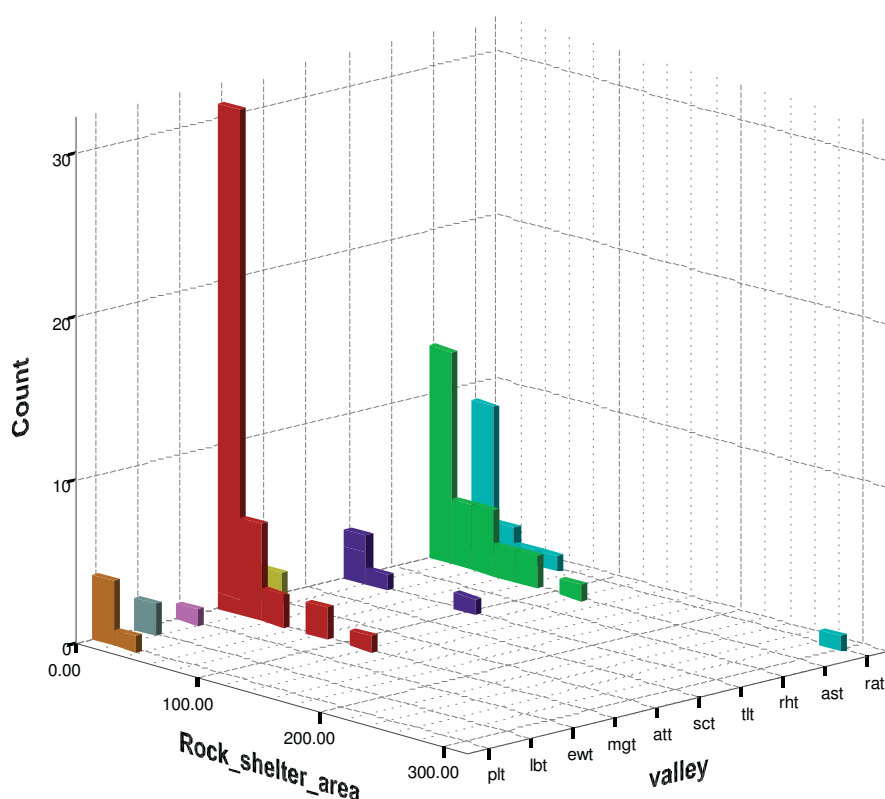


All but three of the cave sites were under 20m<sup>2</sup> in area and the three larger sites are all in the two southern most valleys Langwith and Pleasley (**Fig.10**). The rock shelters are also generally less than 20m<sup>2</sup> in size, although there are several larger sites up to 140m<sup>2</sup> and one very large site of 300m<sup>2</sup> (**Fig.11**). The larger rock shelters tend to be in the more northerly valleys including Roche Abbey Vale, Anston Stones Wood, Thorpe Common and Markland Grips.

This pattern again suggests a change in the nature of the sites from north to south across the study area, as was seen in the types of sites (**section 5.1**). This is again probably due to geological variations in the nature of the rock and the development of the valleys.



**Fig.11 Size of rock shelters by valley**



#### 4.5.5 Altitude and location of sites

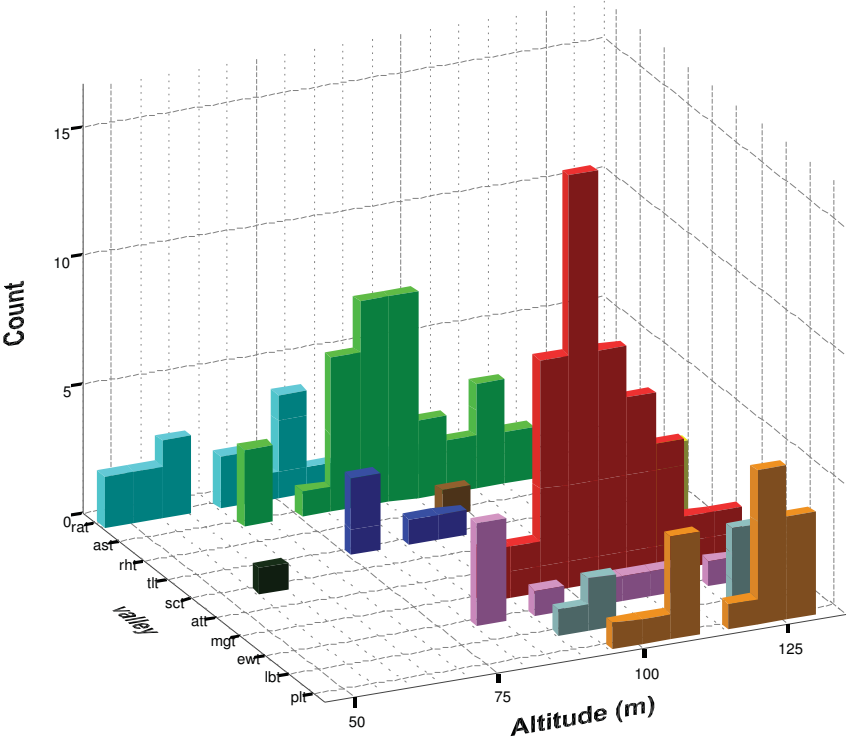
The altitude was measured for each site, this was recorded as meters above ordnance datum at the entrance of each site. The location for each site on the valley side was also recorded. This was a subjective assessment with each site being recorded as being at high, mid or low level on the valley side.

**Fig.12** shows histograms for each valley for site altitudes. There is a wide degree of variation with sites spread over a range from 45m AOD to 130m AOD. However, within each valley the range of altitudes is more restricted; in Roche the sites are between 45m and 100m AOD while in Pleasley the sites are between 95m and 130m AOD. This also demonstrates that there is a general increase in the altitudes at which sites are located across the study area from north to south. This reflects a general increase in altitude across the landscape with the base of Roche Abbey Vale at about 45m AOD and the base of Pleasley Vale at about 95m AOD.

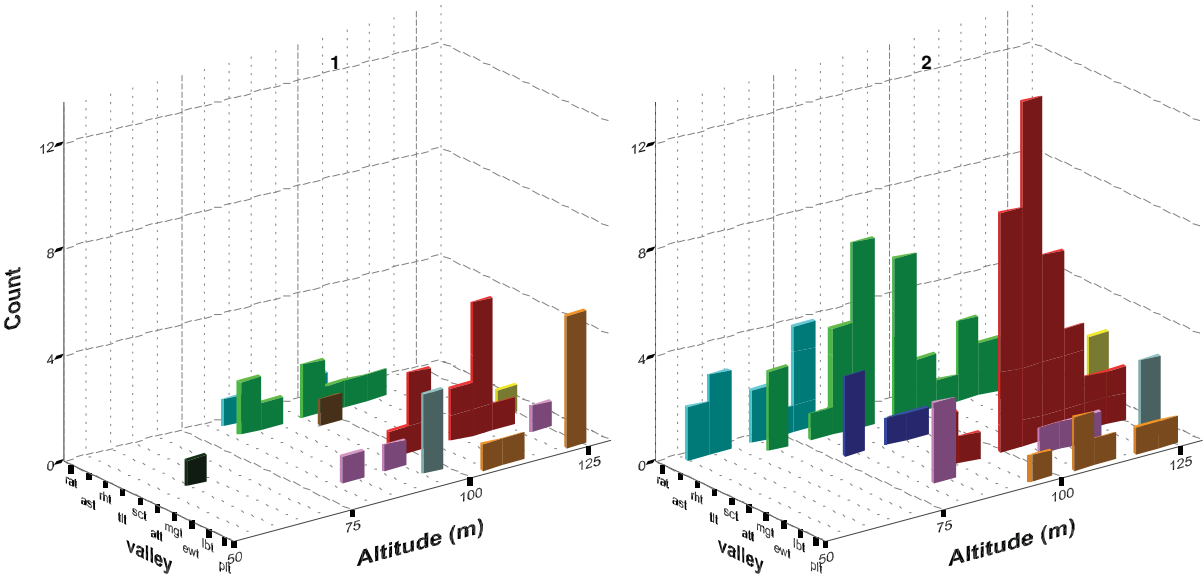
The distribution of site altitudes within valleys also varies; Markland Grips has close to a normal distribution, while in the Elmton and Whaley Valleys the sites were relatively evenly spread over a wide range of altitudes. In most valleys the histograms show bimodal peaks, in Anston Stones these overlapped while in Roche, Langwith and Pleasley they were separated. This could relate to the dates and means by which the sites were formed.



**Fig.12 Site altitude by valley**



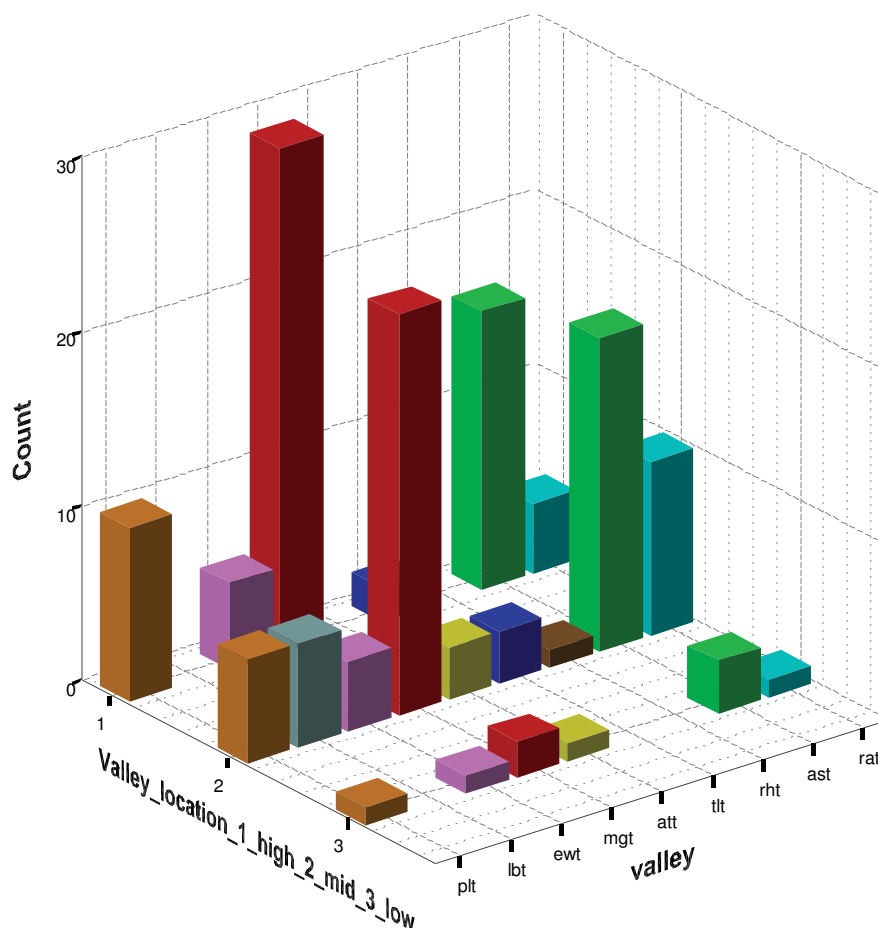
**Fig.13 Site altitudes by valley for caves (1) and rock shelters (2)**





A comparison can be made of the altitudes of caves and rock shelters for each valley and between valleys (**Fig.13**), these histograms show that the picture is even more complicated. In the case of caves, Anston Stones, Markland Grips and Pleasley show evidence for cave formation at two separate altitudes while no clear pattern is observable in the other valleys, this may be due to the small sample size. In the case of rock shelters any pattern is less clear. Markland Grips has close to a normal distribution, but all other valleys have rock shelters scattered over a range of heights, which in the case of Anston Stones has resulted in a histogram with four peaks. The more scattered pattern observed in the case of rock shelters is probably the result of the processes that act to form the sites. Rock shelters can form where ever a rock face is exposed on the surface, irrespective of height, while caves usually form due to the movement of water underground which relates to water table levels and subsurface hydrological flows.

**Fig.14 Site location on valley side by valley**



The site location as recorded on the valley side is a subjective measure but patterns are observable with most sites located at high or mid levels with few at low level (**Fig.14**).



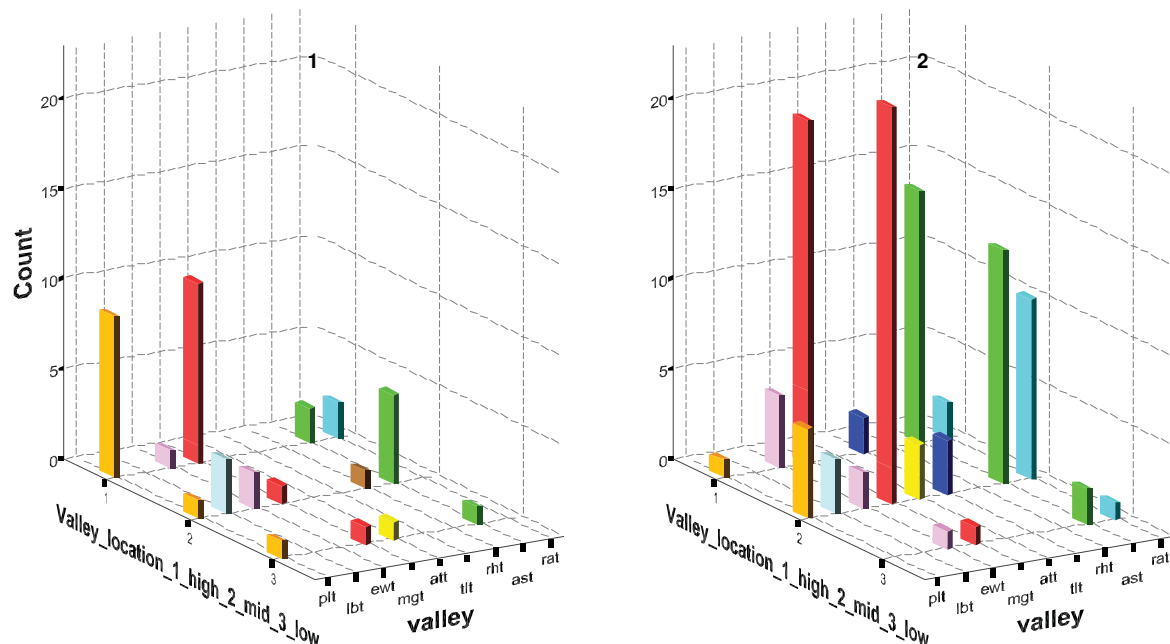
For all site types in the north of the study area (Roche, Anston and Thorpe Common) there are more sites at mid level and slightly fewer at high level. Further south, in Markland, Elmton and Pleasley there are slightly more high level sites than mid level sites.

In Langwith all the sites are at mid level although the altitude figures suggested sites were in two groups (**Fig.12**). This may reflect that the altitude of the valley base changes with all sites at mid level but unevenly distributed along the valley.

If the data is displayed for caves and rock shelters separately (**Fig.15**) it is clear that the two types of sites do not show the same pattern. It is only in Anston Stones, Markland Grips and Pleasley that there are enough caves to give a clear pattern. In these cases the caves are much more common at mid level in Anston Stones, while in Markland Grips and Pleasley they are much more common at high level. With the more common rock shelters, most show similar numbers at both mid and high level. Exceptions are found at Roche and Pleasley where rock shelters are much more common at mid level.

In the case of the caves their location is the result of a combination of factors including water movement and water table levels and faulting and fissuring. It is the combination of these underground factors that determines cave formation, while in the case of the rock shelters their locations reflect the locations of the rock faces on which they develop.

**Fig.15 Site location on valley side by valley for Caves (1) and Rock Shelters (2)**

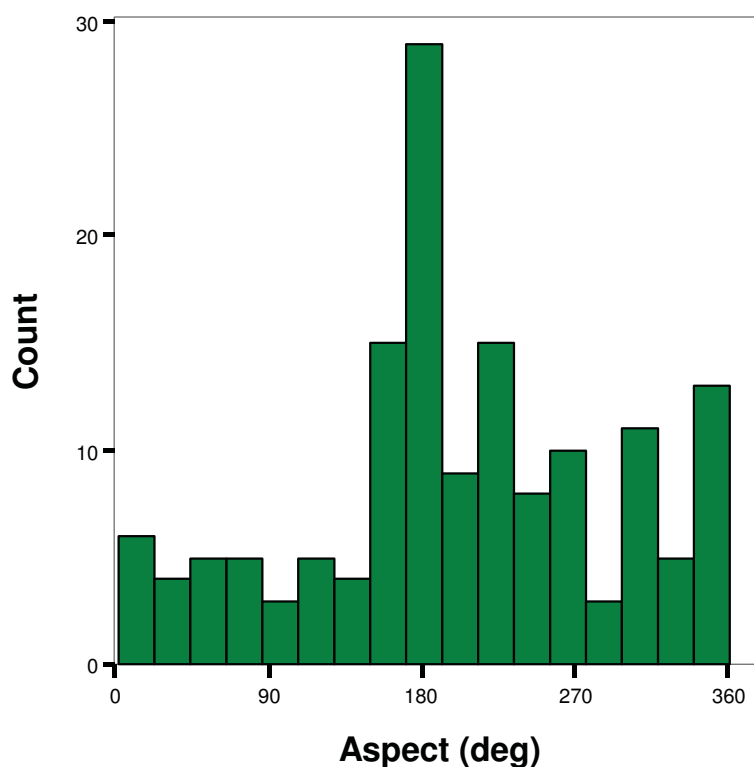




#### 4.5.6 Site aspects

The site aspect was recorded in the field as the angle perpendicular to the entrance of a cave or a rock shelter. **Fig.16** shows a histogram of the distribution of site aspects and as can be seen there is a clear preference for  $180^{\circ}$  (due south) or  $360^{\circ}$  (due north), with a series of subsidiary peaks between  $220^{\circ}$  and  $300^{\circ}$ .

**Fig.16 Site aspects for all valleys**

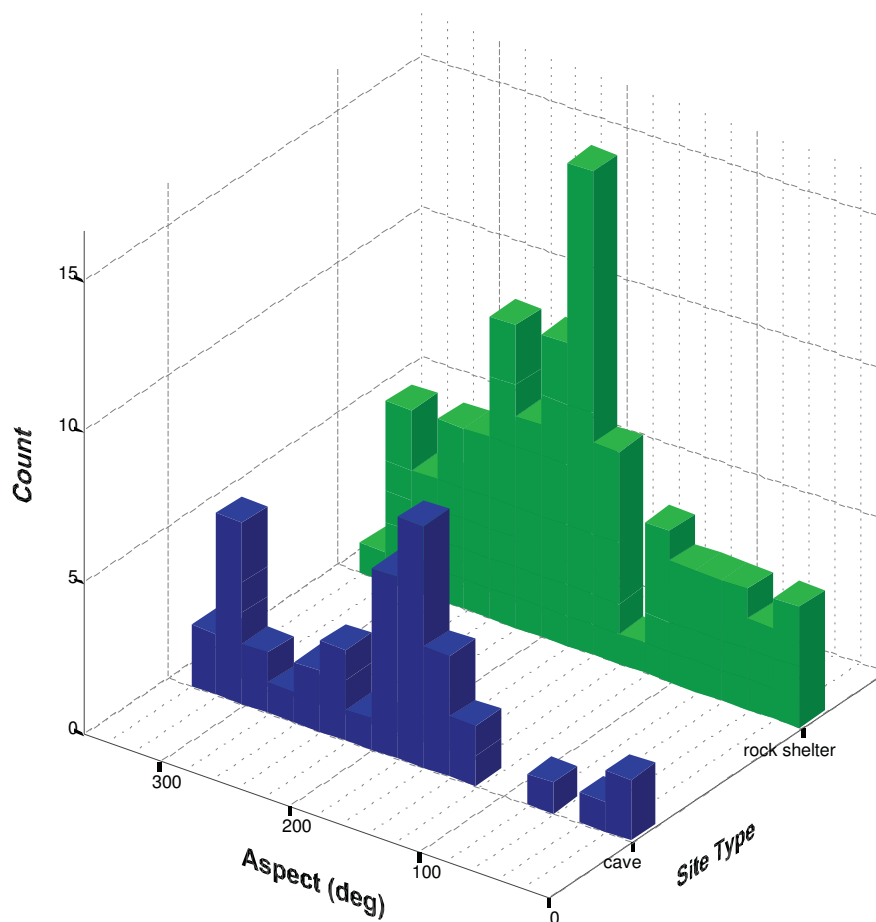


The main factor determining this pattern is the orientation of the valleys. They are primarily aligned east-west with the main rock faces facing either north or south. The majority of sites would therefore be expected to face north and south. As these figures cover all possible sites that were identified, the preponderance of south-facing over north-facing sites must be geological in origin. There would appear to be two possible reasons for this; either sites on the north-facing rock faces are more often obscured, or the weathering processes that result in the formation of sites operate with greater effect on south-facing rock faces creating more sites. In the latter case sites formed by surface weathering processes, i.e. rock shelters, might be preferentially formed on south-facing rock faces due to increased temperature ranges on the rock faces, possibly increasing freeze thaw effects. If this was the case one might expect a difference in the distribution of rock shelters and caves, as the caves were formed by sub surface ground water and faulting processes. Also if the sites were preferentially obscured this should also be visible in the caves. As can be seen in **Fig.17** the rock shelters have one large peak at  $180^{\circ}$  while the caves have two peaks one at  $180^{\circ}$  and one at  $340^{\circ}$ . The peak for caves facing south is slightly larger than that for north-facing caves, but the overall pattern suggests that caves and rock



shelters are formed by different processes and that variations in surface weathering on north- and south-facing rock faces are probably primarily responsible for the greater number of south facing rock shelters.

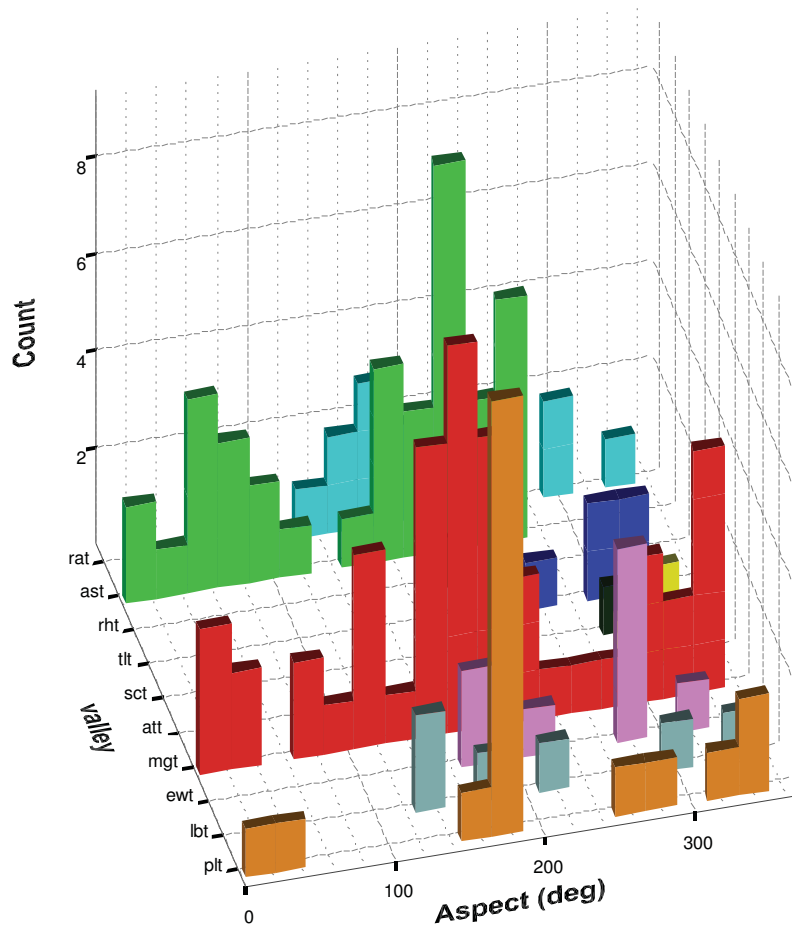
**Fig.17 Site type by aspect**



Many of the subsidiary peaks in **Fig.16** can be explained by examination of the data for each valley as shown in **Fig.18**. Although most valleys trend east-west this does vary. The main peaks on the histograms for Anston Stones and Elmton and Whaley are at 220° and 290°. This is because these valleys are generally orientated nearer to north-west south-east than east-west. This means their main south-facing rock faces have aspects of around 220° and 290°. In Thorpe Common and Lob Wells Wood the aspects range from 250° to 330°. However, in this case the valley includes sections orientated approximately east west and north south, with most of the sites in the section orientated north to south.



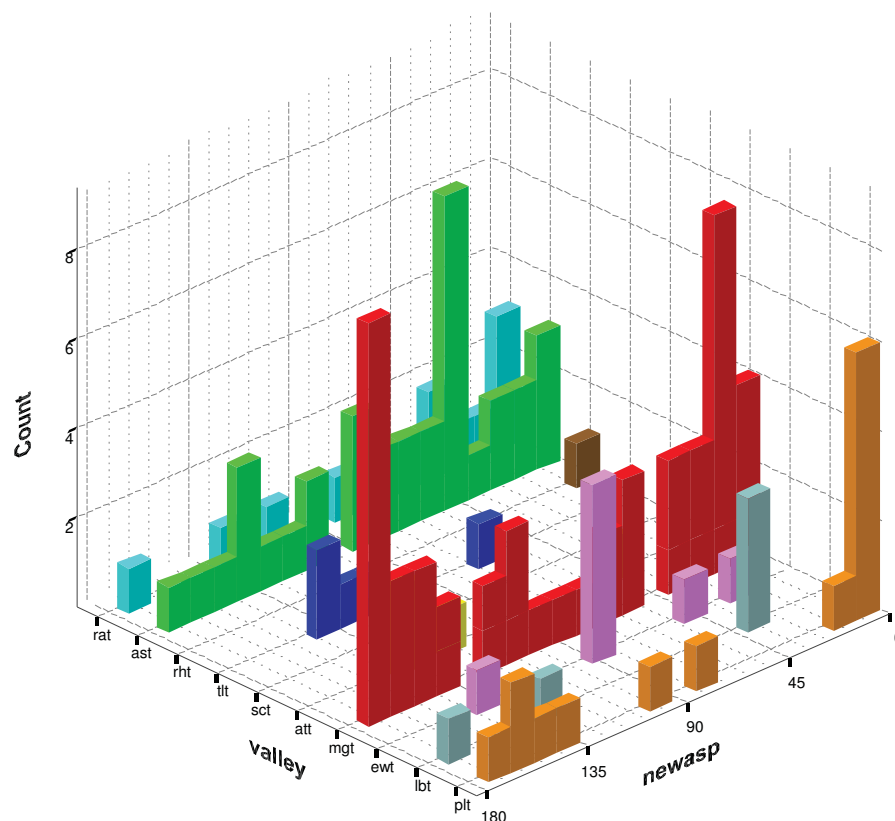
**Fig.18 Site aspects by valley**



For the model building it was necessary to modify the site aspect figures. This was undertaken to avoid the use of circular data. If this wasn't undertaken  $0^\circ$  and  $360^\circ$ , which are in fact the same aspect, appear as numerical extremes. To avoid this the data was transformed with zero set at due south and all other figures given as degrees away from due south, so north becomes  $180^\circ$  and east and west are both  $90^\circ$ . This does distort the data slightly in that there are two different aspects that produce the figure of  $90^\circ$ , east and west, but only one each for both  $0^\circ$  and  $180^\circ$ , south and north. However, it avoids the problems associated with circular data and as such is required for the modelling. The results of this transformation are shown in **Fig.19**. As can be seen in the histograms for most valleys there are still peaks near to  $0^\circ$  (south) and at  $180^\circ$  (north).



**Fig.19 Modified site aspects with south at 0° and all sites shown as degrees from south**



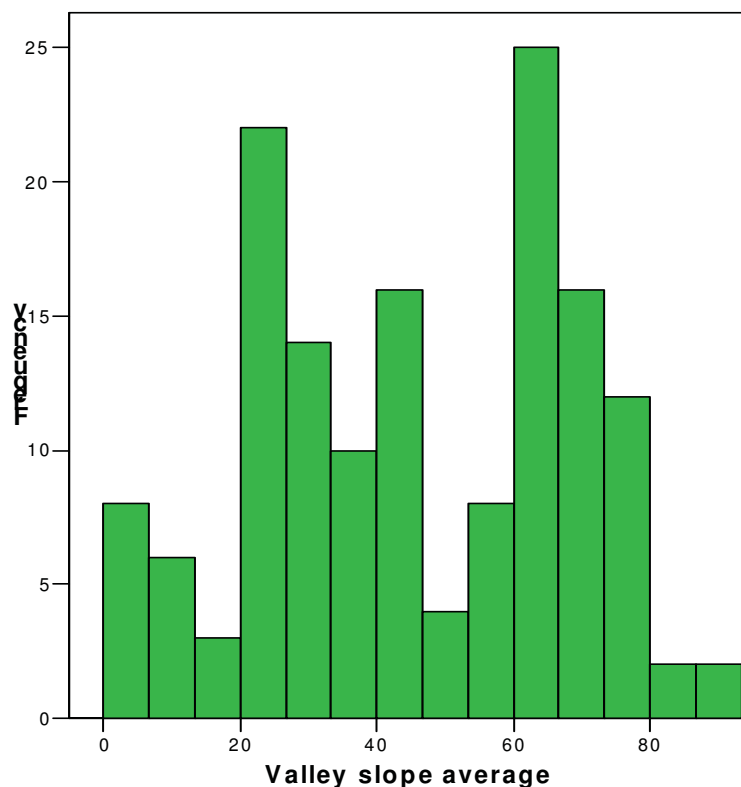
#### 4.5.7 Valley slopes around sites

The slopes around each site were recorded to provide information on the detailed topographic location of each site. Measurements were taken of the valley slope above, below, left and right of each site. The measurements were taken as the angle above horizontal and represent the average for a distance of 5m to 10m away from the site, in some cases a lesser distance was used where areas were overgrown and the ground could not be seen. The angles recorded were only recorded to the nearest 5°. A greater accuracy could not be recorded as all the slopes had variations and changes in them making greater accuracy impossible. Where a vertical rock face was encountered this was recorded as 90° ignoring any overhangs from rock shelters.

A figure was calculated for the general valley slope, averaging the slopes below, left and right for each site. The figure for the slope above each site was excluded, this was often a vertical rock face of 90° and inclusion of this figure would give a false impression of the general shape of the valley slope. The figures produced should therefore be representative of the shape of the valley slopes around each site excluding the rock face on which it is located.



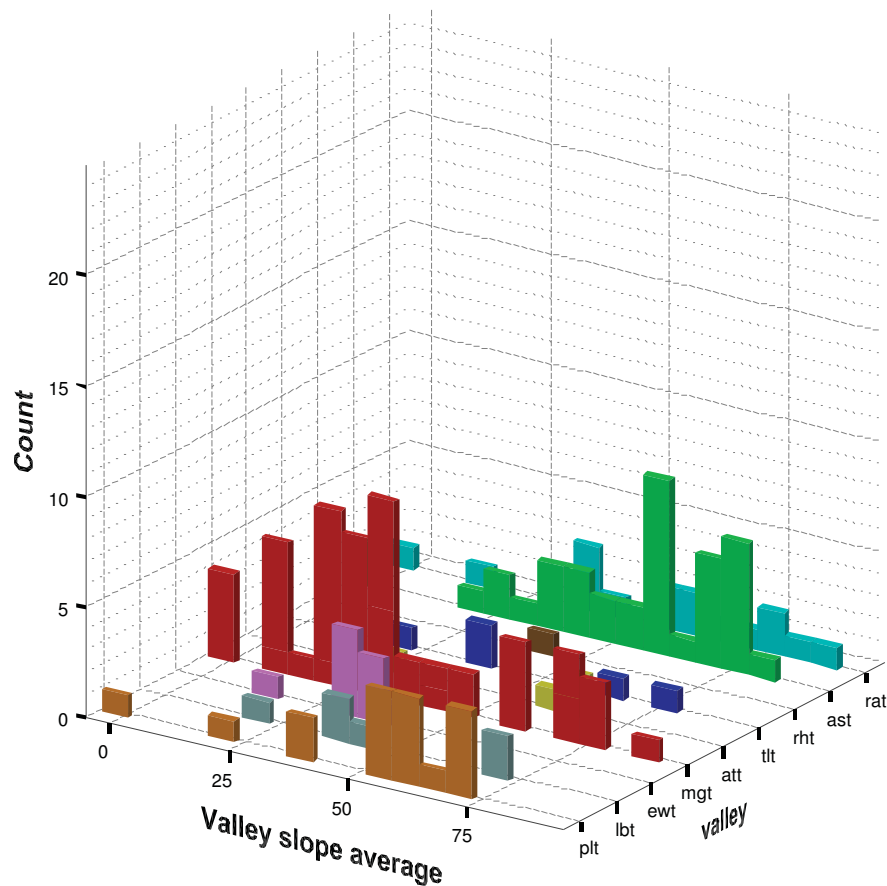
**Fig.20 General valley slopes around sites all valleys**



**Fig.20** shows a histogram of the counts for valley slope averages for each site. At first sight the valley slope average for all sites appears to separate into three groups. A more detailed analysis (**Fig.21**) showing histograms of the valley slope average for sites by valley shows that the valleys have different slopes on their valley sides. Anston and Pleasley have high average figures with peaks over 50° while Markland and Elmton have low figures with peaks around 25°, the rest of the valleys have a more general spread with no clear peaks. This shows that generally there are steeper slopes below the rock faces where sites occur in Anston and Pleasley than there are in Markland or Elmton.



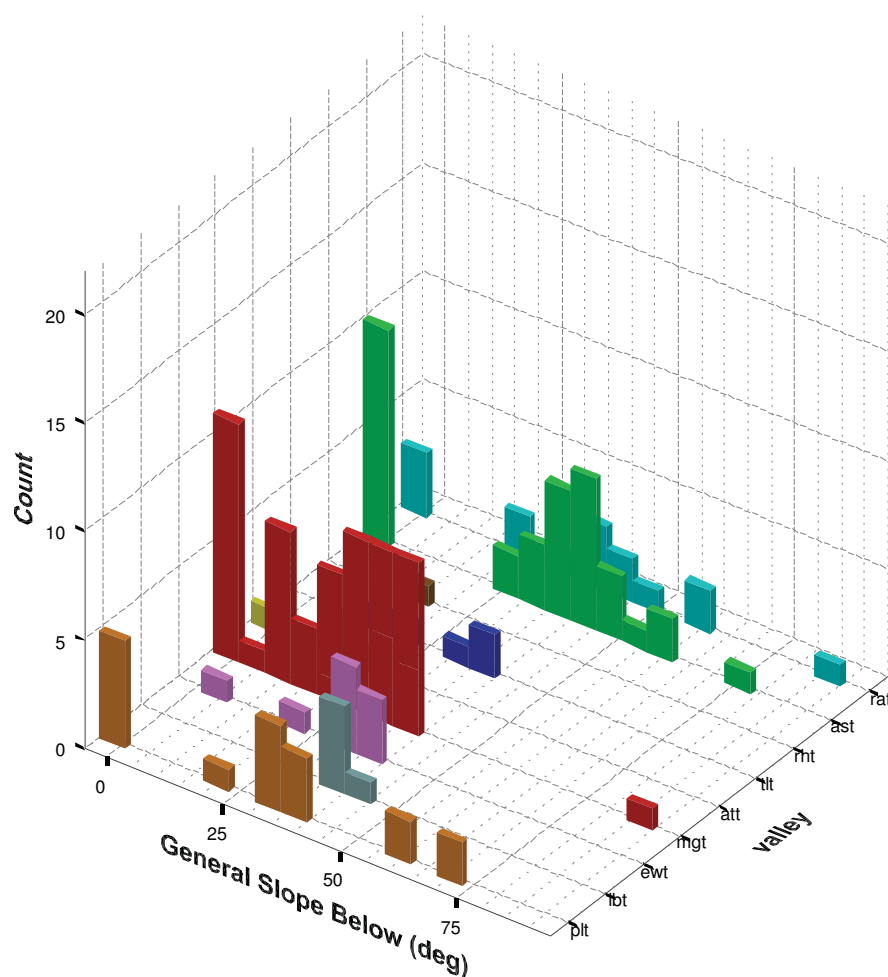
**Fig.21 Valley slope average by valley**



Looking at the data in more detail one sees that the average figures used in **Figs.20** and **21** are a simplification of what at times can be a very complex picture locally. Histograms of the valley slope below by valley (**Fig.22**) show a very different picture to that seen in **Fig.21**. The two main differences seen are that in most valleys there are several sites with no slope below, and also the slopes below sites are generally less steep than the valley slope average. In most valleys the valley slope below histograms peak at 30 - 40°, the figure is slightly less in Markland Grips at 25 – 40° with a smaller peak at 10°. The general picture that appears is that the valley slopes below sites are shallower than for the general valley sides.



**Fig.22 Valley slope below by valley**



The histograms (**Figs.23** and **24**) for valleys slopes to the left and right of sites show patterns that are very similar to each other but very different to the pattern observed for the slope below sites (**Fig.22**). There are many cases with vertical slopes to the left and right of the site. This is due to a number of sites where the rock shelter or cave is located in a slight recess or gully in the rock face thus resulting in vertical rock faces to the left and right of the site. These are most common in Roche, Anston Stones and Markland Grips.

Aside from the sites with vertical slopes, most sites have slopes between 30° and 40° to the left or right of them, although this is less in Markland Grips where the histograms peak for slopes of around 25° to 30° with a smaller peak at 10°. These figures are very similar to that seen for the slope below sites.



Fig.23 Valley slope left by valley

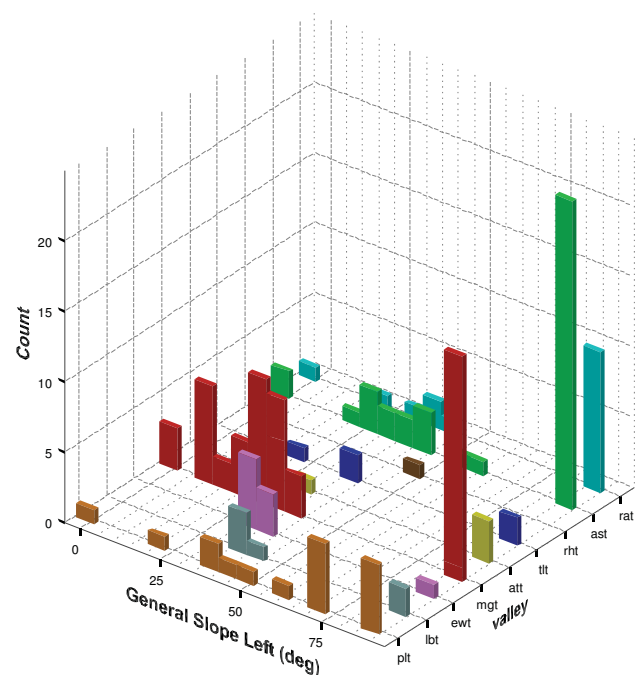
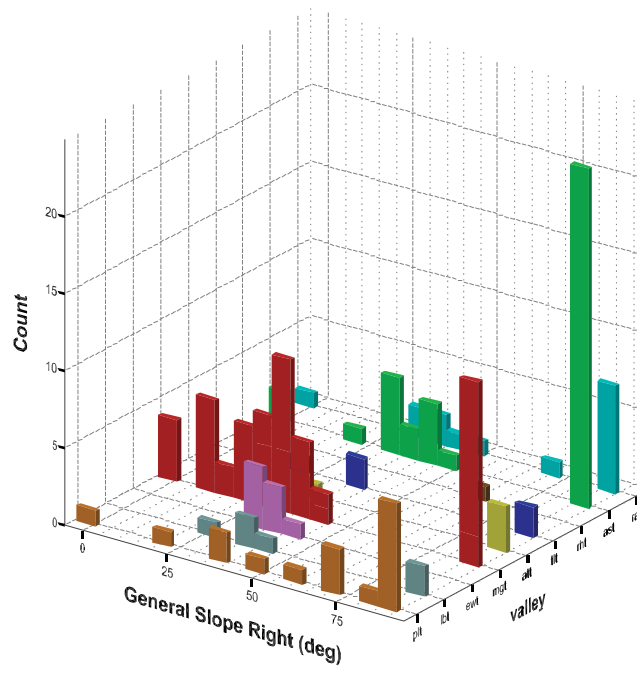


Fig.24 General valley slope to the right

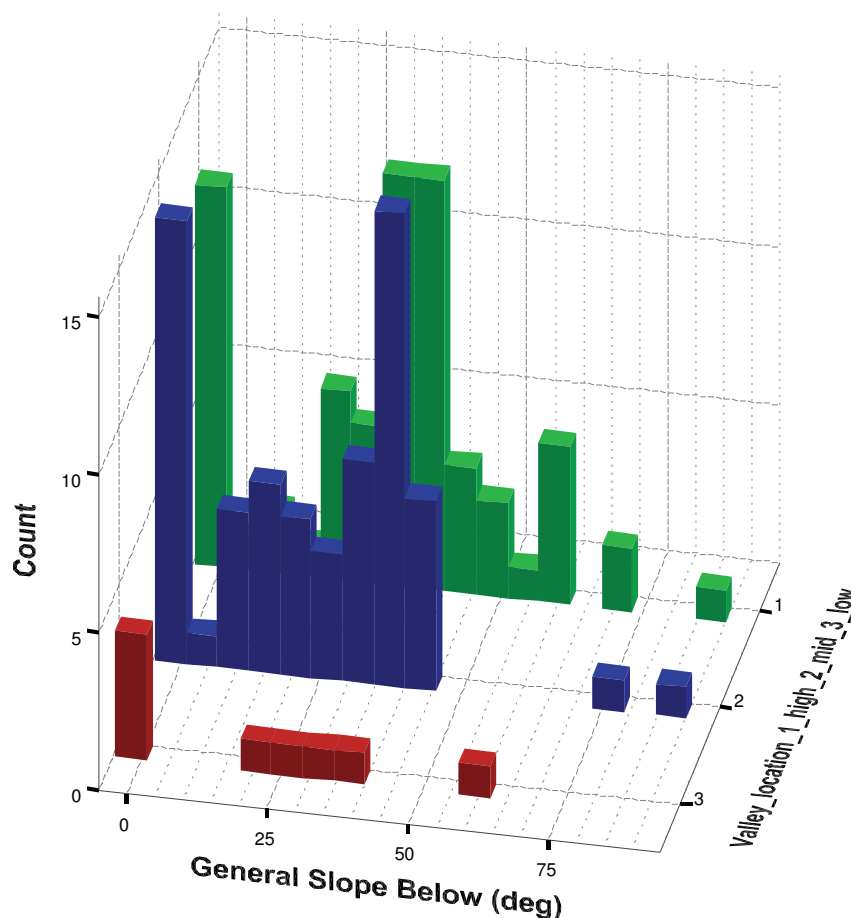




The histograms for valley slopes show that for most valleys the average slope angle is between 25° and 40°. However, many sites have shallower or flat slopes below awhile many sites have vertical faces to the left and right of the sites.

In interpreting why there are many sites with no slopes below one must remember that these histograms show all cave and rock shelter sites not just those known to contain archaeology. Possible reasons for this may be geological factors during the formation of the sites, materials weathered out of sites levelling off the slope below, or archaeological factors, use of the sites resulting in deposition of material below to level off the slope, or a combination of both.

**Fig.25 Valley slope below v valley location**

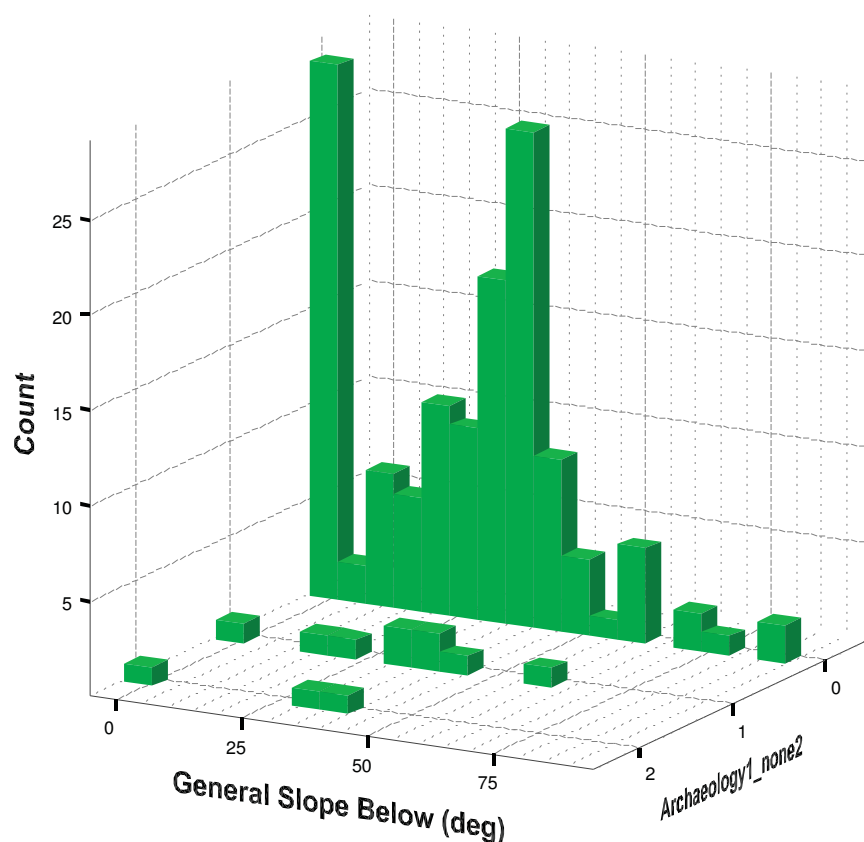


A histogram (**Fig.25**) of valley slope below the site against valley location shows a consistent pattern across the valley side from high to low level. A similar pattern is evident for low level sites though they are relatively few in number. In all cases there are several sites with no slope below, and a peak of sites with slopes below of between 25° and 40°. This demonstrates that the sites with shallow or no slope below are not valley bottom sites.



Histograms were produced of the slope below for sites with archaeology, without archaeology and with unknown archaeology (**Fig.26**). These were produced to test whether the slope below may relate to archaeological activity. However, as the number of sites that have been excavated is very small only the broadest conclusions can be drawn. In all cases there appear to be several sites with no slope below with the main group having slopes of between 25° and 40° below. This conclusion must be considered as tentative as the addition of a few more excavated sites could change the picture completely.

**Fig.26 General slope below for sites with archaeology and for sites without archaeology.**



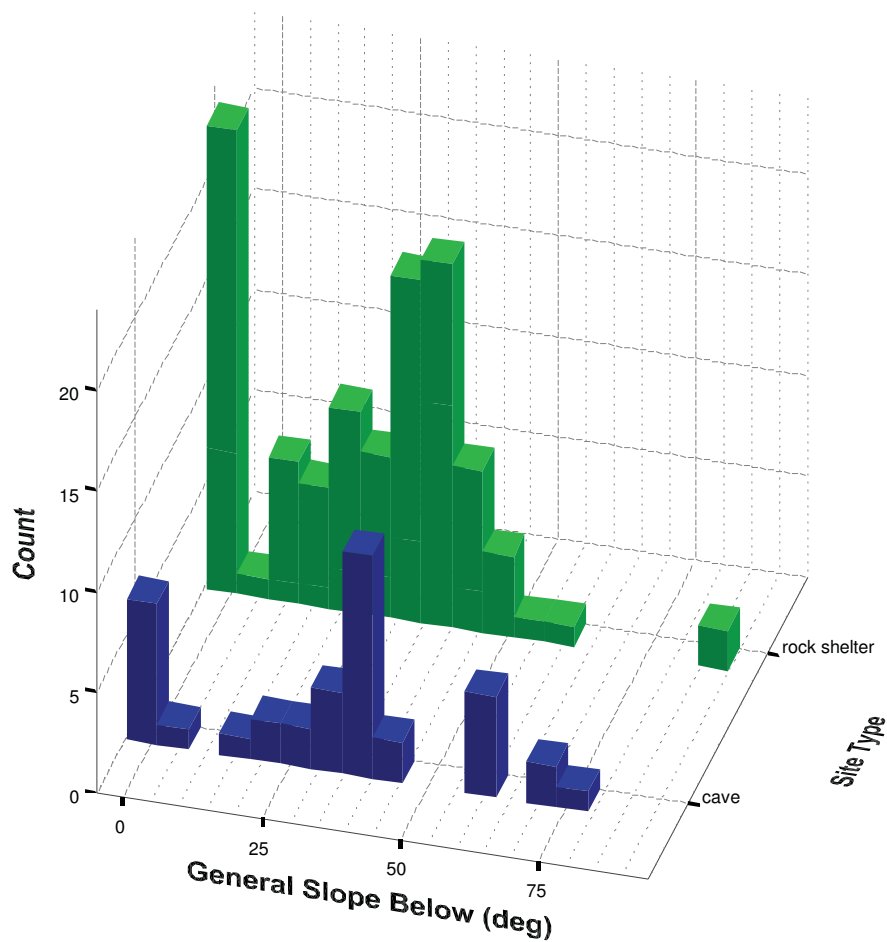
As topographic location and site use do not appear to relate to the general slope below the site it appears most likely that geological factors can in some cases result in the slope immediately below the site being levelled off. If this is so it may be that the caves and rock shelters might show different patterns for the histograms of slopes below the sites (**Fig.27**). However, the histograms for caves and rock shelters appear fairly similar, although there is a small group of caves sites with steep slopes below between 60° and 80° and one rock shelter at 90°. Also for caves sites the peak for 0° or no slope below is less pronounced than that for rock shelters.

It has therefore not been possible to determine why there are a number of sites which lack a slope below them, but it seems likely that geological factors possibly related to



the formation of the sites may play a part, possibly material collapsing of the rock face to leave an overhanging rock shelter is spreading out below the rock shelter to form a level area.

**Fig.27 General slope below for site types.**





#### 4.5.8 Site proximity to water

All the sites (except Steetley caves) lie in valleys and all of these valleys except Ash Tree Gorge have streams flowing through them today. It is impossible to determine whether any of the valleys have been dry in the past but this is probable, particularly during the last ice age.

Although Ash Tree Gorge although it is dry now it is probable that a small stream may have existed in it in the past, as it is likely to have been at least partly created by water. However, as the gorge is very small based on current topography, its potential catchment and any stream would also have been very small.

As Steetley caves were located in an area where the local topography has been heavily modified by quarrying it is not possible to say if there was a stream nearby in the past. However, as the caves were located on the top of the Magnesian Limestone plateau it may well be that there were no significant water sources near by.

A local water supply may have been important in determining which sites were utilised in the past. However, all of the site here have local water supplies except those in Ash Tree Gorge and at Steetley caves, and in both these cases human occupation is known from the sites. Streams exist today approximately 1km away from both groups of sites.

### 4.6 Sites with known archaeology compared to other sites

The second stage in examining the data was to compare the sites that have been investigated by excavation, to those that have not been investigated. This has been undertaken for all the different types of data that were examined in **section 4.5**. The small number of investigated sites (**Fig.3**) makes it difficult to draw definite conclusions in some cases. However, some general points can be made.

#### 4.6.1 Size of sites

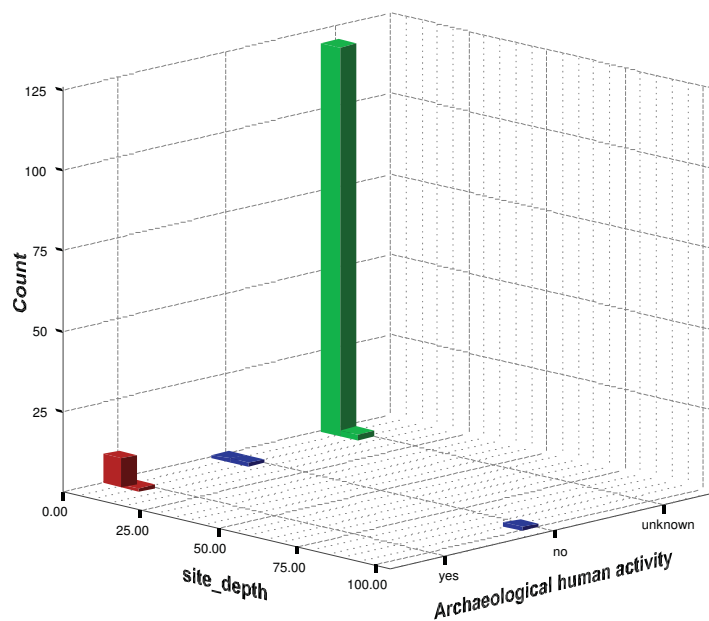
The size of sites have been compared for all sites together and for caves and rock shelters separately.

##### 4.6.1.1 All sites

The site depth and site area were used to compare sites. The data on site depth (**Fig.28**) shows that both caves and rock shelters, were relatively shallow (generally less than 10m deep) with the exception of one site (96m deep). Also the uninvestigated sites are all within the same size range as the archaeological and non archaeological sites.

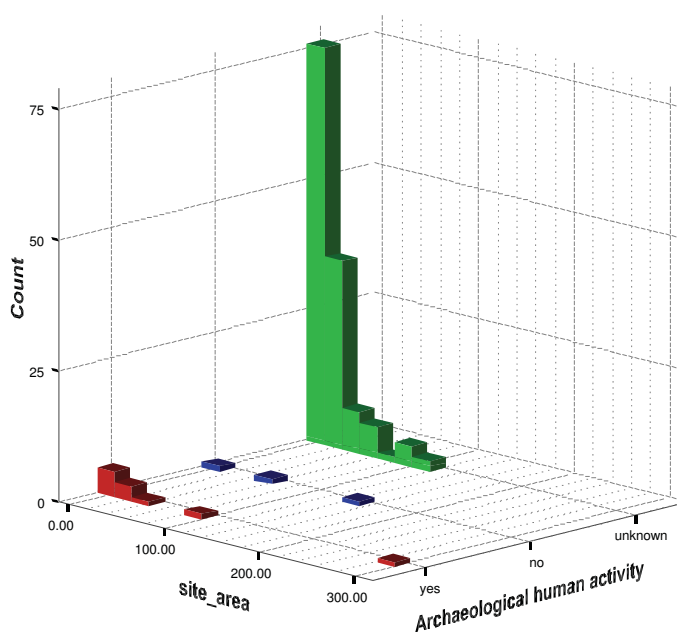


**Fig.28 Depth for all sites with archaeology or without archaeology**



The site area were calculated by multiplying the site depth by site width (cave) or length (rock shelter) (**Fig.29**). With the exception of one site most sites were relatively small, less than 100m<sup>2</sup>. There was a general overlap of sizes for all archaeological, non archaeological and uninvestigated sites and the one large site did contain archaeological remains.

**Fig.29 Area for sites with archaeology or without archaeology**

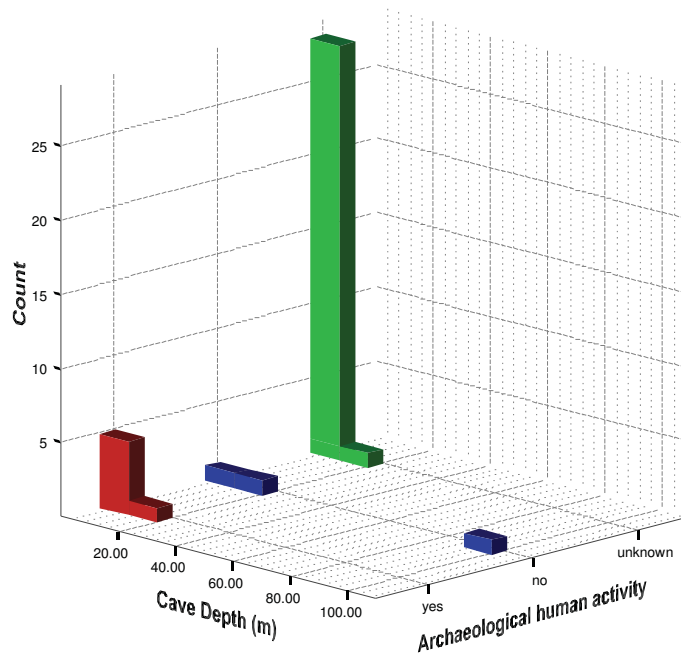




#### 4.6.1.2 Caves

Cave depth, entrance size and cave area (undercover) were used to identify pattern of size in relation to archaeological remains. **Fig.30** shows that all the caves were relatively shallow (less than 20m deep) except one which was 96m deep. With this exception there was no obvious preference for caves of a specific depth that differed to the general population of caves.

**Fig.30** Depth of caves for sites with archaeology or without archaeology

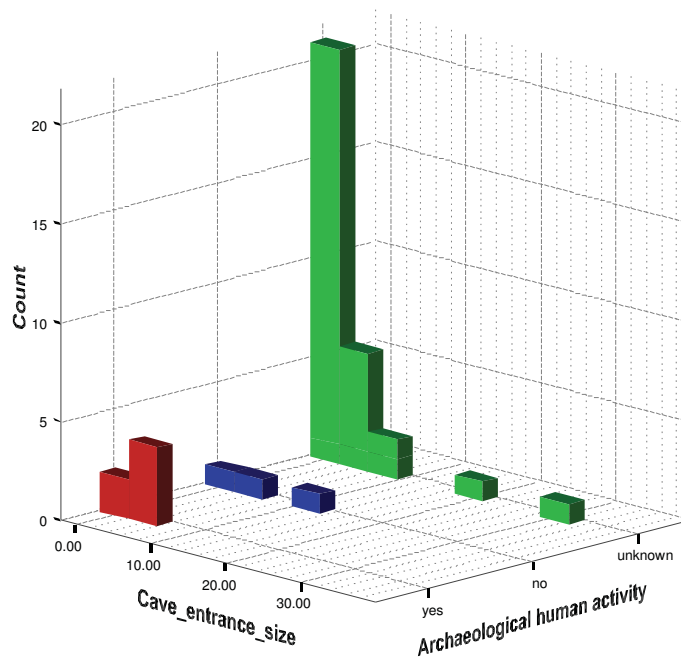


The entrance size (**Fig.31**) was calculated by multiplying the cave entrance height by the cave entrance width. When comparing the known with non archaeological caves there is the suggestion of some difference, with the archaeological caves having smaller entrances, around 5m<sup>2</sup>, while the unoccupied sites have larger entrances of up to 14m<sup>2</sup>. There would therefore appear to be a preference for specific sized cave entrances. With the uninvestigated caves the majority of entrances are smaller than the average size for archaeological caves but the majority are within the size range for archaeological caves. There were also four unexcavated caves with much bigger entrances of up to 32m<sup>2</sup>.

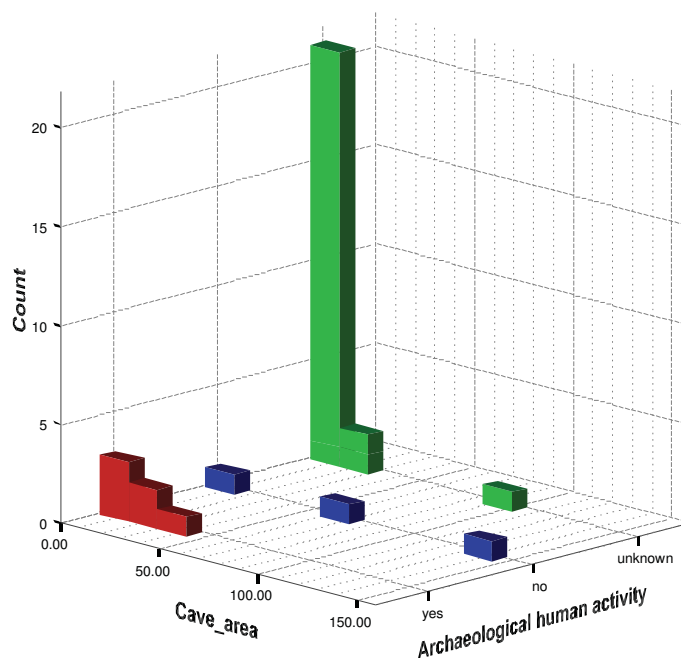
The areas of cave sites were calculated by multiplying the depth by the width. Again the caves with archaeology tended to be smaller than those without archaeology (**Fig.32**). Archaeological caves were up to 45m<sup>2</sup> in area while non archaeological caves were up to 145m<sup>2</sup> in area.



**Fig.31 Cave entrance size for sites with archaeology or without archaeology**



**Fig.32 Areas of caves for sites with archaeology or without archaeology**



In general it does appear that the size of a cave affects the likelihood that it will contain archaeological remains. The smaller, possibly more sheltered caves, having



a greater chance of containing archaeological remains, they also tend to have entrances of around 5m<sup>2</sup>.

#### 4.6.1.3 Rock shelters

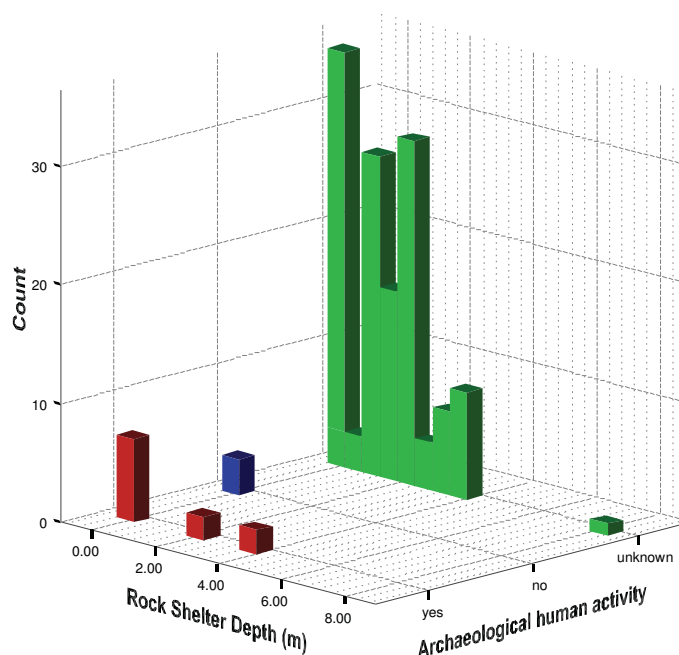
The depth, length and area of rock shelter were use to compare these sites.

**Fig.31** shows the depths of rock shelter sites. Comparing the known archaeological rock shelters with the non archaeological rock shelters suggests that there may have been the non archaeological rock shelters are all shallow while the archaeological rock shelters include the full range of depths of investigated sites. This may suggest that where available deeper rock shelter might be preferred though a larger sample of investigated sites would be required to confirm this. All bar one of the uninvestigated rock shelter fall within the range seen for the archaeological rock shelters.

When comparing the lengths of archaeological rock shelters with the non archaeological rock shelters (**Fig.32**) there again appears to a be a preference for the larger rock shelters. Of the sites that have been investigated the non archaeological rock shelters are all in the smallest size group while the archaeological rock shelters cover the full size range of investigated sites, including the two longest sites identified in the survey. All of the uninvestigated sites fall within the range of the known archaeological rock shelter sites.

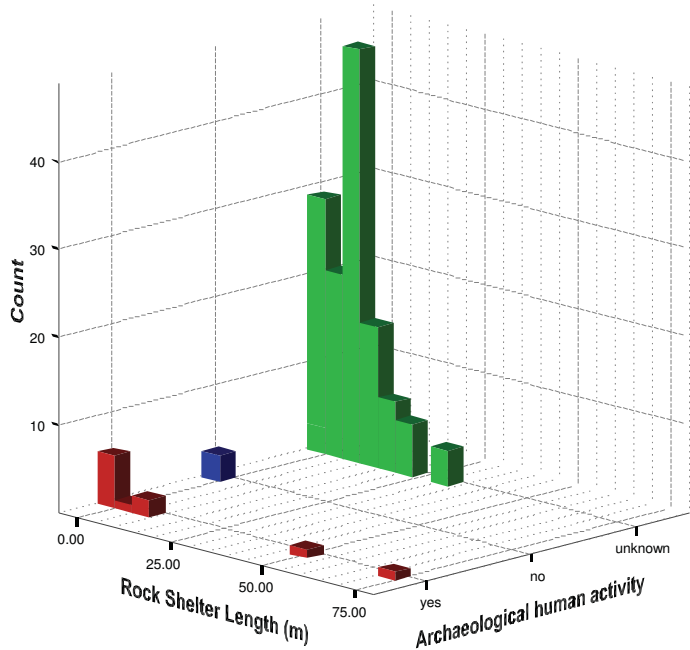
The final measure of size that was examined for rock shelter sites was the area under cover. This was calculated by multiplying the length by the depth for the site. Again, for the investigated sites, the non archaeological sites are all in the smallest size group while the archaeological sites are spread over the full size range. The uninvestigated sites all fall into the range of the archaeological sites.

**Fig.31 Depth of rock shelters sites with archaeology or without archaeology**

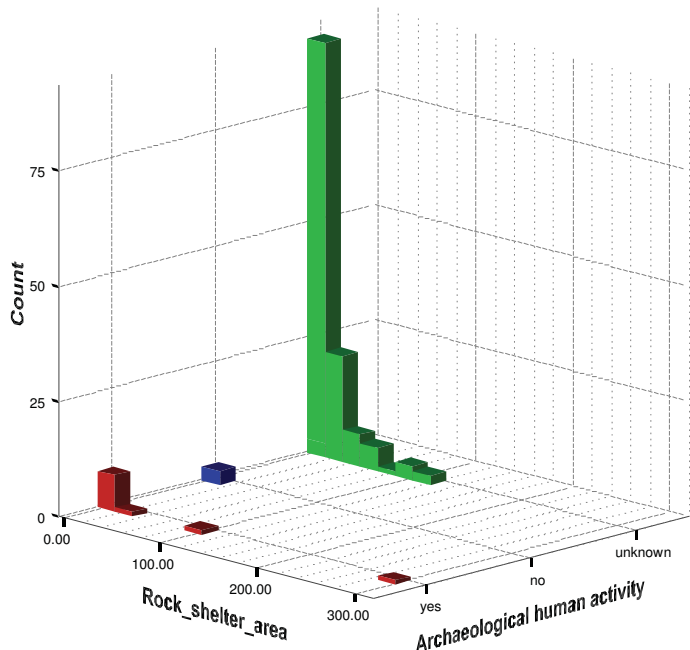




**Fig.32 Length of rock shelters sites with archaeology or without archaeology**



**Fig.35 Areas of rock shelters sites with archaeology or without archaeology**



For the rock shelters where large sites have been investigated they have all been used, possibly suggesting a preference for large rock shelters where they are available. This is in contrast to the cave sites discussed above where the smaller

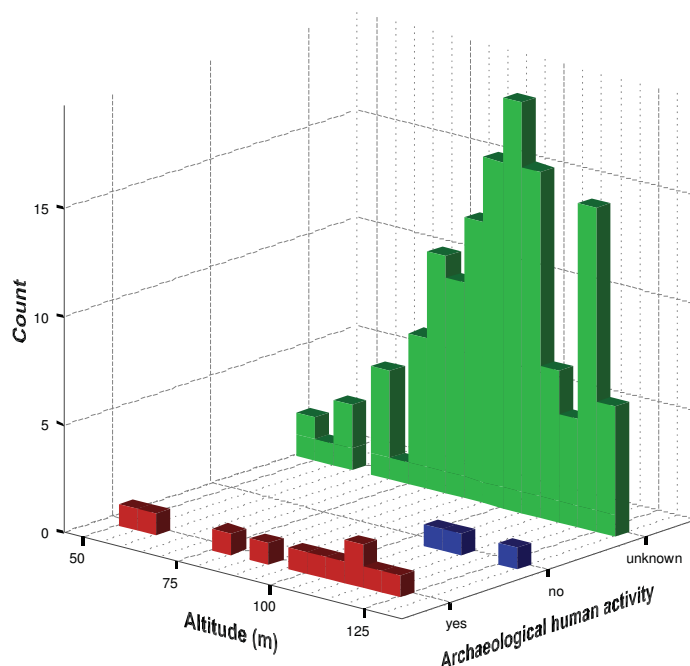


sites appeared to be the preferred archaeological sites. However, there is a large overlap in sizes between the archaeological and non archaeological sites and the vast majority of uninvestigated sites fall into the size ranges of both archaeological and non archaeological sites. In drawing these conclusions it should be emphasised that the sample of uninvestigated sites is very small and a larger sample would be needed to confirm these conclusions.

#### 4.6.2 Altitude and location

In comparing the altitude of archaeological and non archaeological sites it should be remembered that the analysis of the altitude of sites (**section 4.5.5**) identified that the main factor affecting on the altitude of a site was the valley in which it was located. This is because the altitude of the valleys increases towards the south. Examination of (**Fig.36**) shows that although the distribution of archaeological and non archaeological sites overlap, the non archaeological sites appear to tend to higher altitudes. However, this is due to the absence of archaeological material in caves in Pleasley Vale which is at the southern end of the heritage area and therefore at a higher average altitude.

**Fig.36 Altitude for sites with archaeology or without archaeology**

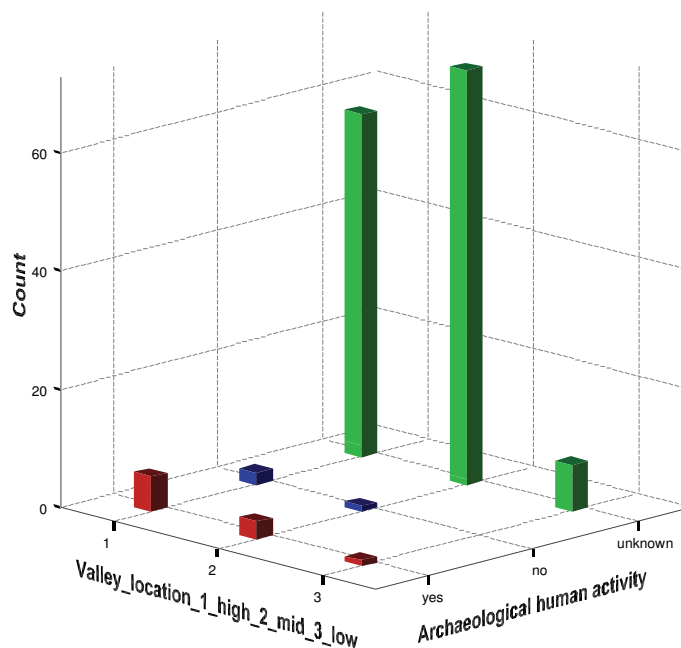


A comparison can be made of the valley location of the sites through their allocation to high, mid or low on the valley side, **Fig.37**. This shows that for the investigated and uninvestigated sites the majority are at a high or mid level on the valley side. There is a difference in that for all the investigated sites there are more sites located at a high level rather than a mid level by a factor of near to 2 to 1. However, for the uninvestigated sites there are slightly more at mid level than high level. This could suggest that the investigated sites are not a representative sample of the whole population of sites. Why this should be is unclear but it may be due to the visibility of



sites or ease of access. Visibility may be greater at high rather than mid level and the high level sites may therefore have been more likely to be subject to investigation. High level sites may have been easier to access from above, when they were investigated, although this was not the impression gained during the field survey.

**Fig.37 Valley location for sites with archaeology or without archaeology**



### 4.6.3 Aspect and light zone

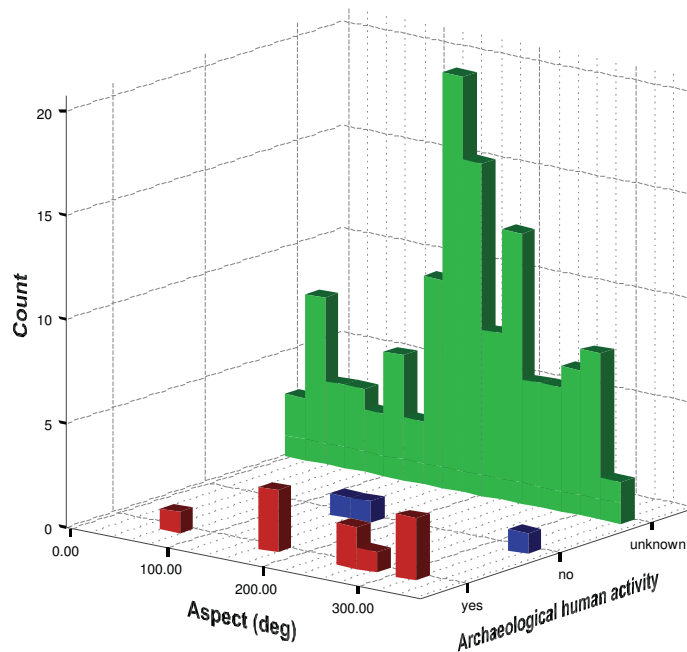
The aspects of each site and how this related to their respective valleys was discussed extensively in **section 4.5.6**. It was identified that the aspect of the sites was largely determined by the orientations of the valleys.

A comparison of the aspects for archaeological, non archaeological and uninvestigated sites (**Fig.38**) shows that the archaeological and non archaeological sites generally appear to be located in areas where there are peaks in the histogram for uninvestigated sites, e.g. 180° and 300°. Suggesting that the investigated sites show the same general pattern as the uninvestigated sites.

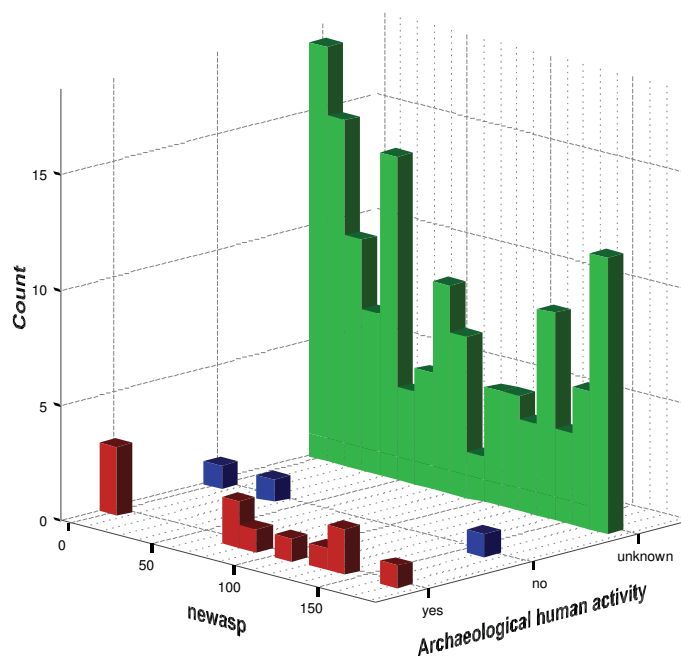
When the aspect is modified with south at 0° and all other aspects given as distance from south (**Fig.39**), all the investigated sites are within the range of uninvestigated sites. There may be some difference in the preferred aspect for the archaeological and non archaeological sites. However, the number of investigated so small that it is difficult to determine whether this is a real pattern or a result of the small sample size.



**Fig.38 Aspect for sites with archaeology or without archaeology**



**Fig.39 Modified aspects for sites with archaeology or without archaeology**

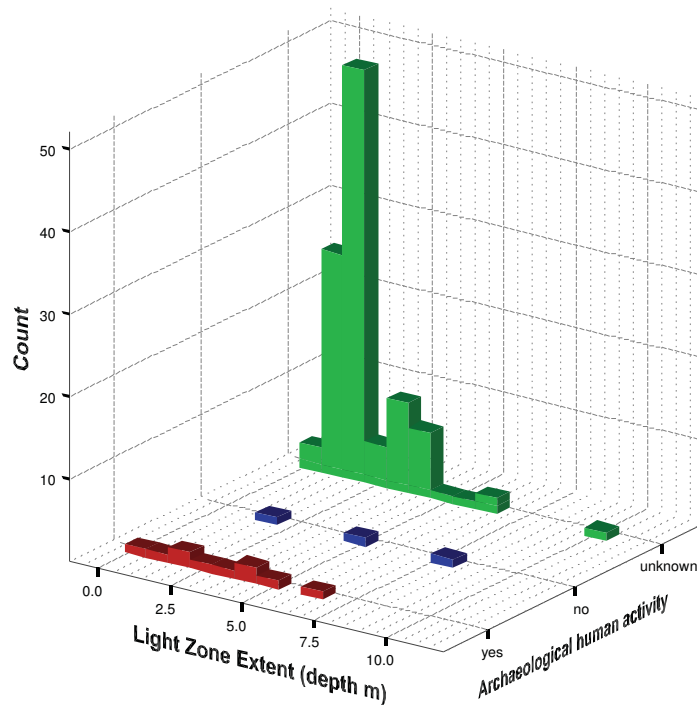


An examination of the light zone within caves and rock shelters suggests that archaeological, non archaeological and uninvestigated sites all show a similar range



of light zone depths (**Fig.40**). This suggests that light zone depth was not an important factor.

**Fig.40 Light zone for sites with archaeology or without archaeology**



#### 4.6.4 Valley slopes around sites

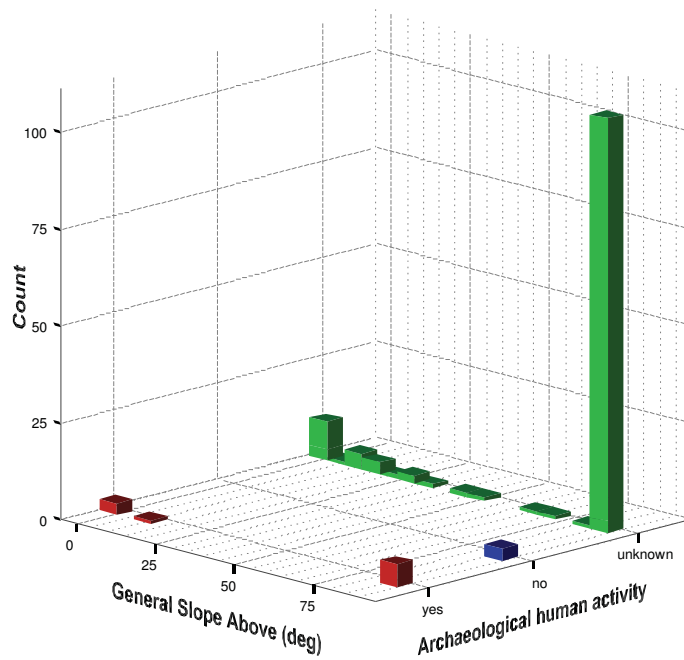
Various measures were recorded for the valley slopes around each site, as was explained in some detail in **section 4.5.7**. These included the slope above the site, the slope below the site, the slopes to left and right and the slope inside the cave or rock shelter.

A comparison of the valley slope above sites shows that the histogram patterns observed for archaeological, non archaeological and uninvestigated sites are very similar (**Fig.41**), with the highest number of sites having vertical slopes (i.e. rock faces) above them.

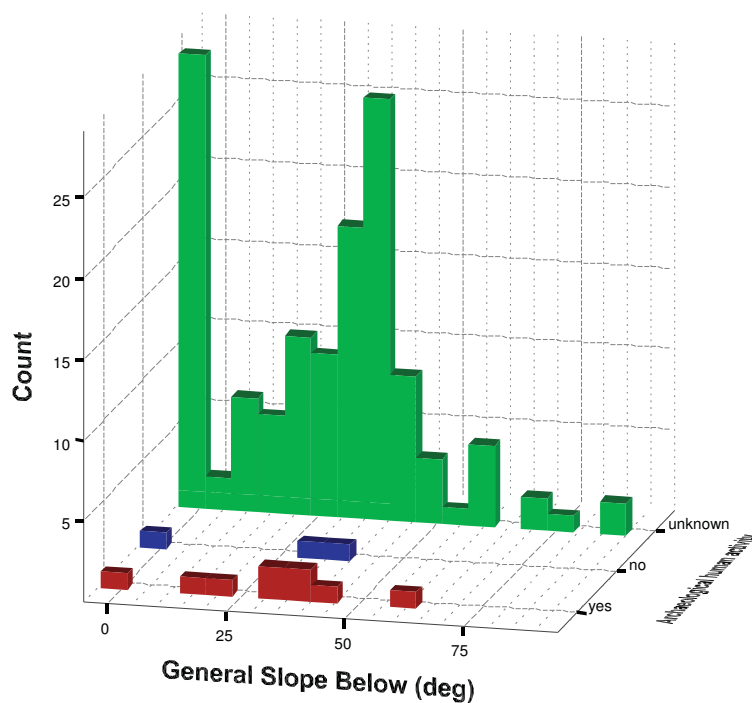
In the case of the valley slope below sites, there were some differences between the different types of sites (**Fig.42**). All of the site types had a similar range of slopes below, but whereas the uninvestigated sites had very clear peaks in the histogram at 0° and 35° this was not seen in the archaeological sites where there was a more general spread slope angles with a small peak at 35°. However, with the small sample size for archaeological sites one should be careful not to over interpret this data.



**Fig.41 General slope above for sites with archaeology or without archaeology**



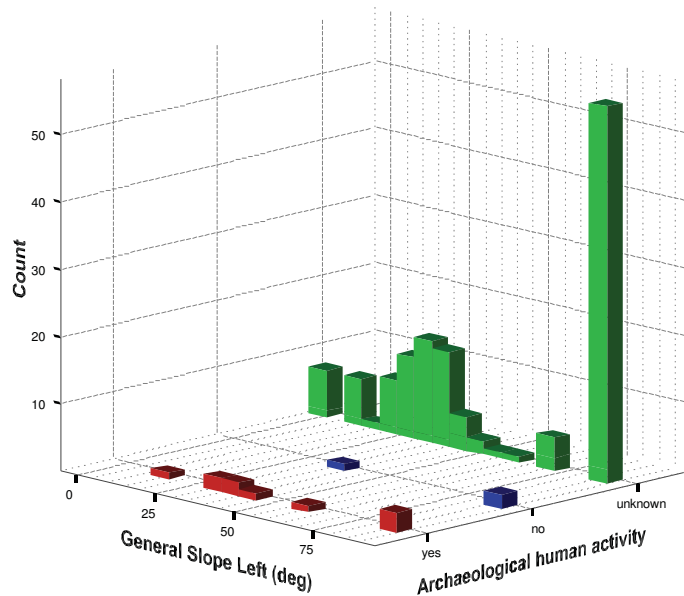
**Fig.42 General slope below for sites with archaeology or without archaeology**



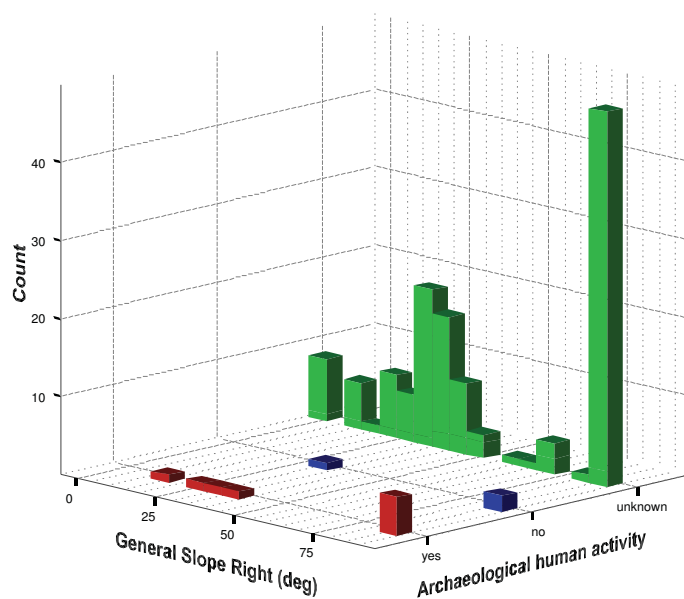


The valley slopes to the left (**Fig.43**) and the right (**Fig.44**) for archaeological, non archaeological and uninvestigated sites showed similar histogram patterns for all types of sites and for both the left and right slopes.

**Fig.43 General slope to the left for sites with archaeology or without archaeology**



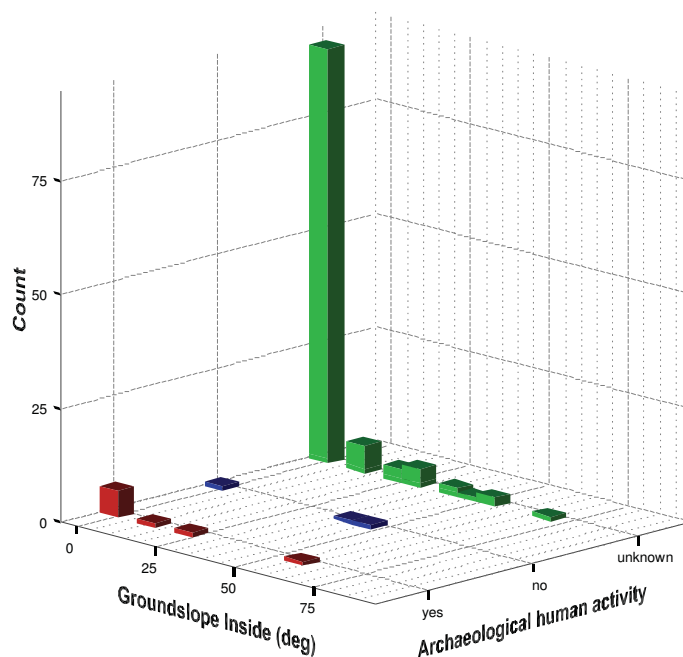
**Fig.44 General slope to the right for sites with archaeology or without archaeology**





In the case of the ground slope inside caves and rock shelters (**Fig.45**) the vast majority of sites had level ground surfaces, although a few sites had sloping surfaces. This pattern was observed for both archaeological and uninvestigated sites. This may well be the case for the non archaeological sites as well but the small number of these sites means that this could not be confirmed.

**Fig.45 Ground slope inside for sites with archaeology or without archaeology**

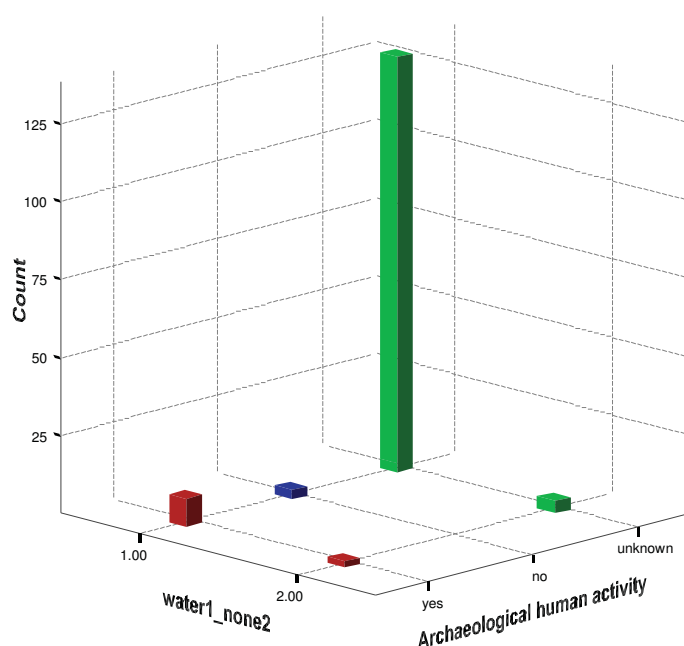


#### 4.6.5 Proximity to water

The proximity of the sites to water was discussed in **section 4.5.8** where it was noted that almost all the sites are currently near to a source of water. This is not overly surprising considering that the vales and gorges were created by water. For both the archaeological and uninvestigated sites the same pattern is observed, the vast majority of sites are in proximity to water with a few that are not. It is important to remember that this data records the current proximity to water which may have changed over time, most specifically in the case of Ash Tree Gorge which was probably made by water and thus is likely to have had running water in it at some time in the past.



**Fig.46 Proximity of water for sites with archaeology or without archaeology**



#### 4.6.6 Characteristics of the archaeological sites

This brief comparison of archaeological, non archaeological and uninvestigated sites shows that there are few obvious major differences in the topographic or environmental location between those sites that are archaeological, non archaeological or uninvestigated. A few observations can be made.

Archaeological cave sites tend to exclude the long deep caves. They also tend to have entrances around 5m<sup>2</sup>, avoiding the very large or small entrances.

The archaeological rock shelters cover the full range of sizes identified whereas all the non archaeological rock shelters identified were small. This possibly suggests that large rock shelters were more likely to have been used by humans in the past.

There is no identified relationship between altitude and archaeological occupation though there may be relationships within valleys that are obscured by the varying altitude of the valleys.

Investigated archaeological and non archaeological caves tend to be high on the valley side. However, the highest number of uninvestigated sites are located at mid level on the valley side. This demonstrates that previous excavations have focused disproportionately on high level sites, possibly for reasons of easier access/visibility.

There is the suggestion that for uninvestigated and non archaeological sites site aspects tend to be towards the south while for archaeological sites it tends to be towards the north.

There is no identified relationship between archaeological sites, non archaeological sites and light zone extent.

There was no significant variation in the distribution of slope angles for archaeological, non archaeological and uninvestigated sites, with the exception of



slopes below sites where a difference between the slope angles for archaeological and uninvestigated sites was identified. The histogram for slope below for uninvestigated sites had peaks at 0° and 35° while the histogram for archaeological sites showed a spread over the whole range with a small peak at 35°. The small sample size of investigated sites should, however, be taken into consideration.

As virtually all the sites are near to water there is no identified relationship between water and site use.

## 4.7 The Predictive Model

Predictive modelling is a powerful tool for landscape archaeology and cultural resource management that has been deployed in many studies over the last decade (for examples, see papers in Allen et al., 1990, and Westcott & Brandon, 2000). The essence of predictive modelling in landscape archaeology is to identify combinations of environmental variables that together are correlated with (and hence predictive of) the occurrence of archaeological sites.

The small number of investigated sites posed a significant problem in producing the predictive model. **Table 2** show figures for the number of sites identified, the numbers with known excavations and the numbers with or without archaeology present. **Table 3** gives details of the excavated sites. Fissures were excluded from the predictive modelling as none have been excavated and there was therefore no comparative data on which to base the model.

**Table 2 Numbers of sites with and without archaeology**

	frequency	percentage of total known sites	percentage of investigated sites
Total sites	151	100%	
Excavated sites	17	11%	100%
Archaeology present	11	7%	65%
Palaeolithic archaeology present	6	4%	35%
Mesolithic archaeology present	5	3%	29%
No archaeology present	3	2%	18%
Known excavations but no details	3	2%	18%

Note: Fissures were excluded from this analysis as none have been excavated

As can be seen in **Table 2** the excavated sites represent a small percentage (11%) of the total number of known sites. There was limited information for three excavated sites, so only 7% of the total number of sites are known to contain archaeology.



**Table 3 Presence of archaeology and palaeontology in excavated sites**

Site	Archaeology <sup>1</sup>	Palaeolithic	Mesolithic	Palaeontology <sup>2</sup>
RAT10	yes	yes	yes	no
AST20	yes	yes	no	yes
TLT5	yes	no	yes	no
TLT17	yes	yes	no	no
SCT1	yes	no	yes	yes
ATT12	yes	yes	yes	yes
MGT52	?	?	?	?
MGT55	?	?	?	?
MGT77	yes	no	no	no
MGT78	?	?	?	?
MGT81	no	no	no	no
MGT82	yes	no	no	no
EWT6	yes	no	no	no
EWT13	yes	yes	yes	no
LBT7	yes	yes	yes	yes
PLT5	no	no	no	yes
PLT30	no	no	no	yes

<sup>1</sup> - archaeology covers all periods

<sup>2</sup> – palaeontology covers bone deposits with no archaeological activity

To produce a reasonable sample size for the archaeological caves and rock shelters it has been necessary to use all sites known to contain archaeology as one group and not to subdivide by periods.

Some of the sites recorded in the survey had to be excluded from the modelling due to an absence of data on some variables. This was because some data could not be recorded leaving incomplete data sets in some cases.

The option of producing separate models for caves and rock shelters was considered. This was done for the caves where there were 6 caves out of 43 that had been investigated, a sample of 14%. However, as there was no data on investigated non archaeological rock shelters a model could not be produced for rock shelters. It was therefore decided to also produce a composite model including both caves and rock shelters.

The figures for investigated sites containing archaeology show that 65% contain archaeology of which 35% contain Palaeolithic remains and 29% contain Mesolithic remains. These figures are much higher than those produced in other surveys, 19% of caves were found to contain some archaeology in the Manifold Valley (Trent and Peak Archaeological Trust, 1993) and 14% on the Malham plateau (Donahue pers.



comm.) It is possible that this is partly due to a lack of reporting of sterile excavations by early archaeologists in the study area; three sites were noted in the survey where possible unrecorded excavations may have taken place. The excavated sites might also be a biased sample and not representative of all the sites, as excavators generally choose the most promising sites. However, it might be due to the character of the Magnesian Limestone where the caves generally occur in discrete groups in the vales and gorges, often in very close proximity. This may result in caves being used differently in this area resulting in a greater proportion of sites being used than in the rest of the country.

#### 4.7.1 The predictive model for caves

The predictive model for caves was undertaken using discriminant analysis in SPSS V12.0. All sites were coded to one of three categories; archaeological, non archaeological and unknown. The predicting group membership option was then used to assign all the unknown sites to either the archaeological or non archaeological categories. The full results of the analysis are provided in **Appendix 4.1**.

Several sites were excluded from the analysis as they did not contain complete data sets for all the variables used in the analysis. This left 27 sites in the analysis of which 4 were archaeological and 3 non archaeological.

Examination of the **Tests of Equality of Group Means** table showed that none of the variables were particularly significant individually. In fact most appeared to have very limited significance. The table of **Functions at Group Centroids** showed that Function 1 for archaeology was negative and that for non archaeology was positive. This meant that when reading the **Structure Matrix** functions, which show the importance of the different variables to the groupings, those that were negative related positively to the archaeology and visa versa. The table of **Casewise Statistics** gives actual group, predicted group and function for all the cases, and a summary of these results is given in **Table 4 Classification Results**.

As can be seen from the classification results, all the archaeological and non archaeological sites were correctly classified and 15 out of 20 (75%) of unknown sites were predicted to be archaeological. At first sight this appears a very significant result but with only 4 and 3 sites defining the archaeological and non archaeological groups one should be careful of placing too much importance on the results. However, the figure of 75% is not dissimilar to the 65% of investigated sites that have archaeology present.

**Table 4 Classification Results**

			Archaeology1_ none0	Predicted Group Membership		Total
				0	1	
Cases Selected	Original	Count	0	3	0	3
			1	0	4	4
		Ungrouped cases		5	15	20
		%	0	100.0	.0	100.0
			1	.0	100.0	100.0
			Ungrouped cases	25.0	75.0	100.0

100.0% of selected original grouped cases correctly classified.



### 4.7.2 The predictive model for all sites

As with the predictive model for caves, the model for all sites was undertaken using discriminant analysis in SPSS V12.0. Again all sites were coded to one of three categories archaeological, non archaeological and unknown, and the predicting group membership option was then used to assign all the unknown sites to either the archaeological or non archaeological categories. The full results of the analysis are provided in **Appendix 4.2**.

The variables used in the analysis were different to those used in the cave model. The variables used can be seen in the **Group Statistics** tables in **Appendices 4.1** and **4.2**. Again, several sites were excluded from the analysis as they did not contain complete data sets for all the variables used in the analysis. In this model this left 110 sites in the analysis of which 8 were archaeological and 3 non archaeological.

The results of the modelling were very similar to those from the caves predictive model. Examination of the **Tests of Equality of Group Means** table showed that none of the variables were particularly significant individually. In fact most appeared to have very limited significance. The table of **Functions at Group Centroids** showed that Function 1 for archaeology was negative and that for non archaeology was positive; this meant that when reading the **Structure Matrix** functions, which show the importance of the different variables to the groupings, those that were negative related positively to the archaeology and visa versa.

The table of **Casewise Statistics** gives actual group, predicted group and function for all the cases, and a summary of these results is given in **Table 5 Classification Results**.

The classification results tables shows that all the archaeological and non archaeological sites were correctly classified and that 86 out of 99 (86.9%) of unknown sites were predicted to be archaeological. This appears to be a very high figure, although it is only 10% higher than that for the cave model (75%). The same caution should be placed on these results that were placed on the results of the cave predictive model, again group sizes for archaeological and non archaeological sites are small and in relation to the unknown sites very small.

The higher percentage of predicted archaeological sites for all site compared to caves sites may be due to the fact that there are no investigated rock shelters that are devoid of archaeology. This may have resulted in characteristics related to rock shelters being more predictive for archaeology raising the number of predicted sites.

**Table 5 Classification Results**

		Archaeology 1 _none0	Predicted Group Membership		Total
			0	1	
Original	Count	0	3	0	3
		1	0	8	8
	Ungrouped cases		13	86	99
	%	0	100.0	.0	100.0
		1	.0	100.0	100.0
	Ungrouped cases		13.1	86.9	100.0

a 100.0% of original grouped cases correctly classified.



### 4.7.3 Predictive Modelling Conclusions and Recommendations

In assessing the results of the predictive models one must take into account the problems with predictive modelling and the small sample size of investigated sites available to develop the models. However, despite these reservations, the results are very similar, with both models suggesting that the majority of sites, around 75-85%, have the potential to contain archaeology. This appears to be very high but is not dissimilar to the number of investigated sites known to contain archaeology (65%).

There were 17 sites in the analysis that were included in both the Caves Predictive Model and the All Sites Predictive Model (**Table 6**). Of these, all bar three were classified in the same way in both models which means that 82% received the same predicted group membership in both models. This demonstrates a high degree of agreement between the two models despite one model having four times as many cases in it and some of the variables differing between the models.

**Table 6 Predicted group membership for sites in both discriminant analyses**

Site terrain unit number	Cave sites analysis	All sites analysis
AST26	archaeological	archaeological
AST33	archaeological	archaeological
AST19	archaeological	archaeological
EWT37	archaeological	archaeological
MGT106	non archaeological	non archaeological
MGT108	non archaeological	archaeological
MGT112	archaeological	non archaeological
MGT118	archaeological	archaeological
MGT125	archaeological	archaeological
MGT52	archaeological	non archaeological
MGT54	archaeological	archaeological
MGT74	archaeological	archaeological
PLT20	archaeological	archaeological
PLT23	non archaeological	non archaeological
PLT31	non archaeological	non archaeological
RAT25	archaeological	archaeological
RHT1	archaeological	archaeological

To investigate the reliability of the model it is necessary to test it by investigating some of the sites to see if their predicted group membership is correct. This would increase the sample size for investigated sites, allowing the model to be refined. It is proposed that a programme of test pitting is used to investigate a number of sites. These would help to establish the presence or absence of archaeology, and the date of any archaeological remains.

It is proposed that 30 test pits are excavated. These will be chosen to sample a range of sites, both caves and rock shelters based on their predicted group



membership. The chosen sites will be representative of three groups based on the models.

- sites strongly predicted to be archaeological
- sites predicted to be archaeological
- sites predicted to be non archaeological

The sites chosen will depend on a number of factors including, access, distribution across the valleys and site type.

Further details of how the test pitting programme would be undertaken are included in **Chapter 7 The Research Priorities**. Following on from the test pitting the predictive model should be revised, costs are outlined in **Appendix 4.3**.

## **4.8 The Potential for Open Air Sites**

Throughout the Creswell Crags Limestone Heritage Area there is the possibility that open air sites from the Palaeolithic exist and that further Mesolithic sites exist. These could include both archaeological deposits related to such sites as camp sites and kill sites, as well as palaeoenvironmentally important sites including Pleistocene and early Holocene deposit sequences.

If Pleistocene deposit sequences do survive they are more likely to date from the later rather than the earlier Pleistocene, although the latter can not be excluded. Survival of such sites is most likely where they are deeply buried, if they are shallowly buried later farming activities and natural processes of bioturbation could have seriously damaged the integrity of any such deposits. As the soils on the Magnesian limestone are often relatively thin significant Pleistocene deposits are most likely to survive in valley bottoms under sequences of later alluvial deposits.

Early Holocene deposits may be more widespread and Mesolithic flint scatters are known from outside the valleys on the limestone plateau. In and around the vales and gorges a number of Mesolithic flint scatters have been found by fieldwalking.

This study focuses on identifying which of the valleys and gorges in the Creswell Crags Limestone Heritage Area have the potential to contain buried deposit sequences with archaeological and/or palaeoenvironmental potential that could extend back to the Pleistocene. However, the limestone plateau also has the potential to contain small buried valleys which could contain buried Pleistocene deposits. The potential of such locations was demonstrated by the discovery of lower Palaeolithic material in a small buried valley at Harnham near Salisbury (Wittaker et al 2004). In the case of the Magnesian Limestone such sites if they existed would most likely be later in date possibly from the Upper Palaeolithic.

For the Holocene period the study again focuses on the vales and gorges but also includes the plateau tops around each gorge.

### **4.8.1 Desk-top assessment methodology**

The desk-top assessment searched published sources and archives for information relating to potential open air Palaeolithic and Mesolithic sites in the gorges and vales. The data collected was collated and assessed to determine if the information is sufficient to produce either:



- deposit models of the gorges which have the potential to identify the location of Pleistocene and early Holocene deposits which might contain archaeological or palaeoenvironmental sites.
- a predictive model of the potential for the gorges and vales to contain Palaeolithic or Mesolithic open air sites

The sources consulted included:

Local Sites and Monuments Records

British Geological Survey Borehole Logs

Geological maps (Solid and Drift)

Soil Survey maps

This was used in conjunction with information gained during the field surveys of the valleys.

#### 4.8.2 Deposits with potential for open air sites

Within the valleys there are two different types of deposits that have the potential to bury Pleistocene and early Holocene deposits containing material of archaeological or palaeoenvironmental interest, these are shown on geological maps by the British Geological Survey (BGS 1:50,000 Sheets 100, 101 and 112). The two types of deposits are alluvium and head and the following simple descriptions are based on the BGS Rock Classification Scheme (McMillan and Powell, 1999).

*Alluvial deposits* are those derived from fluvial processes and include all water-borne deposits of rivers and streams excluding glacial deposits of proglacial or glacial origin. Alluvial deposits are made up of unconsolidated detrital material deposited by a body of flowing water as a sorted or semi sorted sediment. It ranges from fine grained (clay) to coarse grained (gravels). Alluvial deposits can be subdivided into *fluvial deposits*, *alluvial fan deposits* and *fluvial terrace deposits*

*Head deposits* are poorly sorted and stratified deposits mantling hillsides and deposited by hillwash (solifluction and gelifluction). Solifluction involves the slow down slope flow of waterlogged superficial deposits while gelifluction refers to the slow flow of superficial deposits during the thawing of seasonally frozen ground. Head can be subdivided into *hillwash deposits (colluvium)* and *combe deposits* (solifluction and gelifluction deposits, including frost shattered material, found in some valleys on chalk and limestone bedrock).

On the BGS 1:50,000 sheets the deposits are marked as alluvium, head and terrace deposits and are not further subdivided. From the geological maps it is impossible to determine the depth of any of these deposits but bore hole data can help if the boreholes are located in the right place.

#### 4.8.3 Roche Abbey Gorge

Roche Abbey Gorge has a wide flat bottom with sections of both vertical and sloping sides, the latter being the more common. The valley has three arms which intersect at Roche Abbey. BGS Sheets 100 and 101, show that the north west arm contains no drift geology, the south west arm contains head deposits at the base of the valley, and the intersection of the three arms contains head deposits. In the east arm there



are deposits of alluvium in the valley bottom which extend eastwards along the valley beyond the section of the valley with rock faces. This alluvium extends all the way down Firbeck Dike and Oldcoats Dyke to the River Ryton.

The SMR does not record any open air Palaeolithic or Mesolithic sites in the valley or in the vicinity of the valley.

At the west end of the north west arm a sewage works would have impacted on any surviving sites, but the absence of suitable deposits in this section of the valley means that there was little likelihood of sites in this area. At the intersection of the three valley arms the construction of Roche Abbey and later landscaping by Capability Brown will have impacted on deposits in this area. However, it is not known how deep the head deposits were originally or how deep the works associated with the abbey and landscaping will have impacted. In the south west and east arm impacts on the alluvial and head deposits will be restricted to areas such as the village of Stone where substantial impacts will have been made by construction of buildings and by the water management features associated with the former mills. In general, the valley does appear to contain some deposits that could contain or bury archaeological or palaeoenvironmental remains.

#### **4.8.4 Firbeck Valley**

Firbeck valley has a narrow flat bottom with sloping sides. There are several water management features, dams and weirs on Lamb Lane Dike which runs down the valley bottom. On BGS Sheet 101 a thin band of alluvium is shown running down the centre of the valley. This alluvium extends the length of Lamb Lane Dike until it joins to Firbeck Dike.

The SMR does not record any open air Palaeolithic or Mesolithic sites in the valley or in the vicinity of the valley.

The construction of the dams and weirs will have resulted in localised impacts on alluvial deposits. As the ponds and reservoirs created by the dams and weirs are no longer in use they have all at least partially silted up. This will have buried any older alluvial deposits under an unknown depth of modern sediment.

#### **4.8.5 Anston Stones and Lindrick Dale**

Anston Stones Wood and Lindrick Dale originally formed a continuous valley over 4km long, however, the two sections are now separated by the A57. Anston Stones Wood is a deep, generally V-shaped, valley with substantial sections of vertical rock faces, often high up, on the valley side. Lindrick Dale is shallower with vertical sides and a flat bottom.

Anston Stones Wood and Lindrick Dale are on BGS Sheets 100 and 101. For most of the length of Anston Stones Wood there is no drift geology present, but from the west end of Anston Stones and throughout Lindrick Dale head deposits are shown on the geological maps.

The records for three boreholes that have been drilled in Anston Stones Wood show very little as one (SK 58 SW 7) was an underground borehole that did not examine the surface geology and two others (SK 58 SW 60 and SK 58 SW 63) were located in the water works on the north side of the valley where shallow concrete and made ground deposits were identified over the Magnesian Limestone. They were therefore of no value in interpreting the drift geology.

The SMR does not record the presence of any open air Palaeolithic or Mesolithic sites in the valley or in the vicinity of the valley.



The limited drift geology, and the presence of the railway line that runs along it, means that there is little likelihood that there will be deposits in the bottom of Anston Stones Wood that have the potential to contain archaeological or palaeontological remains. In Lindrick Dale there is greater potential for open air archaeological or palaeontological sites buried within or under the head deposits. There will have been some loss of potential deposits in Lindrick Dale from the houses that have been built in it. However, as most of the houses are on the east side of the valley up against, or even on, the rock face the impact on the head deposits in the valley bottom will have been limited. The gardens that spread across the valley bottom will have had some impact on shallow deposits but any deeply buried material will be unaffected.

#### **Borehole data SK 58 SW 60**

Anston W R W Improvements Borehole 1

SK5253 8384

Borehole sunk 1992 on top of valley side in water works

Borehole identified 0.15m of concrete over Magnesium Limestone

#### **Borehole data SK 58 SW 63**

Anston W R W Improvements Borehole 4

SK5267 8377

Borehole sunk 1992 on top of valley side in water works

Borehole identified 0.80m of black ash and gravel made ground over Magnesium Limestone

#### **Borehole data SK 58 SW 7**

Kiveton Park Colliery No.2 underground Borehole

SK52430 83876

Borehole sunk 1969 from 1215.08ft B.O.D. therefore no data on drift geology

### **4.8.6 Red Hill**

Red Hill Valley has moderately sloping valley sides with a narrow flat bottom. BGS sheet 100 shows head deposits in the valley bottom.

The SMR does not record the presence of any open air Palaeolithic or Mesolithic sites in the valley or in the vicinity of the valley.

The north side of the valley is partially disturbed by quarrying but survives in some areas including around Red Hill Cave. A railway runs along the valley bottom and this has been partially constructed within a cutting. The construction of the railway will have severely impacted on any deposits on its line. On the south side of the valley there are several large industrial buildings towards the east end of the valley with arable farming to the west. The valley is relatively small and deposits within it will have been disturbed by the railway and other features.

### **4.8.7 Thorpe Common and Lob Wells Wood**

The valley of Thorpe Common and Lob Wells Wood is a long sinuous valley. This generally has shallow sloping sides and flat bottom. Most rock faces are short outcrops, although in Lob Wells Wood the rock faces are more extensive with one



face around 300m long. BGS sheet 100 shows a narrow band of head deposits along the full length of the valley, following the line of the Bondhay Dyke.

The SMR records several finds of Mesolithic and possibly upper Palaeolithic flints in the area. The flints include three scatters described as Mesolithic or generally Mesolithic (SMR738, SMR1013 and SMR1050). There is also one isolated long flake which Armstrong identified as late Creswellian (SMR1012).

Towards the northern end of the valley lies the village of Netherthorpe, beyond this the main impacts on the deposits in the valley will be through farming and forestry, the latter particularly in Whitwell Wood. In general the valley does appear to hold deposits that could contain or bury archaeological or palaeoenvironmental interesting remains as well as further flint scatters near the surface.

#### **Thorpe Common and Lob Wells Wood**

<b>SMR ref</b>	<b>Description</b>	<b>NGR</b>
<b>Early Prehistoric:</b>		
738	Flints and chert finds, Mesolithic, concentrated in an area 20 yards across on a hill overlooking the stream near Bondhay Dike. Four cores, 1 core trimming, ?microburin or broken microlith, notched blade and 4 scrapers. 15 pieces of black chert including a core and scraper.	SK 534 806
1012	Long flake described by Armstrong as Late Creswellian.	SK 525 790
1013	Flint assemblage "generally Mesolithic in character". Around 50 patinated flints, including 3 small scrapers, a double brim and part of a polished flint axe (Neolithic).	SK 522 792
1050	Group of Mesolithic flints from a restricted area.	SK 526 797

#### **4.8.8 Steetley Quarry Caves**

Steetley Quarry Caves were not in a valley but were located on top of the Magnesian Limestone plateau. BGS sheet 101, shows that there is no drift geology shown in the area, therefore only the plateau topsoils would be present.

The SMR records four flint scatters in the area, SMR5958, SMR4359, SMR4367 and SMR5956. Of these SMR5958 contains material that has been identified as Mesolithic. All the other material is undated.

The area around Steetley caves has suffered extensive modification through quarrying and industrial works which have limited the potential of the area. The presence of the flint scatters shows the area has the potential for Mesolithic sites but earlier material is unlikely.



### Steetley Quarry Caves

SMR Ref	Description	NGR
<b>Prehistoric:</b>		
5958	Assemblage of flint scrapers, arrowheads and other material of Mesolithic and later date, found during systematic field-walking of fields recently cleared of woodland in or near Scratta Wood in the 1960s.	SK 5460 7970
4359	Flint spearhead found during fieldwalking. No further details.	SK 547 795
4367	Twenty-four flint waste flakes found during fieldwalking. No further details.	SK 546 798
5956	Twenty-five flint waste flakes found during fieldwalking. No further details.	SK 549 794

#### 4.8.9 Ash Tree Gorge

Ash Tree Gorge is a small, flat bottomed valley with vertical sides between 2m and 4m tall. The BGS Sheet 100 does not mark any drift geology in the gorge but the gorge is so small that it may not have been included on the 1:50,000 geological map. The gorge lies on top of the limestone plateau overlooking a shallow dry valley to the east which runs towards Creswell.

Excavations in 1960s by the Hunter Geological Society included the cutting of a trench across the base of the valley. This work is not published but a photograph suggests that this trench was about 2m deep, it is not known if bedrock was reached in this excavation. From photographic evidence the sediment exposed by the trench appears to be fine grained, with occasional rocks in it. Neither the origin or date of this material is known but it may have potential to contain archaeological remains.

No open air sites are recorded on the SMR in the vicinity of Ash Tree Gorge.

The presence of sediments in the bottom of the gorge would have potential to contain archaeological remains, and flint scatters could be located in the surrounding fields on the plateau of the Magnesian Limestone.

#### 4.8.10 Markland and Hollinhill Grips

Markland and Hollinhill Grips contain three arms that join together at their eastern or northern ends. The northern most arm running east west is Hollinhill Grips, while the other two Markland Grips arms run southwest to northeast and south to north. The valley arms are generally vertical or steep sided with flat bottoms and extensive rock faces up to 15m high. The valley arms in Markland and Hollinhill Grips are generally about 50m wide.

BGS Sheet 100, marks head deposits through most of the length of Markland and Hollinhill Grips. These continue on along the line of the River Wallend to Creswell Crags. Within Creswell Crags gorge the deposits are absent, although through the village of Creswell these deposits are up to 250m wide in the valley bottom.

One borehole (SK57 SW 8) has been sunk in the bottom of Markland Grips, located near the intersection of the two arms. The log does not record the nature of the drift Geology but records its depth as 9ft (2.75m).

None of the caves in the valley are known to contain Palaeolithic or Mesolithic material and the SMR does not record the presence of any open air Palaeolithic or Mesolithic sites in the valley or in the vicinity of the valley. However, one upper Palaeolithic flint blade has been recovered from the valley bottom (Roger Jacobi



pers. comm.) and Ash Tree cave is only 1km away. Also the stream through Markland Grips connects with Creswell Crags which has an abundance of Palaeolithic material.

Development in Markland and Hollinhill Grips has been very limited. However, there are two areas where water management features have been constructed. A mill was constructed at the intersection of Hollinhill Grips and Markland Grips and this had an associated dam and water channels. The dam is now silted up but some of the water channels still flow including sections that are underground. It is not known how much excavation, may have been involved in the construction of this dam and its pond. In the north to south arm of Markland Grips silted up channels and ponds from water management features are visible on the ground as earthworks and one pond still contains water at the northern end of this arm.

There are deposits in this valley that have the potential to contain or bury archaeological or palaeoenvironmental remains, while flint scatters could exist on the plateau above the valley.

#### **Borehole data SK 57 SW 8**

Markland Grips Borehole

SK5066 7484

Borehole sunk 1957 in valley bottom

<b>Geological Classification</b>	<b>Description</b>	<b>Thickness</b>	<b>Depth</b>
Drift?	no core	9 ft (2.75m)	9 ft (2.75m)
Permian, lower Magnesian Limestone	Limestone Grey marly (8ft of fragmentary core, 11ft of core missing, thickness according to boremaster.)	19 ft (5.75m)	28 ft (8.5m)
Permian, lower Magnesian Limestone	Marl grey becoming brownish grey occasional thin limestone bands	84 ft (25.5m)	112 ft (34m)
	borehole continues to 2090ft		

#### **4.8.11 Elmtun and Whaley Valley**

The Elmtun and Whaley valley is a wide valley with shallow sloping sides and a narrow flat bottom. The base of the valley is shown to contain alluvium on BGS sheet 112. At the southern end of the valley the stream joins on to the River Poulter which runs through Langwith Vale, where the alluvial deposits from both valleys join together. There are also 1<sup>st</sup> terrace gravels marked on the geological map downstream from the confluence of these two rivers.

Data was obtained from three boreholes that have been sunk in the Elmtun and Whaley Valley over the years. One of these, SK 57 SW 92, was of no value as it was an underground borehole. Another SK 57 SW 96 was of limited value as no core was recorded for the first 39ft 4inches (12m), however a note on the log stated that the Boremaster records this as limestone. Unfortunately there was no reference to the drift geology so we don't know if there was none present or it was unrecorded. The



final borehole, SK 57 SW 74, was located high up on the west side of the valley. Here there was 0.3m of soil over 0.6m of clay and loose limestone drift. The clay and loose limestone does not appear to be the alluvium recorded on the geological maps but is more likely a deposit derived from the weathering of the limestone bedrock possibly mixed with other material. This deposit could be a form of head deposit though it is impossible to judge how extensive it is.

The SMR records three open air sites in the valley. SMR 11257 is an isolated end-scraper possibly of upper Palaeolithic date, however, as it was found near to Whaley II rock shelter it may well relate to this site. The other two sites are flint scatters; SMR 12345 is recorded, on the SMR, as dating to the Late Upper Palaeolithic and Early Mesolithic, however, Roger Jacobi has re-examined the material and could not identify any Palaeolithic material in it. The second scatter, SMR 12346, is Mesolithic and the grid coordinates puts it within 50m of SMR 12345. It is not impossible that the two sites are part of the same very large flint scatter.

The valley of Elmton and Whaley has good potential to contain further open air sites beyond those already known. This could include flint scatters on the valley sides and top, most likely to be of Mesolithic date, or material of any date buried beneath the alluvium in the valley bottom. There is also the potential for archaeological or palaeontological material to be buried in the alluvial and terrace deposits further down stream, in and around the confluence with the River Poulter in the Langwith Valley. The terrace deposits here are one of only two such deposits shown on the BGS 1:50,000 maps of the southern Magnesian Limestone. The other deposit is near Shirebrook although the current state of it is uncertain as the latest O.S. 1:25,000 Explorer map (sheet 270) shows the area to include disused workings.

#### **Borehole data SK 57 SW 92**

56's Bore Langwith Colliery

SK5178 7191

Borehole sunk 1965 is located on top of east side of valley

Is recorded as an underground borehole commenced at O.D. -13.74ft (4.2m)

#### **Borehole data SK 57 SW 96**

Elmton Green Borehole

SK5066 7317

Borehole sunk 1957 on east side of valley,

No core was recorded for the first 39ft 4inches (12m), but a note on the record said the Boremaster recorded this as limestone.

#### **Borehole data SK 57 SW 74**

Whaley Well

SK5086 7185

Well sunk in 1929, located near the top of west side of valley



Geological Classification	Description	Thickness	Depth
Drift	soil	1ft (0.3m)	1ft (0.3m)
Drift	clay and loose limestone	2ft (0.6m)	3ft (0.9m)
Permian	Magnesian Limestone	29ft (8.8m)	32ft (9.75m)
Permian	Blue Limestone	2ft (0.6m)	34ft (10.4m)
	plus a further 3 layers		50ft (15.25m)

### Elmton and Whaley

SMR ref	Description	NGR
<b>Early Prehistoric:</b>		
11257	Possibly Upper Palaeolithic end-scraper found downslope from the RB settlement in the vicinity of Whaley II Rock Shelter. Other flints were Neolithic and Bronze Age.	SK 5121 7212
12345	Palaeolithic/Mesolithic open camp site. Fieldwork by the North Derbyshire Archaeological Trust between 1976-78 revealed c.384 flints from plough soils above Mill Farm, Scarcliffe, and suggested an open Late Upper Palaeolithic/Early Mesolithic site in this locality. The products were of narrow blade type flint industry and the assemblage comprises mainly waste and core materials. The finds are comparable with material from Mother Grundy's Parlour. The site is situated to the south of the Whaley Rock Shelters. This is the first open site of this period to be recognised in Derbyshire (Hart 1981, p19-21).  Note Roger Jacobi has re-examined at the material and did not find any Palaeolithic material within it. The material he examined appeared to be late Mesolithic.	SK 517 711
12346	Mesolithic flint collected in large quantities by L B Cooper from a series of fieldwalks in early 1978 at Mill Farm. This material included microliths.	SK 5170 7115

### 4.8.12 Langwith Vale

The Langwith Valley runs south west to north east. For much of its length the shape of the valley is difficult to observe due to dense woodland. Generally it has moderate to steep sloping sides with occasional small rock outcrops. At the east end of the valley where there are fields of pasture the valley sides are moderately sloping with a flat bottom.

BGS Sheet 112, shows that alluvial deposits have been deposited along the length of Langwith vale by the River Poulter. The alluvial deposits extend east along the valley beyond the area where rock faces are found. Further east Whaley Valley joins from the north just west of Nether Langwith where the spread of alluvial deposits extends over a much greater width in the valley bottom, growing from 50m wide to 220m. The alluvium continues along the valley east of Nether Langwith where a small section of terrace deposits are shown on the map (see **Section 4.8.11**).



Data was available from the BGS on two boreholes in the valley, one of which was sunk twice. Boreholes SK 56 NW 17A and SK 56 NW 17C were originally sunk in 1942 during the war and on SK 56 NW 17A is a note on the record stating that,

“The bores were sunk rather hurriedly during the war years as an emergency measure and more detailed information is not available [WQ/112/172. 18.9.50]”

This may explain why although the two boreholes were only 10m apart they have quite different sequences recorded, and why there was no attempt on either of them to differentiate drift from Permian marl. Borehole SK56 NW 17C was deepened and enlarged in 1956 and this produced yet another very different sequence. The borehole data is so contradictory and confusing that it is impossible to draw meaningful conclusions from it.

The SMR records three finds spots in Langwith Vale. One was a possible Palaeolithic implement (SMR12307) found on the valley side near rock shelter LBT18 and LBT21. The other two sites recorded are flint scatters, one Mesolithic scatter (SMR12325) and one Mesolithic and Neolithic scatter (SMR12352). These were both found near the top of the valley side.

In Langwith Vale there will have been damage to potentially interesting deposits in the valley bottom from the railway that runs along the western half of the valley. Any shallow sites on the south side of the valley in Langwith Wood could also have been disturbed by bioturbation in the woodland from tree roots. In general, Langwith Vale has good potential to contain further open air sites beyond those already known. This includes potential flint scatters on the valley sides and top, most likely of Mesolithic date, as well as material buried beneath the alluvium in the valley bottom, which could be of any date. The potential also exists for archaeological or palaeontological material to lie buried in the alluvial and terrace deposits further down stream, around the confluence of the River Poulter with the river from Elmtun and Whaley Valleys.

### **Borehole data SK 56 NW 17A**

SK5116 6919

Well sunk 1942 in valley bottom near Gildwells Farm

Note on log from 1950 says that the bores were sunk rather hurriedly during the war years and more detailed information is not available.

<b>Geological Classification</b>	<b>Description</b>	<b>Thickness</b>	<b>Depth</b>
Drift and Permian Marl	Blue Clay	41ft 6inch (12.6m)	41ft 6inch (12.6m)
	Blue clay and grey shale	9ft 1inch (2.8m)	50ft 7inch (15.4m)
	Blue clay	4ft 5inch (1.4m)	55ft (16.75m)
	Grey shale	4ft 9inch (1.5m)	59ft 9inch (18.2m)
	Hard grey shale	3ft 9inch (1.2m)	63ft 6inch (19.4m)
	Blue and yellow clay	10ft 3inch (3.1m)	73ft 9inch (22.5m)
	Blue clay	4inch (0.1m)	74ft 1inch (22.6m)
	Blue shale		

It is not clear where the boundary between the drift and Permian Marl lies



**Borehole data SK 56 NW 17C, 1942**  
SK5115 6918

Chesterfield and Bolsover Water Board Borehole No. 3

Borehole sunk in 1942 in valley bottom near Gildwells Farm

As with SK56 NW17a this bore was sunk during the war years and more detailed information is not available.

Geological Classification	Description	Thickness	Depth
Drift and Permian Marl	soft stone	10ft 7inch (3.3m)	10ft 7inch (3.3m)
	yellow clay	1ft 5inch (0.4m)	12ft (3.7m)
	grit, yellow clay and limestone	3ft 2inch (1m)	15ft 2inch (4.7m)
	brown grit	2ft 1inch (0.6m)	17ft 3inch (5.3m)
	grey grit	3ft 3inch (1m)	20ft 6inch (6.3m)
	yellow clay and limestone	3ft 0inch (0.9m)	23ft 6inch (7.2m)
	hard limestone	5ft 5inch (1.7m)	28ft 11inch (8.9m)
	blue clay	2ft 3inch (0.7m)	31ft 2inch (9.5m)
	brown and blue grit	9ft 8inch (3m)	40ft 10inch (12.5m)
	blue stone	1ft 8inch (0.5m)	42ft 6inch (13m)
	blue clay and limestone	4ft 1inch (1.2m)	46ft 7inch (14.2m)
	blue clay	3ft 5inch (1m)	50ft (15.2m)
	blue clay and limestone		

It is not clear what the 'soft stone' refers to. It could refer to the drift geology but it might not.

**Borehole data SK 56 NW 17C, 1956**  
SK5115 6918

Chesterfield and Bolsover Water Board Borehole No. 3

Deepened and enlarged in 1956 in valley bottom near Gildwells Farm



Geological Classification	Description	Thickness	Depth
Drift and Permian Marl	broken limestone	7ft (2.1m)	7ft (2.1m)
	limestone with clay beds	5ft (1.5m)	12ft (3.6m)
	broken limestone	10ft (3m)	22ft (6.6m)
	yellow clay with stone beds	6ft (1.8m)	28ft (8.4m)
	blue clay	6ft 6inch (2m)	34ft 6inch (10.4m)
	yellow clay	1ft 6inch (0.5)	36ft ((10.9m)
	blue clay	10ft (3m)	46ft (13.9m)
	yellow loamy sand	1ft (0.3m)	47ft (14.2m)
	blue loamy sand	8ft (2.4m)	55ft (16.6m)

This bore hole does not appear to record the presence of any drift geology. However, the significant differences between this log and the earlier log on Borehole No. 3 suggest there might be some problem with this data or the earlier data. All of the data on this borehole should therefore be treated with caution.

#### Langwith Vale:

SMR ref	Description	NGR
<b>Early Prehistoric:</b>		
12307	Possible Palaeolithic flint implement found in 1936.	SK 5038 6844
12325	Mesolithic flint scatter at Scarcliffe. Fairly dense scatter, averaging 1 flint per square yard over an area along the 450 feet contour overlooking the River Poulter.	SK 4995 6805
12352	Mesolithic/Neolithic flints recovered near Roseland Wood. 5 found by L B Cooper in 1978 near the woodside, 11 by Hart and Cooper on the slope nearer to the pond in 1979.	SK 498 679

#### 4.8.13 Pleasley Vale

Pleasley Vale is orientated east west and subdivides into three sections topographically, a central section and eastern and western ends. The eastern and western ends are not as deep or steep as the central section. There are no rock faces in the western end, large extensive rock faces at various levels in the central section and intermittent sections of occasionally large rock faces in the eastern end. There is generally a flat bottom to the valley though this is very narrow in the western end.

The River Meden which runs through the gorge in Pleasley Vale has deposited alluvial deposits along most of its length extending well beyond Pleasley Vale (BGS Sheet 112). A small stream enters Pleasley Vale from the north on the west side of Pleasley Park and a narrow band of alluvial deposits have been deposited in the base of this side valley.

Four Borehole logs were identified in the BGS archives for Pleasley Vale, two of these were underground boreholes sunk in mine workings (SK 56 NW 90 and SK 56 NW 78) and one did not record the drift geology (SK 56 NW40). However, one was of



use for the purposes of this study (SK 56 NW 19). This borehole was sunk in the west end of the valley bottom near Little Matlock. This recorded a total of 11ft 6inches (2.6m) of drift geology including a 9inch (0.2m) deep soil and 10ft 9inches (3.3m) of brown clay and loose stones. This suggests that substantial depths of Pleistocene and/or Holocene deposits survive in at least parts of the valley bottom.

The SMR records one Mesolithic flint scatter (SMR12532), on the top of the valley side overlooking the valley. This is the only known Palaeolithic or Mesolithic archaeology in the valley as none is known from any of the caves in the valley.

Pleasley Vale is the valley that has been most altered by human activity and as such is likely to have suffered the greatest losses of deposits with archaeological or palaeoenvironmental potential. This is particularly so with the deposits in the central section of the valley where the construction of mills and dams over the last 200 years has seriously degraded the potential of this area. There is also extensive woodland in and around the valley which will have resulted in bioturbation of the soils on the valley sides and tops.

Although the archaeological and palaeoenvironmental potential has been compromised in the central part of the valley some areas have good potential to retain deposits of significance. The possibility exists for more flint scatters to be present on the valley sides and on the plateau above the valley. These are mostly likely to be Mesolithic or later in date. Away from the mills and dams there is the potential for buried deposits to be present in the valley bottom. Here the alluvium could contain or bury archaeological or palaeontological deposits of any date. It should be remembered that no Palaeolithic material has yet been recovered from Pleasley Vale though this does not preclude the possibility of recovering Palaeolithic material in the future.

#### **Borehole data SK 56 NW 19**

SK5272 6513

Well sunk 1956 in valley bottom near Little Matlock

<b>Geological Classification</b>	<b>Description</b>	<b>Thickness</b>	<b>Depth</b>
Drift	soil	9 inch (0.2m)	9 inch (0.2m)
Drift	brown clay and loose stones	10ft 9inch (3.3m)	11ft 6inch (3.5m)
Permian, lower Magnesain Limestone	hard stone with banded grey clay	35ft 6inch (10.8m)	47 ft (14.3m)
Lower Permian Marl ?	hard grey clay	13 ft (3.9m)	60 ft (18.2m)

#### **Borehole data SK 56 NW 90**

Shirebrook Colliery No.38 underground borehole

SK52826 65145

Borehole sunk 1991 in valley bottom near Little Matlock

Bore started at 30m depth therefore no data on the drift geology



**Borehole data SK 56 NW 78**

Silverhill Colliery underground borehole

SK50738 64796

Borehole sunk 1981 in valley bottom Near St Michael Church Pleasley

Bore started at 33m depth therefore no data on the drift geology

**Borehole data SK 56 SW 40**

Hollings Mill

SK51643 64813

Borehole sunk 1974 in Pleasley Vale on top of valley side

No details recorded of the drift geology

**Pleasley Vale:**

f	Description	NGR
<b>Early Prehistoric:</b>		
12532	Mesolithic flint scatter, very thin, across 10 acre field comprising 7 waste flints, a utilised flake and a battered back microlith.	SK 5282 6552

**4.8.14 Conclusions**

The aims of the desk-top assessment of the potential for open air sites were to determine if sufficient information was available to develop:

- deposit models of the gorges which have the potential to identify the location of Pleistocene and early Holocene deposits.
- a predictive model of the potential for the gorges and vales to contain Palaeolithic or Mesolithic open air sites

From the currently available data it has not been possible to develop deposit models for the vales and gorges. This was due to a lack of detailed borehole data from which the deposit sequences in the bottom of vales and gorges could be identified. To develop deposit models for each valley would require more detailed information on the nature and dates of deposits within the valleys. This would require additional, preferably dated, borehole data for each valley.

It has been possible to identify which valleys contain drift geology that could bury archaeological or palaeoenvironmental remains. This, combined with the background archaeological information, has been used to produce a simple model of the potential of each valley to contain open air sites.

The model is displayed as a table (**Table 5**) with assessments of the potentials for different types of open air sites shown on a scale from high to low. In assessing the potential for archaeological deposits or remains to survive the following principals were followed. If an appropriate location exists and finds are known from the locality the potential is deemed to be high. If an appropriate location exists but no finds are known from the locality the potential is deemed to be moderate. If no appropriate location exists the potential is deemed to be low.



The assessment of the potential for deposits that may contain significant palaeoenvironmental sequences in valley bottoms is limited by the lack of any direct dating evidence on deposits. However, the head deposits in the bottom of some valleys will have originated through solifluction or gelifluction processes that are often associated with periglacial conditions. These deposits therefore would be of interest. The alluvial deposits in the valley bottoms are probably post-glacial although whether from the immediate post glacial period or later is unknown. The terrace deposits at the confluence of the Whaley and Langwith valleys are of unknown date but may be early post glacial and therefore of interest.

The potential preservation conditions within deposits were also considered as were potential human impacts on the valley bottom deposits. For example the palaeoenvironmental potential of Ash Tee Gorge was downgraded as this is now a dry valley, reducing the potential for the preservation of remains requiring damp conditions. Firbeck was down graded due to the extensive water management features that have been built in the valley potentially disturbing deposits.

The model produced is qualitative rather than quantitative and should be seen as a guide to potential rather than as a predictive model.



**Table 5 Potential for open air sites in the vales and gorges.**

Vale or Gorge	presence of archaeological caves or rock shelters <sup>1</sup>	presence of open air archaeological sites <sup>1</sup>	presence of alluvium deposits in the valley bottom	presence of head deposits in the valley bottom	potential for valley side or valley top sites	potential for buried archaeological sites in the valley bottom	potential for buried palaeoenvironmental deposits in the valley bottom
Roche Abbey Gorge	yes	no	yes	yes	moderate	moderate	high
Firbeck Valley	no	no	yes	no	moderate	low	moderate
Anston Stones	yes	no	no	no	moderate	low	low
Lindrick Dale <sup>2</sup>			no	yes		moderate	moderate
Red Hill	no	no	no	yes	low	low	low
Thorpe Common and Lob Wells Wood	yes	yes	no	yes	high	high	high
Steetley Quarry Caves	yes	yes	no	no	high	none	none
Ash Tree Gorge	yes	no	no	?	moderate	high	moderate
Markland Grips	no	yes	no	yes	moderate	high	high
Elmton and Whaley Valleys	yes	yes	yes	no	high	high	high
Langwith Vale	yes	yes	yes	no	high	high	high
Pleasley Vale	no	yes	yes	no	high	moderate	high

1 – Presence of Palaeolithic or Mesolithic archaeology.

2 –Lindrick Dale has been considered separately to Anston Stones for valley bottom deposits due to its differing depositional sequence.









# Creswell Crags Limestone Heritage Area Management Action Plan

Volume 2, Text, Chapters 5 - 8

March 2004

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## 5 THE IMPACT OF LATER HUMAN ACTIVITIES ON THE VALES AND GORGES

### 5.1 Introduction

This report examines the impact of human activity within the gorges, primarily from the medieval period onwards, although mention is made of human impacts from the prehistoric period. The study was undertaken through a combination of desk-based research and rapid field survey, and was designed to provide an general overview of the landscape development for the whole area, as well as a more detailed study of each gorge and vale.

#### 5.1.1 Aims

The aim of this study was to identify the principal agencies that have shaped the development and current landscapes of the gorges and vales. The study was designed to enable a series of landscape types to be characterised for each gorge, which would set the present land use and management into its historical context, and enable the impacts of these past and present land uses upon the prehistoric landscapes and features to be assessed.

For each gorge, the main historical influences or items of historic interest are highlighted at the end of the relevant section.

#### 5.1.2 Study area

There are eleven vales/gorges within the study area, and these contain varying numbers of rock outcrops with caves or rock shelters. The eleven vales/gorges include those listed in the Pleistocene Site Gazetteer in the Creswell Crags Conservation Plan and an additional three, namely Roche Abbey Gorge, Red Hill and Firbeck. **Table 1** below lists all the vales/gorges within this historic landscape study. The gorge at Creswell Crags was excluded from the study as this has been the subject of a previous study and report (Collcutt and Johnson 1999).

**Table 1 – gorges and vales included in the historic landscape study**

Vale or Gorge
Roche Abbey Gorge
Firbeck
Anston Stones
Red Hill
Thorpe Common and Lob Wells Wood
Steetley Quarry Caves
Ash Tree Gorge
Markland Grips
Elmton and Whaley Valleys
Langwith Vale
Pleasley Vale



## **5.2 Methodology**

### **5.2.1 Data sources for desk-based assessment**

The following sources were consulted:

South Yorkshire Sites and Monuments Record

Derbyshire Sites and Monuments Record

Nottinghamshire Sites and Monuments Record

Local studies libraries and archives (Sheffield and Rotherham)

The Creswell Crags Conservation Plan

### **5.2.2 Landscape characterisation**

Landscape characterisation exercises have previously been undertaken by Derbyshire County Council and Nottinghamshire County Council. The desk-based assessment consisted of obtaining historic landscape character information from both County Councils, as well as undertaking similar characterisation for the South Yorkshire area. Relevant information from the Sites and Monuments Record for each county was also incorporated into the study.

The Derbyshire Historic Landscape Characterisation project used available historic maps for each parish to establish, where possible, the date and form of field enclosure and significant industrial, residential, woodland, parkland and recreational land use. The information was plotted on a series of maps of different dates: 1650, 1850 and present day. The information is held on a GIS system, which incorporates information as to the historic maps consulted, and notes on the historic processes involved in the formation of the landscape. For this assessment, only the present day map was consulted.

The Nottinghamshire Historic Landscape Characterisation project involved the compilation of a nineteenth-century map based on Sanderson's 1835 map of 20 miles around Mansfield, supplemented by the 1885 25 inch to 1 mile OS map in areas not covered by Sanderson. A present day map was also compiled on GIS, using information from the nineteenth-century map and the present day OS map. Categories included urban, woodland, parks, mineral extraction, military, leisure and the form of field enclosure. The present day map was consulted as part of this assessment.

For the characterisation of the historic landscape of the areas surrounding the South Yorkshire vales and gorges, Sanderson's 1835 map was used as a base. This map covered the entire area in which the gorges are located, and provides a high level of accurate detail. The map is drawn at 2 inches to 1 mile, comparable to the present day 1:25000 OS. It has been used as a standard source for field history in Nottinghamshire and northeast Derbyshire. In addition, available historic maps for the individual parishes were also consulted. These included enclosure, tithe, and rate valuation maps. Historic maps for the Sandbeck Estate were not consulted, as these are held in a private archive, and time constraints did not allow for gaining access to these documents. The 1901 OS 25 inch to 1 mile maps for the area were also consulted.

The form and date of field enclosure was noted in the historic landscape characterisation for the South Yorkshire area. Woodland, parkland, industry and



mineral extraction, as well as significant communication routes such as railway lines and historic roads were also considered. The SMR was consulted to establish known historic and later prehistoric sites within or close to the gorges. This information was added to the historic map data. A list of maps consulted for this study is contained in **Appendix 1**.

The Southern Magnesian Limestone has also been characterised in the Character Map of England (Countryside Commission and English Nature) as both a 'Character Area' and 'Natural Area'.

### **5.2.3 Field survey**

The desk-based assessment was enhanced through a programme of rapid field survey. The aim of the field survey was to gain a feel for the general character of the gorges, identify and illustrate particular instances of human impact of different types, and provide a baseline against which to assess the information gathered during the desk-based assessment. Notes on various landscape characteristics were made, and the record was enhanced by digital photographs for the illustration of particular features or land use types.

## **5.3 General overview of the landscape development**

The Creswell Crags Limestone Heritage Area is part of the Magnesian Limestone Ridge; a distinctive landscape which has been shaped by a wide variety of different land uses from the prehistoric period onwards. This general overview draws upon sections of the NCC Countryside Appraisal (1997) and the Creswell Crags Conservation Plan (2001).

The Magnesian Limestone Ridge is today a predominantly agricultural region. The area is strongly influenced by the underlying geology which has affected not only the physical characteristics of the region, but also its history of human activity, land use, development and settlement. The landform is mainly rolling, but is dissected by rivers which in places have cut narrow, steep-sided gorges through the geology, exposing limestone rock faces. The steep valley sides with cliffs in association with the narrow river corridors create a strong sense of visual confinement. The caves in these rock faces have produced significant evidence for Palaeolithic activity. River meadowlands are a characteristic feature of these often narrow valley floors and provide an important wildlife resource, particularly where they are unimproved.

The area has a diverse range of natural resources that have been exploited at different periods through time. Timber and natural soils would have been amongst the first resources to be exploited by humans. Today, tree cover on the plateau is found predominantly in large woodland pockets, and is a distinctive feature of the landscape. Some woodlands are of ancient origin whilst others comprise more recent plantations with mix of deciduous and coniferous trees. The stream sides in the limestone gorges tend to be well wooded with varying densities of scrub set in the pasture.

Stone from the area was an important source of building material, and while in the medieval period it may have been used primarily for churches, large houses and other buildings of note, by the end of the eighteenth century it was widely used for buildings of all types. This contributes towards the character of the built environment. In a few places limestone extraction has occurred on a much larger scale, for building stone or aggregates. Quarrying has had a major impact in some of the gorges, and coal mining, with its attendant infrastructure, has probably had the greatest physical



and social impact upon the landscape. The remnants of the mining industry, and its associated communities, are a major focus for regeneration activity today.

Water would have been an important focus for prehistoric activity, and the harnessing of water power from the medieval period onwards played a vital role in the development and growth of milling and textile industries. Many of the watercourses that run through the vales and gorges still retain evidence for the harnessing of water power, and of adaptation for the provision of ornamental water features and fish ponds within monastic and parkland estates. Physical features relating to these activities, including coppice woodland, are still present in many areas today. The height of water-powered exploitation in the gorges is expressed in the imposing nineteenth cotton mill complex that dominates Pleasley Vale.

There is still a good variety of settlement types today, including farms, hamlets, small villages and towns (including 'model' settlements associated with collieries), as well as a number of large country houses and halls, with their associated estate lands. These latter and their estate lands were often embellished with more formal gardens and plantations in the eighteenth and nineteenth centuries. A high proportion of the remaining woodland is associated with current or former parkland estates, and includes elements of designed landscapes. With one or two exceptions, the gorges themselves tend not to be heavily settled.

### **5.3.1 Pleistocene deposits**

The gorges, particularly Creswell Crags, are perhaps best known for their cave deposits of Palaeolithic material, which represent a significant proportion of the Scheduled Ancient Monuments for the Palaeolithic period in this country. Key influences on the known settlement patterns are likely to have been proximity to water, available shelter and the areas location between the relatively well watered coal measures to the west and the sandy heathland of Sherwood Forest to the east.

The impact of Palaeolithic activity on the landscape is not covered by this report.

### **5.3.2 Later prehistory**

During the later prehistoric period the land within the Heritage Area would have been attractive due to fertile and freely draining soils and timber and stone resources. However Whitwell Long Cairn, a site of national significance, is the only known Neolithic structure within the Heritage Area. The presence of people is mainly indicated by numerous flint scatters and cave burials such as at Sepulchral Cave (Markland Grips), Whaley Rock Shelter (Elmton and Whaley Valleys) Ash Tree Cave, (Ash Tree Gorge), Lob Wells shelter (Thorpe Common). Early Bronze Age burial sites are known within Scarcliffe Park, including one cairn measuring 11m across.

Evidence for increased farming activity during and after the Iron Age is well represented. For example at Scratta Wood there are the remains of three hut circles and evidence to suggest a mixed farming economy in the form of cereal production and domestic breeding of oxen, sheep, pig and horse. At Markland Grips is the remains of an Iron Age defended settlement site. Pottery found during the survey suggested the use of the site began in the Iron Age with further use in the second and third centuries AD during the Romano-British period. Residues of slag and burnt clay found on site may indicate metal working.

Recent surveys of the Heritage Area have identified eight minor and two major settlement sites of the Roman period. Homesteads possibly originated in the Iron Age and continued to develop throughout the Roman-British period. Scarcliffe Park



enclosure, dated to the early 2<sup>nd</sup> century AD, has a stone built oval enclosure containing oval and rectangular huts. Associated finds include flat and beehive querns and remains of horse, ox, pig and sheep. Other sites known in this area include one Romanised farm or villa in addition to the many isolated finds collected from ploughed fields and the odd coin hoard. Also notable are the brickwork pattern field systems common to this area. Important villas have been found at Oldcoates and at Mansfield Woodhouse, the latter having a winged corridor and an aisled building. These would have been the centres of large estates. They lie outside the normal distribution of villas in Britain but it is interesting that the villas of Yorkshire show a marked attraction to the Magnesian Limestone.

### **5.3.3 Medieval**

Local evidence for the continued use of farmsteads and the establishment of agricultural settlements in the Early Medieval or Saxon period is limited. Presumably the evidence is buried under existing towns and villages. Anglo-Saxon communities were established in the Midlands by the eighth century AD. In Northeast Derbyshire the settlements were part of the west midland kingdom of Mercia on the border with Northumbria. From the eighth century AD a growing population would have produced a need to regulate farming. In 1086 the Magensian Limestone Ridge, in Nottinghamshire at least, was one of the most thinly populated parts of the county. The number of monasteries founded on or adjacent to the Magnesian Limestone plateau in the eleventh and twelfth centuries is indicative of the relative emptiness of the area. The larger communities tended to be located on the edge of the limestone, where resources from both the neighbouring Coal Measures and the Magnesian Limestone could be exploited.

Domesday Book records considerable tracts of woodland, much of it wood pasture. The general emptiness of the area encouraged the Norman Kings to bring it under Forest Law as part of Sherwood Forest. Pressure on the limestone region grew during the Middle Ages, and much woodland will have been removed at this time to facilitate the growth of settlement. Scarcliffe, Whitwell and Pleasley woods are remnants of former royal deer parks while Elmtun, Pleasley, Thorpe Salvin and Scarcliffe are fine examples of deserted or shrunken Medieval villages that were surrounded by extensive areas of common grazing. The medieval commons were enclosed through a variety of mechanisms. Ancient enclosure of open land, and the fossilising of strip fields, is still reflected in some of the modern field boundaries around the settlements of medieval origin.

The medieval period is also associated with the growth of localised industrial exploitation of the region, including quarrying, milling, lime burning and charcoal production.

### **5.3.4 Early post-medieval**

The sixteenth and seventeenth centuries saw a reinforcement of one form of landscape characteristic of the Magnesian Limestone plateau, that of parks associated with the country houses of the nobility and gentry. The transfer of monastic sites and estates into lay hands was in part the foundation of this, as was the fashion for displaying status through building and ornamentation. This parkland contributed and still contributes to the maintenance of a wooded aspect on the Limestone Plateau, reinforced by the larger ornamental gardens and plantations of the wealthy around their houses in the eighteenth and nineteenth centuries.



### 5.3.5 Later post-medieval

With much of its area given over to common grazing, enclosure only became general on the Limestone Plateau during the late eighteenth and nineteenth centuries. Enclosure occurred in both piecemeal fashion and through parliamentary enclosure acts, resulting in a more regular enclosed landscape across the region.

Animal husbandry continued to dominate the agricultural economy but from the late nineteenth century there was a distinct rise in arable farming. Large scale conversion to arable during World War II was maintained thereafter by government and EEC farming policies, with significant loss of hedgerow and other boundaries and disappearance of flower rich limestone grassland. Where boundaries remain, fields are medium regular and semi-regular, mainly enclosed by hedgerows and the occasional stone wall.

Industrial developments in the later post-medieval period have created the most obvious physical and character changes to the landscape of the area. Wool processing and cloth making were important and laid the foundations for the first phase of industrial expansion in the later eighteenth and early nineteenth centuries, focused on textile production. Through the development of domestic framework and the construction of textile mills people were drawn into the region. Rivers such as the Poulter and Meden provided the power on which this industrial development was based.

Important examples of these developments are William Hollins mills and industrial village at Pleasley and the complex of mills and workers housing at Cuckney. Many of the new mills and the houses of their workers were built in local stone. This perpetuated the natural building tradition of the region, which had begun with the houses of the nobility and gentry in the sixteenth and seventeenth centuries and had continued with the middle class town houses and the houses of gentleman farmers in the eighteenth century. In a region where stone was more readily available than brick, it was natural that as humbler dwellings were improved the local stone should be used. By the end of the eighteenth century even the most humble dwelling was likely to be in stone, or depending on the locality, stone and brick. The stone built farms and houses continue to give the area a distinctive built character today.

The development of deep mining in the second half of the nineteenth century has been one of major industrial impacts in the region. Colliery workings are located on the eastern and western edges of the study area, where the coal measures can be reached through the overlying limestone. Many of the colliery workings are now disused, but they have left a distinct industrial fingerprint upon parts of this landscape. Imposing spoil tips, colliery headgear and a large number of disused railway lines are still present in places, and most of the gorges are impacted by one or both of these feature types to some extent. Mining villages (including some colliery-built Model Villages) grew up around the collieries, and these are also very characteristic of later settlement in the area. This is particularly evident in the southern part of the Heritage Area, around the Meden Valley, with the villages of Creswell, Clowne, Church Warsop, Langwith, Meden Vale, Pleasley, Shirebrook and Whitwell. The collapse of a large portion of the mining industry in the 1980s had a hugely detrimental impact on the social and physical fabric of these communities.

Today the major routeways traverse the area in a roughly east-west direction, particularly in the northern half of the study area, but a whole network of smaller roads is present across the entire zone. The pattern of early routeways is hard to establish.



Sewage treatment plants are present in a number of the vales and gorges; presumably these locations are suitable because they are often close to settlements, but provide a discrete location. The sewage works at Creswell has recently been removed to enhance the amenity value of the gorge.

### **5.3.6 Summary**

To summarise, the gorges and vales lie within a distinctive limestone landscape, the character of which has been shaped by its underlying geology and natural formation processes, as well as human activity from the Palaeolithic period onwards. A wide range of landscape types including ancient woodland, river meadowlands, agricultural land, designed parklands, settlements, transportation networks, minerals extraction and industrial complexes are present in the area.

On a smaller scale of analysis, the gorges themselves are remarkably diverse, containing between them a representative sample of all the land use types and impacts of human activity discussed above. The human impacts upon the gorges vary greatly, from those which appear relatively unchanged (except for variations in tree cover and the use of open land) to those which have been severely impacted by quarrying and the imposition of industrial infrastructure. Considered as a group, the gorges comprise a valuable amenity resource, comprising a palimpsest of the changing landscape through time, up to the present day.

## **5.4 impact of human activity in the gorges**

### **5.4.1 Roche Abbey Gorge**

Roche Abbey Gorge lies at the northern end of the Creswell Crags Limestone Heritage Area just south east of Maltby. The gorge has three arms; north-west, south-west and east. These are all of approximately 1.25km each, giving a total length for the gorge of about 3.75km. At the junction of the three arms lies the site of Roche Abbey, a Cistercian abbey now under English Heritage guardianship. The eastern arm of the gorge runs from the abbey through pasture to the village of Stone.

#### **5.4.1.1 Settlement**

Later prehistoric and Roman activity in the gorge is evidenced through isolated findspots of coins and other artefacts, but no settlement from this period is known. The medieval focus of settlement in the gorge was the Cistercian abbey, founded in 1147, and made from stone quarried from the local area (see Section 4.1.5, below). The abbey lies in the bottom of the gorge, on the flood plain of the stream. The ground here is flat, and has been landscaped to accommodate the abbey buildings.

There was a mill associated with the abbey, at around the present day location of Abbey Mill Farm to the east. The mill dam was at the end of a narrow fish pond in the valley – the fish pond is not distinct today, but the stream currently runs through a channel that has wide, gently graduated sides that are likely to be a slumped relic of the former fish pond edge.

Mill buildings of probable post-medieval date are present at Mill Farm (near Maltby) and at Stone. Stone Mill is mentioned in 1319, thus the current buildings may be on earlier foundations (Addy 1932-4). Whether the mills ever operated at the same time or not is uncertain, but water management will have affected the stream and valley floor deposits to a small extent.



There is little other settlement in the gorge itself, although a small number of farms and houses lie on the valley slopes along its length. The buildings on the south side of the main road at Stone have been set into shelves within the rock outcrop, and some outbuildings are built underneath the overhangs, into the rock faces.). The rock outcrop has been impacted by these dwellings (SK 5555 8980).



**Plate 1:** Rock shelter at Stone being used to protect a drinking trough for horses

Temporary settlement is evidenced by brick-built fireplaces/ovens within large rock shelters at Seed Hill, near Stone (SK 55217 89732, RAT10), where quarrymen are thought to have taken shelter.

#### **5.4.1.2 Agriculture & designed landscapes**

The grounds of the Abbey became part of the Sandbeck estate following the dissolution of the monasteries in 1535. In 1787 a lake is shown to the southwest of the abbey, most of which is still present. The grounds were landscaped in c.1794 by Capability Brown, and the route of the stream was altered to run past the cloisters. The ruins were tidied up at this date, and some parts were probably removed, no doubt to create a more aesthetic ruin. It is possible that parts of the gorge were widened or altered at this date, which may have had an impact upon sections of the rock face. The parkland extended from Abbey Mill Farm to Colonel's Holt, southwest of the lake.

The fields in the valley to the east of Stone were enclosed under Parliamentary Enclosure acts. The former parkland between the Abbey and Stone is currently under grazing.





**Plate 2:** Roche Abbey. The stream shows the location of the former fish ponds.

#### **5.4.1.3 Woodland**

The main areas of woodland are located on the north-western and south-western arms of the gorge. Some parts of the Nor Wood show outgrown coppice stools, and yew trees indicate that areas of natural limestone woodland may still persist in parts. Strips of woodland bound both sides of the south-western gorge arm.

#### **5.4.1.4 Transport & industry**

The main road from Maltby to Stone runs along the top of the north edge of the gorge. This is indicated on the 1835 map. Footpaths run along the bottom of each arm of the gorge; their antiquity is not known. Abbey Lane and Gypsy Lane cut through the southern and northern edge of the gorge respectively, and meet at a stone bridge which crosses the stream – this route may be of some antiquity, and has impacted rock outcrops on the northern side.

Much of the southern side of the north-western arm of the gorge is covered by a sewage treatment works. This will have had a major impact upon sediments in the valley bottom, and may well have impacted upon areas of rock outcrop, although the extent to which the rock face has been cut back is not known.

A railway line crosses the vale to the north of the sewage works. It crosses the gorge by means of a substantial embankment through which the stream is channelled.

#### **5.4.1.5 Minerals extraction**

The magnesian limestone at Roche/Stone is valued as building and carving material. The abbey itself was built from material from the local area, and it is possible this came from the quarries located on the northern side of the gorge (centred SK 544 902). This quarry is identified on a map of 1835. The stone was valued for its suitability for building:



"It is one of the most beautiful and durable materials of the kind in the whole kingdom: its texture is close and when worked it is free from any grainy appearance, hence it is particularly valuable for statuary, who generally use it for figures and ornaments where marble is not required. The quarries from which it is dug are close upon the woods on the western side of the Abbey." E. Rhodes 1826 *Yorkshire Scenery*, p 103.

As well as being used in the construction of Roche Abbey Roche Limestone was also used at Sheffield Castle and probably also Tickhill Castle and Sandbeck House.

#### **5.4.1.6 Key historical influences & visual attractions**

Rock shelters in Seed Hill Wood

Roche Abbey (*Cistercian monastery*), associated designed landscape and ghost stories

Nor Wood (*limestone woodland*)

Stone Mill and Mill farm (*possible medieval foundations*)

### **5.4.2 Firbeck**

Firbeck valley runs for approximately 1km southwest from the village of Firbeck. There are very few rock outcrops in this valley.

#### **5.4.2.1 Settlement**

No settlement or activity from the later prehistoric period is recorded. The village of Firbeck lies in the north-eastern end of the vale, and two farmsteads are located at the southern end of the vale. Park Hill Farm lies on the site of the sixteenth century Park Hill Hall, and incorporates some of the original stable buildings and kitchen garden wall.

#### **5.4.2.2 Designed landscapes**

The whole valley was at one time parkland associated with Park Hill Hall, shown on a map of 1835. The valley may have been subject to extensive landscaping, which will have impacted upon valley floor deposits and, to a lesser extent, the rock outcrops. The river was dammed in places to form a series of ornamental ponds; these are now overgrown, but stone retaining banks and several weirs are still visible. There is also a grade II listed ice house, and a grotto cave is present at SK 5575 8788 [FBT4]. This cave is a constructed folly and could not have been utilised in prehistoric times.

#### **5.4.2.3 Woodland**

The south western end of the vale is mainly covered by woodland plantations, and scattered parkland trees are present along the bottom of the vale, following the line of the watercourse.

#### **5.4.2.4 Transport & military**

There is a track through the woods within the vale, which connects with Lamb Lane Dike to the north and south, possibly an old drainage gully. This was shown on the 1835 map as a dike.

To the north of Penny Hill is a triangular field which was Firbeck military airfield, opened in 1940. It was abandoned in 1945. The extent of earthmoving for the construction of the airfield is not known, but it is not thought to have impacted upon cave deposits.



#### 5.4.2.5 Key historical influences & visual attractions

Part of designed parkland, including traces of water features. (*link also to St Leger family, and gallops still preserved in field boundary nearby*)

Firbeck military airfield

### 5.4.3 Anston Stones and Lindrick Dale

Anston Stones and Lindrick Dale form a continuous valley that runs approximately south east from Anston for a total length of about 4.25km. The northern end of Lindrick Dale is cut through by the A57. From Anston to the A57, through Anston Stones, the valley is fairly straight. The section through Lindrick Dale runs north-south; the southern end forms a T- junction with another short length of vale which runs east-west.

#### 5.4.3.1 Settlement

Anston Stones and Lindrick Dale both have a fairly rich body of evidence for later prehistoric and medieval activity. The SMR holds over 30 records of findspots of various types of material, including stone tools, coins and other metalwork, and pottery. There is no distinct evidence for settlement, but it is clear that the valley have seen use since the early prehistoric period onwards. A moated site in North Anston is marked on current OS maps, indicating a focus of medieval settlement here.

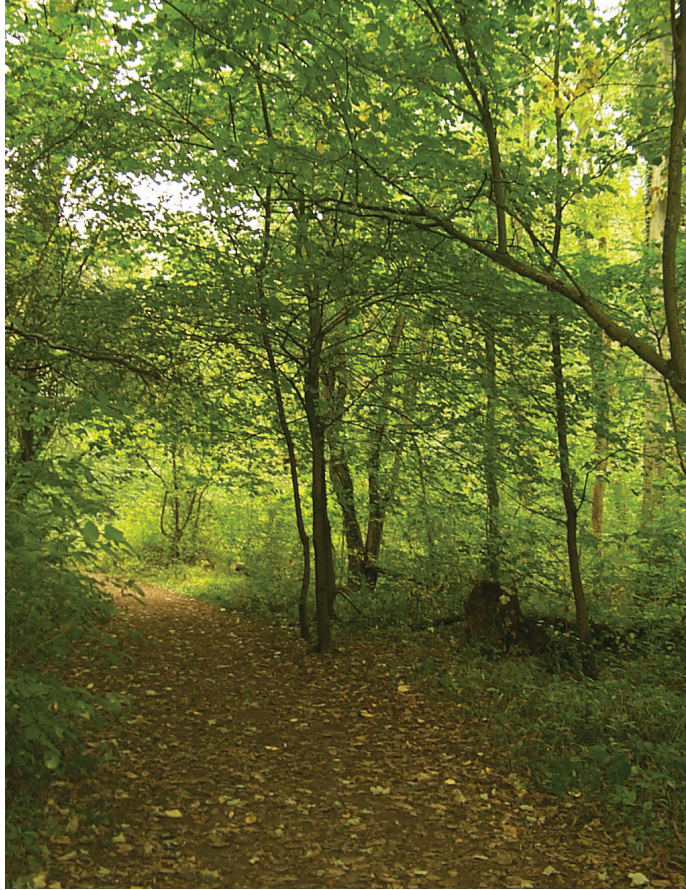
The main areas of present day settlement are North and South Anston at the west end of Anston Stones, and a series of dwellings on the eastern side of Lindrick Dale. It is possible the South Anston has impacted upon the extreme western end of Anston Stones, but this could not be confirmed through field survey. The houses in Lindrick Dale are shown on a map of 1835, and are set close against the eastern rock face. In places it appears that the rock face has been modified in order to incorporate these dwelling and their outbuildings. In addition, the houses have associated landscaped gardens in the valley bottom and on the western slopes. The landscaping will have impacted upon valley floor deposits, rock outcrops may also have been modified, and the stream has been canalised in parts.

The mill at the base of Lindrick Dale was shown on the 1835 map, and there are still buildings on the site. A small mill dam was located to the west of the mill, and ponds are still present between the southern end of Lindrick Dale and Anston Grange.

#### 5.4.3.2 Woodland

Much of Anston Stones is wooded, except a few areas of open grassland at the northwestern end of the valley. Anston Stones Wood covers c.83 hectares, and is a fine example of a mature limestone woodland (**Plate 3**). It is a designated SSI. It is owned and managed as an amenity resource by Anston Parish Council, and contains signposted pathways and interpretation panels. There are scattered trees within the landscaped gardens of Lindrick Dale, and pockets of woodland in the east-west vale at the southern end of Lindrick Dale.





**Plate 3:** Woodland in Anston Stones

#### **5.4.3.3 Transport & industry**

The major impact upon Anston Stones is the railway, probably constructed around the turn of the twentieth century. The railway enters Anstone Stones along the top of western edge of the valley, to the south-west. It gradually drops across the contours into the valley bottom, where it runs along a massive embankment in the valley floor. It re-emerges from the valley through a large cutting in the south side of the valley at the eastern end. Both the footpath and stream are taken under the embankment at two points via large tunnels and brick culverts, and the stream has been canalised at one point to run alongside the embankment (**Plate 4**). The railway has impacted upon rock outcrops on the southern side of the valley, as well as valley deposits which may have been crushed or disturbed during construction of the embankment. The origin of the material that makes up the embankment is not known.





**Plate 4:** Culverted stream in Anston Stones, running alongside the railway embankment

A sewage works is located on top of the north side of the valley, at the western end. It is located just above an area of rock outcrop. It is not thought to have impacted upon the outcrop face itself, although the depth of the sewage works foundations are not known.

There is a route through Lindrick Dale down to the houses and the mill. This was shown on the 1835 map. A road from South Anston to Gateford bypasses Anston Stones, and crosses Lindrick Common.

#### **5.4.3.4 Minerals extraction**

Old limekilns are shown to the west of the mill in Lindrick Dale on a map of 1902; these may have occupied an old quarry. A quarry was also shown on an 1835 map at Anston Stones close to the cutting for the railway – this may have been the location of stone for the railway embankment, and is certain to have impacted upon the southern rock outcrop of the valley.

#### **5.4.3.5 Key historical influences & visual attractions**

- Rock shelters and caves in Anston Stones
- Limestone woodland in Anston Stones
- Railway in Anston Stones
- Rock shelters and landscaped gardens in Lindrick Dale
- Site of mill and ponds in Lindrick Dale



#### **5.4.4 Red Hill**

Red Hill is a small triangular section of land between Kiveton Park and Kiveton Bridge, bounded by the B6059, the Worksop to Sheffield railway and housing on the east end of Kiveton Bridge. It is 0.75km long and up to 0.25km wide at its widest point. The area of interest is formed by the northern side of a valley which runs east-west. The southern side is more gently sloping, and did not form part of the survey area.

##### **5.4.4.1 Settlement**

The SMR records the location of a possible Roman fort just north of the valley (SK 507 828). Finds recovered from excavations here are from a settlement probably a vicus outside the fort, associated with it. Modern settlement is clustered in the bottom of the valley, and also along roads that lead across the contours, east of Red Hill. Construction of buildings towards the bottom of the valley (opposite the rail station) are likely to have impacted upon natural rock outcrops on the north side of the valley.

##### **5.4.4.2 Designed landscapes**

Red Hill lies inside the southern part of a medieval deer park at Kiveton – this was shown on Saxton's map of 1610. No impact from the park was identified; it is perhaps more likely that natural features such as rock outcrops would have been utilised to enhance the boundary, although this is not proven.

##### **5.4.4.3 Transport and industry**

Packman Lane, which runs south from Redhill, is thought to be Roman in origin, and if so, presumably linked with the fort above the north side of the valley. This road was known as Rykniel St until the eighteenth century. No impacts on rock outcrops or valley deposits could be identified. The construction of the B6059 and the railway may have impacted upon rock outcrops.

##### **5.4.4.4 Key historical influences & visual attractions**

Possible Roman fort and road  
Chesterfield Canal

#### **5.4.5 Thorpe Common and Lob Wells Wood**

Thorpe Common and Lob Wells Wood lie in the long and sinuous Bondhay Valley which is approximately 3.25km in length. From Lob Wells Wood the valley runs south-west for about 0.5km to the village of Top Hall, it then runs southwards for about 1.5km to Whitwell Wood. It turns westwards run along the northern side of Whitwell wood for 1.25km.

##### **5.4.5.1 Settlement**

The valley shows evidence for activity and some settlement from early prehistoric times onwards, even if it is not continuous. Mesolithic stone tools have been found in various locations, and Iron Age/Romano-British rectangular cropmark enclosure is located on the western valley slope (SK 524 795). The impact of settlement in more recent times appears to have been fairly minimal; a medieval moated site is located at the northern end of the valley, at Netherthorpe (SK 537 806). This is associated with an earth dam (now breached) and former pond on Bonday Dyke which probably controlled water supply for the moat and dwellings.



The rest of the valley is almost unsettled, with the exception of Moor Mill Farm and Top Hall, which site close together in the northern end of the valley. Moor Mill Farm may have been the location of a mill which is depicted on a map of 1835 - the date of the foundation of the mill is unknown, although existing buildings at Moor Mill Farm all appear to be nineteenth-century. The mill dam is located further south (SK 5295 7985). It supposedly had no pond, just a sluice leading off the main water course, however the body of water depicted on the 1835 map appears wider than a stream. The construction of these dwellings may have impacted upon rock outcrops.

#### **5.4.5.2 Agriculture and woodland**

Thorpe Common is a mainly agricultural landscape containing arable and pasture fields. Small pockets of woodland (including plantations) are present both in the valley bottom and on the slopes. Most of the trees present at the bottom Thorpe Common were present by at least 1835.

#### **5.4.5.3 Transport**

The two routes that cross the valley are Common Road to the north (on which Moor Mill Farm and Top Hall are located) and the junction of Packham Lane, Hardhill Field Road and Boundhay Lane at the western end of the valley. Several trackways run from the fields down into the valley bottom, one of which runs directly north to Thorpe Salvin – the antiquity of this trackway is not known, but it was not identified as a discrete feature on early maps.

#### **5.4.5.4 Key historical influences & visual attractions**

Moor Mill Farm and remnants of water power features

#### **5.4.6 Steetley Quarry**

Steetley Quarry is located c. 1km south of Shireoaks.

##### **5.4.6.1 Settlement**

The SMR records several findspots indicating prehistoric, Roman and medieval activity; the nearest known medieval settlement was at Shireoaks.

##### **5.4.6.2 Minerals extraction**

Two caves sites were known at Steetley. These were discovered during recent quarrying, thus the site is not a gorge or vale like the other sites covered by the study. One cave is under a present road, the other has been destroyed by the quarrying. The construction of the works, quarry, lime kilns, mine and spoil tips has had a significant impact upon the immediate area, and other cave sites or original ground deposits are unlikely to survive.

#### **5.4.7 Ash Tree Gorge**

Ash Tree Gorge lies approximately 1km west of the centre of Whitwell. It is a small valley c. 300m long with rock outcropping for approximately 250m of its length. The valley is orientated east-west, and side valleys enter the gorge from north and south approximately mid way along its length.



#### **5.4.7.1 Agriculture and woodland**

The valley lies entirely within a pasture field and is mostly grass. Some trees and scrub have grown along and on the rock faces. The north east area has recently been fenced off and planted with saplings; this, and subsequent root action, could impact upon buried deposits. Cattle are currently using the field and there is evidence of cattle poaching at the base of some rock faces and in some gullies.

#### **5.4.7.2 Transport**

Highwood Lane passes by the end of the gorge, leading towards the top of Markland Grips. This is shown as Hey Wood on the 1767 map.

### **5.4.8 Markland Grips**

Markland Grips is a large valley/gorge with three arms, the two largest of which meet at the north-east corner of the complex, at Upper Mill farm. The longest arm (Hollinhill Grips) runs east from the centre of Clowne, where it is known as Clowne Grips, for just over 2km. The second arm (Markland Grips) runs north-east from Grange Farm, and measures almost 2km in length. A smaller third arm is about 0.75km in length, and runs roughly south to north, joining Markland Grips about 400m west of Upper Mill Farm. The total length of the valleys is around 5km.

#### **5.4.8.1 Settlement**

There is a rich body of evidence relating to settlement and human activity in the valley and its immediate environs during the prehistoric period. This comprises scatters and concentrations of Neolithic and Roman stone tools, burials, some metalwork, Roman pottery, and relict field systems. An Iron Age hillfort was constructed on the plateau between Markland and Hollinhill Grips (SK 5110 7518). This appears to have continued in use into the Roman period. The site is Scheduled (SAM 23311). The hillfort uses the natural defences created by the rock faces at the junction of the two valleys. The extent to which the tops of the rock faces were modified in the Iron Age/Roman period to enhance the defensive function (or physical appearance) is not known. Since the site was scheduled in 1936, it will have been protected by its scheduled status, although ploughing may still continue.

There has been little impact from settlement in more recent times. Upper Mill Farm was originally a mill, located to the east of the hillfort. The area to the west of the farm is a heavily silted mill pond, with associated overflow channel (leat) to the south, and a large revetted dam wall on its eastern side. Mill Cottages were presumably associated with Upper Mill, or possibly with Lower Mill, further east. The cottages are located on the top of the gorge, on the north side of the Sheffield Road, but are unlikely to have impacted upon the gorge itself.

#### **5.4.8.2 Agriculture and woodland**

The impact of agriculture on this gorge is relatively low. Some areas of grazing land are present in the bottom of the gorge – these are mainly found to the east of Upper Mill Farm, and also in the location of the infilled mill pond. Most of the rest of the gorge bottom is overgrown and scrub-filled, with tree cover at varying stages of maturity. The presence of yew trees within the tree cover is indicative of natural limestone woodland. Parts of the gorge are designated as the Markland Grips Nature Reserve, managed by the Derbyshire Wildlife Trust.



### **5.4.8.3 Transport and industry**

Modern transport routes are a fairly prominent feature of this gorge. The small road leading from Sheffield Road to Upper Mill Farm traverses the rock face on the north side of the gorge (SK 5135 7525) and may have impacted upon the rock outcrop at this point. The antiquity of this route is not known. Markland Lane crosses the gorge 300m south of Markland Farm and may have impacted upon both sides of the gorge at this point.

Two railway lines are also present. One now disused has impacted the gorge in two places; the first is in Clowne itself, where the disused sidings are now part of the Clowne Linear Park. The rail line continued south-east to where it crossed the gorge at SK 5100 7500. The disused line sits within a gap in the rock outcrop on the north side of the gorge, and the gap is likely to have been made (or at least enhanced) during construction of the line. This is also likely to have impacted upon the southern end of the hillfort rampart. The line crossed the gorge by means of a large embankment, which is still present in part. The embankment does not reach the southern side of the gorge, and the rest of the gap was spanned by a viaduct which is no longer present.

The second railway, also disused, ran along the top of Hollinhill Grips, close to Sheffield Road. It crosses the valley at the eastern end by means of a large bridge/embankment; this has impacted upon the northern side of the gorge.

There is a public footpath along Markland Grips, leading to Border Farm and then on to join with the Mansfield Road. A track runs from the west end of Markland Grips (at Border Farm) south-easterly towards Elmtun and Whaley, becoming Oxpasture Lane, which is aligned along the Elmtun and Whaley vales.

The erection of a pylon in the bottom of Hollinhill Grips (SK5100 7530) will have caused localised disturbance to valley floor deposits.

A sewage works is located towards the western end of Hollinhill Grips, in a zone bounded by both rail lines and Markland Lane. This is more likely to have impacted upon valley floor deposits than rock outcrops.

### **5.4.8.4 Key historical influences & visual attractions**

Iron Age hillfort  
Limestone woodland  
Upper Mill Farm and water features  
Railway: site of viaduct across valley, and Clowne Linear Park

## **5.4.9 Elmtun and Whaley Valleys**

The Elmtun and Whaley valley is orientated north-west/south-east, and extends for 4km from Elmtun at its northern end, through Whaley, and down to Nether Langwith. The valley is very shallow with only a few isolated rock outcrops.

### **5.4.9.1 Settlement**

This valley has extensive evidence for settlement and activity from the early prehistoric period onwards. Both cave/shelter sites and open settlement sites and findspots have provided a wealth of evidence in the form of Neolithic and Bronze Age stone tools, Bronze Age pottery, Roman pottery and settlement evidence.

Medieval settlement occurs along the length of the valley. In Elmtun, earthworks indicate the location of the Shrunkun Medieval Village, and the present church stands



on the location of the medieval church. Medieval pottery and earthworks have also been identified along the length of the valley, at Whaley Hall, Whaley, Mill Farm and Apsley Grange, indicating that this area was relatively densely settled and farmed during this period.

A possible medieval mill pond, referred to in the early fourteenth century, is located at Apsley Grange; this was associated with the Prior of Newstead Abbey. The mill continued in use into the post-medieval period, and was shown on the 1835 map. A second mill pond is located at Mill Farm, on the southern edge of Whaley.

#### **5.4.9.2 Agriculture**

Fields to the south-west and south-east of Elmtun are characterised as being 'ancient enclosures' (of unknown form) on the Derbyshire Historic Landscape Characterisation map. Other isolated fields around Whaley and Elmtun, and alongside Whaley Road, are characterised as being irregular fields, with the date of enclosure unknown.

Most of the area today is a mixture of pasture and arable fields. Where ploughing takes place, valley floor deposits will be impacted, as will talus slopes associated with some of the isolated outcrops. The impact of ploughing upon buried soils is demonstrated through the relatively large numbers of artefact scatters and findspots that are recorded in the SMR.

#### **5.4.9.3 Woodland and designed landscapes**

The woodland of Scarcliffe Park covers the southern portion of the valley. This former medieval deer park still has extensive remains of the former park pale (earthworks, which would have had an associated fence) designed to keep the deer inside the woodland.

#### **5.4.9.4 Transport and industry**

Oxpasture Lane, which runs alongside the valley, leads from Nether Langwith to Elmtun, and onto Border Farm at the end of Markland Grips. The date of the route is uncertain, but it runs along a prominent ridge, passing by a Romano-British settlement and linking five medieval settlement locations, thus it is likely to be of some antiquity. The proximity of the road to the known cave sites suggests that the construction of this route may have impacted upon cave deposits and structures. Lanes branch off from this route at Whaley Hall and Whaley, and these too may have had localised impacts upon caves and valley floor deposits.

The route of a dismantled railway runs north-south, across the southern end of the valley. The remains of a large embankment and bridge abutment are present to the south of Whaley Road, but this is not known to have impacted upon cave sites.

A blast furnace was located immediately west of Apsley Grange mill pond, dating to the seventeenth century. It was first mentioned in the 1650s, and was closed around 1777. The area was much altered in the nineteenth century, and there are no visible remains. The associated workers cottages have also been demolished. Fuel came from the adjacent Scarcliffe Park woodland; OS maps indicate that coppicing areas are still identifiable.

To the north of Apsley Grange is the remains of a large colliery spoil tip. This may have since been landscaped, and is shown as 'recreational use' on the Derbyshire Historic Landscape Characterisation map. The spoil tip partially covers the dismantled railway line.



#### **5.4.9.5 Key historical influences & visual attractions**

Medieval settlement/farms and earthworks  
Scarcliffe Park (medieval earthworks, coppicing)  
Site of blast furnace  
Mill ponds

#### **5.4.10 Langwith Vale**

Langwith Vale is orientated south-west to north-east and is approximately 2.75km in length. It runs from just south of Scarcliffe to Upper Langwith. It is a narrow, well-defined valley.

##### **5.4.10.1 Settlement**

Later prehistoric activity is evidenced through various isolated findspots and artefact scatters along the length of the valley. These have mostly been located on the upper valley sides.

Medieval settlement was concentrated at either end of the valley, at the present day settlements of Upper Langwith and Scarcliffe. The possible medieval site of Bassett Hall is located adjacent to the current church, at SK 5183 6936. A few scattered dwelling are present on the north valley slope, opposite Upper Langwith; given the proximity to Langwith Bassett Cave [SK 5179769506, LBT7] it is possible that construction of these dwellings has impacted upon other rock outcrops.

A long flat area in the valley bottom (centred SK 5080 6880) may indicate the remains of a former mill pond, although no reference to a mill building has been found.

##### **5.4.10.2 Agriculture and woodland**

The north-east third of the valley contains pasture fields with a few small pockets of trees, while rest of the valley is mainly wooded, particularly on the southern side. The present enclosed fields are of mixed origin. Around Scarcliffe and Upper Langwith are fields characterised as being 'ancient enclosures' including some fossilised strip fields of medieval origin. The rest of the valley contains 'regular' enclosures which occurred post 1650.

The main body of woodland is Langwith Wood, which delineates the extent of the former medieval hunting park associated with Bassett Hall (thought to have been located adjacent to the church in Upper Langwith). The park was created after a grant of free warren in 1243.

##### **5.4.10.3 Transport and industry**

A railway, now dismantled, runs through a tunnel west of Scarcliffe, and emerges in a deep cutting immediately south of the village. The line cuts through the fields at this point (also cutting through some medieval strip lynchets at SK 4990 6835) before entering the valley. The line sits within a cutting north of Langwith Wood which is likely to have impacted upon rock outcrops and valley deposits. As it continues along the valley floor the railway line is embanked, until it emerges through the southern valley side, where again it lies in a deep cutting, which becomes shallower as the line approaches Upper Langwith. This cutting is also likely to have impacted upon rock outcrops and/or valley deposits.



#### 5.4.10.4 Minerals extraction

A small quarry (**Plate 5**) is located on the south side of the valley, opposite Langwith Bassett Cave (LBT7). This has an associated trackway running up the side of the valley, towards the church and the possible site of Bassett Hall.



**Plate 5:** Small quarry (foreground) with associated trackway running across the contours (background), in Langwith Vale.

#### 5.4.10.5 Key historical influences & visual attractions

Possible medieval site  
Langwith Wood (*medieval deer park*)  
Railway cutting

#### 5.4.11 Pleasley Vale

Pleasley Vale runs roughly east-west, and is approximately 3km in length. The gorge is well defined, particularly in the deepest central section where it also has a more sinuous course.

##### 5.4.11.1 Settlement

Evidence for later prehistoric settlement is sparse, with the exception of Mansfield Woodhouse Roman villa, which was located to the south of the gorge (SK 5244 6461). Pleasley itself is at least medieval in origin, and earthworks and findspots testify to thinly scattered medieval settlement along the vale; a possible medieval manor was located to the south of the western end of the vale, near Radmanthwaite.

A small dwelling (possibly related to the former Stuffynwood Hall) and a nearby church are located in the vale bottom, at Little Matlock; neither of these appear to have impacted upon the rock outcrops, but they may have affected valley floor deposits in a very localised manner.



A small group of dwellings centred at SK 5250 6503 are probably associated with the mills (see below). These are located close to a large rock face which bears evidence for blasting (**Plate 6**). The southern valley side at this point has been severely modified, either to facilitate construction of the dwellings, or perhaps as a later modification to improve access.



**Plate 6:** Drill holes for rock blasting in Pleasley Vale.

#### **5.4.11.2 Agriculture and woodland**

Small areas of rough pasture are present on the valley floor, at the eastern and western ends of the valley. These are classified as 'irregular enclosures' of unknown date. They are unlikely to have been cultivated extensively. There is relatively little land in the valley floor that has not been utilised for industrial and/or transportation purposes (see below); the remainder of the valley floor and gorge sides are wooded. Some of the woodland shows evidence for previous coppicing, although the coppice stools are somewhat outgrown. In the western end of the valley the woodland forms part of the Meden Trail, an amenity trail established by the Wildlife Trusts and English Nature.

The woodland to the north of the vale is part of Pleasley Park, originating in the medieval period. It was founded as a deer park, and later was managed as a woodland resource. In places, towards the western edge of the park, remains of the park pale survive as stone revetments inside the boundary ditch. Relict coppice stools in the park indicate the remains of woodland management, for fuel and building timber, from the medieval period onwards.

#### **5.4.11.3 Transport and industry**

The industrial use of the valley has without doubt been the largest impact on Pleasley Vale, and possibly the largest impact of later human activity in any of the gorges in the study.



Pleasley Forge, shown on Burdett's 1767 map, was working from at least 1655 into the late eighteenth century. There were two forges at the site, and the associated water leats and control gear dating to 1785 remain. Nether and Upper Forge, were run by the iron master George Sitwell. The SMR information is slightly confusing, but the forges and a corn mill are thought to have been located around SK 5160 6490. Nether Forge may have been located just inside the southern edge of Pleasley Park. In 1784 a cotton mill was built on the site - this was Upper mill, now known as Number 3 Mill. Lower Mill, Pleasley (Number 1 Mill) was built in 1798. Both mills burnt down in 1844 and were rebuilt using fireproof construction. The third mill was built in 1913 and situated between Upper and Lower mills.

The three mills formed a large industrial complex, and some housing associated with it is found on the northern side of the valley bottom, opposite Mills 3 and 2. All were water-powered, and several mill dams were constructed to serve the mills. An extensive complex of ponds, water leats and other water management features are present between the mill buildings, and for approximately 500m to the west of Mill 3.

The construction of the mills necessitated the cutting back of large areas of rock face. In addition, the mill buildings, chimneys etc. will have deep foundations which, along with the ponds and water leats, will have greatly impacted upon valley floor deposits.

A small 'works' is noted on recent OS maps on the valley floor at SK 5280 6515. This was not located during the survey, and may now be disused. It will have had a small impact upon valley floor deposits, but no impact upon the rock outcrops.

A road now runs through much of the vale to provide access to the mill complex. This road is shown on the 1767 map, and was possibly constructed to service the forges. The road exits the valley at the eastern end close to the rock face that shows evidence for blasting (see above, and **Plate 6**).

A railway formerly ran along the south side of the gorge for most of its length before crossing the gorge at its west end via an embankment. The railway then headed further west to connect to Pleasley Colliery (see below). On the south side of the gorge the disused railway, now used as a footpath, runs along the top of the gorge, via both very large embankments, and deep cuttings. The cuttings have impacted upon the rock outcrop cutting through several cave sites, including Yew Tree Cave (PLT30).

#### **5.4.11.4 Minerals extraction**

The gorge may have been used as a source of stone prior to the erection of the mill buildings. A small quarry at the eastern end of the valley (east of the extant railway line) is also marked on maps - the impact of this quarry on potential rock outcrops is not known.

There is an area of 'workings' on the southern side of the valley, centred on SK 5300 6480. This appears to have been quarried in the past, and completely re-landscaped. This may have had an impact upon rock outcrops on the southern side of the valley, particularly if deep caves/fissures were present which extended south by any distance.

One of the major industrial influences on Pleasley Vale was Pleasley Colliery. Although it is situated outside the vale itself (to the west of Pleasley village) the colliery was a significant part of the industrial landscape, and features associated with it (in particular the rail link) did impact directly upon the vale.

#### **5.4.11.5 Key historical influences & visual attractions**

Pleasley Park (*medieval deer park*)



Little Matlock  
Pleasely forges (*sites of*)  
Pleasley Mills (*quarrying, mill buildings, water power*)  
Pleasley Colliery and railway



## **6 HERITAGE AREA, NATIONAL COLLECTION CONSOLIDATION**

### **6.1 Introduction**

An assessment of the extant collections from the caves and rock shelters of the Creswell Limestone Heritage Area was carried out as part of the Creswell Crags Conservation Plan (Wall and Jacobi 2000). The assessment identified 21 sites associated with Palaeolithic material, of which eight lie outside Creswell Crags. The collections and archives that developed as a result of over a century of excavation are currently stored in a mixture of 38 museums/university departments. The vast majority of this material is from sites at Creswell Crags, material from the 8 sites outside Creswell Crags being distributed in about half a dozen different locations.

The extant museum collections have an important role to play in future research objectives. Although the stratigraphic location and detailed site records are not as complete as one would like, the knowledge that a particular assemblage is attributable to a particular site will help to assess the significance of sites within the landscape. They can also point to which sites may be beneficial for answering specific research questions.

Study of these collections is imperative in order to develop baseline information on the provenance of the collections are understood and accepted. Initial assessments on this extant material are a necessary step in establishing a baseline resource which can be used in future research frameworks.

To fully appreciate and identify the research potential of this material it is necessary to catalogue the surviving material and its associated information. This can then be used to develop a database of all the dispersed material. This will remove many of the problems facing researchers of a dispersed collection and provide an integrated, comparable set of information.

#### **6.1.1 Aims**

There were two main aims for the program of national collections consolidation:

Identify and assess the nature of the national collections and consolidate the information on archaeological and palaeontological material of the Palaeolithic/Pleistocene period from the Heritage Area (excluding Creswell Crags). This drew heavily on the work of Wall and Jacobi (2000).

Accession the national collection from sites within the Heritage Area (other than Creswell Crags) onto a centralised database for access, monitoring and research.

### **6.2 Methodology**

#### **6.2.1 Desk-top assessment**

The assessment of the Pleistocene collections undertaken by Wall and Jacobi (2000), which formed Appendix 2 of the Conservation Plan, has provided much of the background desk-top work required for the consolidation of the national collection. This has identified all the Pleistocene and early Holocene material held in British museums. To supplement and validate this information the following museums were contacted and information requested.



British Geological Survey Museum Keyworth\*,  
 British Museum\*,  
 Buxton Museum,  
 University of Cambridge, Museum of Archaeology and Anthropology\*,  
 University of Cambridge Museum of Biological Anthropology\*,  
 Manchester University Museum,  
 Natural History Museum\*,  
 University of Nottingham, Department of Archaeology Museum\*,  
 Oxford University Museum, Oxford University Museum of Natural History\*,  
 Royal College of Surgeons Museum\*,  
 Sheffield City Museum\*,  
 Wollaton Hall Natural History Museum\*,  
 Bassetlaw and Worksop Museum \*

Museums marked with \* have provided further information on the collections.

### 6.2.2 Consultation

A meeting was held with Roger Jacobi to discuss the collections. Roger Jacobi has been studying the collections for many years and has detailed knowledge of their condition and potential. During the meeting all the collections he has examined were discussed and notes made on the potential value of the collections for further analysis and interpretation.

### 6.2.3 Database Structure

The information held on the archaeological and palaeontological material of the Palaeolithic/Pleistocene period from the Heritage Area (excluding Creswell Crags) was accessioned onto a database in a format that will enable the maximum use to be made of the data for management and research purposes.

To maximise the value of the material within the collections database the terrain unit number for each site was included to enable information to be correlated between the two databases, enhancing their research and management potential.

The structure of the database was designed to maximise the information on it without overcomplicating it. Separate records were made in the database to record all sites, separate excavations of these sites, and separate museum collections of each excavation. This means that there can be several records for each site, but this gives an accurate record of the material and where it is held. In some cases, collections from different excavations were held together; these archives had become mixed and were recorded as one record as an unknown site.

The following fields were recorded for each record:

*Collection Number* – unique number assigned to the record

*Site Number (terrain unit)* – the site number from the terrain unit database

*Site Name* – the site name (if existing)

*Museum Name* – the museum holding this collection

*Museum Address* -

*Museum Telephone Number* -

*Collection Unified* – tick box to record if the collection is unified



*Other Museums with material from this site* – names of any other museums with material from this site

*Associated Collections* – list of Collection Numbers relating to the same site

*Collections description* -

*Excavator* – the name of the excavator for this collection

*Date of Excavation* – the dates when the excavation was undertaken

*Period* – tick boxes for the periods represented in the collection

Pleistocene

Palaeolithic

Mesolithic

Neolithic

Bronze Age

Iron Age

Roman

Medieval and Later

*C14 dates* – C14 dates with lab code and material dated.

*Finds* – numbers of finds in the collection by type. The types used were those used by the museums. If the number of finds is given as –1 this means that this material is present but not quantified.

Flint

Quartzite

Chert

Quartzite/Chert

Flint/Ironstone

Organic

Animal Bone

Human Bone

Coprolite

Breccia

Travertine

Ochre

Charcoal

Amber

Eggshell

Sediment

Snail

Stones

Ppottery



Metalwork

Glass

Haematite

Clinker

*Archive Paperwork* – tick box for the presence of a paperwork archive

*Archive Paperwork description* – notes on what is contained in the paper archive

*Archive Photos*– tick box for the presence of a photo archive

*Archive Photos description* - notes on what is contained in the photo archive

*Archive Numbers* – The accession numbers assigned to the material by the museum

*Publications* – publications relating to the collection

*Condition of collection* – notes on the condition of the collection, drawing heavily on the work of Roger Jacobi

*Interpretive Potential* – notes on the potential of the collection, drawing heavily on the work of Roger Jacobi

The information input into the database incorporated data from The Creswell Craggs Conservation Plan, (Wall and Jacobi 2000), material from the museums and from the SMRs.

## **6.3 Potential of the collections**

A brief description is given of the potential of the collections for each valley.

### **6.3.1 Roche Abbey Valley**

The small excavation at Stone Mill Rock Shelter has produced a small but interesting assemblage including two late upper Palaeolithic flints and one Mesolithic flint as well as some Pleistocene horse teeth from the slope deposits in front of the shelter.

### **6.3.2 Firbeck**

No collections or excavations are known from Firbeck valley.

### **6.3.3 Anston Stones Wood and Lindrick Dale.**

One site, Dead Mans Cave, has been excavated in Anston Stones Wood. Much of the material from this site proved to be mixed, with material from the Palaeolithic to Roman periods recovered from the same layers. There is a late glacial faunal assemblage including mountain hare, brown bear, wild cat, wild horse and reindeer; none of this has cut marks on it but the reindeer bones show wolf gnawing (Jacobi pers. comm.) suggesting the site may have been a wolf den. There is a small, late Upper Palaeolithic assemblage which includes backed blades and debitage, but the contexts this came from usually contain Roman pottery. The deposits from near the mouth of the cave appear to be best stratified and least mixed. Due to the disturbed state of the excavated deposits there is limited potential in the currently curated assemblages. However, further work around the entrance of the cave might produce more stratified material.



#### **6.3.4 Red Hill Valley**

No collections or excavations are known from Red Hill Cave

#### **6.3.5 Thorpe Common and Lob Wells Wood Valley**

The two rock shelters excavated have both produced significant archaeological material. The material from Lob Wells Wood shelter largely consists of later prehistoric flint but one upper Palaeolithic penknife point was also recovered.

Thorpe Common Rock Shelter produced a large Mesolithic assemblage from two layers, the lower layer being similar to the Mesolithic assemblage from Mother Grundy's Parlour and the upper being associated with scalene triangles types. The C14 dates from the site are all obtained from the upper layer. This Mesolithic material is an important assemblage and is probably worth further examination.

#### **6.3.6 Steetley Caves**

Two assemblages have been recovered from the Steetley area one from Steetley Cave and one from Steetley Quarry (Wood) Cave. Steetley Cave has produced a faunal assemblage which includes some domestic animals and must therefore be Neolithic or later, in part at least. One Mesolithic flint was also recovered from Steetley Cave but the assemblage does not appear to be significant.

Steetley Quarry Cave has produced a early Devensian fauna of bison, bear, wolf, fox and reindeer dated to about 42,000 BP. The human mandible attributed to Steetley Quarry Cave is clearly from a different context based on the sediment adhering to it (Jacobi pers. comm.). This site is one of many that has been used in recent years in Current and Jacobi's study (1997 2001) of Pleistocene biostratigraphy.

#### **6.3.7 Ash Tree**

Ash Tree Cave has been excavated on at least three occasions and the assemblages from it are very important. These have produced stratified Pleistocene faunas from the early and mid Devensian which can be correlated to faunas at Creswell Crags and Steetley Caves. The mid Devensian fauna was associated with a middle Palaeolithic (Mousterian) assemblage. This was overlain by thin deposits containing later upper Palaeolithic and Mesolithic remains. This material has been re-examined in recent years (Currant and Jacobi, 1997 and 2001), but the full assemblage from all the excavations has never been published.

#### **6.3.8 Markland Grips**

Although Armstrong undertook several small excavations in Markland Grips this did not recover any Palaeolithic or Mesolithic material, although he did recover later prehistoric burials from Sepulchral Cave. The collections are therefore not considered further in this study.

#### **6.3.10 Elmtun and Whaley Valley**

Two sites in the Elmtun and Whaley Valley have produced assemblages, Whaley 1 and Whaley 2. There is some confusion as to the integrity of the Whaley 1 artefacts as there are notes with them that suggest they may not all be from Whaley 1. In his examination of the material Jacobi (pers. com.) has noted that only one artefact can be securely provenanced to Whaley 1 and the Palaeolithic date for this assemblage is therefore difficult to substantiate. The material from Whaley 2 is split between several museums but is a very important assemblage; it includes an early or mid Devensian fauna including mammoths and reindeer, the later possibly from a calving ground. The archaeological material includes final Upper Palaeolithic, Mesolithic,



Neolithic and later prehistoric and Roman. This assemblage is highly significant and previous publications on the site do not fully exploit the potential of this material.

### **6.3.11 Langwith Valley**

Langwith Bassett Cave has produced a very important assemblage of Palaeolithic and Mesolithic material, as well as an Iron Age burial. Analysis of material from the excavations has identified that many of the deposits in the cave have been disturbed by badgers. This has resulted in the mixing of many layers. The current assemblages have limited potential for analysis. There are some *in situ* deposits surviving inside, and possibly outside, the cave and it may be that less disturbed deposits do survive.

### **6.3.12 Pleasley Vale**

Collections are known from two caves in Pleasley Vale, Yew Tree Cave and Pleasley Vale Cave. These both contain large palaeontological collections but no archaeological remains. Yew Tree Cave contained an important collection of early Holocene material while Pleasley Vale Cave contained Pleistocene material. Examination of the collection from Pleasley Vale Cave (Jacobi pers. comm.) has identified that the assemblage appears to contain two different components with very different appearances. Most of the material was heavily gnawed bone, possibly from a hyena den, while the other component comprised the ungnawed remains of an articulated bovid, possibly from a pit fall. It is possible that these two components originated from two different sites, with the bovid coming from a fissure into which it fell. If this was so the bovid may have originated in one of the many fissures found in the valley bottom near to Pleasley Vale Cave, several of which are in rock faces that have been cut back in the past. This is significant in that it would be the first evidence that these fissures contain palaeontologically important remains.

## **6.4 Conclusions**

The study of the collections has shown that the curation of the assemblages has been highly variable over the years. Despite this a number of significant assemblages have been identified and several of these are worthy of further study, some of which is being currently considered by Roger Jacobi.

The palaeontological assemblages from Steetley Quarry Cave, Ash Tree Cave, Whaley 2 Rock Shelter and Pleasley Vale Cave are all important and can be used to elucidate the later Pleistocene fauna of the region.

Of the four reasonable sized Palaeolithic assemblages those from Dead Man's Cave and Langwith are disturbed and mixed and have limited potential for further analysis. However, two of the Palaeolithic assemblages from Ash Tree Cave and Whaley 2 Rock Shelter are in good condition and are very important. Ash Tree Cave includes both middle and upper Palaeolithic material while Whaley 2 Rock Shelter contains upper Palaeolithic material. These would both justify further study and this is being considered by Roger Jacobi.

There are Mesolithic assemblages from three sites that are of interest: Ash Tree Cave, Thorpe Common Rock Shelter and Whaley 2 Rock Shelter. Of these, the most significant is Thorpe Common Rock Shelter. This is the largest assemblage and contains both earlier and a later Mesolithic components. These assemblages are worth further examination.

The assemblages for all the other sites excavated are valuable in that they contribute to our general understanding of the Palaeolithic and Mesolithic periods in this area. Although they are generally too small or too disturbed to warrant further work on their



own merit, they could form a significant part of larger synthetic studies that require the analysis of multiple assemblages.



## 7 IDENTIFICATION OF RESEARCH PRIORITIES

### 7.1 Introduction

The Creswell Crags Limestone Heritage Area (Southern Magnesian Limestone) includes some of the most important Pleistocene archaeology and palaeontology in Britain. The concentration of Ice Age archaeology in this area provides the potential to undertake research on major collections representing the northern limits of human occupation during the last Ice Age.

The history of research on the archaeology/palaeontology within the Creswell Crags area started in the nineteenth century and over the last century a number of British Palaeolithic archaeologists have worked in the area. However, research has generally been piecemeal, focused on individual caves or closely associated caves. The Bulk of this work was undertaken in the nineteenth and early twentieth centuries and much of the material may be worthy of further study, and subject to more modern analytical techniques.

#### 7.1.1 Consultation with specialists

Consultation has taken place with a number of specialists regarding the research priorities for the area.

A meeting has been held with Roger Jacobi to discuss both Palaeolithic and Mesolithic archaeology and the research potential of the existing collections. The discussion covered the condition of the collections, the research potential, and those collections on which Roger Jacobi was intending to undertake further work.

The Palaeolithic archaeology of the area was discussed at a meeting with Paul Pettitt. The nature of the sites identified in the survey was discussed and site visits were undertaken on a number of sites identified in the survey to consider their condition and potential for further work.

A meeting was held with John Humble regarding the research priorities for the area. This identified future research priorities and those already established in the *English Heritage Research Framework for the East Midlands*. Discussion also covered potential future funding from English Heritage and other sources. Discussions also covered the public role of archaeology and community involvement in the long term conservation and promotion of the sites.

A meeting was held with Andy Myers to discuss the Mesolithic period in general and issues relating to it. This meeting discussed the nature of the local Mesolithic Archaeology and how it can be difficult to identify when mixed in with large multi-period flint scatters. The temporal changes that occur from the late Palaeolithic, through the early Mesolithic to the late Mesolithic were considered as were the potential implications of models which consider seasonal movements and group territory.

#### 7.1.2 Aims

The general aim of the identification of research priorities will be to:

- identify gaps in knowledge
- propose methods for filling those gaps



The research priorities outlined in this document are those identified as relevant to the aims of the Creswell Crags Management Action Plan. These are not meant to replace the Archaeological Resources Assessment and Research Agenda for the East Midlands produced by English Heritage (2003) or the Research Frameworks for the Palaeolithic and Mesolithic of Britain and Ireland (Prehistoric Society 1999) or to determine the nature and aims of PPG16 related archaeological work.

## **7.2 Time Periods**

The research priorities identified relate to the archaeology of the Palaeolithic and Mesolithic periods within the Creswell Crags Limestone Heritage area with particular reference to cave and rock shelter sites. Prior to presenting the research priorities it is necessary to summarise the key sites within the Southern Magnesian Limestone for the main periods of interest.

### **7.2.1 Lower Palaeolithic – c.500,000 – 250,000 BP**

No Lower Palaeolithic material has been recovered from the caves in the Creswell Crags Limestone Heritage Area or from open air sites on the Magnesian Limestone. There are several earlier and later Lower Palaeolithic sites in southern England but none known in the East Midlands (McNabb 2001). There are a number of later Lower Palaeolithic find spots in river gravels beyond the southern extent of the Magnesian Limestone in the valleys of the Rivers Trent and Dove.

### **7.2.2 Middle Palaeolithic – c.250,000 – 35,000 BP**

Evidence for Middle Palaeolithic activity has been discovered in caves at Creswell Crags, including Church Hole, Robin Hood, Mother Grundy's Parlour and Pin Hole Cave. Outside Creswell Crags Be it has been identified in Langwith Bassett Cave and Ash Tree Cave. Most, if not all, of this material is probably from the late Middle Palaeolithic after the hiatus in the recorded human occupation of Britain between c. 160-60,000 years ago.

After the human reoccupation of Britain c 60,000 years ago human groups would have found a fluctuating climate with alternating cool and warm periods. The later Middle Palaeolithic period is characterised by Mousterian artefacts and was populated by Neanderthal groups. Sites are few and far between and it is likely that population density was low, possibly with a few mobile groups making seasonal movements across the landscape (McNabb 2001). Caves were extensively used and were probably visited repeatedly. Jenkinson (1984) argued that the stone tool assemblage at Pin Hole cave was indicative of specialist activities possibly including hide working, but this is open to debate (McNabb 2001).

### **7.2.3 Upper Palaeolithic – c.35,000 – 10,000 BP**

Early Upper Palaeolithic remains have been recognised from Robin Hood cave and Pin Hole cave, but most of the Upper Palaeolithic remains recorded in the caves from the southern Magnesian Limestone are from the late Upper Palaeolithic. This activity occurred after a hiatus in the recorded human occupation of Britain from c.22,000 to 13,000 years ago. Late Upper Palaeolithic material has also been recorded at several caves in Creswell Crags, including Church Hole, Robin Hood, Mother Grundy and Pin Hole, and at Yew Tree rock shelter. In the wider landscape, late Upper Palaeolithic archaeology has been identified from Stone Mill Rock Shelter (Roche), Dead Mans Cave (Anston Stones Wood), Ash Tree Cave, Langwith Bassett, Whaley 2 Rock Shelter and Lob Wells Wood Rock Shelter (Thorpe Common and Lob Wells Wood).



The Upper Palaeolithic is associated with the advent of modern human populations. The replacement of Neanderthal people by anatomically modern humans was not instant and the relationship between the two groups is still not fully understood. A C14 date on bones associated with an Upper Palaeolithic artefact from Pin Hole Cave, may provide one of the earliest dates for modern humans in Britain. However, this should be treated with caution as there was some disturbance of sediments in the area. Upper Palaeolithic groups were predictive hunters exploiting migrating animals in an open landscape.

Late Upper Palaeolithic cave art, associated with the Creswellian culture, has recently been identified in Britain for the first time (Bahn et. al. 2003).

#### **7.2.4 Mesolithic – c.10,000 – 5,500 BP**

The Mesolithic period starts at the end of the last glaciation and there are several cave sites in the Southern Magnesian Limestone with Mesolithic remains as well as several Mesolithic open air flint scatters. The Mesolithic can be subdivided into an early Mesolithic period and a late Mesolithic period with the subdivision c.8,600.BP.

During the early Mesolithic the landscape was still relatively open and there were similarities with the tool technology of the late Upper Palaeolithic. The economy was probably a continuation of the predictive hunting strategy used by late Upper Palaeolithic groups with hunters exploiting migrating herds (Myers pers. com.).

In the late Mesolithic the environment was dense woodland with hunters having to employ encounter hunting. The tool technology changed with microliths becoming much more common. Settlement pattern also change with more widespread sites exploiting a greater range of environments (Myers 2001). As the Mesolithic developed clearances were created to open up hunting areas within woodland.

### **7.3 Research Priorities**

The advantages of the area for Palaeolithic and Mesolithic research are:

- the long history of research in the area means there is a good database of existing knowledge which can be built upon.
- we know that Palaeolithic sites are present in the area. Concentrations of Palaeolithic sites, as occur in this area, are rare in Britain.
- caves provide sediment traps that can produce continuous sequences through long periods. These deposits are less prone to the taphonomic shredder than river gravels, and therefore provide good potential for extensive *in situ* deposits.
- most of the valleys that contain the known caves sites are relatively undeveloped except for farming or woodland. There is the potential for further undiscovered sites to be present in most of the valleys .
- some of the valleys in the Magnesian Limestone contain small deposits of colluvium and alluvium that have yet to be investigated for their archaeological or palaeoenvironmental potential (Note, one Upper Palaeolithic flint found by Roger Jacobi in valley bottom of Markland Grips is evidence of a potential open air site in the valley bottom).
- the area is the only one with known Palaeolithic rock art in Britain which provides a unique opportunity to study aspects of the social archaeology of the Palaeolithic in Britain.



- the area contains long deposit sequences that can elucidate temporal changes through the Palaeolithic and into the Mesolithic periods.

### **7.3.1 Themes**

There are several themes or areas of study that have been identified in relation to the Palaeolithic and Mesolithic archaeology and palaeontology of the Creswell Crags Heritage area and for the immediate post ice age period (Mesolithic) :

#### **7.3.1.1 Human and animal adaptations on the on the edge of the ice during the Palaeolithic**

- potential human adaptations, biological (Neanderthals) and behavioural (diet, shelter, clothing, migration and fire).
- animal adaptations, biological (body changes, fur and fat) and behavioural (diet and migration).
- what was the relationship/contacts between Creswell populations and those further south; tools (Creswellian), art (it has been argued that the identification of the animal at Church Hole as an Ibex suggests long distance movements or contacts as ibex are not known from Britain).
- can changes in human behaviour be identified adapting to the changing environmental background during interglacials (cold to warm to cold).

#### **7.3.1.2 Reoccupation following glacial extremes**

- when did reoccupation occur, was it immediately after the retreat of the ice or was there a time lag?
- where did the new populations come from, the south or the east (Doggerland)? Further information on cultural affinities and more detailed dating would help to elucidate this question.
- how did human reoccupation relate to animal reoccupation? Did humans reoccupy at the same time or was there a time lag.

#### **7.3.1.3 Palaeolithic archaeology in the landscape**

- why is the area so important for the Palaeolithic? Is this importance real or perceived? Is it related to a dissected plateau with many potential sheltered sites or is it a result of preservation or the history of research?
- what was the relationship between cave sites and open air sites? Were caves and open air sites used for different purposes (base camps, hunting camps etc.) or were they interchangeable?
- open air sites are not known from the Magnesian Limestone but rare mid Palaeolithic and more common upper Palaeolithic sites are known from the Trent. Could open air sites exist in the valleys or on the top of the Magnesian Limestone plateau?
- were the sites occupied all year round or were there differing seasonal strategies?



- were the caves sites used for other purposes than simple camps, possibly meeting areas or ritual areas (cave art)?
- were sources of stone raw materials local or was material imported into the area?
- Palaeolithic people are often portrayed as hunters of big game using predictive strategies to exploit migrating herds; how true is this?
- was population density constant or variable?

#### **7.3.1.4 Mesolithic archaeology in the landscape**

- what continuity and what change was there from the late upper Palaeolithic to the early Mesolithic? There are some similarities between the two, artefacts are similar, as hunting strategies probably were, probably using predictive hunting in open landscape
- what continuity and what change was there during the Mesolithic? The earlier and later Mesolithic are quite different, the later Mesolithic forested landscape lacked very large herds and different hunting strategies were used including encounter hunting. Forest clearance took place in the later Mesolithic to create hunting areas.
- what was the relationship of cave sites to open air sites?
- were caves and open air sites used for different purposes or were they interchangeable? What different site types existed and how did they interrelate?
- what is relationship of the valleys to the limestone plateau?
- what was the relationship of Magnesian limestone to Peak District and lower lying lands to east (Trent Valley, Lincolnshire etc)? Hypothesised seasonal strategies for Mesolithic societies suggest movement between highland and lowland area, where does the Magnesian Limestone fit in?
- where were raw materials procured from? Chert is known to come from the Pennines and flint from river gravels. Over Britain there is a trend towards use of more localised, sometimes lower grade resources over Mesolithic possibly related to the changing sizes of Mesolithic territories.
- can different assemblages be related to technological development and used to aid in refining chronologies?
- what was the population density during the Mesolithic? How intensively occupied was the landscape occupied? Were sites occupied long term or short term, can multiple occupations be identified?

#### **7.3.1.5 Conservation**

- the horse head engraving on bone from Robin Hoods Cave and the incised figures on cave walls and roof of Church Hole Cave are the only Palaeolithic art in Britain. Further art would be internationally significant and worthy of special conservation measures.
- The MAP survey has identified many potential sites but has not determined if they contain archaeological/palaeontological deposits, further fieldwork would result in a more focused conservation strategy.



- the lower Palaeolithic is very rare locally and no Lower Palaeolithic is known from Creswell, therefore any Lower Palaeolithic sites discovered would be worthy of preservation.
- Middle Palaeolithic sites are known from Creswell but are still fairly rare and also worthy of preservation. As a resource it is more common than the Lower Palaeolithic but should only be excavated to confirm specific research questions.
- the upper Palaeolithic is known from several cave sites in the vicinity. The resource should not be squandered but further field research could well increase the known resource.
- the early Mesolithic is more common than the Upper Palaeolithic, again further field research may well add to the resource.
- the later Mesolithic is most common and found over most of the area, further field research may well add to the resource.

#### **7.3.1.6 Testing methodological issues relating to the assessment and analysis of large numbers of cave and rock shelter sites**

- which techniques can be best used to assess large numbers of caves and rock shelters?
- how effective are different approaches?
- further research can test the results of the predictive modelling exercise.

### **7.3.2 Techniques**

Various techniques are available to investigate these themes. This section contains a list of the techniques that could be applied, with notes on the themes they could be used to investigate, and comments on the potential of the technique.

#### **7.3.2.1 Analysis of the existing collections**

Further analysis of the existing collections could help to examine:

- cultural affinities and refine chronologies,
- animal adaptations and human adaptations,
- technological developments in tool production,
- the source of raw materials.

Roger Jacobi (pers. com.) has looked at all the major extant collections from previous work in the Creswell Crags Limestone Heritage Area. He has identified those assemblages which are worthy of further analysis or publication. He is currently working on some of the material and is hoping to undertake further work on some of the assemblages.

#### **7.3.2.2 Field walking**

This could:



- identify different site types, particularly in the Mesolithic,
- examine settlement density,
- provide open air assemblages to compare with cave assemblages to examine the character of different types of sites,
- indicate the presence of buried *in situ* open air sites worth further work,

Fieldwalking can identify open air sites in the right conditions. However, the lack of arable land would be a major problem in undertaking fieldwalking in and around the vales and gorges (see land-use maps in chapter 5),. Only Elmtun and Whaley has arable land in the bottom and around the valley and most valleys have only a few have arable fields around them. The Elmtun and Whaley Valley has been subject to a field walking programme in the past, by the North Derbyshire Archaeological Survey, which identified the Mill Farm open air site.

The potential of the area for fieldwalking is therefore limited.

### **7.3.2.3 Test pitting of caves and rock shelters**

This could:

- test and refine the predictive model.
- identify multi-period and single period sites.
- aid the examination of settlement density.
- identify undisturbed deposits to refine the Management Action Plan.
- identify sites worthy of further research.
- develop methodologies for testing large numbers of sites. This could involve test pitting known sites to determine the visibility of known archaeological deposits.

This techniques has the potential to examine a number of sites and to examine a range of research themes.

### **7.3.2.4 Cleaning exposed sections**

In some sites, where there are exposed sections, test pitting would not be practical. However, sections could be cleaned to expose archaeological deposits. This could,

- test and refine the predictive model.
- identify multi period and single period sites.
- identify undisturbed deposits to refine the Management Action Plan.
- identify sites worthy of further research.
- identify deep deposit sequences with archaeological or environmental potential.

In sites with exposed section, where test pitting is not possible, cleaning the exposed sections could provide similar data to the test pitting programme. This has the potential to record long deposit sequences.



#### 7.3.2.5 Coring in the valley bottoms

This would:

- identify depths of deposits in valley bottoms. This information could be used to assess the potential for further buried caves and open air sites.
- provide samples for examination and dating that would identify if there are *in situ* Pleistocene deposits in the valley bottoms, and the nature of those deposits.
- identify if there is the potential for organic-rich deposits in palaeochannels that could provide palaeoenvironmental sequences.
- identify the deposits sequence which could be used to develop deposit models for the valleys and better identify the potential for open air sites.
- provide information which would enhance our understanding of the development of the valleys.

Coring in the valley bottoms will be the only possible approach to identifying the depth of deposits in the valley bottoms. The choice of potential coring locations will be dependant on the location of potential suitable deposits discussed in chapter 3.

#### 7.3.2.6 Re-excavate old spoil heaps and trenches

Re-examination of old excavations could::

- increase assemblage size particularly of small bones and microliths etc.
- enable records to be made of sections for which some of the old records are of variable quality. These could be used to sample for palaeoenvironmental material.

This is site specific and could aid our interpretation of these sites if there were specific questions we wished to ask.

#### 7.3.2.7 Evaluation of talus slopes below caves or rock shelters,

This could be undertaken on previously excavated sites or as part of the test pitting strategy to examine new sites. Talus slopes below caves, which were identified as terrain units in the condition survey, below caves can have significant assemblages of material in them. Evaluation of the potential of the talus slopes would be best undertaken by test pitting. An evaluation of the slopes below caves could:

- identify talus slopes with archaeological potential and relate them to caves/rock shelter sites above.
- provide information on the nature of the archaeology on the talus slopes and date their formation, so enhancing our understanding of the development of the valleys.
- aid our understanding of the role of the interior and exterior of cave sites which is key to understanding sites in the wider landscape.
- aid in identifying sites worthy of further research.

This could be undertaken in conjunction with the cave/rock shelter test pitting.



#### **7.3.2.8 Excavation of caves or rock shelters**

This would:

- provide an environmental sequence excavated using modern techniques.
- allow detailed analysis of artefact distribution and site structure.
- provide well excavated artefact assemblages to study.
- provide secure dating of local sequences.
- identify the economy and diet of past populations and relate this to the changing environment.
- test the effectiveness of test pitting for site identification.
- identify multi period and single period sites.

It is only by excavation that many of the themes identified in the research priorities can be examined. Ideally such a site would have good preservation and proven archaeological sequences extending unbroken over significant time periods. This should only be undertaken following the evaluation programme of test pitting.

#### **7.3.2.9 Environmental reconstruction**

This would be dependant on identifying suitable deposits but various techniques could be used in providing a model of the changing environment in the Southern Magnesian Limestone and within specific valleys. Analytical techniques could include the study of:

- sediments,
- pollen,
- macro and micro fauna,
- insects,
- snails,
- macroscopic plant remains.

This would be undertaken in conjunction with an excavation or if suitable environmental sequences were identified by coring the valley bottoms.

#### **7.3.2.10 Cave art survey**

Since the recent discovery of cave art at Creswell Crags it is important to determine if any of the other cave sites in the area contain any art. Any art could:

- aid in understanding cultural affinities and contacts with central and southern Europe.
- aid in our understanding of Palaeolithic ritual.
- aid in our understanding of the importance of Palaeolithic archaeology in Britain.

The team of Paul Pettitt, Paul Bahn and Sergio Ripoll who discovered the art in Church Hole Cave are planning further work in the area and this work is very



important. If any further ice age art is present it will be of international importance and should be protected.

## **7.4 Conclusions**

The the main research themes for Pleistocene and early Holocene Archaeology within the Creswell Crags Limestone Heritage Area have been identified. The techniques that could be used to investigate these themes have been considered and the most suitable identified. **Appendices 7.1 to 7.4** provide brief project design for undertaking the proposed work with provisional timetables and costs.



## 8 INTELLECTUAL, PHYSICAL AND VISUAL ACCESS STUDY

The aims of the study were to:

Identify and assess opportunities for consolidating and improving intellectual, physical and visual access to the Palaeolithic/ Pleistocene and other natural and manmade resource for local people and for visitors, for recreational and formal education purposes and including the potential for involving local people in management and interpretation. The study area is identified in figure 1.

### 8.1 Rationale

Long term, high quality conservation of the natural, man-made and educational resource of the Heritage Area is dependent on those who have an impact on it understanding and appreciating its distinctive value. This applies to local people, visitors and decision makers alike. The high quality cultural and natural heritage is undervalued and this lack of appreciation can lead to neglect, vandalism and provide conditions for inappropriate development. The Heritage Area is further threatened by the continued poor economic, social and environmental conditions that much of the area faces.

Conversely there is enormous potential for the natural and cultural heritage of the area to act as a catalyst for a new vision for the future of the area, creating a high quality and sustainable environment that local people can be proud of and that visitors can enjoy and appreciate.

To maximise this potential there is a need to link management and improvement of the cultural and natural heritage with physical, visual and intellectual access opportunities. Identification of opportunities for interpretative and education use, together with the access improvements and the development of events, guides and teaching resources will enable local people and visitors to experience and value the Heritage Area.

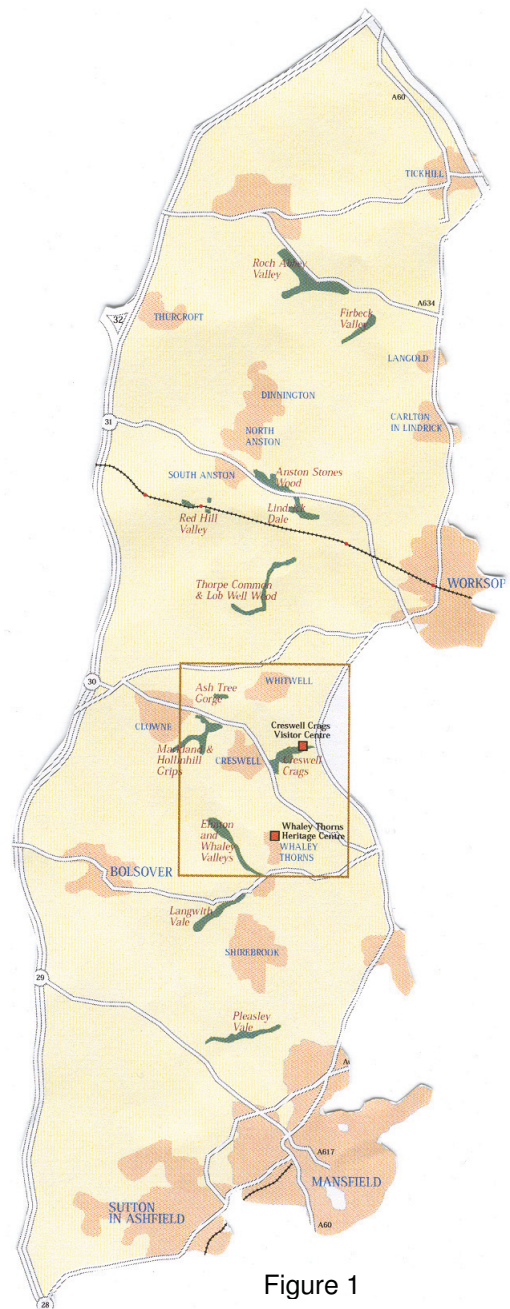


Figure 1

### 8.2 Overview

Intellectual access involves the mind and the process of understanding, appreciating and relating to the resource. This usually implies the provision of information but crucially that information is provided in a form that is accessible to people with a wide range of education, background knowledge and reading ability etc. It involves the imagination, the sense of wonder and curiosity. It is not just formal education or written information.



Physical access means how people move about the Heritage Area and also how they experience it through their other senses such as touch and smell. It includes how they get to the Heritage Area and how they move about it. There is the need to carefully balance ease of access with site sensitivity, site management issues and the constraints of the physical landform.

Visual access means people can see the resource. It includes both distant and near views, views within the Heritage Area and views into it from outside, of individual artefacts and sweeps of landscape. The quality of the visual resource strongly influences how people perceive the Heritage Area and there may be opportunities to improve its image by enhancing the visual resource.

Experiential access is the sum of the above and the aim for equal access is to enable experiential access to all, regardless of sensory impairment, physical disability, learning difficulties, social and educational background or race. It depends on providing an integrated range of stimuli and opportunities.

Although physical and visual access are considered separately to intellectual access in terms of methodology they are interlinked and coherent management actions are needed. They are both dependent and interlinked with those for the archaeological and ecological resource.

### **8.3 Main Task Areas**

- Through consultation, desktop study and field visits audit existing physical, visual and intellectual access provision
- Review existing provision and identify and assess opportunities for consolidation and improvement including opportunities for involving and including local people in understanding, management and interpretation.

### **8.4 Physical and Visual Access**

#### **Aims**

The overall aim is to produce a coherent approach to provision to ensure access needs are provided for in an appropriate and sustainable way with regard to the sensitivity of sites and provide as far as possible access for all. Physical and visual access are closely interlinked and are considered together.

An assessment needs to be made of current access provision and management, gaps identified, problems and issues understood and the level of resources available to undertake ongoing management assessed to ensure proposals for improvements are appropriate and sustainable. Access provision is dependent on anticipated user numbers and user profile. A realistic approach must be taken in assessing provision of access particularly for disabled users due to the constraints of the specific landform of some sites. Safety of users must be a prime consideration.

An assessment of the existing visual resource needs to be undertaken identifying key views and main detractors for the limestone vales and gorges and an overview of the key routes to and between them in order to assess the potential for enhancement.



There is also a need to assess and improve access for local communities and this links closely to the work carried out for the intellectual access study in identifying areas for local community involvement. This includes opportunities for improving access (particularly footpath links and improving visual access) for communities adjacent to key pilot action areas.

## **Methodology**

The study encompassed three stages of work:

- audit of existing physical and visual access;
- assessment of access requirements and opportunities for improvement;
- recommendations for physical and visual access management and improvements.

Following stage 1, it was envisaged that priority areas (Pilot Action Areas) would be identified in which to focus stages 2 and 3.

### **8.4.1 Audit of existing physical and visual access**

This comprised desk study, consultation with stakeholders and field survey.

The following tasks were undertaken:

- Review of landscape character and ecological context to complement information on historical and archaeological issues and processes identified elsewhere in the report.
- Identification of access strategies, guidelines and initiatives by stakeholders that may impact on the proposals and provide opportunities for joint working. This process included collation of information regarding anticipated future visitor requirements
- Audit of existing access provision and access management, identification of problems and issues particularly relating to sensitivity of sites including an overview of access provision throughout the Heritage Area and potential for linkage of Pilot Action Areas. Identification of main access links from communities to key Pilot Action Areas.
- Identify appropriate 'design language' to guide improvement proposals to ensure local distinctiveness.

#### **8.4.1.1 Landscape character assessment and ecological context**

The southern magnesian limestone area has been informally designated the Creswell Heritage Landscape Area because of its distinctive cultural and natural heritage. Derbyshire County Council and the Countryside Agency have undertaken detailed Landscape character assessments. Below is a summary of these findings:

The area lies at the heart of the former rural coalfield of north Nottinghamshire, north east Derbyshire and South Yorkshire and is within easy access to major population centres. It is estimated that over 4 million people live within an hours drive. In spite of the impacts of modern development, deep coal mining and the urbanisation of many small villages, the landscape has retained a rural character.



The limestone gives the area a sense of place and particular identity which is shown by its designation as one of English Nature's 'Natural Areas' and one of the Countryside Commission's 'Countryside Character' areas: 'southern magnesian limestone'. The key characteristics are summarised as follows:

- Elevated ridge with smoothly rolling landform, dissected by dry valleys.
- Predominantly Magnesian Limestone geology which influences soils and ecological character.
- Long views over surrounding lowland.
- Fertile intensively farmed arable land.
- Large fields bounded by low cut thorn hedges creating a generally large scale, open landscape.
- Large number of country houses and estates with parkland, estate woodlands, plantations and game coverts.
- Woodlands combining with open arable land to create a wooded farmland landscape in some parts.
- Unifying influence of creamy white magnesian limestone as a building material often combined with red clay pantile roofing.
- River valleys and gorges cutting through the ridge exposing the underlying rock.
- Industrial influences, especially in the Aire and Don Valleys and other central valleys and along the coal measures fringe, with mines, shale tips, transport routes, power lines and industrial settlements.
- Main transport corridor of the A1 which is often apparent in areas of otherwise undisturbed rural landscape.
- Archaeological remains reflecting the long-standing importance of the area for settlement and transport.



There are two distinct landscape character types within the magnesian limestone character area. These are Limestone Farmland and Limestone Gorges. The distinctive vales, and gorges, known locally as 'gripps' or 'craggs', together with semi-natural ancient woodland provide the areas of most ecological interest. The inaccessibility of the river gorges, along with the steep rocky sides have minimised human disturbance and allowed many of the original habitats to survive.

The main limestone vales and gorges are:

- Roche Abbey
- Firbeck Vale
- Anston Stones and Lindrick Vale
- Red Hill Valley
- Thorpe Common and Lob Wells Wood



- Ash Tree Gorge
- Markland and Hollinhill Grips
- Creswell Craggs
- Elmton and Whaley Valleys
- Langwith Vale
- Pleasley Vale

The Creswell Limestone Strategy highlights the agencies that have an interest in the nature conservation of the area and maps the eight Sites of Special Scientific Interest (SSSI's) and Regionally Important Geological and Geomorphological Sites (RIGS).

Magnesian limestone is one of the least common rock types in Britain and supports a rich wildflower population. The grassland is characterised by tor grass, fairy flax, ox eye daisy, and field garlic, whilst rarer plants like dark red helleborine and common pasque flower can be found in a few locations. The rich wildflower meadows attract a large variety of invertebrates, including glow worms and the dingy skipper moth. Scrub species like guelder rose, dogwood and hawthorn form a mosaic of habitats which support brimstone butterfly and garden warblers.

The ancient semi-natural woodlands are very important for their rich assemblage of lichens, bryophytes, invertebrates and plants like lily of the valley, bluebell and herb paris. Water courses on the magnesian limestone support white-clawed crayfish and brook lamprey, both species identified in the Habitats Directive. The Creswell Limestone Flushes, which are areas where groundwater comes to the surface, are of special interest, as are other areas of wet grassland.

The arable fields support weeds such as prickly poppy and scarlet pimpernel and some areas have corn bunting, skylark, tree sparrow and harvest mouse. There are lists of recorded species kept by local groups as well as the County Wildlife Trusts.

#### **8.4.1.2 Strategic Context - Planning Policies and Strategies**

##### **STATUTORY PLANS AND POLICIES**

National planning guidance relating to countryside access and tourism is contained in several Planning Policy Guidance notes. These include:

##### ***PPG7 The Countryside - Environmental Quality and Economic and Social Development (1997)***

Aims include 'to conserve and improve the landscape and encourage opportunities for recreation' and 'to conserve the diversity of our wildlife particularly by protecting and enhancing habitats.' PPG7 gives guidance on development specifically relating to farm diversification, such as farm shops, nature trails and holiday accommodation.

##### ***PPG13 Transport (1994)***

Plans may also include policies for cycle use of redundant railway lines or space alongside canals and rivers. Sometimes such routes may serve the dual purpose of providing linear parks in urban areas. Routes shared with pedestrians, and sometimes with horse riders, should be considered where space allows. Provision of cycle routes and cycle priority measure should be encouraged in new development. As with pedestrian routes, care needs to be taken to ensure that cycle routes are not isolated from all other activity.



### **PPG17 Sport and Recreation (1991)**

PPG17 gives guidance on the assessment of opportunities and needs for sport and recreation provision and safeguarding open space with recreational value. It contains no explicit references to the principles of sustainable development although, in relation to policies for open space, it notes that these have to be set within a planning framework which takes full account of the community's need for development and conservation of all kinds.

The guidance note concentrates on sport, open space and informal recreational use of the countryside. In relation to sport and recreation, PPG17 stresses that:

- they are important components of civilised life;
- participation can improve an individuals health and sense of well-being;
- promotion of sporting excellence can help foster civic and national pride; and
- they have a valuable social and economic role

It is now eight years since the publication of PPG17 in September 1991 and it should be noted that planning guidance on sport and recreation is currently being revised.

### **PPG21 Tourism (1992)**

PPG21 emphasises the importance of tourism to the national and local economy but stresses the need for planning policies to balance these positive effects with the need to protect the environment from negative impacts. This guidance stresses the need to comply with the Government's environmental strategy that has as its objective the achievement of sustainable development.

The guidance note states that tourism cannot be regarded as a single or distinct category of land use and is made up of *"a wide range of very different activities and operations. These include accommodation, catering, transport, tourism attractions, information provision and all other amenities and facilities designed to cater for the needs of visitors."* (paragraph 3.3). The overlap with related areas such as sport, entertainment, the arts and other recreation and leisure activities is noted.

### **Regional Planning Guidance**

The Office of the Deputy Prime Minister now provides the regional strategies which will inform the development and implementation of other strategies and programmes. The Regional Planning Guidance (RPG) presents four strategic themes: Economic regeneration & growth; Promoting social inclusion; Urban and rural renaissance; Conserving & enhancing natural resources.

The RPG develops policies that amplify these themes and which fall within the scope of this study.

Policy S3 ... "Ensuring that the needs of local communities for access to (on foot, bicycle or public transport) and experience of, nature are protected, helping the vulnerable, disadvantaged or excluded groups to gain access to nature and wild space."

Policy S4 ... "Recognise the particular importance of access to urban green space and to countryside and the urban fringe."

### **Disability Discrimination Act 1995**

The Disability Rights Commission, the organisation charged with enforcing the Disability Discrimination Act 1995, classifies public rights of way as a service under



the terms of the Act. This means that Highways Authorities are service providers. This has important implications for all work on rights of way:

*“From 2004, service providers will have to take reasonable steps to remove, alter or provide reasonable means of avoiding physical features that make it impossible or unreasonably difficult for disabled people to use a service.”*

Disability Discrimination Act 1995; Section 21 (2) a,b,c.

### ***Countryside and Rights of Way Act 2000***

The Countryside and Rights of Way Act 2000 will pave the way to a significant expansion of public access to open countryside. It also introduces a new duty for highways authorities to prepare Rights of Way Improvement Plans (ROWIPs). These plans are intended to be a mechanism for improving the network of public rights of way and other non-motorised routes in light of the need of all types of user. The ROWIPs must assess:

- The extent to which local rights of way meet the present and future needs of the public;
- The opportunities provided by local rights of way for exercise and other forms of outdoor recreation and the enjoyment of the authority's area;
- The accessibility of local rights of way to the blind or partially sighted people and people with mobility problems

All highways authorities have until November 2007 to complete their first plans. Derbyshire County Council have just commenced theirs. Work on the plans is progressing in Nottinghamshire and Rotherham.

### ***Derbyshire Structure Plan***

Recognises the need for priority to be given to proposals which help regenerate the area and overcome, economic, social or environmental problems. It also states that leisure facilities and tourist development will be encouraged, provided they are in keeping with the character of the area. Particular protection will be given to area and features of special interest, e.g. conservation area, listed buildings, ancient monuments, protected trees and landscape.

### ***Nottinghamshire Structure Plan***

Identifies the need to conserve and enhance local landscape character. It also recognises the need for better public transport links between visitor attractions and for important recreational routes. It states that the existing network of public rights of way and other recreational routes will be maintained and wherever possible improved. In particular priority will be given to developing routes linking urban areas to the countryside and the reuse of former railway lines and other transport features such as canals.

### ***Bolsover District Local Plan (February 2000)***

One of the key transport objectives is “to ensure maximum accessibility for both residents and visitors to the area by making efficient and effective use of existing road space and by promoting the use of public transport, cycling, horse riding and walking.”

Policy TRA 11 recognises that “there is considerable potential for adding new routes to the existing definitive network of footpaths and bridleways.”



Policies CLT 10 and 11 propose protection and promotion of existing countryside trails.

The need to protect wildlife habitats is fully recognised in the plan. In particular the importance of the magnesian limestone area is recognised.

#### ***Mansfield District Local Plan***

The plan contains a number of policies and proposals relating to the protection and improvement of local routes for pedestrians/walkers/cyclists/horse riders.

#### ***Rotherham Unitary Development Plan***

The overall environmental objectives for Rotherham are to create a better environment and to maintain the integrity of the countryside and the urban heritage. The necessity for provision for people with disabilities is acknowledged.

### **LOCAL NON-STATUTORY PLANS AND POLICIES**

#### ***The Creswell Limestone Strategy***

The Creswell Limestone Strategy was developed through a partnership including Derbyshire and Nottinghamshire County Councils, Rotherham Metropolitan Borough Council, the District of Bolsover, Nottinghamshire Wildlife Trust, Derbyshire Wildlife Trust, Yorkshire Wildlife Trust, Groundwork Creswell and Creswell Heritage Trust. The strategy covers the southern third of the southern magnesian limestone natural area, as designated by English Nature. The aim is to ensure a strategic approach to the protection and enhancement of sites. The strategy recognises the potential of the limestone habitats for interpretation and education to encourage locals and visitors to appreciate and respect the area.

The strategy has been adopted by all the partners as a guide to management of the areas wildlife habitats.

#### ***The Creswell Crags Conservation Plan***

The Plan is recognised by Nottinghamshire and Derbyshire County Councils and by the Districts of Bolsover and Bassetlaw as an important document informing planning issues.

The Plan identifies why Creswell Crags and the surrounding heritage is significant and how it can be protected and enhanced.

Key projects relevant to this study are the relocation of the B6042 access road to Creswell Crags, improvements to education and interpretation services and facilities and improved conservation and access. It hopes that enhancing public access will be a key factor in contributing to the regeneration of the area.

The plan recognises the need for appropriate access in order to ensure the long-term conservation of the sites (policy H.1). The need to develop an integrated approach is recognised, including public transport links (policies H.2 and H.4). The plan highlights the importance of encouraging local communities to develop an appreciation and pride in their local heritage (policy H.3).

#### ***South Yorkshire Forest Plan***

The South Yorkshire Community Forest area overlaps with the north western tip of the Limestone Heritage Area and is part of the Rotherham Plain zone. Provision for recreation and access is a key part of the South Yorkshire Forest Plan (2002) –



policies R1 – R4. The Plan recognises that the existing network should be improved and extended to provide links to and between key areas and the importance of maintenance.

### ***Greenwood Community Forest***

Provision for recreation and improving access is a key part of the Greenwood Forest's strategy (proposals CAP1 – CAP10). The Strategic Plan (2000) recognises that the opportunity exists to develop and enhance a network of recreational routes to enable easy access to "gateway" sites and the wider forest area (p.48).

The Strategy states; "The overall approach to management in the limestone fringe should thus involve a combination of restoration and enhancement – to restore those features which contribute to local distinctiveness, while at the same time enhancing the overall unity of the landscape through appropriate large-scale woodland planting" (p.22).

### ***Countryside Agency***

The 2001 strategy 'Towards Tomorrow's countryside' lists amongst its priorities "...we will establish more areas where visitors can enjoy the countryside with confidence, in particular on foot, horse or cycle, while also benefiting rural businesses" (p.7).

### ***English Nature***

English Nature is the agency responsible in England for advising central and local government on nature conservation and for monitoring, research and promotion of wildlife and natural features. It establishes, maintains and manages National Nature Reserves, notifies and protects SSSIs, and provides advice to central and local government on policies affecting nature conservation. It also has a statutory role in development plan preparation and development control.

English Nature's position statement on access and nature conservation states that its objectives for access are "to maximise the benefits of nature conservation to people and in doing so, to ensure that the resource itself is not degraded. Nature conservation and access need not conflict provided appropriate management and good practice measures are implemented to mitigate potential damaging effects. Where access is shown to have actual or potentially adverse effects on nature conservation, English Nature will take a precautionary approach in considering management for the area, and will monitor the need for continued research". The statement refers to the positive benefits that can result from encouraging understanding and awareness of nature conservation and helping people to care for and enjoy our natural heritage.

In relation to SSSI's in particular their position is to "Promote the active management of public access to areas of high nature conservation value, in order that people can enjoy and appreciate nature in ways that sustain the special interest".

### ***Environment Agency***

Established in 1996, the EA has a general duty to promote amenity and recreation on land and water in its control. Proposals for construction (such as bridges or buildings) within 8 metres of the top of the riverbank would require the consent of the EA.

### ***East Derbyshire Greenways Strategy (1998)***

The main concept behind this strategy can be seen as the need to: "...Create multi-user, traffic free routes which link areas of population to each other and provide links to the countryside."



In general, route priorities are to centres of activity and out into the countryside, with flat routes being preferred.

### ***A Trails Strategy for Mansfield***

Aims to extend the trail network and establish links to points of interest such as Pleasley Vale, Creswell Crags and Creswell Archaeological trail.

### ***Others***

There are a number of other strategies in place to which these proposals must relate. These include:

- Mansfield District Council Nature Conservation Strategy
- Mansfield District Council Tourism Strategy
- Access study for the Greenwood / Sherwood Area (North)
- Nottinghamshire County Council (1999) Milestones Statement
- Bolsover Town Tourism Appraisal, Interpretative Strategy and Plan
- National and Local Biodiversity Action Plans

## **LAND TENURE**

Land ownership in the limestone Heritage Area is mainly shared between the major landowners of Chatsworth Estates and Welbeck Estates. The Earl of Scarborough's Sandbeck Estate own the land at Roche Abbey Gorge which is managed by English Heritage, and Welbeck Estate own the land at Creswell Crags which is leased and managed by Creswell Heritage Trust. There are various smaller private landowners.

### **8.4.1.3 Overview of the Existing Access Network**

#### **TRANSPORT NETWORK**

The 6000-mile National Cycle Network is on the fringe of this study area, both to the east (route 6) and to the west (route 67). Route 6 extends the full length of Nottinghamshire through Sherwood Forest from Nottingham towards Worksop, from here it heads west to cross the M1 at Wales. Route 67 Follows the Chesterfield Canal towpath from Chesterfield to Rother Valley Country Park where both routes join (see map 13 Appendix 8.13). Other off road routes are included in maps 9-12 appendix 8.13.

This route aims to increase people's choice of travel and encourage people to visit the area from home by foot or by bicycle. As this is part of the National Cycle Network there are potential tourism benefits. Consideration should be given to developing links with this route.

The Robin Hood line runs through the area from Nottingham to Worksop. There are stations at Mansfield, Mansfield Woodhouse, Shirebrook, Langwith-Whaley Thorns, Creswell, Whitwell and Worksop within the study area. Although there is currently no Sunday service this line has potential to bring many leisure visitors to the area. Cycles are carried free of charge. In developing new promoted walks or rides consideration should be given to links with the Robin Hood Line to encourage sustainable tourism. The whole district is well served by public buses and bus information and numbers should be given on any interpretative material. The Traveline on 01709 515151 can provide full details of local public transport services. Nottinghamshire's Sherwood



Forester buses run regular services from Nottingham north to Dinnington and serve many of the villages in the study area.

## **PUBLIC RIGHTS OF WAY NETWORK**

The Countryside Commission have recognised the rights of way network as the single most important means of enabling people to enjoy the English countryside.

Maps 1-8, appendix 8.13 show the existing public rights of way network as shown on the Definitive Maps held by the highways departments of Rotherham, Derbyshire and Nottinghamshire in relation to the limestone vales and gorges.

Much of the area is in the ownership of three large estates; Chatsworth, Welbeck and Scarborough. There is a fair amount of existing access on the Scarborough Estate according to Pett (pers.comm.). Welbeck and Chatsworth, however, are bereft of public rights of way in comparison to the land outside the estates ownership.

The Countryside Agency (2001b) report shows that 61.9% of paths in Derbyshire are easy to find, 94% easy to follow and 94% easy to use. For Nottinghamshire the figures are 54% easy to find, 84.1% easy to follow and 85% easy to use. Significantly, Nottinghamshire had one of the lowest proportions of paths 'easy to use'. The South Yorkshire figures are 69.1% easy to find, 97.2% easy to follow and 95% easy to use.

In Derbyshire, maintenance of rights of way, erection of stiles, bridle gates, signposts and way marking are the responsibility of the Rights of Way team. The County Council's Countryside Service is also involved in improving and promoting access. In Nottinghamshire, definitive routes come under the jurisdiction of Nottinghamshire County Council's Rights of Way section who have responsibility for maintaining the rights of way network. The Countryside Management Service organise community and voluntary groups to assist in the physical improvement of routes and promote routes.

Derbyshire County Council have advised us that for Bolsover District all signposts where a right of way meets a metalled road will be replaced as necessary during 2006/2007.

## **EXISTING PROMOTED ROUTES**

Certain public rights of way are promoted as access routes for leisure and recreational use, for tourism and for access to work. Some of these promoted routes are strategic, identified by Local Authorities and other partners as part of national, regional or sub-regional access networks. These routes are identified in Local Plans, tend to be maintained and are likely to be promoted on a long term basis.

Other routes may be considered as 'local' promoted routes. These may be trails round particular points or sites of interest, around or between villages etc. These routes are often not maintained and the promotional literature is often not in print.

Appendix 8.1 summaries all the strategic and 'local' promoted routes identified in the desktop study.

## **PROPOSED STRATEGIC ROUTE NETWORK**



The existing strategic promoted routes form part of a proposed strategic network. The network proposed by Rotherham Metropolitan Borough Council is largely complete for the Heritage Area. Derbyshire and Nottinghamshire County Councils and Mansfield District Council have comprehensive strategies that are being implemented gradually as funding allows.

### **Derbyshire**

Derbyshire County Council have focused on the 'Greenways and Quiet Roads Initiative' promoted by the Countryside Agency: *'they are designed and managed for shared use by people on foot, bicycle and on horseback'* (Countryside Commission, 1997).

The County Council has identified proposals for extending the network of Greenways in the County (see map 9, appendix 8.13). A proposed east west cycle route exists linking the Trans Pennine Trail (TPT) / National Cycle Network route 67 at Staveley through Clowne and Creswell. Another proposed route north - south runs between Clowne and Bolsover. Also within the study area is a route from Bolsover to Shirebrook which runs adjacent to Langwith Vale. Anna Chapman, Derbyshire County Council's Greenway Officer, is currently writing a pre-project action brief for the Bolsover Loop. This will join the Trans Pennine Trail southern link in the north to the Pleasley Trails Network in the south. The east side of the loop runs from Pleasley along the Rowthorne Trail to/by Hardwick Hall, through the Glapwell Colliery Site, along Stockley Trail to the MEGZ site to rejoin the TPT at Poolsbrook. Various sections are dependent on reclamation schemes or landowner negotiations and therefore more difficult to define a time scale. Some parts still need a route identifying. The sections at Pleasley, Creswell and Shirebrook Collieries are already in development.

The downgrading of Craggs Road to a bridleway to the Creswell Craggs Museum and the road's realignment is currently at the planning stage and is scheduled for completion in 2004. The section running west from the A616 on Frithwood Lane across the former Creswell Colliery is similarly happening this year or next. The short section to join the two parts together will depend on officer time to discuss with Welbeck Estates, so could take longer.

Whitwell Quarry has applied for an extension which includes proposals to upgrade some footpaths to bridleways and access improvements to Whitwell and Creswell Craggs.

Anna Chapman, (pers. comm.), advises that although it is difficult to predict a likely timescale the aspirations are that the Creswell to Nottingham route will be completed within the next two years, the Bolsover Loop within the next five years, other routes within next ten years.

These routes will become an important part of the Greenway network and are likely to increase the number of visitors to the area, as can be seen by the success of the Trans Pennine Trail southern spur to the west which is already complete, and runs from Chesterfield to Rother Valley country park.

There are discussions regarding widening schemes of the M1 in Derbyshire. If these proceed then crossing points, such as pedestrian bridges, have the potential to be replaced or improved by providing multi user crossings.

### **Nottinghamshire** (refer to appendix 8.13, map 10)



Recreational routes in Nottinghamshire are linked closely to the Sustrans National Cycle Network proposals. There is a master plan in Nottinghamshire for development of a strategic cycle network. This network of routes is known as the 'Double H'. There are many schemes in the pipeline, all at different stages of development. The priority in Nottinghamshire is to prioritise routes interlinking larger communities and secondly to develop routes interlinking smaller communities.

The main priority at present is the proposed cycle route from Shirebrook station to Warsop. There is a lot of potential for developing off-road cycle routes in Nottinghamshire, including from Creswell Crags eastwards to the National Cycle Network. Map 10 appendix 8.13 shows proposed greenway links to the National Cycle Network.

### ***Mansfield District Trails Strategy***

This strategy identifies a network of strategic trails throughout the Mansfield District. The ones with most relevance to this study are as follows:

River Meden Trail forms a major strategic route from Pleasley to Meden Vale and beyond.

Meden Trail - Warsop Wood – this route links to Langwith and Creswell Crags.

Meden Trail - Minster Wood – also provides links to Langwith and Creswell Crags.

Chesterfield Road – Pleasley Vale links the urban area with open countryside.

Oxclose Lane – Meden Trail – a link from the urban area into the Meden Trail.

Kings Mill – Meden Trail – links Maun and Meden Trails and other routes.

Chesterfield Cycle Campaign have advised a series of road routes all radiating out from Mansfield Market place to link into surrounding areas of interest. The 'cycloss' has a rim and 8 spokes. The spokes go to:

- Creswell Crags (27km)
- Clumber park (25km)
- Rufford (19km)
- Southwell (28km)
- Nottingham (25km)
- Langley Mill (21km)
- South Wingfield (24km)
- Bolsover (19km)

*(These routes are not yet published).*

### ***Other Access Provision***

The Forestry Commission has a general policy that access on foot is welcome in all its woods. Forest Enterprise allows de facto access on forest rides and trackways on foot only in Whitwell Woods (168.8ha) and aims to increase accessibility generally. In Nottinghamshire Forest Enterprise allows horse riding with permits.

Additional public access linking with public rights of way have recently been created through Defra's countryside stewardship scheme at the following locations:

Whinny Haugh Lane, near Tickhill, South Yorkshire	SK600 920
*Moor Hill Farm, near Thorpe Salvin, South Yorkshire	SK519 801
*Anston Stones, near North Anston, South Yorkshire	SK529 835
*Anston Grange, near Anston, South Yorkshire	SK535 823
Langold Farm, near Langold, South Yorkshire	SK568 878



\* These three agreements are adjacent to identified Heritage Area sites.

N.B. There are many other guides to tourist attractions in the area, together with events guides which have not been listed as they are not directly relevant to this study.

#### 8.4.1.4 Visual Access

Views and viewpoints form an important part of how the area is perceived and contribute to an area's local character and interest. The majority of magnesian limestone outcrops are well hidden from the road and there are very few good uninterrupted views from existing public rights of way. On site visual analysis found some sites to be totally hidden and inaccessible to the public, for example Red Hill.

For the majority of sites it was only upon entering the gorges and vales that the distinctive limestone environments became apparent. However, field visits identified key sites including Creswell Crags, Roche Abbey, Ashtree Gorge, Whitwell and Warsop where some potential roadside viewpoint and gateway opportunities exist. The results of this study are presented in a short Video CD (appendix 8.12), that shows the potential of existing car pull ins for view points and explores road side opportunities for positioning magnesian limestone gateways. The main view points were discovered from existing pull ins on the A616 Creswell Crags, Ashtree Gorge and Whitwell and opportunities for gateway features were noted at Roche Abbey A634, Warsop, Creswell Crags A616 and Anston Stones Wood A57. In addition the video explores the opportunity to link together Anston Stones Wood and Lindrick Vale and shows the potential dangers of crossing the busy A57 that divides the sites. The positives and negatives of promoting visual access are presented and recommendations are made.



Roche Abbey Distant View

#### *Recommendations*

*Adopting and extending existing roadside pull ins to take advantage of site views from the A616 Creswell Crags, Whitwell and Ash Tree*

*Installation of interpretation panels at the above sites to explain the views*

*Installation of gateway features at Roche Abbey (A634), Warsop, Creswell and Anston Stones Wood/Lindrick Vale (A57) to make people aware that they are entering the Limestone Heritage Area – these could be limestone standing stones or heritage style signs*

*Consultation and approval from highways department is crucial to any works affecting the Highway*

*Consultation and approval from landowners and tenants is crucial to any works affecting existing access and alterations to their land  
(Refer to appendix 8.12 for visual presentation)*

#### 8.4.1.5 Market Appraisal

The County and District Councils actively promote development of a strategic network of walking, cycling and equestrian routes for local recreational use, for access to work and for rural tourism. A recent initiative is to promote walking for health reasons,



encouraging people to discover the trail networks. Many of the communities in the Heritage Area rate poorly in health statistics.

Several tourism studies emphasise the potential to develop the rural tourism product within the area including a network of multi-user trails. However, there has been no recent market appraisal of the potential or actual user groups for the trail network. The bulk of appraisals that do exist relate to the general tourism product (sites, towns etc) and therefore have a different emphasis. The physically nearest trail user information available is from the Peak National Park for which many detailed studies have been undertaken. This information is not applicable to the Heritage Area due to the difference in scale and usage.

Using the available information it can be concluded that the various rights of way and promoted routes are actively used by local residents for short walks around the villages and towns that dot the Heritage Area. They are used primarily for recreation and exercise. The strategic routes that run through the area are used as parts of short routes but seldom as one 'A to B' activity.

There are active rambling and walking groups based in the main towns and cities (Sheffield, Nottingham, Mansfield) that organise annual programmes of longer walks using the promoted trail network. Staff at Creswell Crags report regular usage of the car park by rambling and walking groups and by cyclists as a base for exploring the Robin Hood Way and the area around Welbeck and Clumber.

There is low usage of the routes by people visiting the area and those that do, do so as VFR's (Visiting Friends and Relatives). The strategic route network would appeal to none VFR's with improvements to the area's infrastructure however this would be a long-term goal at present. The area is not, and is not likely to become, a major 'destination' for walkers from outside the area.

It is recommended that further detailed assessment and market appraisal is undertaken to provide detailed levels of information for medium and long term trail development.

## **WALKING**

The 1986 General Household Survey (Office of Population Censuses and Surveys, 1988) cited in Curry (1994: p94) states *"Walking in the countryside is by far the most popular specific countryside recreation 'active' pursuit, being 25% more popular than all other classified activities put together. In the main, walkers tend to be frequent users of the countryside, walking over short distances and familiar territory."*

The more recent 1998 UK Day Visits Survey confirms walking as the most popular countryside activity. It estimates that there are around 891 million walking day trips each year with most walks being less than 2 miles.

Walking takes place on the rights of way network as well as in other areas with free access, which are generally open to the public. The Ramblers Association are one of many organisations within the Limestone area who run a calendar of guided walks throughout the year.

The Limestone Heritage Area contains a wealth of sites and artefacts of archaeological and natural interest which are at present isolated and in most cases hidden. Rights of way provision is generally good throughout (refer to maps 1-8



appendix 8.13), although in relation to Pleasley Vale in particular, there is a distinct lack of maintenance and this neglect detracts from the inherent attractiveness of the site. Without further investment and management Anston Stones, Pleasley Vale, and Nor Wood (Roche Abbey vale) in particular will remain places for local people to walk their dogs rather than attracting visitors from further field. Site analysis plans 19-21 appendix 8.13, illustrate the problems and opportunities for improvement at key sites.

Walking, cycling and riding are three of Britain's most popular forms of recreation. Circular routes and links to other trails are of great importance to the enjoyment of these activities. The importance of improving and extending the network for informal recreation is recognised in the many strategies already in existence (2.0, 2.1 and 2.2).

## **CYCLING**

Nottinghamshire County Council operate a programme of Rural Rides in the County. Local sections of the Cyclists Touring Club and other cycling clubs from a wide area have rides which pass through the area as part of their regular club rides. (refer to map 10, appendix 8.13 showing the main proposed routes and links to existing).

## **HORSERIDING**

There is much interest in riding around the area, especially where bridleways and trails are beginning to form a useable network. Richard Pett (RMBC) reports that there is strong interest in horse riding in the Rotherham area.

The following horse riding stables are based within the study area:

Woodside Stables, Barlborough Road, Clowne, tel: 01246 810817  
Villa Mar, Langwith Road, Bolsover tel: 01246 824606  
Ringer Villa equestrian centre, Ringer Lane, Clowne tel: 01246 810456

## **ISSUES AND CONFLICTS**

Inaccessibility of the gorges has meant they are valuable ecological sites. Careful consideration has been given to the recommendations to ensure that they enhance the sites in a sensitive way.

This is a relatively small area at the margins of many different administrative units, heightening the need to ensure a co-ordinated approach to the protection and promotion of the Heritage Area sites. There has been a fragmented approach to the promotion and development of routes in this area. Very few have made mention of the significance of the magnesian limestone in their current interpretation.

Bolsover District Council are looking to create a countryside management project in the District which would be access, ecology and landscape orientated. There would be much potential for improving and promoting access in the District through such a project, as has been shown with similar schemes elsewhere. Lack of maintenance was evident at the sites visited within Bolsover District.





Neglected entrance at Meden Valley Trail



Uninviting & neglected footpath Markland

## 8.4.2 ASSESSMENT OF PROMOTED ACCESS PROVISION AND OPPORTUNITIES FOR IMPROVEMENT

### 8.4.2.1 Strategic Promoted Routes (Appendix 8.1)

Several of the strategic promoted routes provide and promote access to particular parts of the Heritage Area. The most important of these is the Creswell Archaeological Way which provides a 'spinal' route running north/south across the southern half of the Heritage Area, linking several of the vales and gorges. Other strategic routes are the Robin Hood Way, the Rotherham Ring Route, the Cuckoo Way, Meden Way, and the National Cycle Network 6. The Meden Way cuts across the southern part of the area linking Mansfield to Pleasley. The Robin Hood Way is circular route that links several key sites within the Sherwood Forest Area. It includes a detour westwards to Creswell Crags but does not link with the Archaeological Way. The Cuckoo Way cuts across the northern part of the Heritage Area following the course of the Chesterfield Canal and is part of the Trans Pennine Trail. The Rotherham Ring Route is a circular route round Rotherham linked to a network of local 'Doorstep' walks.

These strategic routes provide a skeleton through which to articulate a network of local promoted routes. (Refer to maps 9-12 appendix 8.13)

### CRESWELL ARCHAEOLOGICAL WAY

The Creswell Archaeological Way was designed to provide users with a sample of some of the visible evidence of human activity within the area. A promotional leaflet is maintained in print by Derbyshire County Council. In the south the route links to the Meden Trail. At Creswell the route runs close to the Robin Hood Way although there is no formal link.

The full route of the Creswell Archaeological Way was surveyed on Wednesday 27 August 2003. The survey form used is contained in appendix 8.4. This form details the location and the problems encountered.

Overall the ground conditions were good





with only short stretches slightly overgrown, but not impassable. Much of the route passes through land owned by Chatsworth Estate and their footpaths are maintained to a good standard. A few waymark discs were missing or damaged. An additional way mark post is required at the corner of Upper Mill Farm to avoid confusion. There were a few discrepancies between the route on the leaflet and the route on the OS Explorer maps. The route shown on the Explorer maps differed slightly to that on the ground, but did not cause any real problems.

Some of the limestone crags and outcrops are not very visible due to vegetation cover and this detracts from their visual impact, in particular through Markland Grips. There are sections of the route plagued with litter and dumping.

At the time of survey many species of butterfly were in abundance along the route, including commas, speckled woods, red admirals, small tortoiseshells. Minnows were spotted in the stream at Water Lane (SK 495 665) indicating it is of good quality. There was recent evidence of badgers in Langwith Wood.

### ***Observation of use***

On 27 August two horse riders were using the route near Pleasley, five walkers were noted in the vicinity of Langwith and six other walkers at various locations on the route. Many of these appeared to be local people walking their dog on short sections of the route, rather than walking the route as a whole.

### ***Route amendments***

The current route links Elmtun and Whaley Valleys with Markland and Hollinhill Grips. In doing so Creswell Crags is excluded. Map 17 (Volume 5) shows a suggested spur to Creswell Crags via Creswell Village. There is no obvious route to link all the above sites without adding a considerable distance and deviation. However, the suggested spur would also provide a link to the Robin Hood Way and could be identified as a strategic link route between the two.

There is unfortunately a significant road stretch in the section between Elmtun and Markland Grips (1.5km) There is however no obvious alternative preferred route, without missing out the Grips. On initial inspection therefore no obvious route improvements can be recommended. There is also the issue of the current route as shown on new edition OS Explorer Maps, so any route change could be problematic, as many users do not update their maps every time a new edition comes out.

### ***Public transport links to the Archaeological Way***

As the Archaeological Way is on a linear route good links to public transport are essential to encourage people to walk the route without having to resort to two cars. There is a regular bus service from Chesterfield to the start at Pleasley (no.737). There are buses from Clowne to Chesterfield (77) and Clowne to Sheffield (53). Anyone living in Chesterfield could get to the start at Pleasley Vale and finish at Clowne and return to Chesterfield on public transport quite simply. People from other areas would have to change buses, which detracts from using public transport.

Alternatively, Mansfield Woodhouse and Whitwell are linked via the Robin Hood railway line so the current route could be walked in a day and return satisfactorily for anyone able to access these stations with ease.

If the route were extended further north public transport links back to the start of the second day e.g. North Anston or Roche Abbey back to Whitwell are more problematic. There are bus links however from North Anston to Worksop and



Rotherham. There is a regular service from Roche Abbey to Worksop and Rotherham and from there regular connections to Sheffield, however public transport links to the south are not direct.

In order to help people with their journey planning the Traveline phone number and web site address should be included on all promotional literature.

### ***Analysis***

Consideration should be given to renaming the route 'The Limestone Heritage Way' or 'The Limestone Heritage Trail' as its current name leads to unfulfilled expectations, as there is little archaeological evidence to be seen. A strategic link between the Archaeological Way and the Robin Hood Trail should be identified.

Extend the route north to Roche Abbey (map 14-16 appendix. 8.13), taking in the other limestone vales and gorges, and potentially south to Mansfield Woodhouse Station.

**Phase1 North:** Extend route to Anston Stones Wood (map 15 appendix. 8.13) *This is dependent on access being approved by Forest Enterprise and the adjacent landowner*

**Phase 2 North:** It is recommended that the further extension to Roche Abbey (map 16 appendix 8.13) be reassessed in the future. *This is dependent on the completion of a permissive bridleway proposed on the old Dinnington colliery site which links to quiet lanes to the north. This proposal is due to be completed during 2004 and would be the preferred option.*



The extension would take in the pleasant walk through Anston Stones Wood

### ***Recommendations***

*Rename the route 'The Limestone Heritage Way' or 'The Limestone Heritage Trail'.*

*Identify a strategic link between the Archaeological Way and the Robin Hood Trail.*

*Extend the route north to Anston Stones and to Roche Abbey*

*Provide a link to Mansfield Woodhouse Station*

*Make physical improvements as required including way marking, stiles and path work*

Consideration should be given to renaming the route 'The Limestone Heritage Way' or 'The Limestone Heritage Trail' as its current name leads to unfulfilled expectations, as there is little archaeological evidence to be seen. A strategic link between the Archaeological Way and the Robin Hood Trail should be identified.



## OTHER STRATEGIC PROMOTED ROUTES

Several 'other' strategic promoted routes are identified below which are important within the Limestone Heritage Area. The routes take advantage of existing rights of way, highways paths or concessionary paths and were found to be generally well used and in satisfactory condition (refer appendix 8.1, and maps 1-8 appendix 8.13).

### ***Robin Hood Way***

This route is not fully multi user. In order to maintain the character of the area and its sensitivity surfacing has been resisted in parts. There is a Robin Hood's Way Association who report any problems to Nottinghamshire's rights of way team. There are no current complaints so it can be assumed that the condition is satisfactory. Staff at Creswell Crags report regular use of the Robin Hood Way by walkers and cyclists.

### ***Rotherham Ring Route***

The Ramblers Association survey of Rotherham Ring Route undertaken in Autumn 2003 shows the current condition to be very good (map 11, appendix 8.13).

### ***Cuckoo Way***

The route varies from multi-user surfaced trail to narrow muddy paths, pavements and mown grass along its 46-mile length following the Chesterfield canal. The stiles and gates are generally in good condition and the whole route is open and useable by the able-bodied. There may be diversions in place due to restoration work over the next few years at the former Kiveton Park Colliery site. The section through Killamarsh where the canal has been built over is difficult to follow at present. Etched pavement slabs are suggested along this stretch.

### ***Greenway Strategy***

Derbyshire County Council Countryside Service has a Greenway Strategy that proposes a network of multi-user trails in and around Chesterfield and Northeast Derbyshire. This network forms part of the national Trans-Pennine Trail route travelling from Southport (West Coast) to Hornsea (East Coast). This trail in turn is part of a larger international route planned entitled Euroroute 8 which begins on the west coast of Ireland and travels to Istanbul.

For the purpose of this study it is important to note that the current plans tabled by Derbyshire County Council entail the use of a former Mineral Railway line curving through the study area linking Clowne, Creswell, Whaley Thorns and Shirebrook (map 9, appendix 8.18). It should be noted that a spur would be developed linking into Creswell Crags and Nottinghamshire's path network to explore Welbeck and Clumber estates.

Derbyshire County Council sees this strategy as a long-term project that will be implemented as opportunities arise. Discussions with developers and landowners have started.

## **8.4.2.2 Local Promoted Routes - Pilot Action Areas**

Appendix 8.1 and appendix 8.2 contains summaries of key features, issues and access opportunities for each of the Limestone Vales and Gorges. Firbeck Vale, Red Hill Valley, Thorpe Common and Ash Tree Gorge provide few access opportunities due to a combination of limited rights of way and lack of visual access to landscape features of interest.



Roche Abbey, Anston Stones/Lindrick Vale and Pleasley Vale have good access opportunities and a wide range of interesting and accessible landscape features and are therefore identified as **Pilot Action Areas**. Analysis plans 19-21, appendix 8.13 evaluates the physical and visual condition of these sites.

Markland and Holinhill Gripps, the Elmtun and Whaley Valleys and Creswell Craggs form a close network of sites around the village of Creswell. The Elmtun and Creswell Village Company proposes to develop an interpretation point in Creswell that will act as a gateway to the Creswell Heritage Area. It seems appropriate therefore to identify a fourth Pilot Action Area as the Creswell Hub, linking the three sites.

A separate note is provided on Langwith Vale. The public right of way network is not extensive, is partly covered within the Creswell Hub, and requires no physical improvements. However, the area illustrates several features of the Heritage Area landscape and is closely linked to the Poulter Country Park and to a proposed new Community Heritage Centre at Langwith/Whaley Thorns

Each of these Pilot Action Area sites is considered under the following headings:

- Suggested amendments to promoted routes
- Physical footpath works needed (stiles, gates, steps, surfaces, benches, etc.)
- Transport improvements (including car parks, anti motor-cycle barriers etc)
- Signage (way marking, footpath signs, promotional signage)

## **ROCHE ABBEY**

The site is managed by English Heritage and includes an EH custodian managed Visitor Centre with internal interpretation facility and shop where tours of the Abbey can be booked. Outside facilities include further interpretation and informal car park including designated disabled bay. Direct public access to the Abbey is not allowed unless on a guided tour, however, excellent close views of the monument are allowed via a dogleg path from two sides.

English Heritage (York Office) has prepared a management plan for the site with proposals principally concerning realignment of earth banks and grass slopes to facilitate reasonable access under the Disability Discrimination Act that comes in to affect this year. We also understand that English Heritage has a proposal to develop a promoted walk northwards from Roche Abbey but no further details have been forwarded to date.

### ***Amendments to promoted routes***

There are five promoted walks which pass through the area. All the current walks are useful as they promote different aspects of the gorge and do not overlap too much. The key promoted route for this site is contained in the booklet "Walking in the Creswell Limestone Heritage Area." This walk does not reflect the best the area has to offer and should be totally revised (refer to map 18 Volume 5).

Improvements to the route would be to take the route out to Stone, east of the Abbey, in a loop, and return via the lake in Kings Wood. It would be worth investigating the possibility of concessionary access through the wood east of Abbey Mill Farm as the



limestone cliffs can be seen here, but they are not visible from the right of way. The links to Maltby as well as public transport could also be shown. This walk takes in the present houses which are using the shelters as car ports or garden features/sheds.

Rotherham Metropolitan Borough Council's Doorstep Walk No 2 is a circular walk of about 5 miles. An improvement to this walk would be to shorten it slightly by going more directly through the village of Laughton, in its present form it skirts around the edge missing out the distinctive All Saints church.

If the site were to be promoted the resulting visitor pressure on the site would need to be carefully addressed, particularly regarding the existing visitor car park. The car park is specifically for Visitor Centre use, and does not have the capacity for large numbers of additional visitors or ramblers. It was noted that walkers do attempt to use the car park at present which is controlled at the discretion of English Heritage who manage the site.

### ***Path works***

The revised route referred in fig.3, appendix 8.13, takes advantage of existing paths and no physical works are necessary except the possibility of way marking. However the 'Walking in the Creswell Limestone Heritage Area' booklet would need amending. Other paths contained in the booklet are presented in map 22, appendix 8.13.

The footpath from the car park alongside the Abbey leads to a boundary fence with narrow kissing gate and uneven surface. The red shale surfaced path is very narrow, only about 300mm wide. Opportunities exist to upgrade this path to a standard suitable for wheelchair users. There is nothing to prevent vehicles entering the path to the gorge.

Other footpaths in the vicinity of the gorge are well marked and maintained by RMBC and form part of the Rotherham Ring Route map 11, appendix 8.13. They are currently in good condition. Many of the paths provide an open aspect through fields with pleasant views of surrounding area.

A new access has been constructed which includes removal of a section of wall and new kissing gate off Kingswood Lane. This access is part of the improvement program for the Rotherham Ring Route (RMBC). The original stile access still remains on Blyth Road A634.

There is no provision for seating on any of the footpaths outside the confines of the Abbey. We would recommend a bench adjacent to the interpretation panel from where there are good views of the abbey and gorge. Chain link fence around the Abbey is out of character with the area and is an eyesore and could be replaced with something more in keeping, such as timber post and wire mesh.

Northern footpaths to Maltby are very tunnel like with closed canopy woodland to either side. In this vicinity there is evidence of anti-social behaviour such as discarded alcohol cans/bottles, fires and broken glass. The sewage works creates unpleasant odours throughout the northern route which detracts from the visitor experience.

The Gypsy Lane entrance has a motorcycle prevention barrier however, there is no deterrent to motorbikes at the other entrance of the path. There is no maintenance gate at the Gypsy Lane entrance. All footpaths are generally well marked and in good condition if somewhat overgrown in places at the edges.



### **Transport**

The access road to the car park is constructed of red shale, which is very rutted, and in poor condition. Vehicular access & parking is only possible at the Roche Abbey entrance where parking for approximately fifteen vehicles including disabled bays exists at the visitor centre. The car park is inappropriately sited very near to parts of the Abbey & cliffs adjacent to the visitor centre. Remnants of the abbey have been used to define the parking area in a haphazard way. Two disabled parking bays are provided but signage is poor. An informal car park exists adjacent to the access road about 150m away from the visitor centre, which was abandoned due to damage to visitor cars. Consideration should be given to relocating the car park away from main buildings. Bus stops exist both at the northern and southern entrance of the gorge along the A634 Blyth Rd.

### **Signage**

Improve signage for disabled parking.

### **Recommendations**

*Create an informal limestone path 1.5m wide and install a new wheel chair access in place of the narrow kissing gate, along with a new maintenance gate and fencing at the same point.*

*Install a simple informal bollard combined with limestone boulders near the path entrance.*

*Replace steel chain link fencing around perimeter of Abbey with timber post & wire mesh (sensitive operation - consultation required with English Heritage)*

*A seat should be placed adjacent to the interpretation panel.*

*Additional motorcycle barrier at other end of Gypsy Lane path.*

*Reintroduce woodland management at Norwood to create more light.*

*Revise the walk contained in the booklet "Walking in the Creswell Limestone Heritage Area" to reflect the area to its best advantage*

*Way mark revised route identified in figure 7*

*Close consultation required with English Heritage due to site sensitivity & current management*

(Refer also to site analysis plans 19-21, appendix 8.13)

### **ANSTON STONES AND LINDRICK VALE**

Brian Davies from English Nature advises that Anston Stones Wood is well managed by Anston Parish Council with access in mind. The Parish Council are soon to have a new management plan written for the site by Bullens Consultants. It is expected that this will be completed in 2004. The Parish Council are in the process of reinstating a path shown on old maps which runs parallel to the railway line. This path is not shown on the definitive maps of Rotherham Borough Council. Michael Gazur advises that



the reason behind this is to provide more options for those wishing to take a circular route, especially if other paths should be closed temporarily for any reason. This work is being carried out by Groundwork Creswell's 'Breakthrough' Project. The suggested northern extension of the Archaeological Way would come through Anston Stones.

### ***Amendments to promoted routes***

The walk contained in the "Walking in the Limestone Heritage Area" booklet could be improved by taking the main route along the restored Chesterfield Canal with a link into Shireoaks. It is a useful walk and links the two sites together showing the best the area has to offer. If the geological trail is no longer in print then the proposed interpretative leaflet for each site would replace this, incorporating archaeology as well as ecology. Current walks are shown in map 22, appendix 8.13.

Signage of Dead Mans Cave is possible as ARCUS suggest it is extensively damaged through vandalism etc, however access to this location needs some thought.

### ***Path works***

The entrance off the B6060 is not wheelchair accessible at present. The current barrier could be replaced with a standard motorcycle barrier. There is a potential easy access route from the B6060 and onto the cleared grassland area where a picnic table and seat could be situated.

The broken stile near the railway line should be replaced with a motorcycle barrier. The footpaths are generally very good but narrow in some places. The main paths need widening and surface topping up. Benches should be provided at intervals along the main pathways and the existing rustic benches replaced as necessary. There is potential for picnic tables just north of stream and also where gorse has been cleared.

If the opportunity arose to improve safe access to Lindrick across the A57 consideration should be given to acquiring a concessionary path through land parallel to the A57. The stile at the A57 entrance could be moved closer to the road and the entrance made more prominent.

### ***Transport***

The nearest parking at present is adjacent to the Parish Hall in the recreation ground. There is the opportunity to provide a small car-parking area for people with disabilities at SK522841 which gives easy access into the woods. If road is closed off by proposed gate ensure radar key to allow access for key holders.

There are bus stops on the B6060 and regular services to Rotherham, Sheffield and Worksop.

### ***Signage***

Additional way marking required in Lindrick quarry area.

### ***Recommendations***

*Improve main entrances off the B6060 and A57*

*Create easy access loop through site*

*Create picnic area and provide benches throughout the site*



*Resurface and widen the main paths*

*Create disabled access parking area*

*Additional way marking in Lindrick quarry area*

*Install motorcycle prevention barriers at strategic locations*

(Refer also to site analysis plans 19-21, appendix 8.13)

## **CRESWELL HUB**

**(Creswell Village, Elmton and Whaley Valleys, Markland and Holinhill Grips, Creswell Craggs)** refer to 'Concept Plan' map 23, appendix 8.13

Elmton and Creswell Village Company has attracted funding from NRF and HLF sources to develop a community café and information centre located in Creswell village. Its aims would be (a) to raise awareness of regional heritage for local residents and (b) to act as an orientation point for visitors to the wider limestone region. The displays and information will present the story of the magnesian limestone landscape, pointing to sites local to the village that illustrate this story. Key themes will include geology, the Ice Age, landscape history and wildlife. As well as innovative permanent display areas, there will be a small seating area where visitors may sit and browse through printed information resources, changing temporary exhibitions, timetables and maps, or opportunities to explore further material via the computer database.

The developments at Creswell will create a convenient 'hub' from which to explore Creswell Craggs, Markland and Holinhill Grips and the Elmton and Whaley Valleys. The proposals are fully supported by Creswell Heritage Trust as they complement the proposals for the proposed new Ice Age displays at Creswell Craggs and will provide a mechanism to link Creswell Craggs more strongly to the village, bringing added community benefit.

### ***Amendments to promoted routes***

The 'Creswell Craggs' and 'Whaley and Upper Langwith Valleys' routes identified in the 'Walking in the Limestone Heritage Area' booklet provide comprehensive coverage of the sites and landscapes surrounding Creswell village. The Interpretation point in Creswell Village could serve as a central orientation point for these routes whilst retaining the options of walking these routes from Creswell Craggs or Whaley Thorns and Poulter Country Park as appropriate. Some repackaging of these routes would be needed, including identification of route options.

Markland Grips is near to Clowne and is linked to the community of Creswell by the Archaeological Way that runs through the site. The opportunity exists to create a link from Markland directly to Creswell Craggs and the Robin Hood Way by creating a new loop from Creswell Village see figure 2 page 18 of this report. The Creswell Hub would also serve as a central orientation point also linking in with the Elmton and Whaley Valley including Poulter Country Park and the Archaeological Way which passes by.

Railtrack have plans to reopen the old mineral line as a commercial service. A proposed Greenway link runs through the site. This is unlikely to be developed in the short term.



Creswell Crag is well covered by promoted walks. There are four walk leaflets covering almost the same route, although they are not all thought to be current. The route in the booklet "Walking in the Limestone Heritage area" links Creswell Crag to the surrounding villages of Creswell and Elmlton and should be maintained in print. A useful addition to this booklet would be the inclusion of the 3-mile circular walk from Creswell Crag to Welbeck and the Dukeries Garden Centre. This could be used to illustrate the 'Abbeys and Country Houses' theme of the proposed new Interpretation point in Creswell. The forthcoming relocation of the B6042 (2004) provides an opportunity to develop a multi-user route along the length of the gorge, linked to the route proposed by Derbyshire County Council's Greenways Strategy across the former Creswell Colliery site.

### **Path works**

The orientation centre is to be sited in the village and access is provided via tarmac pavements, however drop curbs and rumble strips may aid access.

Selective clearance of vegetation and trees currently obscuring outcrops in Markland Gips and other sites is recommended in conjunction with Derbyshire Wildlife Trust. The site has several nationally rare plants and active management is required to conserve these species.

### **Transport**

The 'Robin Hood Line' rail network from Nottingham and a regular bus service from Chesterfield and Worksop serve the village. Car parking is provided approx. 400 metres down Elmlton Road from the site of the proposed centre. A drop off area maybe advantageous close to the building. The car park at the back of the War Memorial is closer to the Interpretation Point and possible use and signage of this should be investigated.

The car park at Creswell Crag provides quality & adequate car parking which will be enhanced with the development of a new Museum in 2006. It has public transport provision within the neighbouring village of Creswell, taking the form of the 'Robin Hood Line' rail network for Nottingham and regular bus links to Worksop and Chesterfield

### **Signage**

In Creswell, brown tourist signs will be required once the information centre is open as will signage from the railway station and car park signage.

All routes need improved waymarking.

### **Recommendations**

*Maintain as separate routes the 'Creswell Crag' and 'Whaley and Upper Langwith Valleys' routes identified in the 'Walking in the Limestone Heritage Area' booklet since the Elmlton and Whaley Valleys can be explored either from Whaley Thorns or from Elmlton*

*Under the title of 'Creswell Hub routes', identify four (see 'Concept Plan' map 23, appendix 8.13) trails that explore the landscape around Creswell : the 'Creswell Crag' route (as identified in the current Limestone Heritage Area walks leaflet; the Creswell village trail; a link from Markland directly to Creswell Crag and the Robin*



*Hood Way (a new loop from Creswell Village figure 2, a walk from Creswell to Elmtun, extended to include the loop from Elmtun to Whaley (the northern end of the 'Elmtun and Whaley Valleys' route).*

*Review car parking arrangements for Creswell Interpretation Point*

*Manage vegetation encroaching on paths and obscuring rock outcrops in Markland Grips*

*Provide effective signage for Creswell Interpretation Point, including brown signs, car parking, railway station*

*Improve waymarking of all routes*

## **LANGWITH VALE**

Langwith Vale runs from Elmtun village at its northern end down to Upper Langwith at the Southern most point. Rural minor roads and a limited footpath network link these two pretty stone villages. Another picturesque village, Whaley, marks the centre point of the valley. The aesthetics of this area of magnesian limestone have great potential over a wider vista and provide an opportunity to look at the area as a pre industrial rural setting.

The footpath network of this area is, while not extensive, in good condition with no short-term management action needed. Some way-marking is missing for some promoted routes.

## **PLEASLEY VALE**

Pleasley Vale contains a wide diversity of historical, landscape and wildlife interest including Pleasley Pit, William Hollins Mill complex, Pleasley gorge and Little Matlock, Pleasley Park, Ice Age archaeology, a Roman villa, river corridor habitats. There are proposals to develop visitor facilities at Pleasley Pit. The District of Bolsover operate an outdoor pursuits centre based in Pleasley and has proposals to develop a small satellite centre in Pleasley Vale itself using one of the former mills buildings. The southern end of the Archaeological Way starts at the Outgang Lane car park.

Unfortunately this diversity of interest is not currently managed or promoted in an integrated way. This is especially unfortunate as the wealth of sites and landscapes provides perhaps the greatest potential within the Heritage Area to interpret its full range of interest and diversity.

In view of the large number of stakeholders, the historical phases represented, the ecological and landscape interest of the area and the pressure for development it is recommended that an integrated interpretation and development plan be created for Pleasley Vale. This should include proposals for long term management and presentation of the cultural, ecological and landscape interest and an interpretative plan to set out a strategic approach to the presentation and promotion of the site.

### ***Amendments to promoted routes***

The Pleasley area is well covered by promoted routes including the Archaeological Way and Meden Trail (refer to appendix 8.1). The walk in "Walking in the Creswell



Limestone Heritage Area” booklet is useful but could be improved by taking a route through Pleasley Park, which allows concessionary access, thus avoiding the road. An additional loop around Little Matlock would also enhance the walk.

No further amendments are currently recommended, pending preparation of an integrated development and promotional plan.

### **Path works**

There is scope for a possible picnic area adjacent to the Archaeological Way car park on Outgang Lane near Pleasley. Remove gates and fences which are excessive and unnecessary along path in woodland adjacent to Outgang Lane. Reposition motorcycle barriers from bridge to near Archaeological car park instead.

Steps need maintenance at junction with Outgang Lane (Archaeological Way) and near path heading east from church at Little Matlock.

Vegetation clearance is needed along the stretch of footpath along the south side of the river at Little Matlock. There is no continuity in the type of stile used. At Little Matlock a large log impedes access at on point. This obstruction should be replaced with a post and rail fence and gate.

Meden Trail surfacing is in good condition but only 300mm wide. Vegetation clearance is required to widen it to the appropriate width. Provide benches on Meden Trail

Replace the few way mark discs that are damaged.

### **Transport**

Remove glass and other litter from both car parks at Outgang Lane and Common Lane, Little Matlock to make them more welcoming.

Remove barrier from Archaeological Way car park

### **Signage**

Brown signage to the car park at Common Lane, Little Matlock and Pleasley Vale from Mansfield Woodhouse. Signage to say that access is not suitable for lorries into Pleasley Vale from the Little Matlock end.

### **Recommendations**

*Consider providing additional promoted routes through Pleasley Park and around Little Matlock*

*Provide a small picnic area adjacent to the Archaeological Way car park on Outgang Lane.*

*Remove gates and fences which are excessive and unnecessary along the start of the Archaeological Way and maintain steps and way markers and paths.*

*Replace log obstruction at Little Matlock with a post and rail fence and gate.*

*Improve Car parks to make them more welcoming to visitors.*

*Improve signage to car parks*



*Request signage to deter lorries entering the vale from Little Matlock*

### 8.4.2.3 Design Language

The survey revealed no locally distinctive design styles and the selection of site fencing and furniture varied in range and quality throughout the area. However, several good examples of using locally distinctive materials were noted, including magnesian limestone footpaths, limestone boulders for interpretation panels and good quality dry stone walling and fencing. It was considered that good examples should be adopted to use at other sites where appropriate, to create a 'design language' and distinctive continuity of styles throughout the area.

Local Planning Authorities are encouraged to prepare Countryside Design Summaries for their area to help shape developments to respect the local countryside character.

Village Design Statements are prepared by local communities to encourage debate about ensuring new development fits in with surrounds and local character.



Themed use of indigenous limestone at Bolsover



Interpretation panels set into Indigenous limestone at Creswell Crags is sympathetic to the environment



Indigenous limestone footpaths at Creswell Crags

### **Recommendations**

*Develop an appropriate Limestone Area 'design language' by sourcing and using appropriate local materials and in construction:*

- *Magnesian limestone interpretation blocks*
- *Magnesian limestone footpaths*
- *Drystone walling using magnesian limestone*
- *Good quality timber routed way markers and finger posts*
- *Quality site furniture and interpretation*



- *Use of recycled aggregates and other materials from sustainable resources should also be considered*

### 8.4.3 Cost Estimates and Funding Sources

Cost estimates for the recommended improvements to physical, visual & intellectual access are provided in appendix 8.10.

There are many potential sources of funding from various funding bodies. The main ones are identified in appendix 8.9.

### 8.4.4 Implementation Mechanisms

#### PARTNERSHIPS

There is the potential for joint partnership working with the following organisations: Creswell Heritage Trust, Groundwork Creswell, Bolsover, Bassetlaw District and Rotherham Borough Councils and Derbyshire and Nottinghamshire County Councils. English Heritage, English Nature, Bolsover Countryside Partnership and local Wildlife Trusts are also important consultees in this process.

Significant opportunities exist for joint working that would contribute to Local Authority Best Value targets. Given its remit (through its charitable objectives) to cover the whole Heritage Area, the Creswell Heritage Trust seems the most appropriate organisation to co-ordinate implementation, in partnership with and supported by the complementary expertise of Groundwork Creswell. Effective implementation would require funding to support one or more staff to take on this role, reporting to a steering group of partner representatives administered by one of the Trusts.

#### COMMUNITY INVOLVEMENT

Community involvement is essential if local people are to participate in 'ownership' of the project, identifying with the 'ethos' of the project and helping look after the sites. Creswell Heritage Trust and Groundwork Creswell have extensive experience of working with local communities and might be the most suitable groups to co-ordinate this activity subject to any existing local partnerships or initiatives.

There are a number of specific initiatives which may be of particular interest to local communities, and potential stakeholders are listed for each site profile (see appendix 8.2).

Continuing liaison should be ensured with local access groups, other interested community organisations and individuals.





Considerable work has already been undertaken by these groups in some areas and this should be encouraged and developed. Consultation is essential throughout the process of improving access to the area.

Local Access liaison groups have been set up in Bolsover District, Chesterfield and North East Derbyshire with representatives from various groups. A new post has recently been appointed in Derbyshire to oversee this process and lead on producing the rights of way improvement plan for the county. Nottinghamshire have a rights of way liaison group, but this is not at such a local level. Rotherham has a Local Access Forum who are in favour of multi access routes.

## **DELIVERY**

### **Groundwork Creswell Intermediate Labour Market Team**

Groundwork Creswell's Intermediate Labour Market (ILM) teams could have an important role in the delivery of some of the objectives in this plan. Both Groundwork Creswell and Groundwork Ashfield and Mansfield have ILM workforces working in the area of this study. Groundwork Creswell are also proposing to set up an ILM team covering the Rotherham Metropolitan Borough area.

### **Groundwork Creswell Breakthrough Team**

Another vehicle for delivery of selective elements of the project could be achieved through Groundwork Creswell's Breakthrough Team. Breakthrough was established in order to help young people aged 14-16 who are at risk of being excluded from mainstream education, achieve practical skills away from the classroom environment through conservational activities. The overall aim of the programme is to re-engage young people back in to some form of education or training programme, thus improving their prospects for the future.

### **Design & Project Management**

Groundwork Creswell offer professional landscape design consultancy services including detailed design and contract management from implementation to completion

### **External Consultants & Contractors**

External consultants, contractors and sub-contractors could be employed if required. In this situation the formal tender procedure would be followed in order to achieve good value, quality services and products.

### **Recommendations**

*Encourage partnership working via consultation, communication and through properly funded project staff*

*Set up appropriate mechanisms for working with local communities*

*Commission Access Bolsover to carry out a survey of each Pilot Action Area*



## 8.5 Intellectual Access

Analysis of the interpretative and educational potential of the resource follows on from the recommendations produced for visual and physical access. They define how directly the public will be able to experience the archaeological, geological and ecological features of the Heritage Area and identify the principal vales and gorges to which access should be promoted. These locations are where much of the interpretative and educational potential of the resource will be experienced but other heritage and tourism sites may also contribute to the story of the landscape. All these locations provide opportunities to explore broader themes and stories concerning the landscape as a whole, not just those of the individual location. These broader themes and stories can also be experienced away from the promoted locations, as documentary or virtual sources at home or at school, or at heritage sites and similar visitor attractions within and around the area. Analysis identifies the potential for intellectual and experiential access including consideration of:

- **Sensory opportunities** - the landscape character of the magnesian limestone is difficult for the casual visitor to grasp. The most impressive features, the limestone gorges, tend to be hidden from view. An exception is the view of Creswell Crags off the A616 approaching Creswell from Cuckney. Here it is possible to appreciate the cleft of the limestone gorge into the escarpment. Elsewhere, the gently undulating landscape of the plateau is difficult to differentiate from its surroundings especially as the band of limestone is only a maximum of 8km wide and modern agriculture has tended to create a bland and featureless 'agriscap' of large cultivated fields. The visitor might notice the stone built cottages although in many cases these have been absorbed into the brick built terraced housing of the 19<sup>th</sup> century or the late 20<sup>th</sup> century 'designer' housing estates.

The combined effects of brick built villages and estates and the large cultivated fields have destroyed the unity of much of the historic landscape when viewed from the main roads. It is mainly along the minor roads that it is now possible to appreciate the historic landscape character of the plateau.

In a few locations the approaches to the plateau provide the visitor with the opportunity to appreciate a change in landscape character. Examples are the approach from the west, from the M1 corridor in the area around Bolsover and Hardwick, and the approach from the east, from Sherwood Forest along the A616 between Ollerton and Cuckney. In the Bolsover/Hardwick area, the escarpment on the west side of the Magnesian limestone belt rises sharply from the coal measures, this dramatic effect being used in the siting of Hardwick Hall and Bolsover Castle. The approach to Bolsover Castle along the A632 provides the best opportunity to experience this view, which is enhanced in Bolsover itself by the stone built houses in the town centre.

Although much of the plateau has limited sensory interest, Hardwick Hall, Bolsover Castle and Roche Abbey are all dramatic buildings in dramatic settings, providing opportunities to tell key parts of the story of the landscape in settings that inspire sensory stimulation.

In contrast to much of the plateau, the gorges and vales provide distinctive and sometimes powerful sensory experiences. The gorges are dramatic, highly visual and evoke emotional responses through the cliffs, the rock strata, the woodlands



and the feeling of enclosure and isolation. The vales and gorges tend to be areas in which the historic landscape character is best preserved and appreciated.

- **Geological, ecological, archaeological and historical significance** - in the context of the Management Action Plan, the key points of interest are those which best illustrate the distinctive nature of the landscape. The geology is fundamental. It is ubiquitous but is best illustrated in the older buildings of the villages and towns and especially in the cliff faces of the gorges. The areas of ecological interest are largely restricted to the vales and gorges where areas of limestone grassland and semi-natural woodland are preserved both in the gorges and adjacent to them.

Archaeologically the area contains some interesting sites and features some of which are well preserved within the semi-natural woodland. Indeed, it is likely that further archaeological survey of these areas could be very productive. However, the outstanding interest lies in the caves and rock shelters located in the gorges that have revealed evidence of life and environment during the Ice Age.

The historic land-use seems to have been predominantly as grazing land and as royal hunting parks but this is hard to grasp today amongst the large expanses of cultivated fields. This system of land-use can however be explained through the abbeys and the country houses with their associated parklands that are such prominent features. The recent industrial history of the textile industry and of the coalmining industry has left a prominent mark on the landscape and needs to be explained.

- **Human interest stories** - key characters and stories include Bess of Hardwick, the Smithson family of architects, the Duke of Newcastle and Bolsover Castle, Peter Fidler the explorer and surveyor from Bolsover, the sixth Duke of Portland and the Welbeck tunnels, William Hollins and the textile mills at Pleasley, Percy Houghton and the colliery villages. These human interest stories tend to be specific to particular places and are best explored and interpreted locally. Some, such as Bess of Hardwick and the Duke of Newcastle are of national interest and also inform our understanding of the processes (the great houses and their parklands) that have affected the landscape of the Heritage Area. However, their stories nonetheless remain rooted in the particular places with which they are associated. The story of the nineteenth and early twentieth century archaeologists has perhaps wider applicability as their research covered all the vales and gorges of the Heritage Area.
- **Folklore and mythology** - well dressing is the only 'traditional' custom that features strongly in the area today. However, this is in fact a recent custom, imported from the limestone villages of the Peak District over the last twenty years. Most of the villages in the Heritage Area now use the tradition in association with community festivals. This relative lack of folklore and tradition may reflect the immigrant origins of the much of the modern population who came here in the late nineteenth and early twentieth centuries on the back of the coalmining boom.

Evidently the area possesses a plethora of stories and traditions associated with the coalmining industry. As with the human interest stories, these are best explored and interpreted locally.



- **Current usage and attitudes** - the experience of the 'Pride of Place' community heritage project is that local people have little understanding or identity with the depth of landscape heritage and the events and processes that have created it. The primary attachment of older people is to the mining heritage, which has little resonance with young people. At school, most teachers originate from and live from outside the area so do not use it as an educational resource.

On the other hand, where communities are closely associated with one or other of the gorges, they value and respect the distinctive landscape. Anston Stones is owned by the local Parish Council who have undertaken a lot of work to manage the site with the support of outside agencies including Groundwork Creswell. Research into attitudes of local people at Creswell Craggs shows that many value the site as a local amenity and appreciate its spirit and atmosphere. They resent the way the site has become more 'managed' over the years, restricting freedom of movement and the sense of wilderness. However, other locals have little appreciation of the interest and significance of the site.

Creswell Craggs is located on the Robin Hood Way and the car park is often used by rambling groups and walkers as a base for exploring the surrounding countryside. There is no information available on the extent to which visitors from outside the area visit the other vales and gorges. Visitors from outside the area come mainly to the major heritage attractions at Bolsover Castle, Hardwick Hall, Creswell Craggs and Roche Abbey. Few, if any, visitors will have any sense that these sites form part of a network within a particular type of landscape.

Economy, land-use and settlement in the area are changing in the aftermath of the pit closures and in consequence of the regeneration programme that has followed. The social networks of the coalmining era have been disrupted and the communities now lack social cohesion. The future of most of the former pit villages is as commuter bases for employment centres in surrounding towns and business estates. Modern housing development is taking place on the edges of many of the villages, usually with scant use or reference to the local building stone. Many former colliery sites are being turned into business estates or landscaped to create country parks.

Vandalism is increasingly a problem in the vales and gorges located adjacent to settlements such as Anston Stones. At Creswell Craggs the problem has been contained through employment of wardens assisted by the attentions of the gamekeeper from Welbeck Estates.

Changes such as the inappropriate style and character of the housing developments threaten the area's distinctive identity. On the other hand, trends towards less intensive agriculture are opening up opportunities to extend areas of Magnesian limestone habitat (grassland and semi-natural woodland) on the edges of the vales and gorges.

- **Documentary resources** - there is a wealth of documentary sources and illustrated records for the great country estates and for the coalmining heritage of the area. There is no single location that stores information about the area as a whole. On the other hand there are a number of places and organisations that store useful information about specific sites or areas. These include the Langwith Whaley Thorns Heritage Centre, Creswell Craggs Museum, Creswell Local History Group. Nottinghamshire Wildlife trust has prepared several education resource packs that interpret magnesian limestone habitats and could be used as generic



source material. Creswell Heritage Trust has excellent education resources for the Ice Age archaeology of Creswell Crags, but no equivalent for the natural history of the site.

- **Fragility and safety** - the contexts of the Ice Age archaeology (caves and shelters with their associated sediments, valley floor deposits) in the Pilot Action Areas are generally sufficiently robust that relatively low key unmanaged public access will not threaten conservation. However, most of the vales and gorges are located close to former mining villages and in the current economic and social climate there are threats of vandalism and anti-social use. Some of the habitats and their wildlife could be at risk from uncontrolled or over-promoted public access. All documentary interpretation should carry appropriate advice about following the country code. It may also be necessary to include advice about not damaging Scheduled Monuments. By their nature, the gorges can be dangerous places so appropriate advice may also be needed in the documentary interpretation.

The results of this part of the study give us a multi-faceted view of the area which informs the identification of themes and of interpretative media and methods.

### **Analysis and Recommendations:**

- The best opportunities for telling the story of the landscape lie in the sometimes dramatic settings of the vales and gorges and in the areas of semi-natural woodland. However, the story that these special landscapes reveal may not be characteristic of the Heritage Area as a whole.
- The transformation of the landscape of the plateau over the last 150 years through coalmining and intensive agriculture makes it difficult to present key aspects of the landscape history over the last 6000 years. However, this can be done with careful and imaginative use of the major established attractions whose history illustrates this story.
- These established attractions at Hardwick Hall, Bolsover Castle, Creswell Crags and Roche Abbey have strong landscape settings and could also act as gateway sites to introduce visitors to the wider landscape of the Heritage Area. This would require an appropriate range of interpretative guides being made available at these 'gateway' sites.
- There are few if any, human interest stories or folklore traditions that contribute significantly to understanding the landscape history of the area. Although human interest stories help bring interpretation to life, in this case they would tend to distract and confuse the main themes.
- The identity of the landscape is under threat through lack of local awareness and through the legacy of the coal industry and intensive agriculture. Local communities are a prime target for interpretation to help raise understanding of its distinctive features and history and to contribute to its conservation and enhancement.
- The subtlety and small scale of the landscape (it is never more than eight kilometres wide) and the lack of awareness suggest the need for a focal point where the story of the landscape is told. The story is likely to be lost if it is told at one of the main heritage attractions where the focus is necessarily on their



particular site history. Integration into a community heritage centre or similar location would provide an opportunity to develop community interest in and respect for the landscape and its story.

Development of an integrated plan for maximising intellectual access involved assessment of infrastructure and audit of existing provision, identification of user groups and customers, identification of communication objectives and key messages, recommendations for improvements and development.

### **8.5.1 Identification of user groups/customers**

Effective communication is well-targeted and knows its audience. There are two main target groups that need to be considered; the local community and visitors from further afield.

#### **LOCAL COMMUNITY**

Local community involvement is a key objective of this project and there is a range of aspirations for the impact of this project on the local community.

The study area includes several communities suffering acute social and economic deprivation. These communities are not the traditional audience for heritage / environmental attractions and if there is a genuine desire to engage with them there is a need for a long term, carefully targeted programme of community initiatives that build on the work and experience of local community, education, youth and arts workers.

For the last six years Creswell Heritage Trust has developed and managed an innovative community based heritage outreach project using the 'Pride of Place' strapline (see appendix 8.11 for summary description of this project). The project has been highly successful in engaging with local communities, developing capacity of local people to organise and implement their own programmes of heritage activity. The project clearly demonstrates the need and the benefit of using community based heritage 'animateurs' to raise interest and understanding of local heritage amongst local people and to engage them in heritage activity.

The project also revealed a lack of appreciation amongst local people of the range and depth of interest in the Heritage Area landscape. The project worked primarily with older people whose experience of life and landscape has been coloured by the coalmining industry. Initially their principal interest was in interpreting the heritage of the coalmining industry, especially the 1950s. Over time a broader awareness and interest developed through informal education and learning activity provided by the project team and by local residents.

Stories of coalmining life and times have little resonance with younger people as they offer no sense of place or identity - or at least not one with a future! Where the project was able to work with a younger audience through providing work placement opportunities for unemployed young people, the project had significant success in engaging them with their wider heritage, using this as a vehicle for skills acquisition and pathways to employment.

Each of the principal limestone vales and gorges is located in close proximity to a village or small town, usually a former mining community. There is significant scope



to raise understanding of the area's distinctive landscape heritage amongst local people and to involve them in its conservation and improvement. In some cases, as at Anston Stones, the local community is already actively engaged in this process although at present the emphasis lies in the natural rather than the cultural heritage. At Langwith Whaley Thorns an ongoing project to develop a local heritage centre provides a nucleus through which to work. Similarly the Creswell Village Company is implementing a project to create an information point and educational resource centre that will focus on the landscape of the Heritage Area. The Langwith Whaley Thorns and Creswell Village Company projects are being facilitated by the 'Pride of Place' project, demonstrating that the support of appropriately trained heritage professionals is needed to facilitate integration of the Heritage Area landscape 'concept' into local community activity.

## **ANALYSIS**

- There is clearly a need for local communities to engage with their local heritage if the objective of protecting and enhancing the area's distinctive character is to be achieved in the long term. Local communities can also clearly benefit from this process as it contributes to creating a local sense of place and identity as well as providing educational and lifelong opportunities and opportunities for voluntary and recreational activity. The 'Pride of Place' project provides a model of how this process of community engagement can be taken forward across the Heritage Area.

## **LEISURE VISITORS**

The needs of day visitors are different from those of local communities and are considered separately.

Little market appraisal as to outdoor activities has taken place in the areas covered by the Magnesian Limestone Heritage Area. That which has been undertaken has highlighted that the area has a low '*visitors from outside the area*' market. Large scale holiday providers at 'Centre parks' (Sherwood) and Thoresby Hall have been established in such a way as to provide everything for guests 'on-site' and are seen as having minimal effect on attractions in this area.

The day market is potentially strong – however none of the individual attractions/resources in the locality currently have the market presence to pull audiences from the established routes. Developments in strategic joint marketing and product development could go some way to addressing this issue in the medium term. The landscape of the magnesian limestone, at least in the vales and gorges, is sufficiently scenic and interesting to be attractive to walkers

### ***Demographic Trends and Visitor Constraints***

The size of an audience to a particular attraction has to be judged against any visitor constraints that may be apparent to that site.

Visitor constraints can be both structural and cultural, and may include age, transport, image of site product, admission charges and historic interest.

The summary below indicates the general demographic breakdown of the populace and how visitor constraints are related to each age range:

65 years +



This sector of the population is currently on the increase and it is therefore important to note that these people often have time and income. They comprise a large proportion of special interest groups that frequent visitor sites.

#### 45-64 years

Individuals within this age bracket have high spending power due to lack of dependants. Time however is not as available as some other age groups, but is often spent partaking in special interests. Transport is not a problem and this sector is responsible for the largest proportion of the VFR (visits with friends or relatives market).

#### 25 – 44 years

Families often with children comprise most of this sector. These people have transport, yet small amounts of time mean that most visits are well chosen educational or recreational opportunities for the children on a strict budget.

#### 17 – 24 years

This age bracket have notoriously limited participation in the heritage sector. Transport and disposable income make them attractive market sector. Some educational visits can come through colleges and universities.

#### 10 – 16 years

An important sector of populous as school visits provide a large proportion of heritage and environmental sites.

This breakdown provides an indication of the potential for visits into the limestone Heritage Area. Global conclusions can be extracted from these guides to inform the development of product and services for the project area. The main points being:

- Young people and children are realistically only entering the market via education providers and those that come with parents come with limited time and budgets. Educational provision is the key to mass participation.
- The older end of the market make-up is a heavy user of environmental and heritage resources and have the potential to produce further visits though VFR.

### ***Analysis - Target Market profile for Intellectual Access***

The target market is likely to be older people (25 +, but especially 45+), visitors and locals, who are:

- more knowledgeable about heritage
- likely to be visitors to major heritage attractions
- likely to want a relatively 'informed' level of interpretation
- likely to want good information with perhaps some pointers to where they can learn more
- may welcome activity sheets for children so they can visit suitable sites as family groups
- likely to enjoy guided walks so these would be good to set up and promote, to be provided by local people.

This market includes ramblers - significant usage of Creswell Crags car park as base for walking the Robin Hood Way



Many people will not wish to walk more than five minutes. These people can be catered for through the main attractions that have car parks and other visitor facilities (Creswell Crags, Roche Abbey).

To engage with this target market, and to promote the identify of the Heritage Area, a network of information points is needed as well as a 'focal' point where people can learn about the Heritage Area and that can also act as a repository of information concerning it. The network could comprise literature available to visitors at the main heritage attractions (Bolsover Castle, Hardwick Hall, Harley Gallery, Creswell Crags, Roche Abbey) and interpretation panels in key locations.

## **SCHOOL AND OTHER FORMAL EDUCATION GROUPS**

Formal education groups have much clearer educational objectives than community or leisure groups. For school groups these almost invariably relate to the National Curriculum. As a market, education groups can be both part of the local community and a potential purchaser of educational products (site visits; educational resource packs etc).

There are obvious curriculum links to History and Geography throughout all key stages however education resources should be developed which are cross curricular and topic driven, encompassing art, drama, literacy, citizenship and ICT. At Key Stage 4 extra capacity can be developed with the introduction of alternative subjects including geology and archaeology.



Exploring archaeology at Creswell Crags, local school visit during 2002

The 'Pride of Place' project has found that as well as curriculum commitments there are extra stresses on most teaching staff in schools in the area coping with delivering the required educational standards in deprived former mining communities. Educational standards in several subjects, especially maths and English are below the national level. In these circumstances, OFSTED inspections take on particular significance and implementation of OFSTED recommendations have major



implications for staff time. In addition many teachers originate from and live outside the communities in which they work. All this combines to reduce the time, energy and, critically, local understanding of teachers to be able to participate in developing educational heritage products using local resources.

The 'Pride of Place' project developed a successful approach to working with local schools by adding value to curriculum projects schools were already engaged in, creating a heritage dimension to other school work and providing support to out-of-school activities. This produced some varied and interesting collaborations, including working with a local arts organisation to add a heritage dimension to a school playground renovation project; working with a learning support teacher to help teens with classroom problems explore the local heritage environment; adding depth to a school geography project based on 'coal' by bringing children together with minerals and heritage objects, and arranging visits into school by former mineworkers.

Provision of education resources and accessible sites could also provide a product that could be marketed to schools outside the area. This is unlikely to have much economic benefit but would help raise the profile and identify of the magnesian limestone outside within the region.

Adult education can take several forms ranging from guided walk participation to fully accredited courses. Outside the subject based formal education which can be provided, the opportunity lies to work with established groups (i.e. local history groups) to provide lateral routes into education i.e. exhibition development, IT skills developed on the back of family history research. This will also develop capacity building within local communities providing increased levels of communication and confidence.

The many organisations based and/or working within the study area provide a wealth of educational opportunities for schools and groups to engage in – these organisations include groundwork trusts who employ education and community staff to work in school or on sites looking at environmental issues.

The same is true of the Wildlife Trusts educational staff. Nottinghamshire Wildlife Trust for example has a series of reserves located within or adjoining the magnesian limestone area. Reserve fact sheets are available for these sites offering information relating to the reserve, ecology, biodiversity and in some cases the geology. School visits to the reserves are encouraged and supported by the Trusts education staff. Educational resources linking directly to magnesian limestone are currently being developed and are hoped to be available later in 2004.

The National Trust and English Heritage have local and regional education staff providing curriculum-based access to the sites in the study area. Bespoke visits can be arranged to specific sites to explore various topics, this service is (particularly by English Heritage) backed up with web based and printed generic materials looking at castles or abbeys.

Other providers of note are Creswell Crags who offer bespoke visits to parties including role play, guided tours and 'hands on' activities, these services are again backed by an award winning web resource.

### **Analysis:**



- There is clearly potential to develop linkages between local schools and their local landscapes as part of an overall programme of work with local communities. Indeed, the lack of local knowledge amongst teachers identified by the 'Pride of Place' project illustrates how the concept of sense of place can lose its roots in local landscapes, stories and traditions.
- There is also clearly some potential to develop resources and delivery mechanisms for the adult education market linking up with existing education providers (colleges and universities).

## **VISITORS WITH DISABILITIES**

This is a market sector equally as important as any other.

The key heritage attractions of Hardwick Hall, Bolsover Castle, Creswell Crags, Roche Abbey and the Harley Gallery offer good access for people with disabilities. The vales and gorges provide fewer opportunities as they are informal 'countryside sites'. However, some of the gorges offer sensory experiences that could be of particular value to people with disabilities.

The access needs of all visitors including people with physical disabilities, sensory impairments, learning difficulties and other special needs will need to be accommodated in-line with the requirements of the Disability Discrimination Act.

## **LANDOWNERS, PLANNERS AND DECISION MAKERS**

The primary objective of the Management Action Plan is to secure the long term, sustainable management of the cultural and natural heritage resource. It is essential that all the above stakeholders engage with and support this objective and contribute to 'ownership' of it.

Landownership is largely in the hands of a few major stakeholders. Both landowners and tenants facilitated access to the vales and gorges for the purposes of the archaeological and access studies and expressed interest in the results of the study. The Heritage Area has a low take up rate for Stewardship schemes, perhaps reflecting the need to apply chemical fertilisers to maintain the current arable regime on the plateau.

One of the difficulties facing the Heritage Area is the diversity of local authorities and hence of planning, access, leisure, and conservation departments with responsibility for aspects of long term land management. Indeed, the number of administrative boundaries is remarkable for such a narrow strip of land and may well reflect its history as an 'edge' habitat, used predominantly for pasture by organisations and communities based in adjacent areas.

Most of these local authorities, the relevant Wildlife Trusts and the national agencies have endorsed the Creswell Crags Conservation Plan and the Creswell Limestone Area Strategy as key policy documents to be referred to with regard to planning matters. It is important that similar endorsement be given to the recommendations of the Management Action Plan and that a co-ordinating and monitoring mechanism is maintained.

At present this co-ordinating role is performed by Creswell Heritage Trust and by Groundwork Creswell, supported by the Limestone Strategy partnership.



## **Analysis**

- Landowners, planners and decision makers constitute a priority audience if the objectives of raising interest, understanding and awareness of the special landscape quality of the Heritage Area and of securing its long term sustainable management are to be achieved.
- It is essential that these stakeholders endorse the recommendations of the Management Action Plan and that the co-ordinating and monitoring role currently played by Creswell Heritage Trust and by Groundwork Creswell is maintained and supported.

### **Recommendations for Key User Groups & Customers:**

*More market research is needed to assess current levels of usage of trails network.*

*Engagement with local communities is essential and can be facilitated through the 'Pride of Place' model.*

*A quality guide should be produced targeted at visitors to the main heritage attractions and including pointers to places to visit that will illustrate the story.*

*A programme of guided walks designed to present and interpret the landscape to visitors should be considered. It would be most appropriate to operate this through local people, perhaps facilitated through a 'Pride of Place' project.*

*Appropriate literature and information should be produced for the walking market.*

*At appropriate sites, interpretative literature should be made available to the family market (e.g. short walks and activity sheets)*

*Develop the local education market through a 'Pride of Place' style project.*

*Promote and co-ordinate partnership with the main heritage attractions to serve as 'gateways'; introducing visitors to the wider landscape through displays, panels, availability of interpretative guides as appropriate.*

*Facilitate engagement of landowners, tenants, planners and decision makers with the process and objectives of the Management Action Plan through consultation and through provision of appropriate information.*

## **8.5.2 Identification of communication objectives and key messages**

If an area as diverse and complex as the Heritage Area is to communicate coherently and comprehensibly, the objectives and the themes for communication must be clearly identified. The communication objectives will clarify the purpose of interpretation and affect selection of themes and stories and of media.

### **COMMUNICATION OBJECTIVES:**



The communication objectives can be described under three headings:

### ***Learning Objectives***

Visitors to the area, local people and stakeholders should be made aware:

The magnesian limestone is one of Britain's least common rock types, formed over 200 million years ago, and gives rise to distinctive landforms including a plateau with scarp and dip slopes, limestone vales and dramatic gorges.

The magnesian limestone belt extends in a narrow band from the area around Mansfield northwards to County Durham. The southern part of this area is a separate natural area called the Creswell Heritage Area.

The magnesian limestone supports distinctive and rare habitats and wildlife, especially magnesian limestone grassland but also fine and characteristic examples of semi-natural woodland.

The caves and gorges were used as camps and shelters by Ice Age hunters who came to live off the great animal herds that made seasonal visits to the area. These places were amongst the most northerly in the world to be visited by humans during the Ice Age and provide the greatest concentration of Ice Age archaeological sites in Britain.

Historically, until the industrial revolution, much of the area was grassland or enclosed to form royal deer parks and great estates. This story can be traced in the great abbeys and country houses and in the woodlands and parks that are a characteristic feature of the landscape today.

The tradition of wool production helped lay the foundation for early industrial development in the Poulter Valley. At the end of the 19<sup>th</sup> century the landscape was transformed through improvements in mining technology that permitted mines to be sunk through the limestone to the coal seams below.

The limestone rock has contributed to the distinctive character of the surface landscape, supplying building stone for drystone walls, for humble farms and cottages, for the great abbeys and country houses, and even for the Houses of Parliament.

Today, local communities and regional and national agencies seek to treasure, to restore and to enhance the features that characterise this distinctive landscape.

### ***Behavioural Objectives***

We want visitors to the area and local people to:

- Keep to public rights of way and respect the landscape and wildlife (observe the country code)
- Visit the key sites and locations that illustrate the distinctive character and history of the landscape
- Be aware that these sites and locations are part of a linked network
- Use local facilities and services (pubs, shops, cafes)



### ***Post Visit Objectives***

After their visit, visitors and local residents should feel that:

- The Heritage Area landscape is distinctive and is well managed by an active and committed partnership of local people and regional and national agencies
- They would recommend the area to friends and family as an enjoyable and interesting place to visit
- Local residents are proud to live in this distinctive landscape and would like to contribute in some way to its management

### **INTERPRETATIVE THEMES AND STORIES**

The Heritage Area has a wealth of subject matter to work with - in historical terms alone the area features heavily in many aspects. For example: the most northerly sites of human occupation during the ice age, the only known site of ice age British cave art, cutting edge Elizabethan architectural design, and famous commanders of civil war armies.

In ecology terms it rates highly too with limestone hills and vales providing homes for skylarks, rare orchids and grasses.

Underpinning all this is a striking band of magnesian limestone, 200 million years older than the Himalayas, providing the characteristically gently undulating stage on which all these events and activities are played out.

Although complicated at first sight, the Landscape History research helps identify several key stories or themes that help to understand and to appreciate the landscape we see today. Some are obvious, others need slightly fuller explanation here:

#### ***The Magnesian Limestone Geology***

This is fundamental, telling the story of how the distinctive rock and the primary landforms (vales and gorges, plateau) were created. The use of this material for building stone forms part of this story.

The limestone that we see exposed in the gorges was once the sand and mud that settled on the floor of a shallow tropical ocean 250 million years ago. This was the Permian age, when Britain was part of a great continent that lay just north of the equator. The land that was to become the Creswell Limestone Heritage Area lay on the western shore of an ocean geologists now call the Zechstein sea, that stretched east as far as Poland.

The sea shoreline was fringed by tropical beaches and barrier reefs. The sands and muds on the sea bed formed great underwater dunes whose shape can still be seen in some of the rocky cliffs exposed in the gorges today. Chemical changes (dolomitisation) that took place millions of years ago destroyed any fossils that were present.

For centuries, people have used the rock as building material, for domestic buildings and field walls, and for great abbeys and country houses such as Bolsover Castle and Hardwick Hall. Magnesian limestone from Anston quarry was used to build the Houses of Parliament in the 19<sup>th</sup> century.



Today the particular chemical properties of the limestone make it suited for use in the special steel industry, refractory brick industry and agricultural soil stabilising markets with significant export value. Some 40% of processed dolomite production is exported to 25 countries. The Whitwell works is sited on one of the best quality deposits of magnesian limestone in the country and is the sole UK producer of a range of dolomitic products, estimated to bring in £6 million investment to the local economy and £10 million to the UK economy through exports.

### ***The Ice Age***

This is the most characteristic and 'original' human story. The Heritage Area contains the largest concentration of Scheduled archaeological sites for the Ice Age in Britain. These are concentrated in the vales and gorges. Surveys undertaken as part of the Management Action Plan show there is considerable potential for further discoveries.

The great ice sheets of the last Ice Age covered much of northern and western Britain. Here they stopped just north of present day Doncaster. South of the ice sheet, the grassy plateau of the magnesian limestone teemed with grazing animals including horse, bison, reindeer, mammoth and woolly rhinoceros. Many of these animals visited in the spring and summer to feed off the lush grass before heading south and east across 'Doggerland' (now under the North Sea) as winter approached.

Carved out in part by earlier ice sheets and melt water channels along fault lines in the limestone, the limestone vales and gorges provided sheltered havens for shrubs and trees and for carnivorous animals like the hyena that followed the animal herds and used the caves as dens.

Human hunters visited these same places, hunting the animals and leaving behind flint and bone tools. At Creswell Crags they left behind the most important collection of ice age artefacts and the earliest art found in Britain.

Today the limestone area contains the greatest concentration of ice age archaeological sites in the UK. Sediments found in the caves and along the rocky slopes of the gorges are important storehouses of scientific information for modern archaeologists and environmental scientists.

### ***Abbeys, Country Houses and Parkland***

For the last 6000 years at least, until the late nineteenth century coalmining bonanza, the limestone plateau has been relatively sparsely populated with very extensive



Roche Abbey



areas of common grazing land probably accessed by communities to the east and west as well as by local settlements.

The number of monasteries founded on or adjacent to the magnesian limestone plateau in the eleventh and twelfth centuries is indicative of the relative emptiness of the area, allowing the extensive grazing land to be exploited for wool production. The larger communities tended to be located on the edge of the limestone, where resources from both the neighbouring Coal Measures and the magnesian limestone could be accessed.

The general emptiness of the area encouraged the Norman Kings to bring it under Forest Law as part of Sherwood Forest. Scarcliffe, Whitwell and Pleasley woods are remnants of former royal deer parks while Elmtun, Pleasley, Thorpe Salvin and Scarcliffe are fine examples of deserted or shrunken medieval villages that were surrounded by extensive areas of common grazing. Enclosure of the commons occurred quite late, and in some cases as around Elmtun the medieval field boundaries are clearly fossilised in the landscape.

With the dissolution of the monasteries the transfer of monastic sites and estates into lay hands contributed to a reinforcement of one form of landscape characteristic of the magnesian limestone plateau, that of parks associated with the country houses of the nobility and gentry. This parkland contributed and still contributes to the maintenance of a wooded aspect on the plateau. Hardwick Hall and Bolsover Castle are outstanding examples of British Renaissance architecture, sited to display the status and power of their owners on the edge of the escarpment that runs along the western side of the magnesian limestone outcrop.

### ***Industry***

Industrial developments in the later post-medieval period have created the most obvious physical and character changes to the landscape of the area. Wool processing and cloth making were important and laid the foundations for the first phase of industrial expansion in the later eighteenth and early nineteenth centuries, focused on textile production.

Through the development of domestic framework knitting and the construction of textile mills people were drawn into the region. Rivers such as the Poulter and Meden provided the power on which this industrial development was based. Important examples of these developments are William Hollins mills and industrial village at Pleasley and the complex of mills and workers housing at Cuckney.

The development of deep mining in the second half of the nineteenth century has been the major industrial impact in the region. Colliery workings are located on the eastern and western edges of the Heritage Area, where the coal measures can be reached through the overlying limestone.

Many of the colliery workings are now disused, but they have left a distinct industrial fingerprint upon parts of this landscape. Imposing spoil tips, colliery headgear and a large number of disused railway lines are still present in places, and most of the gorges are impacted by one or both of these feature types to some extent.

Mining villages (including some colliery-built Model Villages) grew up around the collieries, and these are also very characteristic of later settlement in the area. This is particularly evident in the southern part of the Heritage Area, around the Meden



Valley, with the villages of Creswell, Clowne, Church Warsop, Langwith, Meden Vale, Pleasley, Shirebrook and Whitwell.

Since the second world war, the use of fertilisers has enabled former grazing land to be converted into extensive arable fields.

### ***Habitats and Wildlife***

The magnesian limestone rock, the landforms and the history of land-use combine to create distinctive wildlife habitats. These include rare magnesian limestone grassland, semi-natural woodlands, wetlands, rock faces and caves.

In the limestone gorges and on their edges, the limestone rock is either exposed or near the surface and the valleys are quite steep sided and narrow. This land is difficult to farm so these areas have been protected from modern agriculture and from development. They create ideal locations where rare and protected plants and animals can thrive.

The limestone valleys at Creswell Crags, Pleasley Vale, Markland Grips, Anston Stones and Roche Abbey Vale preserve some of the only surviving patches of rare limestone grassland and characteristic semi-natural woodland. On the plateau, remnants of the former royal hunting parks at Pleasley, Scarcliffe and Whitwell and of the great country house estates at Hardwick and at Welbeck contribute to the wooded character of the landscape and preserve their semi-natural status.

Rare plants include large leaved lime, pasque flower, grass of parnassus, spring and march cinquefoil, common and narrow fruited cornsalad, whooley thistle, marsh arrow-grass, perfoliate pondweed, blunt-flowered rush, fingered sedge, green flowered helleborine, bird's nest and fly orchids and autumn ladies-tresses.

The caves at Creswell Crags are home to rare troglomorphic invertebrates (spiders, beetles, springtails, mites) and act as hibernacula for overwintering moths, mosquitoes and parasitic wasps.

*Around these five main themes local stories and subsidiary themes can be woven using locally available landscape features and resources and local human interest stories, folklore etc. For instance, the process of enclosure that has fossilised strip fields around some of the settlements; some good examples of prehistoric and Roman settlements preserved in the parkland; drystone walls and stone built farms and cottages.*

### **8.5.3 Audit of existing provision**

The existing infrastructure and interpretative provision must be viewed as a collection of resources, which belong to many agencies around the area. These resources are the initial 'jigsaw pieces' of the Limestone story. While many organisations are developing strategies for set subjects or areas within and on the outskirts of the limestone belt there is little coherent interpretative product across the area. This lack of coherence is due to two main reasons:

- The Magnesian limestone belt, although narrow and small in area, comes within the administrative areas of at least six local authorities including four unitary authorities (Rotherham MBC, Doncaster, Nottinghamshire and Derbyshire) and three District Councils (Bolsover, Bassetlaw and Mansfield). This administrative division perhaps reflects the landscape history of the area in historical times as



an 'edge' habitat between Sherwood Forest to the east and the coal measures and the pennines to the west.

- Since the late nineteenth century the 'perceived' landscape has been dominated by coal mining industry. Until the collapse of this industry in the late 20<sup>th</sup> century there was little need or incentive to consider other aspects of the cultural or natural heritage of the area, or to interpret them other than as sites or places of individual significance or merit. Over the last 20 years, interest in countryside management and recognition of the countryside of the Heritage Area as a potential tourism product has led to development of a network of walking (and to a lesser extent, cycling and horse riding) routes but these tend to be disjointed, reflecting the complex administrative boundaries.

Existing interpretative resources can therefore be classified into sites and trails:

### **SITE BASED INFORMATION**

This area is predominately the preserve of six focal sites of which four comprise or are located in limestone gorges.

***Bolsover Castle and Hardwick Hall*** are heritage sites of national significance located on the limestone escarpment on the western edge of the Heritage Area. They represent an important characteristic of the area's history in the 16<sup>th</sup> - 18<sup>th</sup> centuries when it was owned and managed by a small number of great aristocratic estates. They are managed respectively by English Heritage and the National Trust and the range and quality of the interpretation is what you would expect of such important and well managed sites. However, the interpretation is naturally focused on the stories specific to each site and does not extend to the wider landscape. At Bolsover, an interpretative plan has been produced for the town that places the castle in its local context. However, the story of the castle in its broader landscape setting is not told.

***Roche Abbey*** – located within one of the limestone gorges, the English Heritage site and visitor centre focuses interpretation around the presence of a Cistercian Abbey complex. Half a dozen panels are on offer within the centre and around the site. Alongside this English Heritage run a number of events and activities throughout the summer season including re-enactments and art work. Rotherham MBC has placed an interpretative panel adjacent to the abbey site that quickly covers the history of both the abbey and gorge and touches on the natural history aspects of limestone vale. This information is not directly accessible by people visiting 'the site'.

***Creswell Crags*** is managed by the Creswell Heritage Trust. The site has numerous panels and a small exhibition/museum, which takes the Last Ice Age and archaeological discovery as main story lines. A varied mix of media is utilised to portray these stories including printed materials, children's craft activities, guided tours and artists. The visitor centre incorporates disabled access, a room for education visits and a 'shopmobility scooter' facility for exploring the gorge. Web site images enable visitors to discover the world of the caves if they are unable to experience a cave tour. Panels interpret an area of magnesian limestone grassland within the site and point visitors to other gorges within the Heritage Area. Proposals are in hand to create a major new museum and visitor complex to interpret the story of Creswell Crags, display the museum collections and provide facilities for education parties.



**Anston Stones** is owned by the Parish Council and is actively managed by local volunteers because of its SSSI status. A number of interpretative panels are strategically placed throughout the gorge. These concentrate on the ecology of the area while providing basic information as to the heritage and geological aspects of the gorge.

**Pleasley Vale** echoes the mix at other sites where the ecological elements of the area are strongly expressed as part of the Pleasley trails network. In addition a brief resume of the history of the mill complex is presented.

These interpreted sites are managed by a broad collection of different organisations leading to a range of differing management objectives and styles. Each individual site management leads the visitor to a sense of experiencing an amenity recreational resource. The range of organisations involved with the sites all with differing interpretative focus and styles leads to a lack of cohesion over the Limestone Heritage Area.

**Three small scale interpretative foci** are currently planned or in a process of transformation. The Whaley Thorns Heritage Centre until recently provided local people and visitors with an insight into the local landscape and the story of its community, centred on an interesting and diverse collection of artefacts and memorabilia. The Centre is currently closed but there are plans to re-open it in a former Methodist chapel. The Creswell Village Company has obtained funding to create an education and interpretation point in Creswell village. The focus of interpretation is to be the landscape and history of the Heritage Area, focusing on the resources and features available locally. The Leisure Services Department of the District of Bolsover is proposing to create an education centre for outdoor activities in Pleasley Vale. This could provide scope for further interpretative provision here.

A significant interpretative and visitor attraction is also proposed for the former colliery at Pleasley.

## **LEAFLETED TRAILS**

A wide range of trails criss-cross the area. The subject matter for these trails tends to lie within ecology and local history and varies from introductions to detailed accounts. The subject matter is probably due to the origin of the majority of the trails being in the hands of environmental organisations or local groups. Appendix 10.1 demonstrates the number and variety of this resource in the Limestone Heritage Area. There are however a smaller number of trails which deal closely with the archaeology and with the landscape history – the most significant of these are the ‘Archaeological Way’ and ‘Walking in the Creswell Limestone Area’.

## **ACCESS**

In a national context the Heritage Area is centrally located between the M1 and A1 corridors and has a potential day visit market of over 4 million people living within a one hour drive. The local road network is quite poor and difficult to navigate with confusing signage.

The Robin Hood Line runs through the centre of the southern part of the area and has the potential to bring leisure visitors, particularly walkers and ramblers, from Nottingham, Mansfield and Worksop into the countryside. However, there is currently no Sunday service.



The whole area is quite well served by public transport. Nottinghamshire's Sherwood Forester buses run regular services and serve many of the villages in the area. There is potential to promote fuller use of the public transport network for countryside recreation.

## **ANALYSIS**

It is unlikely that the Creswell Limestone Heritage Area will receive formal recognition in the short to medium term as an area of special landscape significance (e.g. AONB). This may be desirable in the long term and should certainly be considered as the area merits greater recognition than it currently receives.

In the absence of any formal designation, it would be unrealistic to recommend that the various local authorities should put resources into marketing the area as a specific destination or that interpretation should be badged in a strongly unified way.

However, there is considerable scope for the special character of the magnesian limestone landscape to be more fully identified and featured in the interpretative media and for more effective 'pointing' from one site or trail to the next. The Creswell Heritage Trust and the Creswell Limestone Strategy Partnership have an important role in 'championing' and facilitating this. However, to be successful, the various local authorities need explicitly to recognise the need and the role of the Trust s and of the partnership.

Currently the area lacks identity as an interpreted 'location'. The only guide book targeted at visitors is the booklet 'Walking in the Limestone Heritage Area' produced by Creswell Heritage Trust. A booklet is needed that sets out the story of the landscape, identifies the key locations of interest, and is made available at all 'managed' locations within the area.

There is a plethora of walks leaflets, but apart from the 'Walking in the Limestone Heritage Area' booklet and the 'Creswell Archaeological Way' trail guide, few of these clearly identify the nature and character of the Heritage Area landscape.

## **Recommendations**

*Support and encourage the roles of Creswell Heritage Trust, Groundwork Creswell and the Limestone Strategy Partnership in 'championing' the identity, conservation and enhancement of the Heritage Area.*

*Encourage the main heritage attractions to tell relevant parts of the story of the Heritage Area through interpretation (e.g. on-site panels) and through 'pointing' to other locations within the area (e.g. selling interpretative literature).*

*Support the setting up of the Interpretation Point in Creswell village as a focus for interpretation of the area to local people and to visitors.*

*Produce a new, quality guide book that tells the story of the Heritage Area, supported by revised editions of the 'Walking in the Limestone Heritage Area' and Creswell Archaeological Way' guides.*



*Produce a short guide to each of the Pilot Action Areas, identifying the key points of interest that contribute to understanding of the landscape*

#### 8.5.4 Identification of appropriate media/locations

The landscape diversity, subject areas and opportunity present within the project area mean an equally varied use of interpretative media. This can include:

- *Written – general guides, specialist texts on geology, archaeology and ecology, community led booklets dealing with particular sites and areas – arch way – limestone walks layering*
- *Interpretation panels – include welcomes, signage, car stopping points*
- *Activities – a linked events programme with local groups putting on events in their spaces; programme of guided walks or walking festivals; awareness weeks; activity weekends*
- *Information technology - provides an exciting vehicle with which to work. Seamlessly linking and layering sites and story lines providing the visitor with access to the area from home or whilst on the holiday. Can also provide a vehicle for bringing together information about the history of the area and making it accessible to a wider audience.*
- *Formal displays and exhibits –a wide variety of technologies is available. However, these require dedicated space and a dependable visitor market to sustain them.*

*Landscape design language - the use of an appropriate landscape design language (especially the use of magnesian limestone references) is an important means of interpreting the landscape and reinforcing messages about its character.*

The primary objective of interpretation here is educational in the broadest sense – to inform people and to

raise awareness of the distinctive character and history of the magnesian limestone landscape. The target markets are local people (adults and children), visitors to existing heritage attractions and walkers/ramblers from within the region. The primary locations where interpretation will take place and/or that will be interpreted are the limestone vales and gorges identified as Pilot Action Areas and the main existing heritage attractions.



Creswell Craggs

The proposed Interpretation Point in Creswell will be the only place where a dedicated, formal display will focus on the landscape history of the area. The main heritage attractions have their own stories to tell and cannot be expected to dedicate



significant space to the magnesian limestone story. However, it might be possible to negotiate some space where the connections to this story can be made.

Elsewhere, interpretation will take place in the landscape itself, in the absence of formal visitor facilities

### **Recommendations**

*The primary interpretative media will be guidebooks and leaflets that set out and explain the story of the magnesian limestone, supported by interpretative panels, a programme of community based guided walks and activities, reinforced by appropriate landscape design language. A portable display system that could tour community and visitor venues would be a useful means of promoting awareness of the landscape and of the interpretative and amenity resource it offers.*

*Information technology provides opportunities for linking sites and resources. Appropriate web pages could be developed as part of Creswell Heritage Trust's website, linked to the 'Virtually the ice Age' museum, with pointers to other sites (English Nature – Natural Areas; the main heritage attractions etc).*

## **8.5.5 Creswell Archaeological Way and Pilot Action Areas**

### **CRESWELL ARCHAEOLOGICAL WAY**

The Creswell Archaeological Way is an important strategic interpretative route as it tracks the magnesian limestone outcrop from south to north. However, consideration should be given to renaming the route as its current name leads to unfulfilled expectations since there is little archaeological evidence to be seen. A name such as 'Limestone Heritage Way' or the 'Limestone Heritage Trail' would be more appropriate. Appropriate discussion would be needed as the route is marked on the OS maps.

The interpretative media comprise panels (at Pleasley Vale and at Poulter Country Park) and a booklet. These need comprehensive renewal and updating. Additional panels could be considered at Mansfield Woodhouse Station and at Creswell Crags (identifying the link to the Archaeological Way). Additional panels should be considered at Anston Stones and at Roche Abbey if the route is extended northwards.

Appendix 8.5 lists suggested amendments to the leaflet. Consideration should be given to republishing the leaflet as a small booklet giving more information about the landscape and its history.

### **Recommendations**

*Rename the Archaeological Way*

*Update and renew interpretation panels at Pleasley Vale and Poulter Country Park*

*Install new interpretation panels at Mansfield Woodhouse Station, Creswell Crags, Anston Stones and Roche Abbey*



*Revise and re-publish the Archaeological Way leaflet as a small booklet with updated and fuller information, including a link (spur) to Creswell Crags*

### **PILOT ACTION AREAS (PAA)**

The booklet “Walking in the Limestone Heritage Area” is a key medium for the provision of introductory interpretation covering all the sites and should be updated and reprinted. The physical condition of the sites is analysed in maps 19-21, appendix 8.13. Suggestions for the key sites and improvements to the booklet are shown below and cost estimates for the improvements are included in appendix 8.10.

For each of the key sites an interpretative booklet covering the geology, archaeology and ecology features of interest (an ‘ology’ booklet) would be useful to complement the walk leaflets already in existence. Such a leaflet would highlight where interesting features can be seen and provide more detail for the person who would like to find out more. The existing walk leaflets do not have room to do this. These leaflets could be prepared in partnership with local communities.

Interpretation for children is an important element in attracting visitors to the area. A discovery booklet could follow the adventures of factual/semi – fictional archaeologist. The booklet will explore the process of discovery looking for clues to land use (coppicing etc) and occupation (cave sites, houses). Information could be provided and activities developed to draw out the stories for each site. A complementary booklet could explore wildlife habitats. These proposals could be developed in partnership with education providers, contributing to development of a resource for use by local schools.

Local enthusiasts could be trained to lead themed guided walks exploring the key landscape and historical features associated with each vale. There could be a small charge for these walks with the proceeds given to the walk leader. A launch event could comprise a programme of walks at each key site, associated with (for instance) publication of a revised “Walking in the Limestone Heritage Area” booklet. The suggested programme of guided walks, preparation of an ‘ology’ booklet, preparation of activity sheets for children, could all form a programme of linked activity facilitated by a ‘Pride of Place’ project officer. This programme could result in, for instance, local walking festivals and contribute to educational development, community capacity building and local ownership.

The predictive modelling has identified a major increase in the number of potential Ice Age archaeological and palaeontological sites and has recommended a programme of field testing. Such a programme would provide a major opportunity to engage with local communities through active participation in the process as well as through site visits, school activities etc. This opportunity to improve intellectual access through direct engagement in knowledge acquisition should not be missed.

### **Recommendations**

*Revise and reprint ‘Walking in the Limestone Heritage Area’ booklet*

*Produce an interpretative leaflet covering the geology, archaeology and ecology of each key site*

*Produce discovery booklets for children that explore the archaeological/historical and wildlife interest of each site*



*Train local people to lead regular walks at each site*

*Engage local people in the process of field testing the predictive model*

### **Roche Abbey**

The Roche Abbey area provides the best 'field' opportunity to explore the Abbeys and great estates theme of the interpretation plan and to appreciate the open uncultivated commons as well as the geology and Ice Age archaeology of the gorge. Close proximity of Maltby provides opportunities for engaging with local communities.

A more detailed information leaflet is needed to explore these themes as well as an interpretation panel.

### **Recommendations**

*Amend the route and notes in the 'Heritage Area' walks booklet as suggested under Physical and Visual Access*

*Provide an additional booklet exploring the landscape in greater depth, paying particular attention to the Abbeys and great estates theme of the interpretation plan, using Maltby Commons to illustrate the grassland history*

*Subject to agreement with English Heritage, install an interpretation panel at the Roche Abbey car park*

*Develop a programme of community outreach targeted at Maltby to engage local people with the landscape history of the area, to include guided walks and events as appropriate*

### **Anston Stones**

Anston Stones provides opportunities to explore limestone woodlands, magnesian limestone grassland and geology, and the Ice Age story. The Parish Council provides a mechanism for active involvement of the local community in managing and interpreting the site and there is an ongoing management partnership with English Nature, Rotherham Borough Council and Groundwork Creswell. However, the partnership focuses on the ecological interest. There is scope to expand understanding and interpretation of the geological, historical and archaeological dimension.

The predictive modelling has identified Anston Stones as an area with high potential for Ice Age archaeology and palaeontology, and as an appropriate location for field testing. This could provide an excellent opportunity for to involve and to engage with the local community through active participation as well as talks, site visits, school activities etc.

The three existing interpretation panels need revising, replacing and repositioning and there is scope for an additional interpretation panel inside the recreation ground, at the entrance to the woods. A hierarchy of interpretation is recommended, with additional, smaller 'gateway' signs at each entrance. As with the other Pilot Action



Areas, a more detailed interpretative leaflet is needed to explore the landscape history of the area, identifying key features of interest.

The existing programme of community activity provides an excellent platform to develop understanding and engagement with the historical dimension of the landscape.

### **Recommendations**

*Replace and reposition existing interpretation panels and add a further panel in the recreation ground*

*Provide 'gateway signs' at each entrance*

*Maintain and amend the route in the 'Heritage Area' walks booklet as suggested under Physical and Visual Access*

*Provide an additional booklet exploring the landscape in greater depth, paying particular attention to the geology, Ice Age archaeology, woodlands and grasslands theme of the interpretation plan*

*Develop a programme of community outreach designed to engage with and add value to existing activity by adding a historical dimension*

### **Creswell Hub**

#### **(Creswell Village, Elmtun and Whaley Valleys, Markland and Hollinhill Grips, Creswell Craggs)**

The Creswell Hub provides the best opportunity to present the story of the Heritage Area as a whole to visitors as well as to the local community of Creswell. For this it is important that active links are maintained with Creswell Craggs, to encourage visitors to Creswell Craggs to explore the local area, starting with the Creswell Education and Information Point.

The landscape around Creswell (Creswell Craggs, Markland Grips, Elmtun and its field system, Welbeck Abbey, Elmtun Green, Craggs Meadow, Creswell Model Village) provides opportunities to explore all aspects of the story set out in the Interpretation Plan.

It is recommended that this be presented through a new booklet that focuses on the area and includes the four walks identified under Physical and Visual Access (the Creswell Craggs route, the Creswell Village trail, the Markland/Creswell Craggs/Robin Hood Way route and the Creswell/Elmtun route) as well as an additional route to Welbeck Abbey the existing Welbeck walk leaflet). A suitable title might be 'Exploring Creswell's Historic Landscape'.

In the "Walking in the Creswell Limestone Heritage Area" booklet, it is suggested that no route revisions are needed to the 'Creswell Craggs' and 'Elmtun and Whaley Valleys' routes, but that reference should be made to the Creswell Education and Interpretation Point and to the complementary Creswell Hub leaflet.



Information boards and way marking will be required in Creswell village to encourage use. Interpretation design and implementation should be co-ordinated with that already undertaken in the area at Creswell Crag.

### **Recommendations**

*Provide effective signage for the Creswell Interpretation Point as identified under Physical and Intellectual Access*

*Revise the Heritage Area walks booklet to include reference to the Interpretation Point*

*Produce a new booklet that explores the landscape history of the area in greater depth and includes (or refers to as a separate booklet) the five suggested routes*

## **LANGWITH VALE**

The valley contains a number of interesting historical features that illustrate the pre-industrial landscape away from the gorges. The area's links to the Ice Age past are represented by caves and rock shelters at Upper Langwith and Whaley respectively. A remnant of Royal hunting forest is preserved along with its defensive ditch and rides at Scarcliffe Park. Excellent examples of local vernacular architecture can be found at Langwith old hall and in surrounding villages. Evidence of milling, which was hugely popular in this area, can be found adjacent to Whaley village. Scarcliffe Park and Poulter Country Park provide excellent habitat for many of the area's indicator species.

The proposed redevelopment of the Whaley Thorns Heritage Centre close to Langwith Vale will provide an optional focal point from which to explore this area. Development of interpretative literature should be considered as part of an Interpretation Plan for this redevelopment.

## **PLEASLEY VALE**

As with the Creswell Hub, the landscape around Pleasley Vale provides an opportunity to explore all aspects of the story set out in the Interpretation Plan (Pleasley gorge and caves, Little Matlock, Pleasley Park, Pleasley Mills, Pleasley Pit).

As identified under Physical and Visual Access, in view of the wealth of interest, the diversity of stakeholders and the various uncoordinated initiatives currently active, it is essential that an integrated Interpretation and Development plan be created. This should include proposals for long term management and presentation of the cultural, ecological and landscape interest. The most critical need is for an interpretation plan that sets out the story of Pleasley Vale and a strategic approach to its presentation.

As with the other Pilot Action Areas, a more detailed interpretative booklet is needed to explore the landscape history of the area, identifying key features of interest. This could be an outcome of the Interpretation Plan or could be a stepping stone towards it.

Key omissions at present are any interpretation of Pleasley Gorge in terms of its geology, Ice Age archaeology and industrial history. The proposal by the District of



Bolsover Leisure Services Department to develop a satellite outdoor activities centre in one of the old mill buildings with dedicated educational/interpretative space presents an opportunity that should not be missed. It is understood that these proposals could include provision for an officer, part of whose role could be to develop and lead a programme of guided walks. This reinforces the opportunity, and the need to ensure the officer is trained and equipped to interpret the story of the vale.

As with the other Pilot Action Areas, an excellent opportunity exists to engage the local community in the interpretative opportunity.

Pleasley Vale is also the start of the Creswell Archaeological Way for which interpretative recommendations have been made above.

### **Recommendations**

*Produce an interpretative plan for the whole site*

*Produce a new booklet that explores the landscape history of the area in greater depth and that identifies the key trails through which to explore it*

*Develop a programme of community outreach designed to engage with and add value to existing community activity*

*Update and replace the existing interpretation board at Outgang Lane car park and provide a new interpretation board at Mansfield Woodhouse station*

*Revise the walk shown in "Walking in the Creswell Limestone Heritage area" booklet*

*Produce a new booklet that explores the landscape history of the area in greater*

### **ADDITIONAL INTERPREATION OPPORTUNITIES**

Several specific locations offer opportunities for interpretation panels in prominent public places that would help raise the profile of the Limestone Heritage Area amongst visitors and locals. In all cases, appropriate awareness raising, consultation and partnership with local community groups and/or stakeholders is essential before any action is undertaken on the ground. Installation of numerous interpretation panels raises issues of maintenance that need to be discussed and resolved with relevant stakeholders. On the other hand, a network of interpretation panels could provide an effective way of raising the profile of the Limestone Heritage Area.

At Thorpe Common, the area managed under the Countryside Stewardship scheme at Moor Mill Farm there is the potential for installing an interpretation point showing the types of wildflowers that this rare limestone habitat supports.

Thorpe Salvin village centre has potential for an orientation/information point in the existing seating area opposite the pub, interpreting the Limestone Heritage Area and showing nearby places of interest to visit.

At Firbeck there is an opportunity opposite the public house just inside the community centre grounds or adjacent to the bridleway leading to the river.



At Scarcliffe Village and in Langwith Vale there are opportunities for siting village interpretation boards making mention of the magnesian limestone significance locally.

At North Anston there is an opportunity at the recreation ground where the Parish Council Offices are also based.

Interpretation panels were also recommended under Visual Access at several locations which afford panoramic views of the Heritage Area landscape.

**Recommendations:**

*Install interpretation panels at the recommended locations subject to local and stakeholder consultation*

## 8.6 Community Involvement

The importance of engaging with local communities has been emphasised. The most effective way of doing this would be through a project modelled on the current 'Pride of Place' programme currently managed by Creswell Heritage Trust (see appendix 8.11).

**Outreach activity should include:**

*Open days and surveys within communities adjacent to the Pilot Action Areas including Maltby, North Anston, Creswell, Whitwell, Langwith - Whaley Thorns and Shirebrook to ascertain current awareness and usage of Heritage Area sites and any issues arising.*

*Contact with community groups including Bolsover Ramblers, Anston Stones, Anston Conservation Society, Pleasley Pit Nature Study Group, Warsop Footpaths and Countryside group, youth clubs, resident associations, scouts, guides and others;*

*Meetings with schools and educational visits.*

*Opportunities should also be sought to benefit local communities by promoting use of local facilities by visitors. This could be achieved through a separate guide (to allow for flexible updating) identifying suitable refreshment stops and accommodation.*

## 8.7 Management and Promotion

The various recommendations for providing and improving Physical, Visual and Intellectual Access need on-going co-ordination and review if they are to be effective. The charitable remit of Creswell Heritage Trust focuses on cultural heritage, specifically that of the Limestone Heritage Area. Groundwork Creswell has a complementary remit focused on the physical environment. The area specific remit of Creswell Heritage Trust makes the Trust ideally suited to deliver the overall co-ordinating role, supported by Groundwork Creswell as appropriate. These roles need



not be onerous, but require recognition and some financial support from key stakeholders including the local authorities and national agencies.

The Management role involves facilitating partnership action by the various stakeholders, especially the local authorities, to implement the recommendations of the Management Action Plan. Activities would include organising and administering meetings, seeking funding, managing projects, monitoring the situation on the ground and monitoring currency of interpretative leaflets, booklets etc.

The Promotional role overlaps with the Management role with respect to the interpretative material. At the most basic level, promotional activity would focus on ensuring that interpretative literature is current, in print, and available (for sale as appropriate) in key locations including the main heritage attractions, local libraries etc. This could be expanded slightly by (for instance) provision of a promotional flyer that could be distributed to local accommodation providers, pubs, leisure centres etc. This role could also include seeking funding for research into usage of the trails network.

Key co-ordinating and monitoring tasks include:

- Monitoring of physical works (stiles, gates, interpretation panels)
- Monitoring, amending and maintaining in print the key booklets
- Co-ordination of promotion (links to key attractions, distribution of booklets etc to key outlets within the Heritage Area including the main attractions, accommodation providers, pubs and hotels, libraries and leisure centres)
- Seeking funding and co-ordinating implementation
- Leaflets in pubs and local accommodation providers etc (perhaps a flier)
- Visitor surveys during summer months to ascertain visitor profiles and improvements people would like at each of the main sites.

### ***Recommendations***

*Support the role of Creswell Heritage Trust and Groundwork Creswell in co-ordinating implementation and monitoring of the Management Action Plan*



# Creswell Crags Limestone Heritage Area Management Action Plan

Volume 3, Appendices

March 2004

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By Glyn Davies, Anna Badcock, Nigel Mills and Brian Smith



# APPENDICES



## **Appendix 2.1 - Nottinghamshire Information on the GIS Index**

Special Areas of Conservation - SAC

National Nature Reserves - NNR

Sites of Special Scientific Interest - SSSI

Sites of Importance for Nature Conservation - SINC

Ancient Woodlands

Statutory Local Nature Reserves - LNR

Informal Nature Reserves

Nottinghamshire Wildlife Trust

Woodlands Trust

RSPB

Scheduled Ancient Monuments – SAM

Listed Buildings

Conservation Areas

Sites and Monuments Record - SMR



## Appendix 3.1 Costs for Production of Information Guides

	Sc	Sp	Per Day	Days	Cost	Total
<b>ARCUS staff</b>						
James Symonds	OR3	2	178.00	5	890.00	
Glyn Davies	OR1	5	135.00	30	4050.00	
site assistant	Tech D	2	93.41	3	280.23	
Illustrator	Tech D	2	93.41	9	840.69	
					Sub-total a	6060.92

<b>External Specialists</b>						
					Sub-total b	0.00

<b>Non-staff cost ARCUS</b>						
Travel			30.00	6	180.00	
Consumables			1.00	200	200.00	
					Sub-total c	380.00

<b>Non-staff cost external</b>						
travel					0.00	
Printing 30 copies of each			20.00	9	180.00	
					0.00	
					Sub-total d	180.00

<b>Overheads</b>						
ARCUS Overheads at 25% a+c					1610.23	
External Overheads at 10% b+d					18.00	
					Sub-total e	1628.23

<b>Capital Equipment</b>						
					Sub-total f	0.00

<b>Gross Total</b>						8249.15
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## Appendix 3.2 Costs for the Monitoring Programme

### Monitoring 4 yearly

	Per Day	Days	Cost	Total
<b>Creswell Heritage Trust staff</b>				
Nigel Mills	340.00	2	680.00	
Ranger	225.00	14	3150.00	
			Total	£3830.00

### Monitoring 2 yearly

	Per Day	Days	Cost	Total
<b>Creswell Heritage Trust staff</b>				
Nigel Mills	340.00	1	340.00	
Ranger	225.00	6	1350.00	
			Total	£1690.00



### Appendix 3.3 Costs for Backfilling Trenches at Thorpe Common Rock Shelter

	Sc	Sp	Per Day	Days	Cost	Total
<b>ARCUS staff</b>						
James Symonds	OR3	2	178.00		0.00	
Glyn Davies	OR1	5	135.00	2	270.00	
site assistant	Tech D	2	93.41	1	93.41	
					Sub-total a	363.41

<b>External Specialists</b>						
					0.00	
					Sub-total b	0.00

<b>Non-staff cost ARCUS</b>						
Travel			30.00	2	60.00	
					Sub-total c	60.00

<b>Non-staff cost external</b>						
					0.00	
					Sub-total d	0.00

<b>Overheads</b>						
ARCUS Overheads at 25% a+c					105.85	
External Overheads at 10% b+d					0.00	
					Sub-total e	105.85

<b>Capital Equipment</b>						
					Sub-total f	0.00

<b>Gross Total</b>						529.26
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## **Appendix 3.4    Terrain Unit Database CD**



## Appendix 4.1 Discriminat analysis for cave sites

### Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		6	4.0
Excluded	Missing or out-of-range group codes	19	12.6
	At least one missing discriminating variable	7	4.6
	Both missing or out-of-range group codes and at least one missing discriminating variable	118	78.1
	Unselected	1	.7
	Total	145	96.0
Total		151	100.0

### Group Statistics

Archaeology1_none0		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
0	Valley_location_1_high_2_mid_3_low	1.3333	.57735	3	3.000
	Altitude (m)	118.3333	10.40833	3	3.000
	arch_cave_vacinity1_none2	1.6667	.57735	3	3.000
	Light Zone Extent (depth m)	5.0000	3.00000	3	3.000
	Groundslope Inside (deg)	28.3333	24.66441	3	3.000
	General Slope Above (deg)	90.0000	.00000	3	3.000
	General Slope Below (deg)	23.3333	20.81666	3	3.000
	General Slope Left (deg)	73.3333	28.86751	3	3.000
	newasp	63.3333	85.04901	3	3.000
	Cave_area	70.0000	69.54135	3	3.000
	Cave Depth (m)	37.6667	50.63925	3	3.000
	Cave_entrance_size	4.9333	4.42869	3	3.000
1	Valley_location_1_high_2_mid_3_low	1.6667	1.15470	3	3.000
	Altitude (m)	115.6667	6.02771	3	3.000
	arch_cave_vacinity1_none2	1.0000	.00000	3	3.000
	Light Zone Extent (depth m)	2.3333	1.52753	3	3.000
	Groundslope Inside (deg)	20.0000	34.64102	3	3.000
	General Slope Above (deg)	60.0000	51.96152	3	3.000
	General Slope Below (deg)	33.3333	30.55050	3	3.000
	General Slope Left (deg)	80.0000	17.32051	3	3.000
	newasp	108.3333	27.53785	3	3.000
	Cave_area	15.3333	11.71893	3	3.000



Total	Cave Depth (m)	6.0000	5.56776	3	3.000
	Cave_entrance_size	3.9333	.11547	3	3.000
	Valley_location_1_high_2_mid_3_low	1.5000	.83666	6	6.000
	Altitude (m)	117.0000	7.74597	6	6.000
	arch_cave_vacinity1_none2	1.3333	.51640	6	6.000
	Light Zone Extent (depth m)	3.6667	2.58199	6	6.000
	Groundslope Inside (deg)	24.1667	27.27942	6	6.000
	General Slope Above (deg)	75.0000	36.74235	6	6.000
	General Slope Below (deg)	28.3333	24.01388	6	6.000
	General Slope Left (deg)	76.6667	21.60247	6	6.000
	newasp	85.8333	61.67793	6	6.000
	Cave_area	42.6667	53.72026	6	6.000
	Cave Depth (m)	21.8333	36.59189	6	6.000
	Cave_entrance_size	4.4333	2.85494	6	6.000

### Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Valley_location_1_high_2_mid_3_low	.952	.200	1	4	.678
Altitude (m)	.964	.147	1	4	.721
arch_cave_vacinity1_none2	.500	4.000	1	4	.116
Light Zone Extent (depth m)	.680	1.882	1	4	.242
Groundslope Inside (deg)	.972	.115	1	4	.751
General Slope Above (deg)	.800	1.000	1	4	.374
General Slope Below (deg)	.948	.220	1	4	.664
General Slope Left (deg)	.971	.118	1	4	.749
newasp	.840	.760	1	4	.432
Cave_area	.689	1.803	1	4	.251
Cave Depth (m)	.775	1.159	1	4	.342
Cave_entrance_size	.963	.153	1	4	.716



**Pooled Within-Groups Matrices(a)**

		Valley_location_1_high_2_mid_3_low	Altitude (m)	arch_cave_vacinity1_one2	Light Zone Extent (depth m)	Groundslope Inside (deg)	General Slope Above (deg)	General Slope Below (deg)	General Slope Left (deg)	newasp	Cave_area	Cave Depth (m)	Cave_entrance_size
Covariance	Valley_location_1_high_2_mid_3_low	.833	1.083	.083	.583	12.917	-30.000	-22.500	9.167	-2.500	1.833	-3.417	1.200
	Altitude (m)	1.083	72.333	.833	-17.667	174.167	-142.500	-37.500	84.167	523.750	299.333	262.583	-18.400
	arch_cave_vacinity1_one2	.083	.833	.167	.000	-4.167	.000	-4.167	8.333	8.333	16.000	8.167	.483
	Light Zone Extent (depth m)	.583	-17.667	.000	5.667	-35.000	7.500	-10.833	-12.500	-134.583	-57.333	-62.250	6.167
	Groundslope Inside (deg)	12.917	174.167	-4.167	-35.000	904.167	-900.000	-245.833	-58.333	991.667	150.000	305.833	-55.083
	General Slope Above (deg)	-30.000	-142.500	.000	7.500	-900.000	1350.000	750.000	-225.000	-600.000	-195.000	-135.000	3.000
	General Slope Below (deg)	-22.500	-37.500	-4.167	-10.833	-245.833	750.000	683.333	-408.333	-16.667	-148.333	45.833	-41.167
	General Slope Left (deg)	9.167	84.167	8.333	-12.500	-58.333	-225.000	-408.333	566.667	629.167	765.000	415.833	23.667
	newasp	-2.500	523.750	8.333	-134.583	991.667	-600.000	-16.667	629.167	3995.833	2499.167	2133.333	-141.167
	Cave_area	1.833	299.333	16.000	-57.333	150.000	-195.000	-148.333	765.000	2499.167	2486.667	1694.500	-40.133
	Cave Depth (m)	-3.417	262.583	8.167	-62.250	305.833	-135.000	45.833	415.833	2133.333	1694.500	1297.667	-62.717
	Cave_entrance_size	1.200	-18.400	.483	6.167	-55.083	3.000	-41.167	23.667	-141.167	-40.133	-62.717	9.813
Correlation	Valley_location_1_high_2_mid_3_low	1.000	.140	.224	.268	.471	-.894	-.943	.422	-.043	.040	-.104	.420



Altitude (m)	.140	1.000	.240	-.873	.681	-.456	-.169	.416	.974	.706	.857	-.691
arch_cave_vacinity1_none2	.224	.240	1.000	.000	-.339	.000	-.390	.857	.323	.786	.555	.378
Light Zone Extent (depth m)	.268	-.873	.000	1.000	-.489	.086	-.174	-.221	-.894	-.483	-.726	.827
Groundslope Inside (deg)	.471	.681	-.339	-.489	1.000	-.815	-.313	-.081	.522	.100	.282	-.585
General Slope Above (deg)	-.894	-.456	.000	.086	-.815	1.000	.781	-.257	-.258	-.106	-.102	.026
General Slope Below (deg)	-.943	-.169	-.390	-.174	-.313	.781	1.000	-.656	-.010	-.114	.049	-.503
General Slope Left (deg)	.422	.416	.857	-.221	-.081	-.257	-.656	1.000	.418	.644	.485	.317
newasp	-.043	.974	.323	-.894	.522	-.258	-.010	.418	1.000	.793	.937	-.713
Cave_area	.040	.706	.786	-.483	.100	-.106	-.114	.644	.793	1.000	.943	-.257
Cave Depth (m)	-.104	.857	.555	-.726	.282	-.102	.049	.485	.937	.943	1.000	-.556
Cave_entrance_size	.420	-.691	.378	.827	-.585	.026	-.503	.317	-.713	-.257	-.556	1.000

a The covariance matrix has 4 degrees of freedom.

### Covariance Matrices(a)

Archaeology1_none0		Valley_location_1_high_2_mid_3_low	Altitude (m)	arch_cave_vacinity1_none2	Light Zone Extent (depth m)	Groundslope Inside (deg)	General Slope Above (deg)	General Slope Below (deg)	General Slope Left (deg)	newasp	Cave_area	Cave Depth (m)	Cave_entrance_size
0	Valley_location_1_high_2_mid_3_low	.333	-4.167	.167	1.500	-14.167	.000	-11.667	8.333	31.667	-5.000	-12.833	2.533
	Altitude (m)	-4.167	108.333	1.667	-30.000	158.333	.000	108.333	83.333	883.333	580.000	501.667	-36.167



1	arch_cave_vacinity1_none2	.167	1.667	.333	.000	-8.333	.000	-8.333	16.667	16.667	32.000	16.333	.967
	Light Zone Extent (depth m)	1.500	-30.000	.000	9.000	-60.000	.000	-45.000	.000	240.000	126.000	126.000	12.300
	Groundslope Inside (deg)	-14.167	158.333	-8.333	-60.000	608.333	.000	508.333	416.667	1183.333	40.000	431.667	-106.167
	General Slope Above (deg)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	General Slope Below (deg)	-11.667	108.333	-8.333	-45.000	508.333	.000	433.333	416.667	783.333	170.000	221.667	-85.667
	General Slope Left (deg)	8.333	83.333	16.667	.000	-416.667	.000	-416.667	833.333	833.333	1600.000	816.667	48.333
	newasp	-31.667	883.333	16.667	240.000	1183.333	.000	783.333	833.333	7233.333	4960.000	4176.667	-279.667
	Cave_area	-5.000	580.000	32.000	126.000	40.000	.000	-170.000	1600.000	4960.000	4836.000	3332.000	-79.400
	Cave Depth (m)	-12.833	501.667	16.333	126.000	431.667	.000	221.667	816.667	4176.667	3332.000	2564.333	-124.833
	Cave_entrance_size	2.533	-36.167	.967	12.300	-106.167	.000	-85.667	48.333	279.667	-79.400	124.833	19.613
	Valley_location_1_high_2_mid_3_low	1.333	6.333	.000	-.333	40.000	-60.000	-33.333	10.000	26.667	8.667	6.000	-.133
	Altitude (m)	6.333	36.333	.000	-5.333	190.000	-285.000	-183.333	85.000	164.167	18.667	23.500	-.633
	arch_cave_vacinity1_none2	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Light Zone Extent (depth m)	-.333	-5.333	.000	2.333	-10.000	15.000	23.333	-25.000	29.167	11.333	1.500	.033
	Groundslope Inside (deg)	40.000	190.000	.000	-10.000	1200.000	1800.000	1000.000	300.000	800.000	260.000	180.000	-4.000
	General Slope Above (deg)	-60.000	285.000	.000	15.000	-1800.000	2700.000	1500.000	450.000	1200.000	390.000	270.000	6.000



Total	General Slope Below (deg)	-33.333	183.333	.000	23.333	-1000.000	1500.000	933.333	400.00 0	816.66 7	126.667	130.00 0	3.333
	General Slope Left (deg)	10.000	85.000	.000	-25.000	300.000	-450.000	-400.000	300.00 0	425.00 0	-70.000	15.000	-1.000
	newasp	26.667	164.167	.000	-29.167	800.000	-	-816.667	425.00 0	758.33 3	38.333	90.000	-2.667
	Cave_area	8.667	18.667	.000	11.333	260.000	-390.000	-126.667	-70.000	38.333	137.333	57.000	-.867
	Cave Depth (m)	6.000	23.500	.000	1.500	180.000	-270.000	-130.000	15.000	90.000	57.000	31.000	-.600
	Cave_entrance_size	-.133	-.633	.000	.033	-4.000	6.000	3.333	-1.000	-2.667	-.867	-.600	.013
	Valley_location_1_high_2_mid_3_low	.700	.600	.000	.200	9.500	-27.000	-17.000	8.000	2.500	-4.000	-5.900	.860
	Altitude (m)	.600	60.000	1.200	-12.000	146.000	-90.000	-38.000	62.000	383.00 0	283.200	235.40 0	-13.920
	arch_cave_vacinity1_none2	.000	1.200	.267	.533	-1.667	6.000	-5.333	5.333	-2.333	23.733	12.867	.587
	Light Zone Extent (depth m)	.200	-12.000	.533	6.667	-21.333	30.000	-16.667	-15.333	143.66 7	-2.133	-24.467	5.733
	Groundslope Inside (deg)	9.500	146.000	-1.667	-21.333	744.167	-645.000	-221.667	-63.333	680.83 3	256.667	323.83 3	-41.567
	General Slope Above (deg)	-27.000	-90.000	6.000	30.000	-645.000	1350.000	510.000	240.00 0	885.00 0	336.000	177.00 0	11.400
	General Slope Below (deg)	-17.000	-38.000	-5.333	-16.667	-221.667	510.000	576.667	306.66 7	121.66 7	282.667	-58.333	-35.933
	General Slope Left (deg)	8.000	62.000	5.333	-15.333	-63.333	-240.000	-306.667	466.66 7	593.33 3	502.667	269.33 3	16.933
	newasp	2.500	383.000	-2.333	-	680.833	-885.000	121.667	593.33 3	3804.1 67	1261.33 3	1279.1 67	-126.433
	Cave_area	-4.000	283.200	23.733	-2.133	256.667	336.000	-282.667	502.66 7	1261.3 33	2885.86 7	1874.9 33	-15.707
	Cave Depth (m)	-5.900	235.400	12.867	-24.467	323.833	177.000	-58.333	269.33 3	1279.1 67	1874.93 3	1338.9 67	-40.673



Cave_entrance_ size	.860	-13.920	.587	5.733	-41.567	11.400	-35.933	16.933	126.43 3	-15.707	-40.673	8.151
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a The total covariance matrix has 5 degrees of freedom.



## Box's Test of Equality of Covariance Matrices

### Log Determinants

Archaeology1_none0	Rank	Log Determinant
0	.(a)	.(b)
1	.(a)	.(b)
Pooled within-groups	4	1.166

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

a Rank < 3

b Too few cases to be non-singular

### Test Results(a)

Tests null hypothesis of equal population covariance matrices.

a No test can be performed with fewer than two nonsingular group covariance matrices.

### Variables Failing Tolerance Test(a)

	Within-Groups Variance	Tolerance	Minimum Tolerance
Groundslope Inside (deg)	904.167	.000	.000
General Slope Above (deg)	1350.000	.000	.000
General Slope Below (deg)	683.333	.000	.000
General Slope Left (deg)	566.667	.000	.000
newasp	3995.833	.000	.000
Cave_area	2486.667	.000	.000
Cave Depth (m)	1297.667	.000	.000
Cave_entrance_size	9.813	.000	.000

All variables passing the tolerance criteria are entered simultaneously.

a Minimum tolerance level is .001.

## Summary of Canonical Discriminant Functions

### Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	11.417(a)	100.0	100.0	.959

a First 1 canonical discriminant functions were used in the analysis.

### Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.081	5.038	4	.283



### Standardized Canonical Discriminant Function Coefficients

	Function
	1
Valley_location_1_high_2_mid_3_low	-1.525
Altitude (m)	3.598
arch_cave_vacinity1_none2	-.227
Light Zone Extent (depth m)	3.752

### Structure Matrix

	Function
	1
Cave_area(a)	.488
Cave Depth (m)(a)	.393
arch_cave_vacinity1_none2	.296
General Slope Below (deg)(a)	.266
Light Zone Extent (depth m)	.203
General Slope Left (deg)(a)	-.169
newasp(a)	.142
Cave_entrance_size(a)	-.108
Valley_location_1_high_2_mid_3_low	-.066
Altitude (m)	.057
General Slope Above (deg)(a)	.045
Groundslope Inside (deg)(a)	-.025

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.

a This variable not used in the analysis.

### Functions at Group Centroids

	Function
Archaeology1_none0	1
0	2.759
1	-2.759

Unstandardized canonical discriminant functions evaluated at group means

### Classification Statistics

#### Classification Processing Summary

Processed		151
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	30
Used in Output		121



### Prior Probabilities for Groups

Archaeology1_ none0	Prior	Cases Used in Analysis	
		Unweighte d	Weighted
0	.500	3	3.000
1	.500	3	3.000
Total	1.000	6	6.000



### Casewise Statistics

	Case Number	Actual Group	Highest Group					Second Highest Group			Discriminant Scores
			Predicted Group	P(D>d   G=g)		P(G=g   D=d)	Squared Mahalanobis Distance to Centroid	Group	P(G=g   D=d)	Squared Mahalanobis Distance to Centroid	Function 1
				p	df						
Original	AST12	ungrouped	1	.000	1	1.000	197.555	0	.000	383.108	-16.814
	AST20	1	1	.179	1	1.000	1.804	0	.000	17.427	-1.416
	AST26	ungrouped	1	.000	1	1.000	96.531	0	.000	235.399	-12.584
	AST33	ungrouped	1	.000	1	1.000	247.296	0	.000	451.281	-18.485
	AST9	ungrouped	1	.000	1	1.000	72.213	0	.000	196.436	-11.257
	ATT12	1	1	.942	1	1.000	.005	0	.000	31.257	-2.832
	EWT21	ungrouped	0	.061	1	.993	3.503	1	.007	13.294	.887
	EWT37	ungrouped	1	.000	1	1.000	155.733	0	.000	323.893	-15.238
	EWT46	ungrouped	1	.000	1	1.000	104.284	0	.000	247.423	-12.971
	LBT7	1	1	.007	1	1.000	7.153	0	.000	67.112	-5.433
	MGT102	ungrouped	1	.070	1	1.000	3.273	0	.000	53.683	-4.568
	MGT106	ungrouped	0	.128	1	.999	2.311	1	.001	15.979	1.239
	MGT108	ungrouped	0	.039	1	.979	4.241	1	.021	11.960	.699
	MGT118	ungrouped	1	.000	1	1.000	36.476	0	.000	133.571	-8.798
	MGT125	ungrouped	1	.760	1	1.000	.094	0	.000	27.161	-2.453
	MGT52	ungrouped	1	.178	1	1.000	1.815	0	.000	47.128	-4.106
	MGT54	ungrouped	1	.002	1	1.000	9.459	0	.000	73.844	-5.834
	MGT74	ungrouped	1	.204	1	1.000	1.613	0	.000	46.074	-4.029
	MGT81	0	0	.629	1	1.000	.234	1	.000	25.346	2.276
	MGT82	1	1	.204	1	1.000	1.613	0	.000	46.074	-4.029



PLT20	ungrouped	1	.016	1	.876	5.785	0	.124	9.688	-.354
PLT23	ungrouped	0	.031	1	1.000	4.644	1	.000	58.870	4.914
PLT30	0	0	.563	1	1.000	.335	1	.000	37.168	3.338
PLT31	ungrouped	0	.124	1	.999	2.360	1	.001	15.851	1.222
PLT5	0	0	.924	1	1.000	.009	1	.000	29.400	2.663
RAT25	ungrouped	1	.000	1	1.000	116.837	0	.000	266.565	-13.568
RHT1	ungrouped	1	.000	1	1.000	99.144	0	.000	239.471	-12.716

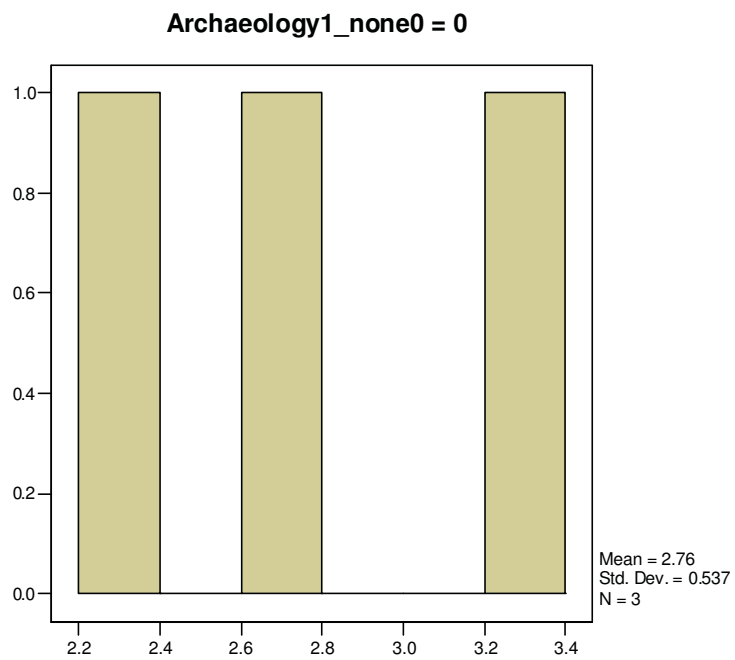
Unselected case were deleted from the table

\*\* Misclassified case

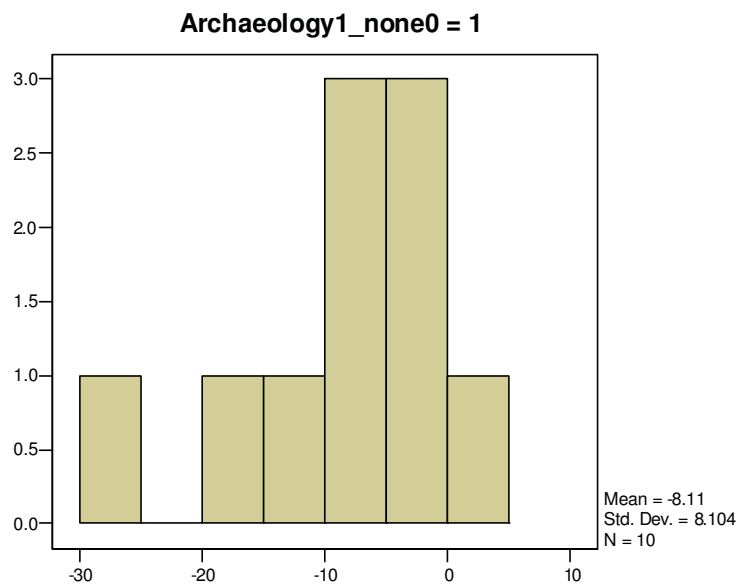


## Separate-Groups Graphs

### Canonical Discriminant Function 1

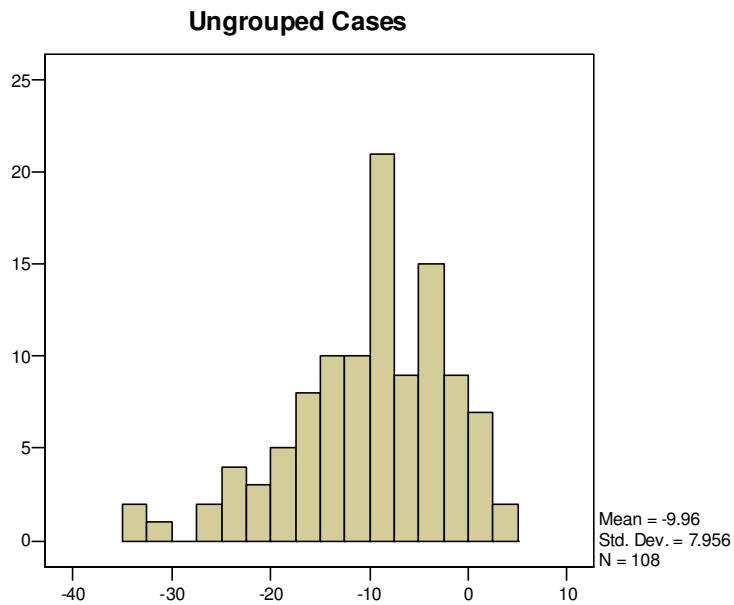


### Canonical Discriminant Function 1





## Canonical Discriminant Function 1



## Classification Results (a,b)

			Archaeology1_ none0	Predicted Group Membership		Total
				0	1	
Cases Selected	Original	Count	0	3	0	3
			1	0	4	4
			Ungrouped cases	5	15	20
		%	0	100.0	.0	100.0
			1	.0	100.0	100.0
			Ungrouped cases	25.0	75.0	100.0
Cases Not Selected	Original	Count	0	0	0	0
			1	1	5	6
			Ungrouped cases	4	84	88
		%	0	.0	.0	100.0
			1	16.7	83.3	100.0
			Ungrouped cases	4.5	95.5	100.0

a 100.0% of selected original grouped cases correctly classified.

b 83.3% of unselected original grouped cases correctly classified.



## Appendix 4.2 Discriminat analysis for all sites

### Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		11	7.3
Excluded	Missing or out-of-range group codes	99	65.6
	At least one missing discriminating variable	3	2.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	38	25.2
	Total	140	92.7
Total		151	100.0

### Group Statistics

Archaeology1_none0		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
0	Valley_location_1_high_2_mid_3_low	1.3333	.57735	3	3.000
	Altitude (m)	118.3333	10.40833	3	3.000
	arch_cave_vacinity1_none2	1.6667	.57735	3	3.000
	Light Zone Extent (depth m)	5.0000	3.00000	3	3.000
	Groundslope Inside (deg)	28.3333	24.66441	3	3.000
	General Slope Above (deg)	90.0000	.00000	3	3.000
	General Slope Below (deg)	23.3333	20.81666	3	3.000
	General Slope Left (deg)	73.3333	28.86751	3	3.000
	newasp	63.3333	85.04901	3	3.000
	site_depth	37.6667	50.63925	3	3.000
	site_area	70.0000	69.54135	3	3.000
1	Valley_location_1_high_2_mid_3_low	1.5000	.75593	8	8.000
	Altitude (m)	99.0000	23.41550	8	8.000
	arch_cave_vacinity1_none2	1.1250	.35355	8	8.000
	Light Zone Extent (depth m)	2.9000	1.33951	8	8.000
	Groundslope Inside (deg)	8.7500	21.00170	8	8.000
	General Slope Above (deg)	67.5000	41.66190	8	8.000
	General Slope Below (deg)	31.2500	19.03943	8	8.000
	General Slope Left (deg)	57.5000	29.76095	8	8.000
	newasp	88.1250	63.24202	8	8.000
	site_depth	4.1500	3.42387	8	8.000
	site_area	60.7800	101.63289	8	8.000



Total	Valley_location_1_high_2_mid_3_low	1.4545	.68755	11	11.000
	Altitude (m)	104.2727	22.06849	11	11.000
	arch_cave_vacinity1_none2	1.2727	.46710	11	11.000
	Light Zone Extent (depth m)	3.4727	2.00454	11	11.000
	Groundslope Inside (deg)	14.0909	22.67357	11	11.000
	General Slope Above (deg)	73.6364	36.40679	11	11.000
	General Slope Below (deg)	29.0909	18.81730	11	11.000
	General Slope Left (deg)	61.8182	29.00627	11	11.000
	newasp	81.3636	66.18500	11	11.000
	site_depth	13.2909	27.67979	11	11.000
	site_area	63.2945	90.64336	11	11.000

### Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Valley_location_1_high_2_mid_3_low	.987	.117	1	9	.740
Altitude (m)	.833	1.810	1	9	.211
arch_cave_vacinity1_none2	.707	3.737	1	9	.085
Light Zone Extent (depth m)	.761	2.834	1	9	.127
Groundslope Inside (deg)	.837	1.750	1	9	.219
General Slope Above (deg)	.917	.818	1	9	.389
General Slope Below (deg)	.961	.362	1	9	.562
General Slope Left (deg)	.935	.626	1	9	.449
newasp	.969	.284	1	9	.607
site_depth	.680	4.233	1	9	.070
site_area	.998	.020	1	9	.890



**Pooled Within-Groups Matrices(a)**

		Valley_location_1_high_2_mid_3_low	Altitude (m)	arch_cave_vacinity1_none2	Light Zone Extent (depth m)	Groundslope Inside (deg)	General Slope Above (deg)	General Slope Below (deg)	General Slope Left (deg)	newasp	site_depth	site_area
Covariance	Valley_location_1_high_2_mid_3_low	.519	-2.148	.093	.267	6.296	-10.000	-9.815	11.296	10.463	-1.363	21.653
	Altitude (m)	-2.148	450.519	-4.519	-22.444	211.852	-280.000	-32.037	99.074	393.148	127.370	1439.867
	arch_cave_vacinity1_none2	.093	-4.519	.171	.233	-2.824	2.500	-.324	2.315	12.801	3.613	33.691
	Light Zone Extent (depth m)	.267	-22.444	.233	3.396	-19.222	16.000	.444	-16.444	-30.500	-27.716	34.359
	Groundslope Inside (deg)	6.296	211.852	-2.824	-19.222	478.241	-425.000	-85.648	76.852	477.546	146.981	300.511
	General Slope Above (deg)	-10.000	-280.000	2.500	16.000	-425.000	1350.000	425.000	-50.000	412.500	-59.000	883.200
	General Slope Below (deg)	-9.815	-32.037	-.324	.444	-85.648	425.000	378.241	-248.148	181.713	26.648	209.978
	General Slope Left (deg)	11.296	99.074	2.315	-16.444	76.852	-50.000	-248.148	874.074	836.574	202.815	302.600
	newasp	10.463	-393.148	12.801	-30.500	477.546	412.500	181.713	836.574	4718.171	993.065	3783.344
	site_depth	-1.363	127.370	3.613	-27.716	146.981	-59.000	26.648	202.815	993.065	578.970	730.826
Correlation	site_area	21.653	1439.867	33.691	34.359	-300.511	883.200	209.978	302.600	3783.344	730.826	9108.523
	Valley_location_1_high_2_mid_3_low	1.000	-.141	.311	.201	.400	-.378	-.701	.531	.212	-.079	.315
	Altitude (m)	-.141	1.000	-.514	-.574	.456	-.359	-.078	.158	-.270	.249	-.711
	arch_cave_vacinity1_none2	.311	-.514	1.000	.306	-.312	.164	-.040	.189	.450	.363	.853



Light Zone Extent (depth m)	.201	-.574	.306	1.000	-.477	.236	.012	-.302	-.241	-.625	.195
Groundslope Inside (deg)	.400	.456	-.312	-.477	1.000	-.529	-.201	.119	.318	.279	-.144
General Slope Above (deg)	-.378	-.359	.164	.236	-.529	1.000	.595	-.046	.163	-.067	.252
General Slope Below (deg)	-.701	-.078	-.040	.012	-.201	.595	1.000	-.432	.136	.057	.113
General Slope Left (deg)	.531	.158	.189	-.302	.119	-.046	-.432	1.000	.412	.285	.107
newasp	.212	-.270	.450	-.241	.318	.163	.136	.412	1.000	.601	.577
site_depth	-.079	.249	.363	-.625	.279	-.067	.057	.285	.601	1.000	.318
site_area	.315	-.711	.853	.195	-.144	.252	.113	.107	.577	.318	1.000

a The covariance matrix has 9 degrees of freedom.

### Covariance Matrices(a)

Archaeology1_none0		Valley_location_1_high_2_mid_3_low	Altitude (m)	arch_cave_vacinity1_none2	Light Zone Extent (depth m)	Groundslope Inside (deg)	General Slope Above (deg)	General Slope Below (deg)	General Slope Left (deg)	newasp	site_depth	site_area
0	Valley_location_1_high_2_mid_3_low	.333	-4.167	.167	1.500	-14.167	.000	-11.667	8.333	-31.667	-12.833	-5.000
	Altitude (m)	-4.167	108.333	1.667	-30.000	158.333	.000	108.333	83.333	883.333	501.667	580.000
	arch_cave_vacinity1_none2	.167	1.667	.333	.000	-8.333	.000	-8.333	16.667	16.667	16.333	32.000
	Light Zone Extent (depth m)	1.500	-30.000	.000	9.000	-60.000	.000	-45.000	.000	-	-	-
	Groundslope Inside (deg)	-14.167	158.333	-8.333	-60.000	608.333	.000	508.333	-	240.000	126.000	126.000
	General Slope Above (deg)	.000	.000	.000	.000	.000	.000	.000	416.667	1183.333	431.667	40.000
										.000	.000	.000



1	General Slope Below (deg)	-11.667	108.333	-8.333	-45.000	508.333	.000	433.333	416.667	783.333	221.667	170.000
	General Slope Left (deg)	8.333	83.333	16.667	.000	-416.667	.000	-416.667	833.333	833.333	816.667	1600.00
	newasp	-31.667	883.333	16.667	-240.000	1183.333	.000	783.333	833.333	7233.33	4176.66	4960.00
	site_depth	-12.833	501.667	16.333	-126.000	431.667	.000	221.667	816.667	4176.66	2564.33	3332.00
	site_area	-5.000	580.000	32.000	-126.000	40.000	.000	-170.000	1600.00	4960.00	3332.00	4836.00
	Valley_location_1_ high_2_mid_3_low	.571	-1.571	.071	-.086	12.143	-12.857	-9.286	12.143	22.500	1.914	29.269
	Altitude (m)	-1.571	548.286	-6.286	-20.286	227.143	-360.000	-72.143	103.571	757.857	20.429	2016.97
	arch_cave_vacinit y1_none2	.071	-6.286	.125	.300	-1.250	3.214	1.964	-1.786	11.696	-.021	34.174
	Light Zone Extent (depth m)	-.086	-20.286	.300	1.794	-7.571	20.571	13.429	-21.143	29.357	.366	80.176
	Groundslope Inside (deg)	12.143	227.143	-1.250	-7.571	441.071	-546.429	-255.357	217.857	275.893	65.643	397.800
	General Slope Above (deg)	-12.857	-360.000	3.214	20.571	-546.429	1735.714	546.429	-64.286	530.357	-75.857	1135.54
	General Slope Below (deg)	-9.286	-72.143	1.964	13.429	-255.357	546.429	362.500	200.000	9.821	-29.071	318.543
	General Slope Left (deg)	12.143	103.571	-1.786	-21.143	217.857	-64.286	-200.000	885.714	837.500	27.429	-68.086
	newasp	22.500	-757.857	11.696	29.357	275.893	530.357	9.821	837.500	3999.55	83.464	3447.15
	site_depth	1.914	20.429	-.021	.366	65.643	-75.857	-29.071	27.429	83.464	11.723	-12.367
	site_area	29.269	2016.971	34.174	80.176	-397.800	1135.543	318.543	-68.086	3447.15	-12.367	10329.2
	Valley_location_1_ high_2_mid_3_low	.473	-2.636	.064	.164	4.955	-9.818	-8.545	9.591	10.318	-2.445	19.153
Total												



Altitude (m)	-2.636	487.018	-1.782	-11.342	273.273	-157.091	-62.227	155.955	-458.409	256.013	-1256.988
arch_cave_vacinity1_none2	.064	-1.782	.218	.458	-.227	4.909	-1.227	3.955	8.591	7.213	31.412
Light Zone Extent (depth m)	.164	-11.342	.458	4.018	-8.327	24.709	-3.227	-7.545	-38.809	-9.587	35.148
Groundslope Inside (deg)	4.955	273.273	-.227	-8.327	514.091	-286.364	-110.909	136.818	323.864	275.491	-231.065
General Slope Above (deg)	-9.818	-157.091	4.909	24.709	-286.364	1325.455	343.636	32.727	249.545	111.436	840.142
General Slope Below (deg)	-8.545	-62.227	-1.227	-3.227	-110.909	343.636	354.091	-250.682	206.364	-33.909	173.055
General Slope Left (deg)	9.591	155.955	3.955	-7.545	136.818	32.727	-250.682	841.364	667.273	298.318	304.191
newasp	10.318	-458.409	8.591	-38.809	323.864	249.545	206.364	667.273	4380.455	712.464	3355.138
site_depth	-2.445	256.013	7.213	-9.587	275.491	111.436	-33.909	298.318	712.464	766.171	725.167
site_area	19.153	-1256.988	31.412	35.148	-231.065	840.142	173.055	304.191	3355.138	725.167	8216.218

a The total covariance matrix has 10 degrees of freedom.



## Box's Test of Equality of Covariance Matrices

### Log Determinants

Archaeology1_none0	Rank	Log Determinant
0	.(a)	.(b)
1	.(c)	.(b)
Pooled within-groups	9	30.108

The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

a Rank < 3

b Too few cases to be non-singular

c Rank < 8

### Test Results(a)

Tests null hypothesis of equal population covariance matrices.

a No test can be performed with fewer than two nonsingular group covariance matrices.

### Variables Failing Tolerance Test(a)

	Within-Groups Variance	Tolerance	Minimum Tolerance
newasp	4718.171	.000	.000
site_area	9108.523	.000	.000

All variables passing the tolerance criteria are entered simultaneously.

a Minimum tolerance level is .001.

## Summary of Canonical Discriminant Functions

### Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	19.593(a)	100.0	100.0	.975

a First 1 canonical discriminant functions were used in the analysis.

### Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.049	13.612	9	.137

### Standardized Canonical Discriminant Function Coefficients

	Function
	1
Valley_location_1_high_2_mid_3_low	-4.302
Altitude (m)	.044
arch_cave_vacinity1_none2	1.871
Light Zone Extent (depth m)	1.700



Groundslope Inside (deg)	3.233
General Slope Above (deg)	.665
General Slope Below (deg)	-2.020
General Slope Left (deg)	1.553
site_depth	-.997

### Structure Matrix

	Function
	1
newasp(a)	.413
site_depth	.155
arch_cave_vacinity1_none2	.146
site_area(a)	-.136
Light Zone Extent (depth m)	.127
Altitude (m)	.101
Groundslope Inside (deg)	.100
General Slope Above (deg)	.068
General Slope Left (deg)	.060
General Slope Below (deg)	-.045
Valley_location_1_high_2_mid_3_low	-.026

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.

a. This variable not used in the analysis.

### Functions at Group Centroids

Archaeology1_none0	Function
	1
0	6.538
1	-2.452

Unstandardized canonical discriminant functions evaluated at group means

### Classification Statistics

#### Classification Processing Summary

Processed		151
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	41
Used in Output		110

### Prior Probabilities for Groups

Archaeology1_none0	Prior	Cases Used in Analysis
--------------------	-------	------------------------



		Unweighted	Weighted
0	.500	3	3.000
1	.500	8	8.000
Total	1.000	11	11.000



# Casewise Statistics

	Case Number	Actual Group	Highest Group					Second Highest Group			Discriminant Scores
			Predicted Group	P(D>d   G=g)		P(G=g   D=d)	Squared Mahalanobis Distance to Centroid	Group	P(G=g   D=d)	Squared Mahalanobis Distance to Centroid	Function 1
				p	df						
Original	AST10	ungrouped	1	.055	1	1.000	3.682	0	.000	119.006	-4.371
	AST14	ungrouped	1	.000	1	1.000	15.140	0	.000	165.919	-6.343
	AST20	1	1	.752	1	1.000	.100	0	.000	86.602	-2.768
	AST22	ungrouped	1	.034	1	1.000	4.485	0	.000	123.382	-4.570
	AST26	ungrouped	1	.000	1	1.000	24.299	0	.000	193.749	-7.381
	AST27	ungrouped	1	.000	1	1.000	14.454	0	.000	163.630	-6.254
	AST28	ungrouped	1	.000	1	.982	16.394	0	.018	24.414	1.597
	AST29	ungrouped	0	.001	1	1.000	10.563	1	.000	32.947	3.288
	AST32	ungrouped	1	.047	1	1.000	3.954	0	.000	49.023	-.463
	AST33	ungrouped	1	.000	1	1.000	155.298	0	.000	460.182	-14.914
	AST35	ungrouped	1	.952	1	1.000	.004	0	.000	81.900	-2.512
	AST38	ungrouped	1	.145	1	1.000	2.129	0	.000	56.715	-.993
	AST39	ungrouped	1	.563	1	1.000	.334	0	.000	70.765	-1.874
	AST40	ungrouped	1	.015	1	1.000	5.945	0	.000	130.605	-4.890
	AST41	ungrouped	1	.518	1	1.000	.417	0	.000	69.622	-1.806
	AST42	ungrouped	1	.000	1	1.000	14.296	0	.000	163.099	-6.233
	AST54	ungrouped	0	.002	1	1.000	9.900	1	.000	34.147	3.392
	AST55	ungrouped	0	.001	1	1.000	10.702	1	.000	32.702	3.267
	AST67	ungrouped	1	.113	1	1.000	2.512	0	.000	54.834	-.867
	AST69	ungrouped	1	.028	1	1.000	4.798	0	.000	125.001	-4.642
	AST71	ungrouped	1	.391	1	1.000	.736	0	.000	96.984	-3.310
	AST74	ungrouped	1	.003	1	1.000	8.933	0	.000	143.491	-5.441



AST75	ungrouped	1	.000	1	1.000	14.977	0	.000	165.380	-6.322
AST77	ungrouped	1	.000	1	1.000	53.172	0	.000	265.101	-9.744
AST8	ungrouped	1	.000	1	1.000	54.491	0	.000	268.036	-9.834
AST80	ungrouped	1	.711	1	1.000	.137	0	.000	87.611	-2.822
AST9	ungrouped	1	.024	1	1.000	5.119	0	.000	126.617	-4.714
ATT10	ungrouped	1	.004	1	1.000	8.305	0	.000	140.942	-5.334
ATT12	1	1	.500	1	1.000	.454	0	.000	69.155	-1.778
ATT32	ungrouped	1	.000	1	1.000	14.414	0	.000	163.497	-6.248
EWT37	ungrouped	1	.001	1	1.000	10.921	0	.000	151.157	-5.756
EWT6	1	1	.355	1	1.000	.854	0	.000	98.294	-3.376
MGT1	ungrouped	1	.003	1	1.000	8.554	0	.000	141.962	-5.377
MGT102	ungrouped	0	.057	1	1.000	3.609	1	.000	50.270	4.638
MGT105	ungrouped	1	.611	1	1.000	.258	0	.000	90.211	-2.960
MGT106	ungrouped	0	.000	1	.908	17.975	1	.092	22.565	2.298
MGT107	ungrouped	1	.004	1	1.000	8.380	0	.000	141.250	-5.347
MGT108	ungrouped	1	.000	1	.995	15.278	0	.005	25.820	1.457
MGT109	ungrouped	1	.000	1	1.000	43.397	0	.000	242.663	-9.039
MGT111	ungrouped	1	.000	1	1.000	38.890	0	.000	231.837	-8.688
MGT112	ungrouped	1	.000	1	1.000	16.581	0	.000	170.615	-6.524
MGT114	ungrouped	1	.216	1	1.000	1.531	0	.000	60.102	-1.214
MGT115	ungrouped	1	.117	1	1.000	2.457	0	.000	55.093	-.884
MGT116	ungrouped	0	.001	1	1.000	10.441	1	.000	33.163	3.307
MGT117	ungrouped	1	.000	1	1.000	28.075	0	.000	204.163	-7.750
MGT118	ungrouped	1	.996	1	1.000	.000	0	.000	80.914	-2.457
MGT119	ungrouped	1	.000	1	1.000	29.701	0	.000	208.508	-7.902
MGT12	ungrouped	1	.000	1	1.000	163.674	0	.000	474.521	-15.245
MGT121	ungrouped	1	.023	1	1.000	5.155	0	.000	45.153	-.181
MGT122	ungrouped	1	.000	1	1.000	29.767	0	.000	208.685	-7.908
MGT123	ungrouped	1	.000	1	1.000	29.634	0	.000	208.332	-7.896
MGT125	ungrouped	1	.581	1	1.000	.304	0	.000	71.207	-1.900



MGT126	ungrouped	1	.000	1	1.000	24.534	0	.000	194.413	-7.405
MGT127	ungrouped	1	.000	1	1.000	39.928	0	.000	234.360	-8.771
MGT128	ungrouped	1	.387	1	1.000	.749	0	.000	97.132	-3.317
MGT21	ungrouped	1	.550	1	1.000	.357	0	.000	70.428	-1.854
MGT30	ungrouped	1	.782	1	1.000	.077	0	.000	75.915	-2.175
MGT47	ungrouped	1	.064	1	1.000	3.442	0	.000	117.622	-4.307
MGT50	ungrouped	1	.827	1	1.000	.048	0	.000	76.943	-2.234
MGT52	ungrouped	0	.946	1	1.000	.005	1	.000	79.613	6.471
MGT53	ungrouped	0	.665	1	1.000	.188	1	.000	73.216	6.105
MGT54	ungrouped	1	.279	1	1.000	1.173	0	.000	62.522	-1.369
MGT55	ungrouped	1	.831	1	1.000	.046	0	.000	84.712	-2.666
MGT63	ungrouped	1	.000	1	.983	16.370	0	.017	24.444	1.594
MGT69	ungrouped	1	.171	1	1.000	1.872	0	.000	107.294	-3.820
MGT70	ungrouped	1	.818	1	1.000	.053	0	.000	85.016	-2.682
MGT74	ungrouped	1	.001	1	1.000	10.908	0	.000	32.345	.851
MGT75	ungrouped	1	.425	1	1.000	.636	0	.000	67.113	-1.654
MGT77	1	1	.955	1	1.000	.003	0	.000	79.811	-2.396
MGT79	ungrouped	1	.733	1	1.000	.116	0	.000	74.813	-2.111
MGT8	ungrouped	1	.100	1	1.000	2.701	0	.000	53.969	-.808
MGT81	0	0	.488	1	1.000	.481	1	.000	68.826	5.844
MGT82	1	1	.456	1	1.000	.556	0	.000	67.969	-1.706
MGT85	ungrouped	1	.002	1	1.000	10.075	0	.000	147.967	-5.626
MGT87	ungrouped	1	.000	1	1.000	56.565	0	.000	272.611	-9.973
MGT89	ungrouped	1	.000	1	1.000	42.100	0	.000	239.582	-8.940
MGT93	ungrouped	1	.030	1	1.000	4.688	0	.000	124.438	-4.617
MGT94	ungrouped	1	.000	1	1.000	40.293	0	.000	235.243	-8.799
MGT95	ungrouped	1	.000	1	1.000	34.893	0	.000	221.921	-8.359
MGT97	ungrouped	1	.482	1	1.000	.493	0	.000	93.944	-3.154
PLT10	ungrouped	0	.797	1	1.000	.066	1	.000	76.254	6.281
PLT11	ungrouped	1	.001	1	1.000	11.758	0	.000	30.924	.977

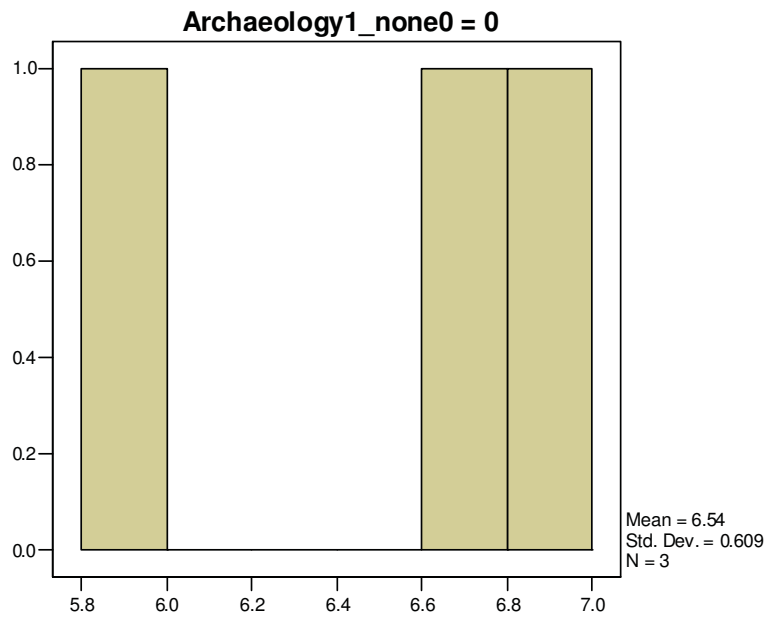


PLT20	ungrouped	1	.066	1	1.000	3.390	0	.000	51.104	-.610
PLT23	ungrouped	0	.000	1	1.000	21.920	1	.000	186.919	11.220
PLT30	0	0	.806	1	1.000	.060	1	.000	85.295	6.784
PLT31	ungrouped	0	.908	1	1.000	.013	1	.000	82.915	6.654
PLT41	ungrouped	1	.253	1	1.000	1.306	0	.000	102.672	-3.595
PLT44	ungrouped	1	.749	1	1.000	.102	0	.000	75.177	-2.132
PLT47	ungrouped	1	.000	1	1.000	26.718	0	.000	200.477	-7.621
PLT5	0	0	.654	1	1.000	.201	1	.000	89.081	6.986
PLT8	ungrouped	1	.000	1	.999	13.540	0	.001	28.200	1.228
RAT10	1	1	.880	1	1.000	.023	0	.000	83.568	-2.603
RAT11	ungrouped	1	.000	1	1.000	48.518	0	.000	254.577	-9.417
RAT14	ungrouped	0	.000	1	.941	17.524	1	.059	23.077	2.352
RAT17	ungrouped	1	.000	1	1.000	57.354	0	.000	274.342	-10.025
RAT18	ungrouped	1	.000	1	1.000	19.543	0	.000	179.848	-6.873
RAT19	ungrouped	1	.000	1	1.000	14.613	0	.000	164.166	-6.275
RAT2	ungrouped	1	.000	1	1.000	30.233	0	.000	209.916	-7.950
RAT21	ungrouped	1	.774	1	1.000	.082	0	.000	86.066	-2.739
RAT22	ungrouped	1	.000	1	1.000	62.303	0	.000	285.042	-10.345
RAT23	ungrouped	1	.593	1	1.000	.285	0	.000	90.708	-2.986
RAT25	ungrouped	1	.713	1	1.000	.135	0	.000	74.337	-2.084
RAT5	ungrouped	1	.000	1	1.000	24.819	0	.000	195.214	-7.434
RAT6	ungrouped	1	.000	1	1.000	16.176	0	.000	169.311	-6.474
RAT7	ungrouped	1	.000	1	1.000	141.100	0	.000	435.496	-14.330
RHT1	ungrouped	0	.132	1	1.000	2.268	1	.000	56.012	5.032
TLT11	ungrouped	1	.000	1	1.000	72.782	0	.000	306.994	-10.983
TLT17	1	1	.084	1	1.000	2.985	0	.000	52.742	-.724
TLT18	ungrouped	1	.000	1	1.000	58.867	0	.000	277.638	-10.124
TLT5	1	1	.070	1	1.000	3.282	0	.000	116.675	-4.263

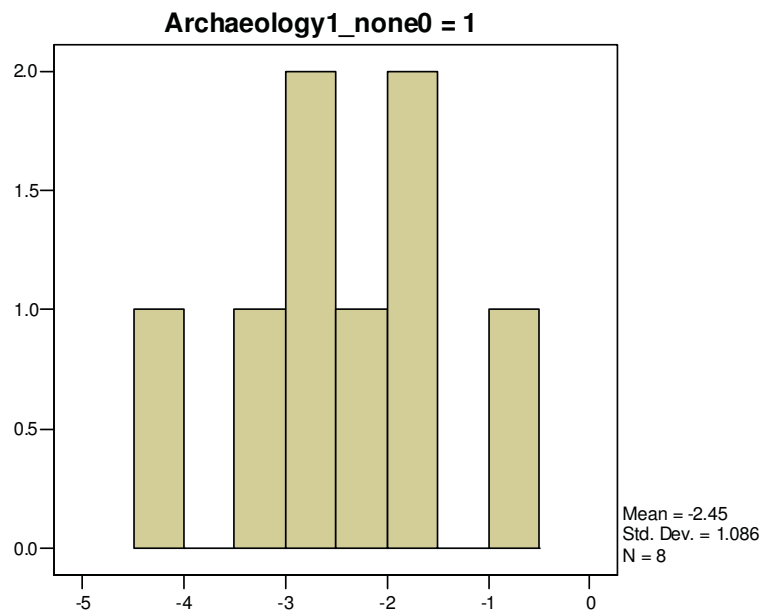


## Separate-Groups Graphs

### Canonical Discriminant Function 1

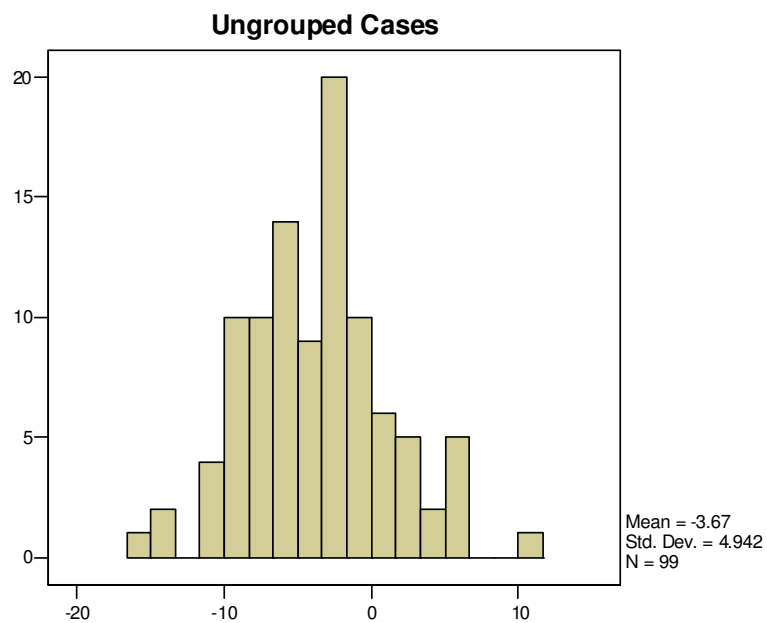


### Canonical Discriminant Function 1





## Canonical Discriminant Function 1



## Classification Results(a)

		Archaeology 1 None0	Predicted Group Membership		Total
			0	1	
Original	Count	0	3	0	3
		1	0	8	8
		Ungrouped cases	13	86	99
	%	0	100.0	.0	100.0
		1	.0	100.0	100.0
		Ungrouped cases	13.1	86.9	100.0

a 100.0% of original grouped cases correctly classified.



## Appendix 4.3 Costs for Revising Predictive Model

	Sc	Sp	Per Day	Days	Cost	Total
<b>ARCUS staff</b>						
James Symonds	OR3	2	178.00	1	178.00	
Glyn Davies	OR1	5	135.00	8	1080.00	
Andrew Chamberlain			230.00	2	460.00	
					Sub-total a	1718.00

<b>External Specialists</b>						
					0.00	
					Sub-total b	0.00

<b>Non-staff cost ARCUS</b>						
Travel			30.00	1	30.00	
Consumables			150.00	1	150.00	
					Sub-total c	180.00

<b>Non-staff cost external</b>						
					0.00	
					Sub-total d	0.00

<b>Overheads</b>						
ARCUS Overheads at 25% a+c					474.50	
External Overheads at 10% b+d					0.00	
					Sub-total e	474.50

<b>Capital Equipment</b>						
					Sub-total f	0.00

<b>Gross Total</b>						2372.50
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## **Appendix 5.1 – List of Historic Maps Consulted**

### **Derbyshire:**

#### Whitwell:

Estate map, 1799,  
Whitwell Parish Old Inclosures, 1814,  
Sanderson's map of 20 miles around Mansfield, 1835,  
Whitwell Tithe map, 1839,  
Parliamentary Enclosure map, 1843.

#### Elmton:

Map of Elmton and Creswell, 1793,  
Sanderson, 1835,  
Elmton Common Parliamentary Enclosure map, 1850,  
Elmton Tithe map, 1850.

#### Whaley:

Bolsover, Oxcroft and Clowne Parliamentary Enclosure map, 1780,  
Sanderson, 1835,  
OS 1890 25 inch: 1 mile,  
Senior map of Bolsover, 1630.

#### Scarcliffe (Langwith):

Estate map of lands in Scarcliffe (Earl of Bathurst), 1791,  
Sanderson, 1835,  
Scarcliffe Tithe map, 1850.

#### Shirebrook (Langwith and Pleasley):

Senior map of the Manor of Langwith, 1611,  
Shirebrook and Langwith Estate map, 1792,  
Sanderson, 1835,  
Tithe map of Shirebrook and Pleasley, 1841,  
Senior map of Houghton, 1611,  
Pleasley Parliamentary Enclosure map, 1748.

### **South Yorkshire:**

#### North and South Anston:

Sanderson, 1835,  
Tithe Map, 1850 (South Anston),  
Anston Valuation, 1865 (North Anston).  
1890 OS 25 inch: 1 mile map.

#### Firbeck:

Sanderson, 1835,  
Firbeck Tithe map, 1842.  
1890 OS 25 inch: 1 mile map.

#### Laughton-en-le-Morthen:

Parliamentary Enclosure Award, 1771,  
Sanderson 1835.  
1890 OS 25 inch: 1 mile map.



Wales:

Wales Parliamentary Enclosure map, 1768.

Sanderson, 1835,

Confirmed apportionment for the Manor of Wales, n.d. (1850s?).

1890 OS 25 inch: 1 mile map.

Thorpe Salvin:

1890 OS 25 inch: 1 mile map.

Roche/Stone (Maltby):

1890 OS 25 inch: 1 mile map.



## **Appendix 6.1    National Collections Database CD**



## Appendix 7.1 Test pitting programme

The test pitting programme will investigate the caves and talus slopes. These will be used to examine the issues identified in **sections 7.3.2.3** and **7.3.2.7**.

### A7.1.1 Strategy

It is proposed that a total of 50 test pits will be excavated to be up to as follows:

- 30 uninvestigated caves or rock shelters (proposed 10 caves and 20 rock shelters),
- 15 slopes below uninvestigated caves or rock shelters (proposed 5 below caves and 10 below rock shelters),
- 5 slopes below previously investigated caves or rock shelters.

The choice of which sites are investigated will be determined by a number of factors including access to, and the characteristics of, the site. It is proposed that the caves and rock shelters chosen should represent the range of sites identified in the survey taking into account archaeological potential, size, location and condition.

For the test pits on slopes below caves and rock shelters it is proposed that these should include both steep and shallow slopes and that the test pits should be located some 5–10m below the site, although this will depend on the individual characteristics of the slopes themselves. The test pits on slopes below sites should be located below sites that either have been previously investigated or are to be investigated by the test pitting programme.

To aid our understanding of the distribution of sites within valleys, and how this may relate to their use, it is preferable to concentrate on selected valleys rather than scatter the test pits across all the valleys.

### A7.1.2 Location of test pits and arranging access

It is not possible to identify which sites will be investigated by test pits at this stage as this will depend on access agreements with the land owners and tenets. However, valleys which are considered to be most appropriate for the test pitting programme, and the numbers of sites within them, are:

Vale or Gorge	No. of caves	No of rock shelters
Roche Abbey Vale	2	14
Anston Stones Wood and Lindrick Dale	7	29
Thorpe Common and Lob Wells Wood	0	5
Ash Tree Gorge	1	3
Markland and Hollinhill Grips	13	41
Elmton and Whaley Valleys	3	7
Langwith Vale	3	3
Pleasley Vale	11	6



The valleys above were identified as appropriate for the test pitting survey based on the number and type of sites available, the location and land use around the sites and likely ease of access.

Prior to agreeing the list of sites, and starting the fieldwork, it will be necessary to arrange access to the sites and gain permission to excavate the test pits.

### **A7.1.3 Methodology**

The test pits will measure 1m by 1m and will be excavated to a depth of 1m or bedrock if shallower. All of the test pits will be hand excavated. Excavation will take place stratigraphically by context. Within contexts excavation will be by 5cm spits.

In caves the test pits will be located towards the front of the cave so as to avoid the need for artificial lighting. In rock shelters the test pits will be located near to the centre of the sites.

If structural features are identified in a test pit these will be cleaned and recorded but will not be removed.

On completion of a test pit it will be backfilled with the spoil removed from it. and the ground surface will be made level.

All of the material excavated from the test pits will be sieved to maximise the retrieval of artefacts and bones. This will be undertaken on site using a 5mm mesh sieve.

If cemented breccia or flowstone deposits are encountered these will be investigated to determine their thickness and will be removed by hand, if possible within the available timeframe. If they are too difficult to remove by hand they will be left *in situ*.

During the fieldwork the test pits will be fenced off with 1m high orange plastic fencing supported on road pins.

#### **A7.1.3.1 Surveying**

The test pits will be surveyed in using an EDM with the four corners of the test pit and height at top and bottom of the test pit being recorded. The test pits will be planned in relation to fixed points and plotted onto the CAD maps produced for each valley as part of the survey undertaken in the Management Action Plan.

#### **A7.1.3.2 Recording**

Each context will be described in full on a pro forma context record sheet in accordance with the accepted context record conventions. Each context will be given a unique number. These field records will be checked and indexes compiled.

A section will be drawn of each test pit at 1:10. If the stratigraphy is complex, and not all features are visible in one section, further sections will be drawn to illustrate all the relevant features. Plans will not normally be drawn of the test pits. However, if any features are identified in the test pits plans will be drawn at a scale of 1:10. All drawings will be drawn on inert materials. All drawings will adhere to accepted drawing conventions and will be checked on completion by supervisory staff. All drawings will be related to Ordnance Datum.



A photographic record will be made of each test pit showing it before, during and after excavation. The photographic register will comprise 35mm format colour slides and black and white prints. All site photography will adhere to accepted photographic record guidelines.

Registers for contexts, drawings, samples, photographs, levels and recorded finds will be kept on pro forma sheets.

#### **A7.1.3.3 Finds collection policy**

All finds will be collected according to an explicit strategy. All finds will be retained except those that are obviously modern in date. Material discarded as a consequence of this policy will be described and quantified in the field. This will involve basic analyses such as counting artefacts, and assigning finds to broad categories, e.g. plastics, glass etc. All other finds will be retained.

All retained material will be individually bagged and recorded to context and spit. Finds of particular interest or fragility will be retrieved as Small Finds, and recorded three dimensionally. This would include all prehistoric material except material from sieving which will be recorded to context and spit.

All retained finds will be cleaned, marked, catalogued and packed in materials suitable for long-term storage, as detailed in the Institute of Field Archaeologists (IFA) guidelines for finds work. Conservation, if required, will be undertaken by approved conservators. The United Kingdom Institute of Conservation (UKIC) guidelines will apply. The artefacts will be analysed by appropriately qualified specialists.

In the event of human remains being discovered during the excavation these will be left *in-situ*, covered and protected, in the first instance. The removal of human remains will only take place under appropriate Home Office and environmental health regulations, and in compliance with the *Burial Act 1857*. If human remains are identified, the SMR and Coroner will be informed immediately. A Home Office licence will be obtained prior to the removal of the remains. Contingency provision will be made for specialist reports on the remains by a recognised osteo-archaeologist.

All finds that fall within the purview of the Treasure Act 1996 will be reported to HM Coroner according to the procedures outlined in the Act.

#### **A7.1.3.4 Sampling**

Palaeo-environmental samples will be collected according to an explicit sampling strategy. The sampling strategy will take the form of both the systematic and judgement methodology, as defined in the English Heritage guidelines for Environmental Archaeology (English Heritage, 2002).

Samples will be taken of all contexts containing undisturbed prehistoric flints or Pleistocene bones. This will require a degree of judgement in the field but if the status of a deposit is uncertain it will be sampled. Additional samples will be taken from any contexts which appear to be of interest.

The sample will be assessed to determine the potential of the deposits for, micro palaeontology, palaeoentomology, and molluscs. The assessment will identify the presence, abundance and condition of micro fauna and molluscs in the samples and their potential for palaeoenvironmental reconstruction.

A total of 40 sample will be assessed from the test pits.



A contingency provision will be made for collecting samples for C14 dating.

Jim Williams (EH Regional Scientific Advisor) will be consulted for additional advice, as necessary.

#### A7.1.3.5 Staffing

The following is a provisional list of specialists for the test pitting programme

Mr James Symonds	Project manager
Dr Glyn Davies	Senior project archaeologist
to be appointed	Field archaeologists (x3)
Dr H. Willmott	Material culture co-ordinator
to be appointed	Worked stone
Dr Andrew Chamberlain	Human remains
to be appointed	Animal bones
Dr Glynis Jones	Palaeoenvironmental consultant
to be appointed	Palaeoenvironmental assistant
Dr H. Willmott	Medieval and post-medieval small finds
Dr Chris Cumberpatch	Medieval and post-medieval ceramics
to be appointed	Metalwork

#### A7.1.4 Reporting

An assessment report will be produced in accordance with English Heritage guidelines as outlined in *Management of Archaeological Projects* (1991), IFA standards and current best archaeological practice. The assessment report will be of a standardised format and will synthesise all elements of the evaluation work. It will contain:

- date and duration of fieldwork;
- author of report, and report date;
- name of Project Manager and Project Archaeologist;
- a non-technical summary and introductory statement;
- summary background information;
- a summary account of the techniques employed during the project;
- a detailed plan of the position of all test pits, related to fixed points;
- a summary stratigraphy for all test pits with section drawings;
- a summary record of all artefactual material recovered or recorded;
- summary assessment of all material and samples recovered and their potential for further analysis (including scientific dating) and need for illustration;
- a selection of images, which may include work in progress on site and selected artefacts recovered;
- a context index,



- an evaluation of the potential of the sites with recommendations for further work.

### A7.1.5 Costs

	Sc	Sp	Per Day	Days	Cost	Total
<b>ARCUS staff</b>						
James Symonds	OR3	2	178.00	8	1424.00	
Glyn Davies	OR1	5	135.00	60	8100.00	
Hugh Willmott	OR1	5	135.00	9	1215.00	
site assistant	Tech D	2	93.41	30	2802.30	
site assistant	Tech D	2	93.41	25	2335.25	
site assistant	Tech D	2	93.41	25	2335.25	
Illustrator	Tech D	2	93.41	8	747.28	
palaeoenviromental assistant	Tech D	2	93.41	20	1868.20	
Andrew Chamberlain			230.00	2	460.00	
Glynis Jones			230.00	2	460.00	
					Sub-total a	21747.28
<b>External Specialists</b>						
Worked stone to be appointed			230.00	8	1840.00	
Animal Bones to be appointed			160.00	10	1600.00	
Chris Cumberpatch			160.00	3	480.00	
Meatwork to be appointed			160.00	2	320.00	
					Sub-total b	3920.00
<b>Non-staff cost ARCUS</b>						
SiteTravel			30.00	35	1050.00	
Consumables			1.00	200	200.00	
Field Consumables			50.00	5	250.00	
Films			15.00	8	120.00	
C14					1500.00	
					Sub-total c	3120.00
<b>Non-staff cost external</b>						
travel			100.00	3	300.00	
					Sub-total d	300.00
<b>Overheads</b>						
ARCUS Overheads at 25% a+c					6216.82	
External Overheads at 10% b+d					422.00	
					Sub-total e	6638.82
<b>Capital Equipment</b>						
					Sub-total f	0.00
<b>Gross Total</b>						35726.10



### A7.1.6 Timetable

Week	Person	Activity	Days
1	Project Archaeologist	arranging access	2
2	Project Archaeologist	arranging access	2
3	Project Archaeologist	arranging access	2
4	Project Archaeologist	arranging access and set up	4
5-9	Project Archaeologist Field Archaeologists (x3)	fieldwork	25 25 (x3)
10	Project Archaeologist Field Archaeologist Finds Officer	collation of field data	5 5 3
11-20	Specialists	stone tool assessment other finds animal bones assessment environmental assessment	5 8 10 20
21-25	Project Archaeologist Finds Officer	reporting	15 3
1-25	Project manager Project Officer	management	8 5



## **Appendix 7.2 Section Cleaning**

The section cleaning programme will investigate exposed sections of cave fill identified in the field survey. These will be used to examine the issues identified in **section 7.3.2.4**.

### **A7.2.1 Strategy**

It is proposed to investigate three sections, two in Pleasley Vale and one in Markland Grips. Subject to agreeing access the sections to be examined will be PLT13, PLT17 and MGT101. These sections have been chosen as they are the largest external sections that are the most vulnerable to damage. If access can not be gained to any of these sections alternative sections will be investigated.

### **A7.2.3 Methodology**

A 2m wide section will be cleaned on each site. This will entail cutting deposits back 0.1m to expose clean, unweathered sediment.

All cleaning will be by hand and will be undertaken stratigraphically by context.

If structural features are identified during cleaning these will be cleaned and recorded but will not be removed.

All of the material cleaned from the sections will be sieved to maximise the retrieval of artefacts and bones. This will be undertaken on site using a 5mm mesh sieve.

If cemented breccia or flowstone deposits are encountered these will be investigated to determine their thickness and they will be removed by hand, if possible within the available timeframe. If they are too difficult to remove by hand they will be left *in situ*.

During the fieldwork the sections will be fenced off with 1m high orange plastic fencing supported on road pins.

#### **A7.2.3.1 Surveying**

The sections will be surveyed using an EDM. The sections will be recorded in relation to the site and plotted onto the CAD maps produced for each valley as part of the survey undertaken in the Management Action Plan.

#### **A7.2.3.2 Recording**

Each context will be described in full on a pro forma context record sheet in accordance with the accepted context record conventions. Each context will be given a unique number. These field records will be checked and indexes compiled.

The cleaned sections will be drawn after cleaning at a scale of 1:10. All drawings will be drawn on inert materials. All drawings will adhere to accepted drawing conventions and will be checked on completion by supervisory staff. All drawings will be related to the Ordnance Datum.

A photographic record will be made of each section showing it before, during and after cleaning. The photographic register will comprise 35mm format colour slides and black and white prints. All site photography will adhere to accepted photographic record guidelines.

Registers for contexts, drawings, samples, photographs, levels and recorded finds will be kept on current pro forma sheets



#### **A7.2.3.3 Finds collection policy**

All finds will be collected according to an explicit strategy. All finds will be retained except those that are obviously modern in date. Material discarded as a consequence of this policy will be described and quantified in the field. This will involve basic analyses such as counting artefacts, and assigning finds to broad categories, e.g. plastics, glass etc. All other finds will be retained.

All retained material will be individually bagged and recorded to context. Finds of particular interest or fragility will be retrieved as Small Finds, and recorded three dimensionally. This would include all prehistoric material.

All retained finds will be cleaned, marked, catalogued and packed in materials suitable for long-term storage, as detailed in the Institute of Field Archaeologists (IFA) guidelines for finds work. Conservation, if required, will be undertaken by approved conservators. The United Kingdom Institute of Conservation (UKIC) guidelines will apply. The artefacts will be analysed by appropriately qualified specialists.

In the event of human remains being discovered during the excavation these will be left *in-situ*, covered and protected, in the first instance. The removal of human remains will only take place under appropriate Home Office and environmental health regulations, and in compliance with the *Burial Act 1857*. If human remains are identified, the SMR and Coroner will be informed immediately. A Home Office licence will be obtained prior to the removal of the remains. Contingency provision will be made for specialist reports on the remains by a recognised osteo-archaeologist.

All finds that fall within the purview of the Treasure Act 1996 will be reported to HM Coroner according to the procedures outlined in the Act.

#### **A7.2.3.4 Sampling**

Palaeo-environmental samples will be collected according to an explicit sampling strategy. The sampling strategy will take the form of both the systematic and judgement methodology, as defined in the English Heritage guidelines for Environmental Archaeology (English Heritage, 2002).

Samples will be taken of all major contexts recorded in the cleaned section. Also any contexts containing prehistoric flints or bones will be sampled. This will require a degree of judgement in the field but if the status of a deposit is uncertain it will be sampled.

The sample will be assessed to determine the potential of the deposits for, micro palaeontology, palaeoentomology, and snails. The assessment will identify the presence, abundance and condition of micro fauna and snails in the samples and their potential.

A total of 15 samples will be assessed from the section cleaning.

Contingency provision will be made for collecting samples for C14 dating.

Jim Williams (EH Regional Scientific Advisor) will be consulted for additional advice, as necessary.



#### A7.2.3.5 Staffing

The following is a provisional list of specialists for the section cleaning project:

Mr James Symonds	Project manager
Dr Glyn Davies	Senior project archaeologist
to be appointed	Field archaeologists (x2)
Dr H. Willmott	Material culture co-ordinator
to be appointed	Worked stone
Dr Andrew Chamberlain	Human remains
to be appointed	Animal bones
Dr Glynis Jones	Palaeoenvironmental consultant
to be appointed	Palaeoenvironmental assistant
Dr H. Willmott	Medieval and post-medieval small finds
Dr Chris Cumberpatch	Medieval and post-medieval ceramics
to be appointed	Metalwork

#### A7.2.4 Reporting

An assessment report will be produced in accordance with English Heritage guidelines as outlined in *Management of Archaeological Projects* (1991), IFA standards and current best archaeological practice. The assessment report will be of a standardised format and will synthesise all elements of the evaluation work. It will contain:

- date and duration of fieldwork;
- author of report, and report date;
- name of Project Manager and Project Officer;
- a non-technical summary and introductory statement;
- summary background information;
- a summary account of the techniques employed during the project;
- a detailed plan of the position of all sections cleaned, related to fixed points;
- a summary stratigraphy for all sections with section drawings;
- a summary record of all artefactual material recovered or recorded;
- summary assessment of all material and samples recovered and their potential for further analysis (including scientific dating) and need for illustration;
- a selection of images, which may include work in progress on site and selected artefacts recovered;
- a context index,
- an evaluation of the potential of the sites with recommendations for further work.



## A7.2.5 Costs

	Sc	Sp	Per Day	Days	Cost	Total
<b>ARCUS staff</b>						
James Symonds	OR3	2	178.00	2	356.00	
Glyn Davies	OR1	5	135.00	20	2700.00	
Hugh Willmott	OR1	5	135.00	1	135.00	
site assistant	Tech D	2	93.41	9	840.69	
site assistant	Tech D	2	93.41	9	840.69	
illustrator	Tech D	2	93.41	3	280.23	
palaeoenvironmental assistant	Tech D	2	93.41	8	747.28	
Andrew Chamberlain			230.00	1	230.00	
Glynis Jones			230.00	1	230.00	
					Sub-total a	6359.89
<b>External Specialists</b>						
Worked stone to be appointed			230.00	2	460.00	
Animal Bones to be appointed			160.00	3	480.00	
Chris Cumberpatch			160.00	1	160.00	
metalwork to be appointed			160.00	1	160.00	
					Sub-total b	1100.00
<b>Non-staff cost ARCUS</b>						
Site Travel			30.00	12	360.00	
Consumables			1.00	200	200.00	
Field Consumables			50.00	2	100.00	
Films			15.00	4	60.00	
Scaffold hire			200.00	1	200.00	
					Sub-total c	920.00
<b>Non-staff cost external</b>						
travel			100.00	1	100.00	
					Sub-total d	100.00
<b>Overheads</b>						
ARCUS Overheads at 25% a+c					1819.97	
External Overheads at 10% b+d					120.00	
					Sub-total e	1939.97
<b>Capital Equipment</b>						
					Sub-total f	0.00
<b>Gross Total</b>						10419.86



## A7.2.6 Timetable

Week	Person	Activity	Days
1	Project archaeologist	arranging access	1
2-4	Project archaeologist	arranging access	1
5	Project archaeologist	arranging access and set up	1
6-7	Project archaeologist Field archaeologists (x3)	fieldwork	9 9 (x2)
8	Project archaeologist Field Archaeologist	collation of field data	2 2
9-15	Specialists	worked stone finds assessment animal bones assessment environmental assessment	2 2 3 6
16-17	Project archaeologist	reporting	5
1-17	Project manager Project archaeologist	management	2 1



## Appendix 7.3 Borehole survey

The borehole survey is designed to identify the depth and character of deposits in the base of the valleys. This is to be undertaken to examine the issues identified in **section 7.3.2.5**.

### A7.3.1 Strategy

There are seven valleys that have the potential to contain a significant depth of deposits in the bottom of the valley.

Roche Abbey Vale

Lindrick Dale

Ash Tree

Markland and Hollinhill Grips

Elmton and Whaley Valley

Langwith Vale

Pleasley Vale

This survey is an evaluation survey aimed at identifying the depth of deposits in the valley bottoms and determining which, if any, contain deposits with palaeoenvironmental potential and to develop simple deposit models for the valleys.

If deposit sequences are identified with palaeoenvironmental potential these will be the subject of a separate programme of sampling and analysis. The techniques to be employed in obtaining samples for in this programme would be dependant on the location, character and depth of deposits to be sampled.

### A7.3.2 Location of boreholes and arranging access

The boreholes will be located to obtain profiles across and along the valleys. The exact locations will depend on where access can be arranged.

### A7.3.3 Methodology

It is proposed that the coring is undertaken by hand using a bucket auger. This is proposed for two reasons;

- vehicle access to the bottom of many of the valleys is very difficult and use of a machine would limit the areas that can be sampled.
- most of the valleys are not thought to contain deep deposits and it should be possible to core through most area using a hand auger.

Up to 40 cores will be bored in total with five cores being bored in the selected valleys. Further cores will be located to test specific questions raised by the desk top study of the potential for open air sites **section 4.8**.



#### **7.3.3.1 Surveying**

The borehole locations will be surveyed in using a hand held GPS and plotted onto the CAD maps produced for each valley as part of the survey undertaken in the Management Action Plan.

#### **7.3.3.2 Recording**

The deposit sequence will be recorded using standard soil descriptions with the depth and thickness of each layer being recorded.

#### **7.3.3.3 Finds collection policy**

It is not expected that finds will be recovered from the coring programme but any finds recovered will be retained.

All retained material will be individually bagged and recorded by layer and depth.

All retained finds will be cleaned, marked, catalogued and packed in materials suitable for long-term storage, as detailed in the Institute of Field Archaeologists (IFA) guidelines for finds work. Conservation, if required, will be undertaken by approved conservators. The United Kingdom Institute of Conservation (UKIC) guidelines will apply. The artefacts will be analysed by appropriately qualified specialists.

All finds that fall within the purview of the Treasure Act 1996 will be reported to HM Coroner according to the procedures outlined in the Act.

#### **7.3.3.4 Sampling**

Palaeo-environmental samples will be collected according to an explicit sampling strategy. The sampling strategy will take the form of both the systematic and judgement methodology, as defined in the English Heritage guidelines for Environmental Archaeology (English Heritage, 2002).

Samples will be taken of all major contexts recorded in the cleaned section. Also any contexts containing prehistoric flints or bones will be sampled. This will require a degree of judgement in the field but if the status of a deposit is uncertain it will be sampled.

The sample will be assessed to determine the potential of the deposits for, palynology, palaeoentomology, and snails. The assessment will identify the presence, abundance and condition of pollen, insect remains and snails in the samples and their potential.

A total of 15 samples will be assessed from the cores.

Contingency provision will be made for collecting samples for C14 dating.

Jim Williams (EH Regional Scientific Advisor) will be consulted for additional advice, as necessary.



### 7.3.3.5 Staffing

The following is a provisional list of specialists for the borehole project:

Mr James Symonds	Project Manager
Dr Glyn Davies	Project Officer
to be appointed	Palaeoenvironmental assistant
to be appointed	Field archaeologists (x2)
Dr Glynis Jones	Palaeoenvironmental consultant (CHECK)

### A7.3.4 Reporting

An assessment report will be produced in accordance with English Heritage guidelines as outlined in *Management of Archaeological Projects* (1991), IFA standards and current best archaeological practice. The assessment report will be of a standardised format and will synthesise all elements of the evaluation work. It will contain:

- date and duration of fieldwork;
- author of report, and report date;
- name of Project Manager and Project Officer;
- a non-technical summary and introductory statement;
- summary background information;
- a summary account of the techniques employed during the project;
- a detailed plan of the position of all boreholes cored, related to fixed points;
- a summary stratigraphy for all boreholes with logs,
- a summary record of all artefactual material recovered or recorded;
- summary assessment of all material and samples recovered and their potential for further analysis (including scientific dating) and need for illustration;
- an evaluation of the potential of the sites with recommendations for further work.



### A7.3.5 Costs

	Sc	Sp	Per Day	Days	Cost	Total
<b>ARCUS staff</b>						
James Symonds	OR3	2	178.00	2	356.00	
Glyn Davies	OR1	5	135.00	19	2565.00	
site assistant	Tech D	2	93.41	8	747.28	
site assistant	Tech D	2	93.41	8	747.28	
palaeoenviromental assistant	Tech D	2	93.41	20	1868.20	
Glynis Jones			230.00	1	230.00	
					Sub-total a	6513.76

<b>External Specialists</b>						
					0.00	
					Sub-total b	0.00

<b>Non-staff cost ARCUS</b>						
Travel			30.00	13	390.00	
Consumables			1.00	200	200.00	
Field Consumables			50.00	2	100.00	
Films			15.00	2	30.00	
C14					500.00	
					Sub-total c	1220.00

<b>Non-staff cost external</b>						
					0.00	
					Sub-total d	0.00

<b>Overheads</b>						
ARCUS Overheads at 25% a+c					1933.44	
External Overheads at 10% b+d					0.00	
					Sub-total e	1933.44

<b>Capital Equipment</b>						
					Sub-total f	0.00

<b>Gross Total</b>						9667.20
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### A7.3.6 Timetable

Week	Person	Activity	Days
1	Project archaeologist	arranging access	1
2-4	Project archaeologist	arranging access	1
5	Project archaeologist	arranging access and set up	1
6-7	Project archaeologist	Fieldwork	8
	Field palaeoenviromentalist		8



	Field archaeologists (x2)		8 (x2)
8	Project Officer	collation of field data	2
	Field palaeoenvironmentalist		2
9-15	Specialists	environmental assessment	10
16-17	Project archaeologist	reporting	5
1-17	Project manager	Management	2
	Project archaeologist		1



## **Appendix 7.4 Cave excavation**

As was identified in **sections 7.3.2.8 and 7.3.2.9** it is only through the excavation of cave or rock shelter sites that some themes within the research priorities can be investigated. The test pitting and section cleaning programmes will both aid in the management of the archaeological resource, and will also act as a site evaluation programme to determine which sites have the best potential for further research.

Until the test pitting and section cleaning programmes have been completed it is impossible to determine which site or sites would be appropriate for excavation. Detailed methodologies and costs will be site-specific, and will be produced on a site-by-site basis, as appropriate.



## Appendix 8.1 Promoted Routes in the Limestone Heritage Area

PROMOTED ROUTES IN THE LIMESTONE HERITAGE AREA				
Name of route	Distance (miles)	Produced by	General information	Current/ Out of print
<b>STRATEGIC PROMOTED ROUTES</b>				
Creswell Archaeological Way	13	Derbyshire County Council	A waymarked linear route from Pleasley Park to Whitwell	Current
Robin Hood Way	88	Nottinghamshire County Council	Book detailing this long distance walk route which passes through Creswell Crag.	Current
Meander through the Meden Valley	4 each	Action Mansfield	Two circular walks around Sookholme and Pleasley Vale	Out of print
Discover the Pleasley Trails Network	1-4	District of Bolsover	Map of the different routes making up Pleasley Trails including the <u>Meden Trail</u> , Rowthorne Trail and Teversal Trail.  Multi-use trails	Current
The Lady Lee Cuckoo Way circular	4	Chesterfield Canal Trust	Circular walk following part of the Chesterfield Canal near Workshop	Current
Rotherham Ring Route	50	Rotherham Borough Council	A circular walk through the countryside around Rotherham	Current
<b>LOCALLY PROMOTED ROUTES</b>				
1 <sup>st</sup> Barlborough Walk Fox and Magpie Heritage Trail	3	Barlborough Parish Council	A circular walk along lanes and footpaths around the Parish of Barlborough	Current
2 <sup>nd</sup> Barlborough Heritage Trail	4	Barlborough Parish Council	A circular trail taking in 22 points of interest	Current
The Chaffinch Trail ( 3 <sup>rd</sup> Barlborough Walk)	4.6	Barlborough Parish Council	Links the historic villages of Barlborough and Spinkhill	Current
Bolsover Town Trail	2	Bolsover Civic Society	A trail covering points of interest	Current



New Bolsover Trail	2	Bolsover Society	Civic	Discover the housing provided for coal miners in Bolsover	Current
Clowne 1 <sup>st</sup> heritage trail	3.25	Clowne Council	Parish	A circular trail taking in points of interest around Clowne.	Current
Clowne 2 <sup>nd</sup> heritage trail	2.75	Clowne Council	Parish	A circular trail taking in points of interest around Clowne.	Current
Crags Loop	7	Whitwell Council	Parish	A way marked circular trail from Creswell Crags	Current
Markland Loop	6	Whitwell Council	Parish	A circular walk in the south west of Whitwell Parish	Current
Whitwell Churches Loop	5	Whitwell Council	Parish	A circular addition to the archaeological way, linking two churches	Current
Whitwell Village Loop	3	Whitwell Council	Parish	A walk around the village streets	Current
Holbeck Walk	3	Creswell visitor centre	Crags	A short walk through Creswell Crags and surrounding countryside	Out of print
Walking in the Creswell Limestone Heritage Area	4.5 – 8	Creswell Heritage Trust		5 walks exploring the archaeology of the Magnesium Limestone Landscape	Current
Creswell Village Trail	1.5	Pride of Place		A short walk around the past of Creswell	Current
A Walk from Welbeck	3	Pride of Place		A shot walk linking three attractions on the Welbeck Estate	Out of print
Greenwood Walks	Various	Nottinghamshire County Council.		6 walks around Nottinghamshire's Community Forest	Current
Exploring Greenwood	3.5 - 6	Nottinghamshire County Council		Five Countryside walks in Nottinghamshire's Community Forest	Current
Exploring the Robin Hood line	4.5 – 6.5	Nottinghamshire County Council		Folder containing 6 walks between stations £2.50	Current
Hodthorpe Butterfly Trails	3 & 4	Hodthorpe school		A circular route around Whitwell, Hodthorpe and Creswell Crags	Out of print
Poulter Country Park loop	5	Pride of Place?		A spur of the Heritage Way connecting to Whaley Thorns Heritage centre	Out of print
Walks in the Meden Valley	4	Pride of Place		3 short heritage walks from the Robin Hood line – Creswell and Whaley Thorns link, Creswell Loop, Whaley Thorns loop	Out of print
Walking the River Maun in Mansfield	7	Mansfield District Council		A walk from the source of the River Maun	Out of print
Whaley Thorns to Shirebrook rail trail	6.5	Pride of Place		Journey back through time with Frank as he guides you between the villages of	Current



			Whaley Thorns and Shirebrook	
Whaley Thorns and Langwith Village Trail	3	Pride of Place	Journey through time with Tommo	Current
Six centenary walks around Warsop, Nether Langwith and Cuckney	Various	?		?
Warsop working with the Parish Paths Partnership	Various	Warsop footpaths and countryside group	A leaflet showing the network of paths in the Parish	Out of Print
A Walk Round Warsop	Not stated	Old Warsop Society	A short walk around the villages old town	Out of print
Whitwell Village Trail	2	Pride of Place	Explore war time Whitwell with John and Josie	Current
Whitwell Wood	6	Forest Enterprise?	3 waymarked routes through ancient woodland	?
Waymarked Walks Around the Five Pits Trail	2.5 – 5.5	Derbyshire County Council	4 waymarked circular walks off the Five Pits trail	Out of print
Five Pits Trail	7.5	Derbyshire County Council	A multi use route from Tibshelf to Grassmoor country park	Current
Pleasley Park	Unknown	Shirebrook History Group	Exploring this historical woodland area	Out of print
The Lady Chatterley Trail	6	Teversal Visitor Centre	A figure of 8 walk through the literary landscape	Current
The Pleasley Trails: Industrial heritage 1200s – 1992	1 - 4	Teversal Visitor Centre	Multi-user trail network	Current
The Teversal Nature Trail	5	Teversal Visitor Centre	A circular route from Teversal to Pleasley	Current
The Teversal Running Trail	3-10	Teversal Visitor Centre	A number of circular routes identified for runners along the Teversal Trails network	Current
The Teversal Sculpture Trail	4	Teversal Visitor Centre	A circular walk past 10 sculptures	Current
Teversal Trail circular walks	3 - 4.5		Three circular walks	Out of print
Teversal Trail visitor centre	5.5		A short circular walk from the visitor centre	Current
Brierley Forest Park, Discover the Park and Visitor Centre	3	Ashfield District Council	Information on Brierley Forest Park showing the 3 miles of trails	Current
The Three Centres Trail	6.8	Groundwork Ashfield and	A linear walk linking Portland, Brierley and	Current



		Mansfield	Teversal visitor centres	
Mansfield Timberland Trail	4.75	Mansfield District Council	A linear trail through Mansfield (walk and cycle)	Current
Mansfield Town Centre Trail	Various	Mansfield Town Centre Partnership	Explores Mansfield's historical, cultural and educational interest	Current
Kelky's Forest Town	1.5	Pride of Place	A short walk around Forest Town with local Kelky.	Current
Mansfield Woodhouse Village Trail	2	Pride of Place	A short look at the history of this ancient village	Current
Tibshelf Town Trail	4.5	Groundwork Creswell	A circular waymarked trail exploring the features of Tibshelf and its surrounding area.	?
An introduction to the Chesterfield Canal	46	Chesterfield Canal Trust	Outlines the route of the Cuckoo Way from Chesterfield to the River Trent at West Stockwith	Current
Peveril Way	13	Groundwork Creswell	A linear route from Bolsover south to Pinxton on footpaths and country lanes.	?
Langold Country Walk	8 and 3	Groundwork Creswell	An 8 mile circular waymarked walk along footpaths, bridleways and roads which can be extended by a further 3 miles.	Current
Favourite Walks of the Bolsover Ramblers	4 – 8	Bolsover District Group of the Ramblers	A series of five walk leaflets covering the Bolsover area.	Current
Carr Vale – changing places	Various	Groundwork Creswell	A map showing paths and trails around Carr Vale and New Bolsover	Current
Anston Stones Wood geological trail	Various	Anston Parish Council	A guide to Anston Stone woods showing the routes through the site.	Current
Shirebrook Town Trail	4	Pride of Place	Explore historic Shirebrook	Current
Laughton en le Morthen Historical Walk	Not stated	Rotherham Borough Council	A short historic walk around the village	Current
Maltby Area, Waymarked Circular Walk	15	Rotherham Borough Council	A marked route around this rural area including Roche Abbey	Current
The Five Churches Waymarked Circular Walk	10	Rotherham Borough Council	A circular route linking the churches of Wales, Harthill Thorpe Salvin, South Anston and Todwick	Current
Doorstep Walk No: 1 Laughton en le Morthen	Not stated	Rotherham Borough Council	A short walk in the countryside around Laughton	Current



Doorstep Walk No: 2 Laughton walk around Roche Abbey	Not stated	Rotherham Borough Council	A short walk in the countryside around Roche Abbey	Current
Doorstep Walk No: 3 A Family Friendly Walk at Letwell	Not stated	Rotherham Borough Council	A short walk in the countryside of Letwell	Current
Short Circular Walks in the Dukeries	Various	A J.N.M publication	A small booklet of walks ranging from 2 to 14 miles by John Merrill	Current
Door Step Walks	2.5 - 4	Bassetlaw District Council	Short health walks around Bassetlaw	Current
<b>PROMOTED CYCLE ROUTES</b>				
Dukeries cycle trail 1 & 2	13.5 – 22	Bassetlaw District Council	A circular cycle route with short cuts using roads and bridleways	Out of print
Rotherham Round Rides	10 – 40	Rotherham Borough Council	A series of seven circular cycling and horse riding routes using roads and bridleways	Current
Sherwood Forest and the Maun Valley	15	?	A published route showing a suggested cycle ride	Out of print
Pleasley and the Five Pits Trail	22	Derbyshire County Council??	A published route showing a suggested cycle ride	?
National Cycle Network	45 (in Notts.)	Sustrans	Route 6 of the National Cycle Network passes through the area - Worksop to Killamarsh, where it joins the Trans Pennine Trail southern spur (route 67)	Current



PROMOTED HORSE RIDING ROUTES				
Ducal Nottinghamshire Western Circuit Creswell to Carburton	18	Nottinghamshire County Council	Circular route using bridleways and roads, available also to walkers and cyclists.	Out of print. Due to traffic conditions no reprint is planned.
Rotherham Round Rides (see above)				
OTHER PROMOTIONAL LEAFLETS				
Leaflet Name	Produced by	General information		Current / out of print
Great Days Out pocket guide	District of Bolsover	Guide to facilities and attractions in the area		Current
Symmetry and Light	District of Bolsover	A tourist trail linking historic architecture of the Smythson family		Current
Whitwell a short history	Whitwell Local History Group	Outlines the history of the parish of Whitwell		out of print
Laughton en le Morthen	Rotherham Borough Council	An historical guide		Current



## Appendix 8.2

## Vales and Gorges Checklist

### Roche Abbey Vale (Rotherham)

#### Historical Features

Cave  
Abbey  
Commons



#### Ecological Features

Maltby Low Common  
Maltby High Common  
Kings Wood is the best example of limestone woodland in South Yorkshire  
River course  
Lakes and ponds with marginal vegetation  
Mixed coniferous woodland  
Broadleaf woodland  
Hedgerow habitats

#### Landscape Features

Commons  
Limestone buttresses  
Heading north along this path through the gorge there are good views of the Abbey and outcrops of limestone.  
Capability Brown landscape

#### Key communities

Maltby  
Dinnington

#### Other stakeholders

Scarborough Estate  
English Heritage  
English Nature  
Rotherham MBC  
Yorkshire Wildlife Trust  
(There is an access forum with representatives from the above organisations).

#### Issues

Already well visited (over 9000 p.a. who purchase tickets from English Heritage). Actual number to the



vale much more. The Abbey car park is used by day visitors to the area; approx. 4000 non-paying visitors use the car park and gorge who do not pay. Congestion along access road at busy periods.

Vandalism – litter, dislodging of rocks etc.

Evidence of car break-ins broken glass in the lay by

Sewage works in Nor Wood

Vegetation obscures much of the limestone outcrops

### **Promoted routes**

Roche Abbey 5.5mile walk (contained in booklet *Walking in the Creswell Limestone Heritage Area*).

Maltby Area waymarked circular walk (15miles)

Laughton walk around Roche Abbey (Doorstep walk No 2)

Short circular walks in the Dukeries by John Merrill

Rotherham Ring Route

### **Firbeck Vale (Rotherham)**

#### **Historical Features**

Firbeck Hall

#### **Ecological Features**

No site specific ecological reports found. On site field work revealed various habitats including: broad leaf woodland, river course, ponds, hedgerows, improved grassland (pasture) and estate and domestic gardens



#### **Landscape Features**

Historic parkland

Existing rights of way well signed and in good condition

#### **Key communities**

Firbeck village

#### **Other stakeholders**

Firbeck Parish Council

Village pub (Black Lion)

Village hall

Woodsetts local history society

SK58 birders



**Issues** Mainly in private ownership with no direct rights of way / access to vale  
No potential viewpoints as a whole

**Promoted routes**

Maltby Area waymarked circular walk (15miles)  
Round Rotherham Rides  
Rotherham Ring Route  
(Nearby)

**Anston Stones and Lindrick Vale (Rotherham)**

**Historical Features**

Dead Mans Cave  
Late Palaeolithic  
campsite  
Chesterfield Canal

**Ecological Features**

SSSIs  
LNR (Anston Stones  
wood only)



Anston Stone Woods contains the second best example of limestone woodland in South Yorkshire. (The best example is Kings Wood, near Roche Abbey). Bee orchids and skylarks are amongst the species recorded in adjacent field which is under the countryside stewardship scheme. All fields around the recreation ground are now in Stewardship.

Lindrick golf course, once common land, away from the greens and fairways, supports the largest and one of the most diverse areas of limestone grassland in South Yorkshire.

There are many significant species recorded for Anston Stones wood (see Ecus report for lists).

**Landscape Features**

Gorges  
Vales  
River Ryton  
Disused quarries  
Exposure of Magnesian limestone evident in both wood and vale



Condition of paths generally very good

### **Key communities**

North Anston

South Anston

Shireoaks

Woodsetts

Lindrick Dale (neighbourhood watch)

### **Other stakeholders**

Anston Parish Council (landowner Anston Stones wood)

Consultants appointed to do management plan

Anston Stones Wood Management Partnership

English Nature

Rotherham Metropolitan Borough Council

Local residents

Sorby Natural History Society

Rotherham Naturalists Society

Yorkshire Wildlife Trust

Lindrick Golf club

Groundwork Creswell's 'Breakaway' Project

Defra

### **Issues**

Sites are bisected by busy A57 road

Attracts lots of visitors

Anston Stones wood is the largest 'leisure' facility in the parish of Anston.

Very limited parking in Lindrick Dale

Potential for improvements, including easy access routes.

Bullens consultants have just been commissioned to undertake a new management plan for Anston Stones wood.

Field in countryside stewardship (SK529 835) provides open access to the public. Access into Anston Stones Wood can be gained from this field. Another countryside stewardship site exists adjacent to Lindrick Dale (SK535 823). There are permissive footpaths of 1.8 miles as well as an area of open access.

In Lindrick Dale there is such a mix of building materials and styles so as to detract from the landscape character of the area.



Houses and gardens incorporated into the gorge walls (Lindrick Vale).

Instability of path along top of quarry near steel grill bridge.

#### **Promoted routes**

Anston Stones and Lindrick Dale 7.25 mile walk (contained in booklet *Walking in the Creswell Limestone Heritage Area*).

Rotherham Ring Route

Proposed Doorstep Walk (RMBC)

Cuckoo Way (Chesterfield Canal) is nearby

Anston Stones Wood geological trail (out of print?)

Short walks in the Dukeries by John Merrill

### **Red Hill Valley (Rotherham)**

#### **Historical Features**

Desk top research revealed no site specific historical reports. Nearby features include the Chesterfield Canal that runs parallel to the site



#### **Ecological Features**

Scrubland, tall ruderal grassland, hedgerow and broadleaf woodland observed during the field study.

Desk top research revealed no site specific ecological reports

#### **Landscape Features**

Limestone cliff

Woodland

**Key Communities** Kiveton Park

**Other stakeholders** Local farmer

#### **Issues**

Landowner unknown

No public rights of way / formal access although desire lines exist into the woods from opposite the lay by on the B6059.



Evidence at base of woods of fires, rubbish and rope swing.

Not visible from road (B6059) or canal towpath

### **Promoted routes**

The Cuckoo Way, Chesterfield Canal (passes nearby but the site cannot be seen from the canal towpath).

## **Thorpe Common and Lob Wells Wood (Rotherham)**

**Historical Features** Prehistoric cave and shelter sites

### **Ecological Features**

Unimproved magnesian limestone grassland

Moor Hill Farm (SK529 801) has been in countryside stewardship scheme for 10 years. Farmer has just entered into new agreement for another 10 years.

Although nearby Whitwell Woods has a history of biological recording, there are no records for Thorpe Common and Lob Wells wood that we are aware of.

Other habitats noted on site include broadleaf woodland, hedgerows, ditches and pond adjacent to the site used for private fishing with marginal vegetation

### **Landscape Features**

Woodland

Wildflowers

Far reaching views

Hamlet is representative of the vernacular building style characteristic of the Heritage Area

**Key communities** Thorpe Salvin  
Bondhay  
Whitwell





## Other stakeholders

Rotherham Borough Council

Yorkshire Wildlife Trust

Defra

Private landowners

## Issues

No public access to wood. It is under private ownership and the owner is not keen on public access. However, under the countryside stewardship scheme there is concessionary access to unimproved grassland area where limestone flora is abundant in spring and summer. There is the potential for installing an interpretation point showing the types of wildflowers this uncommon habitat supports.

Vandalism/problems rare. Farmer reports occasional burnt out cars.

Cave and shelter sites cannot be seen from rights of way in the area.

## Promoted routes

Rotherham Ring Route

(Cuckoo Way, Chesterfield Canal nearby)

## Ash Tree Gorge (Bolsover District)

### Historical Features

Known prehistoric cave and shelter sites

### Ecological Features

ECUS (2000) report little information other than the species list obtained from the Derbyshire Biological Records list which includes the notable species below:

*Sorbus torminalis* wild service

*Cirsium acaule* dwarf thistle

Further field research is recommended for example a Phase 1 Habitat Survey

### Landscape Features

Regionally Important Geological Site (RIGS)





	Views over surrounding landscape
<b>Key communities</b>	Whitwell Clowne
<b>Other stakeholders</b>	Chatsworth Estate Tenant Farmer
<b>Issues</b>	No public access – can only be seen from the road (Highwood Lane), which is on the Archaeological Way. The lay-by off this road is not suitable for car parking as it is used as a passing point and road is a single lane. Evidence of cattle trampling around cliff edge
<b>Promoted routes</b>	The Creswell Archaeological Way (13 miles, passes along the road with a view of the site).

## **Markland and Hollinhill Grips (Bolsover District)**

### **Historical Features**

Cave and shelter sites  
Iron Age Hill Fort  
Railway viaduct



### **Ecological Features**

SSSI  
Semi-natural ancient woodland  
Unimproved magnesian limestone grassland  
Notable species include bee orchids *Ophrys apifera* on the north plateau, the nationally rare large leaved lime *Tilia platyphyllos* along the cliff top and the abundance of yew *Taxus baccata* along the cliff edge. The scarce wood barley *Hordelymus europaeus* is scattered throughout the woodland, the nationally rare mountain currant *Ribes alpinum* is also present. In places the nationally rare soft-leaved sedge *Carex montana* occurs. Importantly, Markland Grips supports the only Derbyshire population of the nationally scarce plant rare spring-sedge *Carex ericetorum* (ref: English Nature).



The marsh area of South Markland supports great-crested and smooth newts.

Outside the SSSI four SINC's exist reinforcing the ecological importance of the area

(Many more have been recorded. The full species lists are contained in the ECUS report).

### **Landscape Features**

Gorges, limestone crags, stream

Regionally Important Geological Site (RIGS)

### **Key communities**

Creswell

Clowne

### **Other stakeholders**

Chatsworth Estates (landowners)

English Nature

Derbyshire Wildlife Trust (manage the site)

Landmarks

Clowne Natural History Society

Tenant farmers

### **Issues**

Landmarks wish to develop in gorge bottom

Dumping of manure at top of gorge changing ecology of limestone grassland

Proposed Greenway will improve access to site

Shooting tenancy covering the reserve

Derbyshire Wildlife Trust concern re encouraging visitors, except in Middle Markland.

Vegetation obscuring cliff faces

Narrow, overgrown footpaths (Derbyshire Wildlife Trust responsible as outlined in licence agreement with Chatsworth Estates)

Litter in stream – Markland Grips

Greenway proposals linking NCN67 to Creswell

Additional railway line not in Greenway proposals

In many places brambles and scrub are now taking

over

Nitrogen pollution from the adjacent sewage works



## Promoted routes

The Markland Loop (6 miles)

The Creswell Archaeological Way (13 miles)

Creswell Crags, Elmtun and Markland Grips 7mile walk (contained in booklet '*Walking in the Creswell Limestone Heritage Area*').

## Creswell Crags (Bolsover and Bassetlaw Districts)

### Historical features

Palaeolithic cave site

A potential World Heritage Site and

Scheduled Ancient Monument

Literary/artistic connections



### Ecological features

Habitats include semi-natural deciduous woodland, mixed plantation, scattered scrub, unimproved calcareous grassland, single species dominant swamp and open water. The habitats support a variety of important flora and fauna including several species of bat, notable populations of breeding birds. Plant species of restricted distribution include giant bell flower, mountain melick (ECUS report 2000 p6), and wetland species consist of blue water speedwell and mares tail (Oliver, 2001).

### Landscape features

SSSI - for geological reasons

Limestone gorge, caves and cliffs

On stream lake and river course

Open space

Education Centre

Dramatic landscape views

Good access

### Key communities

Creswell communities

Whitwell



Holbeck

### **Other stakeholders**

Welbeck Estate

English Nature

English Heritage

Creswell Village Company

Creswell History Group

### **Issues**

Pending re-development of visitor facilities to provide a focus for interpretations of ice age period, visitor figures approx 30000 per annum .

B6042 road is being re routed and will be downgraded to bridleway status in 2004.

### **Promoted routes**

The Craggs Loop (7 miles)

Holbeck Walk (3 miles)

Creswell Craggs, Elmton and Markland Grips (7 miles)  
(contained in booklet *Walking in the Creswell Limestone Heritage Area*)

A walk from Welbeck (3 miles)

Short walks in the Dukeries by John Merrill

Doorstep walk 1 Creswell Craggs

Dukeries cycle trail

Robin Hood Way

Walks in the Meden Valley – Creswell & Whaley Thorns

Out of print:

Hodthorpe School Butterfly Trails (7.5 miles)

## **Elmton and Whaley Vales (Bolsover District)**

### **Historical features**

Whaley Shelter

Elmton village

Scarcliffe Park

Whaley Pit

Langwith Bassett church





### **Ecological features**

ECUS ecological report (2000), confirms that little accurate ecological information exists for this site but species records have been obtained from the Derbyshire Biological Centre. However, ECUS identifies difficulties in correlating the results from the list with the area of interest as the records are taken from 1km grid squares 'between the east of Scarcliffe Park and Nether Langwith'. It is recommended that further site specific investigation is carried out which is beyond the scope of this report. (see Ecus report for comprehensive list of recorded species)

### **Landscape features**

Vales  
Valley bottom pasture  
Old field boundaries  
Good views from road (Oxpasture Lane)

### **Key communities**

Creswell  
Langwith / Whaley

### **Other stakeholders**

Chatsworth Estate  
Elmton / Creswell local history group  
Elmton Village company  
Derbyshire County Council countryside service  
Whaley Thorns heritage committee

### **Issues**

Good walking area – regular led walks  
Aesthetics good  
Car parking at Poulter Country Park which is a gateway to surrounding countryside

### **Promoted routes**

The Creswell Archaeological Way (13 miles)  
Creswell Crags, Elmton and Markland Grips (7miles)  
(contained in booklet *Walking in the Creswell Limestone Heritage Area*).



**Langwith Vale (Bolsover District)**

**Historical features**

Langwith Bassett Cave  
Possible site of chapel

**Ecological features**

Site of importance for nature conservation - (SINCs)

Langwith Wood and railway site is noted as a good site for moths and birds

Scarcliffe Lanes Common includes the following habitats: scrub, bracken, bramble, woodland and open space. Indicator species include: Brachypodium, Pimpinella saxifraga, Linum catharticum, centaurium erythraea, Clinopodium sp. and Arabis hirsuta

Other interest reported by ECUS: 'badger setts, part of a major grassland corridor'

(See ECUS report for list of recorded species)

**Landscape features**

Langwith Junction railway line (SK524 689) and Langwith Bassett Cave (SK518 695) are both Regionally Important Geological Site (RIGS)

Distant views

**Key communities**

Scarcliffe  
Upper Langwith

**Other stakeholders**

Chatsworth Estate

**Issues**

Dogs mess on along the path from Scarcliffe to Langwith Wood. Dog bin in village would be better sited where path meets road.

Proposed 'Greenway' along disused railway line north side of Langwith wood.

**Promoted routes**

The Creswell Archaeological Way (13 miles)  
Scarcliffe and Upper Langwith (4 miles)





## **Pleasley Vale (Bolsover and Mansfield Districts)**

### **Historical features**

Yew tree cave  
Vale house cave  
Pleasley pit  
Vale house  
Pleasley mills  
Pleasley mills  
model village  
Pleasley Park  
Roman villa



### **Ecological features**

Pleasley Park – botanical interest (angiosperms), and good bird population  
Ancient woodland  
Calcareous woodland  
Calcareous grassland - Meden Trail said to contain some of the best remaining calcereous grassland within Nottinghamshire  
Neutral grassland  
Unimproved grassland  
Calcareous pasture with rocky outcrops  
Roadside bank with calcareous flora  
Pond and lake habitats with marginal vegetation  
River course ditches and streams with marginal vegetation  
Marshland  
Scrubland  
There are numerous biological records for Pleasley Vale which is a diverse species rich environment with eight potential Nottinghamshire SINC  
(see Ecus report for details and precise location)

### **Landscape features**

Pleasley Vale RIGS  
Pleasley Gorge  
Little Matlock Gorge



Magnesian limestone quarry  
Other distinct rocky outcrops  
Pleasley Vale rail cutting  
Historic mills of architectural importance  
Disused quarry and working quarry

### **Key communities**

Pleasley  
Mansfield Woodhouse  
Shirebrook

### **Other stakeholders**

Bolsover DC  
Nottinghamshire Wildlife Trust  
Friends of Pleasley Pits  
Pleasley Park Natural History Group  
Mansfield DC  
Tony Barton (local landowner)  
Shirebrook local history group

### **Issues**

park

Pleasley Pit reclamation  
Plethora of trails – no co-ordinated approach  
Maintenance of trails and car parks  
Large lorries using the lane to access the business  
  
Evidence of motorbike use on Meden Trail  
Evidence of horse riders on footpath – Little Matlock  
Dumping at car park entrance on Common Lane

### **Promoted routes**

The Creswell Archaeological Way (13 miles)  
The Meden Trail and Little Matlock (6.5 miles)  
(Exploring the Robin Hood Line series)  
Pleasley Trails network (Meden Trail)  
Short walks in the Dukeries by John Merrill  
Out of print:  
Meander through the Meden Valley (4 miles)  
Pleasley Park



## Appendix 8.3 Nature Conservation Sites

<b>Sites of Special Scientific Interest (SSSI)</b>	<b>OS Grid reference</b>
Anston Stones and Lindrick Dale	SK 537 829
Dovedale Wood	SK 466 632
Teversal – Pleasley Railway	SK 470 636
Doe Lea Stream Section	SK 460 692
Creswell Crags	SK 534 742
Hollinhill and Markland Grips	SK 510 750
Crabtree Wood	SK 490 785
Ginny Spring, Whitwell Wood	SK 520 788

### **Regionally Important Geological and Geomorphological Sites (RIGS)**

Quarry north of The Hurst, Tibshelf	SK 451 618
Hardwick Park Quarry	SK 462 634
B6417 cutting, Pleasley	SK 502 647
Pleasley Vale	SK 523 652
Balkham Lane Quarry	SK 502 666
Hodhill Farm Quarry	SK 506 668
Bradshaw Wood Quarry	SK 526 688
Langwith Junction railway line	SK 524 689
Langwith Bassett Cave	SK 518 695
Station Road, Bolsover	SK 472 707
Oxcroft Quarry	SK 482 737
Hollinhill and Markland Grips	SK 510 750
Clowne Crags/Broughton Lane Railway cutting	SK 496 755
Whitwell Quarry	SK 530 752
Ash Tree Cave, Burnhill Wood	SK 515 762

### **Local Nature Reserves (LNR)**

Rowthorne Trail	SK 491 637
Doe Lea Nature Reserve	SK 459 666



## Appendix 8.4 Form

## Archaeological Way Condition Survey

### Path survey sheet – self-guided walk leaflets

**Walk Title** Archaeological Way

**Surveyor's name(s)** Carol Parsons

**Date walk checked** Wednesday 27 August 2003

Problem	State condition or OK	Location
<b>Ground conditions / grass / crop length</b>	Very good	
<b>Vegetation overgrowth</b>	Horse hop overgrown Footpath overgrown Way mark post obscured	SK515653 SK514751 to 510750 SK514752
<b>Stiles</b>	Good overall Step damaged	SK510750
<b>Gates</b>	Good	
<b>Bridges</b>	OK	
<b>Steps</b>	Old steps need backfilling	SK515649
<b>Way Markers</b>	Slight damage to several Overall good	Throughout
<b>Litter</b>	Quite a bit along the length of Forge Lane In stream	SK511657 to 506668 Markland Grips
<b>Fly tipping</b>	Tyres in river Soil Manure	SK513649 SK506668 SK514752
	Slight damage to several	



<b>Vandalism / eyesore</b>	way mark discs Interpretation board very faded and unreadable	SK509649
<b>Other</b>	New road widening – concern how it will affect route	SK511657



## Appendix 8.5 Archaeological Way Leaflet Amendments

1. Significance of limestone crags and gorges to be made clearer.
2. Concentrate on what is special or unique about the place e.g. a Roman coin was found in fields near here is too general.
3. Under A the car park is signed as Archaeological Way not the Meden Valley Trail car park
4. Under B the distance to Outgang Lane along the road is nearer 20m not 200m
5. Spelling error under E woodland is spelt woodlamd
6. Under G replace abbreviations with the full name of the former railway if this text is to remain.
7. Public transport information should be included on the reverse of the leaflet.
8. The information refers to Pathfinder maps which have now been replaced by Explorer maps
9. The paragraph for people with disabilities should be rephrased
10. Under K reference is made to visiting the Whaley Thorns Heritage Centre. This is currently closed.
11. A better map is required showing distances at various points.
12. Reference could be made to food and accommodation providers on or near the route.
13. Refreshment symbols could be shown on the map.
14. Under Q There should be a space between the words 'the' and 'track'. The last sentence is not clear.



15. Paragraphs O and P are labelled back to front so that the sequence runs N P O instead of N O P.



## **Appendix 8.6    List of Contributors**

Daniel Abrahams, English Nature

Anna Chapman, Greenways Officer, Derbyshire County Council

Brian Davies, English Nature

Michael Gazur, Clerk to the Council, Anston Parish Council

Pete Jarman, Nottinghamshire County Council

Nigel Mills, Creswell Heritage Trust

Richard Pett, Rights of Way Officer, Rotherham Metropolitan Borough Council

John Scott, Pride of Place Project

David Ward, Head Custodian, English Heritage's Roche Abbey



## Appendix 8.7 Documents Consulted

Babtie Group (March 1998) Groundwork Creswell Robin Hood Rail Trails Feasibility Study

Countryside Agency (May 2000) Sense and Accessibility CAX 26

Countryside Agency (January 2001) Towards tomorrow's countryside CA40

Countryside Agency (2002) East Midlands  
The state of the countryside 2002. CA127

Countryside Agency (2002) Yorkshire and the Humber , The state of the countryside 2002. CA126

Countryside Agency (2001b) The Rights of Way condition survey 2000  
Cheltenham: Countryside Agency. CA94

Countryside Commission, CCP457, Growing in confidence - understanding people's perceptions of urban-fringe woodlands.

Creswell Heritage Trust, A New Vision for the Rural Coalfield

Creswell Heritage Trust (August 1999) Bolsover Town Tourism Appraisal, Interpretive Strategy and Plan

Creswell Heritage Trust (April 2001) Creswell Craggs Conservation Plan

Creswell Limestone Strategy steering group, (January 2000)  
Creswell Limestone Strategy

Curry, N (1994) Countryside, Access and Land Use Planning, E & F N Spon, London.

Derbyshire County Council (June 2000) Draft Landscape Character Types

District of Bolsover (February 2000) Bolsover District Local Plan



Ecus (April 2000) Limestone Heritage Area Ecological Assessment of key sites Appendices

HMSO (2000) UK Day Visits Survey 1998

Mansfield District Council (undated) A Trails Network for Mansfield District

Mansfield District Council (undated) A Trails Strategy for Mansfield

Nottinghamshire County Council (August 2002) Access study for the Greenwood / Sherwood Area (North) 1<sup>st</sup> draft full consultation

Nottinghamshire and Nottingham joint structure plan, Deposit Draft 2003

Rotherham Metropolitan Borough Council (June 1999) Rotherham Unitary Development Plan

The Royal Institution of Chartered Surveyors (1993) Tomorrow's Countryside management, conservation and enjoyment

South Yorkshire Forest (2002) South Yorkshire Forest Plan 2002

Greenwood Community Forest (September 2000) Strategic Plan for Greenwood

<http://English-nature.org/>



## **Appendix 8.8 List of Consultees**

Dan Abrahams (English Nature)  
Anna Chapman (DCC, Greenways Officer)  
Glyn Davis (Arcus)  
Glynis Foster (DCC, landscape character assessment)  
Michael Gazur, clerk to Anston Parish Council  
Pete Jarman (Notts CC - countryside) / Neil Lewis 01623 861406  
Gill Millward (DCC, Rights of Way officer – Bolsover & NEDDC)  
Nigel Mills, Creswell Heritage Trust  
Richard Pett (Rotherham MBC, Rights of way officer) 01709 822168  
Diane Priest (English Heritage) 01904 601961  
John Scott (Pride of Place) 01623 742448  
Steve Singleton (Bolsover DC, tourism)  
Angela Stanfield (DCC, re condition of rights of way)  
Ian Wall, Creswell Heritage Trust

### **Further consultation may be required with the following:**

Tony Barton re Pleasley Vale  
Nick Broomhead (Notts CC – head of countryside)  
Kim Carlen (Bolsover DC, conservation officer)  
Phil Colbourne (Bassetlaw, disabled access officer?) 01909 533195  
Derbyshire Wildlife Trust  
Terry Foye (Barlborough leaflets – 44 West Street, Creswell, tel 720067)  
Phil Goodman 01623 812626 or Eric Copley 810920 Bolsover District RA  
Simon Horton (Notts CC – rights of way improvement plan - 01623 861406)  
Steve Jones (Notts County Council, rights of way)  
Barbara Littlewood, Anston Stones wood management committee, tel 01709 548858  
Nottinghamshire Wildlife Trust  
Kate Richardson (DCC, tourism officer)  
Daphne Roe re ecology 42 Skinner Street, Creswell S80 4JW – write for info  
Andy Savage (Rotherham MBC, undertaking ROWIP) 01709 822932  
Helen Sisson (Mansfield DC, tourism)  
Dean Skrabania, Project Manager, Greenwood Community Forest  
Greenwood House, 1 – 3 Diamond Avenue, Kirkby-in-Ashfield, Notts NG17 7GN  
SK58 birders ([www.SK58.freeserve.co.uk](http://www.SK58.freeserve.co.uk))



Sorby Natural History Society  
South Yorkshire Forest  
George Sycamore (Bassetlaw, Interpretive trails policy)  
Dave Wood (Notts. County Council)  
Andy Wickham (Notts County Council) – digital maps  
Whitwell Woods Natural History Group  
Yorkshire Wildlife Trust



## **Appendix 8.9    Potential        Funding        Agencies        For Implementation**

### HERITAGE LOTTERY FUND

One of the current priorities for grants are countryside projects (either at nature reserves or through area-based schemes which, involving a number of separate small projects, boost the appeal of rural landscapes). The Landscape Heritage Grants provide an excellent opportunity to take forward the Heritage Area proposals.

### ROTHERHAM METROPOLITAN BOROUGH COUNCIL

May have some money for suitable projects 2004-5 (Contact Richard Pett).

WOODLAND GRANT SCHEME - Community Woodland supplement as an incentive to encourage public access.

### COUNTRYSIDE STEWARDSHIP SCHEME.

### ENGLISH NATURE

### EUROPEAN REGIONAL DEVELOPMENT FUND (OBJECTIVE 2)

### SPORTS LOTTERY FUND

### NEW OPPORTUNITIES FUND

LANDFILL TAX (Environmental Trusts such as WREN and Derbyshire Environmental Trust)

### AGGREGATES LEVY SUSTAINABILITY FUND

### COALFIELD REGENERATION TRUST

### ENGLISH PARTNERSHIPS

SUSTRANS - Sustrans may consider the addition of loops and links to its Millennium Routes so that access can be created to other features. The potential of such linkages should be attractive to many potential funding partners.



## Appendix 8.10 Cost Estimates: Physical and Visual Access Proposals & Intellectual Access Proposals

### APPENDIX 8.10

#### PHYSICAL & VISUAL ACCESS COST ESTIMATES

##### SITE 1 ROCHE ABBEY

Item	Description	Location	Quantity	Unit	Rate	Cost
1.0	<b>Site Establishment</b>					
1.1	<u>Insurance/Health and Safety Provision</u> Allow for setup on site including insurances, personnel, equipment, site security, welfare facilities, all Health and Safety provisions including that under C.D.M Regulations and for work described in the Specification preliminaries and preambles.					200.00
1.2	<u>Temporary fencing.</u> Supply and erect temporary protective safety fencing around site areas which are deemed to present a hazard and site conditions which could be reasonably foreseen to present a hazard. Allow for removal after completion of the works.					500.00
1.3	<u>Protective measures.</u> Allow for working around, protection of any, reinstatement of all manholes, telegraph poles, lamp posts, fences, pavings, kerbings etc. including for re-bedding and the like.					200.00
1.4	<u>Service Location &amp; Identification.</u> Allow for all work to identify the precise location of all the services within the proposed area of work. Record all such locations and depths until the works are completed, and provide Landscape Architect with satisfactory records.					500.00
1.5	<u>Site Cleanliness.</u> Allow for maintaining all roads and pedestrian areas free from debris and tools/equipment					300.00



1.6	Specification, Preambles & Preliminaries. Allow for any work described in the specification, drawings, preliminaries or preambles not already identified in this bill						-
<b>2.0</b>	<b>Car Park and access road improvements</b>						
2.1	Define parking bays with bollards.	SK545898	item				1,000.00
2.2	Scrape and resurface with limestone.	From end of cobbles to fence at Abbey entrance gate	194m l x 4m w				5,000.00
2.3	Access road. Scrape and resurface with limestone.	From new gate to cobbles at the car park					
2.4	Replace catch on existing new entrance gate with one complying with DDA standards.	entrance gate	item				50.00
<b>3.0</b>	<b>Signage</b>						
3.1	Supply and Install route circulation signs denoting easy access routes, distance of walks etc..	location to confirm subject to survey/consultation					500.00
3.2	Supply & install entrance welcome sign on approach road		1	no.	500.00		500.00
<b>4.1</b>	<b>Footpath Construction</b>						
4.2	Construct 1.8m wide limestone easy access footpaths including excavation, TERRAM edging boards, pegs, limestone base course and topping	From Abbey entrance fence to kissing gate.	141	lin.m	20.00		2,820.00
<b>5.0</b>	<b>Fencing and Gates</b>						
5.1	Remove existing post & wire fence and replace with timber post n rail with mesh	From first gate to kissing gate	141	lin.m	30.00		4,230.00
5.2	Install 4m wide timber field gate		1	no.	350.00		350.00
5.3	Remove chain link fence and replace with timber post n rail with mesh		98	lin.m	30.00		2,940.00
	Replace existing kissing gate with		1	no.			



5.4	DDA requirements				400.00	400.00
5.5	Remove redundant stile and install new post and rail fence	From kissing gate to cliff	9	m	17.00	153.00
<b>6.0</b>	<b>Drainage Works</b>					
6.1	Allow PC sum	Subject to detailed survey	item			500.00
<b>7.0</b>	<b>Site Furniture</b>					
7.1	Supply and install standard type timber benches	Subject to survey/consultation	2	no.	300.00	600.00
<b>8.0</b>	<b>Interpretation</b>					
8.1	Supply and install interpretation panels including all research design and artwork (refer to Intellectual access)	Subject to survey/consultation				-
<b>9.0</b>	<b>Planting</b>					
	Allow PC sum	Subject to survey/consultation	item			500.00
<b>10.0</b>	<b>Specialist Consultants</b>					
10.1	Allow PC sum for commissioning specialist consultancy work ie Landscape Architects, archaeologists, ecologists, geologists as may be required due to the sensitive nature of the site. SSSI / Scheduled Ancient Monument consent may be required.		item			1,000.00
<b>11.0</b>	<b>Project Design &amp; Management Fees</b>					
11.1	Allow for all project design & management costs including detailed design planning supervisor duties planning consents SSSI, SAM consents		item			1,000.00
<b>Sub total</b>						<b>23,243.00</b>



**SITE 2 ANSTON STONES WOOD &  
LINDRICK DALE**

Item	Description	Location	Quantity	Unit	Rate	Cost
<b>1.0</b>	<b>Site Establishment</b>					
1.1	<u>Insurance/Health and Safety Provision</u> Allow for setup on site including insurances, personnel, equipment, site security, welfare facilities, all Health and Safety provisions including that under C.D.M Regulations and for work described in the Specification preliminaries and preambles.		item			200.00
1.2	<u>Temporary fencing.</u> Supply and erect temporary protective safety fencing around site areas which are deemed to present a hazard and site conditions which could be reasonably foreseen to present a hazard. Allow for removal after completion of the works.		item			500.00
1.3	<u>Protective measures.</u> Allow for working around, protection of any, reinstatement of all manholes, telegraph poles, lamp posts, fences, pavings, kerbings etc. including for re-bedding and the like.		item			200.00
1.4	<u>Service Location &amp; Identification.</u> Allow for all work to identify the precise location of all the services within the proposed area of work. Record all such locations and depths until the works are completed, and provide Landscape Architect with satisfactory records.		item			500.00
1.5	<u>Site Cleanliness.</u> Allow for maintaining all roads and pedestrian areas free from debris and tools/equipment		item			300.00
1.6	<u>Specification, Preambles &amp; Preliminaries.</u> Allow for any work described in the specification, drawings, preliminaries or preambles not already identified in this bill		item			-
<b>2.0</b>	<b>Car Park improvements</b>					



2.1	Create disabled car park adjacent to or within existing corner of park. Include for clearance, excavation and limestone surfacing. Allow for RADAR key system. Remove 5 concrete bollards. Define with 10 timber bollards. Subject to Parish Approval.	SK522841	item (10m x10m)				3,000.00
3.0	<b>Signage</b>						
3.1	Supply and Install route circulation signs denoting easy access routes, distance of walks etc..	Subject to site survey	15	no.	50.00		750.00
3.2	Supply & install entrance welcome signs	SK537828, SK518841, SK528839	3	no.	300.00		900.00
3.3	Install way marker post & disc	Lindrick Quarry	1	no.	25.00		25.00
4.0	<b>Footpath Construction</b>						
4.1	Construct 1.8m wide easy access footpaths including excavation, TERRAM edging boards, pegs, limestone base course and topping.	SK522840 From the B6060 to interpretation board at path fork.	192	lin.m	20.00		3,840.00
4.2	Construct 1.8m wide easy access footpaths including excavation, TERRAM edging boards, pegs, limestone base course and topping.	From interpretation board north to kissing gate entrance at track.	82	lin.m	20.00		1,640.00
4.3	Construct 1.8m wide easy access footpaths including excavation, TERRAM edging boards, pegs, limestone base course and topping.	From interpretation to next path fork.	485	lin.m	20.00		9,700.00
4.4	Construct 1.8m wide easy access footpath with or without surfacing to provide alternative return loop. *(Cost represents PC sum for using surfacing material)	*Across open field to entrance adjacent to recreation ground	185	lin.m	20.00		3,700.00
4.5	Scrape & re-top main access paths to original width of 1.8m	Allow PC sum (subject to consultantion)		item			3,500.00
5.0	<b>Fencing and Gates</b>						
5.1	Install 3 rail morticed timber post & rail fence to prevent bank erosion	Position adjacent to existing path to prevent access desire line down slope	22	lin.m	17.00		374.00



5.3	Install 4m wide timber field gate	Locations subject to detailed survey	1	no.	400.00	400.00
5.4	Supply and install motorcycle prevention barrier and remove existing steel barriers. Make good tarmac footpath	Entrance adjacent to main road	1	no.	700.00	700.00
5.5	Supply and install motorcycle prevention barrier and remove stile. Make good surrounding path surface	SK524838. Entrance adjacent to railway	1	no.	620.00	620.00
5.6	Move stile entrance closer to A57 road	SK537828. Near A57	1	no.	300.00	300.00
5.7	Supply and install tubular handrail to replace missing handrail		8	m		
5.8	Replace kissing gate with motorcycle barrier or install gate to DDA standards.	Recreation ground entrance to site, off track.	1	no.	650.00	650.00
<b>6.0</b>	<b>Drainage Works</b>					
6.1	Allow PC sum to construct french drains adjacent to footpath	Locations subject to detailed survey	item			1,000.00
6.2	Allow PC sum to construct open ditch constructed to 'V' shape 300mm depth adjacent to footpath	Locations subject to detailed survey	item			600.00
<b>7.0</b>	<b>Site Furniture</b>					
7.1	Supply and install 'standard type' timber picnic tables and benches		3	no.	500.00	1,500.00
7.2	Supply and install 'disabled type' timber picnic tables and benches		2	no.	500.00	1,000.00
7.3	Supply and install standard type timber benches		6	no.	300.00	1,800.00
<b>8.0</b>	<b>Interpretation</b>					
8.1	Supply and install interpretation panels including all research design and artwork (refer to Intellectual access)				2,500.00	-
8.2	Remove existing interpretation boards to licensed tip		3	no	70.00	210.00
<b>9.0</b>	<b>Planting</b>					
9.1	Allow PC sum		item			500.00



10.0	<b>Specialist Consultants</b>	item				
	Allow PC sum for commissioning specialist consultancy work ie Landscape Architects, archaeologists, ecologists, geologists as may be required due to the sensitive nature of the site					
10.1						1,000.00
11.0	<b>Project Design &amp; Management Fees</b>					
	Allow for all project design & management costs including detailed design planning supervisor duties planning consents SSSI, SAM consents					
11.1						1,500.00
<b>Sub total</b>						<b>40,909.00</b>

### SITE 3 PLEASLEY VALE

Item	Description	Location	Quantity	Unit	Rate	Cost
1.0	<b>Site Establishment</b>					
1.1	<u>Insurance/Health and Safety Provision</u> Allow for setup on site including insurances, personnel, equipment, site security, welfare facilities, all Health and Safety provisions including that under C.D.M Regulations and for work described in the Specification preliminaries and preambles.					200.00
1.2	<u>Temporary fencing.</u> Supply and erect temporary protective safety fencing around site areas which are deemed to present a hazard and site conditions which could be reasonably foreseen to present a hazard. Allow for removal after completion of the works.					500.00
1.3	<u>Protective measures.</u> Allow for working around, protection of any, reinstatement of all manholes, telegraph poles, lamp posts, fences, pavings, kerbings etc. including for re-bedding and the like.					200.00



<u>Service Location &amp; Identification.</u>						
1.4	Allow for all work to identify the precise location of all the services within the proposed area of work. Record all such locations and depths until the works are completed, and provide Landscape Architect with satisfactory records.					500.00
<u>Site Cleanliness.</u> Allow for						
1.5	maintaining all roads and pedestrian areas free from debris and tools/equipment					300.00
<u>Specification, Preambles &amp; Preliminaries.</u> Allow for any work described in the specification, drawings, preliminaries or preambles <u>not</u> already identified in this bill						-
<b>Car Park improvements</b>						
2.0						
2.1	Remove debris and litter from existing car park	Car Park @ Outgang Lane SK508648	item		300.00	300.00
2.2	Resurface car park	Car Park @ Outgang Lane SK508648	item		1,500.00	1,500.00
<b>Traffic Signage</b>						
3.0						
3.1	Signs to indicate where to park/not to park	Little Matlock SK527647	item			500.00
3.2	Signage to prevent lorries entering the Pleasley Mill site from Little Matlock direction	Little Matlock SK534638	1	no.	500.00	500.00
<b>Footpath Construction</b>						
4.0						
4.1	Cut back vegetation to 1m either side of footpath	Meden Valley Trail SK512647	2000	lin.m	0.50	1,000.00
4.2	Repair existing steps (Archaeological Way)	Outgang Lane SK512649	item			300.00
4.3	Repair existing steps (north of church)	North of Church SK527651	item			300.00
4.4	Cut back vegetation to 1m either side of footpath	Little Matlock SK530652 south of river	item			600.00
<b>Fencing and Gates</b>						
5.0						



5.1	Supply and install kissing gate to replace existing	Location confirm to	1	no.		400.00
5.2	Supply and install motorcycle prevention barrier	SK508648	1	no		700.00
5.3	Remove gates & fencing (Archaeological Way)	Outgang Lane SK514649	item			200.00
5.4	Install timber post & rail fence (PC sum)	Adjacent to barrier and kissing gate	item			300.00
5.5	Install post & wire fence (PC sum)	Around new planting areas	item			500.00
5.6	Install 4m wide timber field gate (PC sum)	Outgang Lane car park SK514649	1	no	500.00	500.00
<b>6.0</b>	<b>Drainage Works</b>					
6.1	Allow provisional sum	Subject to detailed survey	item		500.00	500.00
<b>7.0</b>	<b>Site Furniture</b>					
7.1	Supply and install 'standard type' timber picnic tables and benches	SK509648, Outgang Lane	1	no.	550.00	550.00
7.2	Supply and install 'disabled type' timber picnic tables and benches	SK509648, Outgang Lane	1	no.	550.00	550.00
7.3	Supply and install standard type timber benches	Meden Trail	6	no.	300.00	1,800.00
7.4	Supply and install litter bins	SK509648, Outgang Lane	1	no.	450.00	450.00
<b>8.0</b>	<b>Interpretation</b>					
8.1	Supply and install interpretation panels including all research design and artwork (refer to Intellectual access)	Outgang Lane car park and Poulter Country Park car park		no.	2,500.00	-
8.2	Remove existing interpretation boards to licensed tip	Outgang Lane Car Park and Poulter Country Park car park	2	no.	75.00	150.00
8.3	Supply and install interpretation panel including all research design and artwork (refer to Intellectual access)	Mansfield Woodhouse Station		no.	2,500.00	-
<b>9.0</b>	<b>Planting</b>					
	Allow PC sum for native tree/shrub	PC sum	item			



9.1	planting				500.00	500.00
<b>10.0</b>	<b>Specialist Consultants</b>					
10.1	Allow PC sum for commissioning specialist consultancy work ie Landscape Architects, archaeologists, ecologists, geologists as may be required due to the sensitive nature of the site	PC sum	item			1,000.00
<b>11.0</b>	<b>Project Design &amp; Management Fees</b>					
11.1	Allow for all project design & management costs including detailed design planning supervisor duties planning consents SSSI, SAM consents		item			1,500.00
<b>Sub total</b>						<b>16,300.00</b>

#### SITE 4 ARCHAEOLOGICAL WAY - PROPOSED NORTHERN EXTENSION

Item	Description	Location	Quantity	Unit	Rate	Cost
<b>1.0</b>	<b>Site Establishment</b>					
1.1	<u>Insurance/Health and Safety Provision</u> Allow for setup on site including insurances, personnel, equipment, site security, welfare facilities, all Health and Safety provisions including that under C.D.M Regulations and for work described in the Specification preliminaries and preambles.					200.00
1.2	<u>Temporary fencing.</u> Supply and erect temporary protective safety fencing around site areas which are deemed to present a hazard and site conditions which could be reasonably foreseen to present a hazard. Allow for removal after completion of the works.					500.00
1.3	<u>Protective measures.</u> Allow for working around, protection of any, reinstatement of all manholes, telegraph poles, lamp posts, fences, pavings, kerbings etc. including for re-bedding and the like.					200.00



<u>Service Location &amp; Identification.</u>					
1.4	Allow for all work to identify the precise location of all the services within the proposed area of work. Record all such locations and depths until the works are completed, and provide Landscape Architect with satisfactory records.				500.00
<u>Site Cleanliness.</u> Allow for					
1.5	maintaining all roads and pedestrian areas free from debris and tools/equipment				300.00
<u>Specification, Preambles &amp; Preliminaries.</u> Allow for any work described in the specification, drawings, preliminaries or preambles <u>not</u> already identified in this bill					-
<b>Signage</b>					
2.0					
	Way marking from Whitwell to Roche Abbey (discs)	50	no.	5.00	250.00
2.1					
	Way mark posts (finger posts)	4		150.00	600.00
2.2					
<b>Interpretation</b>					
3.0					
	Supply and install interpretation panels including all research design and artwork	4		2,500.00	10,000.00
3.1					
<b>Access and Footpath Works</b>					
4.0					
	Likely to be entrance improvements to existing paths. Allow for a PC sum	item			5,000.00
4.1					
	Small wooden sleeper footbridge	1	North of Whitwell Wood		600.00
4.2					
<b>Project Design &amp; Management Fees</b>					
5.0					
	Allow for all project design & management costs including detailed design planning supervisor duties planning consents SSSI, SAM consents	item			1,500.00
5.1					
<b>Sub total</b>					<b>19,650.00</b>



## VIEW POINT LOCATION WORKS

Item	Description	Location	Quantity	Unit	Rate	Cost
<b>1.0</b>	<b>Site Establishment</b>					
1.1	<u>Insurance/Health and Safety Provision</u> Allow for setup on site including insurances, personnel, equipment, site security, welfare facilities, all Health and Safety provisions including that under C.D.M Regulations and for work described in the Specification preliminaries and preambles.					200.00
1.2	<u>Temporary fencing.</u> Supply and erect temporary protective safety fencing around site areas which are deemed to present a hazard and site conditions which could be reasonably foreseen to present a hazard. Allow for removal after completion of the works.					500.00
1.3	<u>Protective measures.</u> Allow for working around, protection of any, reinstatement of all manholes, telegraph poles, lamp posts, fences, pavings, kerbings etc. including for re-bedding and the like.					200.00
1.4	<u>Service Location &amp; Identification.</u> Allow for all work to identify the precise location of all the services within the proposed area of work. Record all such locations and depths until the works are completed, and provide Landscape Architect with satisfactory records.					500.00
1.5	<u>Site Cleanliness.</u> Allow for maintaining all roads and pedestrian areas free from debris and tools/equipment					300.00
1.6	<u>Specification, Preambles &amp; Preliminaries.</u> Allow for any work described in the specification, drawings, preliminaries or preambles <u>not</u> already identified in this bill					-
<b>2.0</b>	<b>Pull Ins</b>					
2.1	Resurface and extend existing pull ins a required including PCC edging	Creswell Crags A	1	item	3,500.00	3,500.00



2.2	Resurface and extend existing pull in as required including PCC edging	Whitwell	1	item	3,000.00	3,000.00
2.3	Resurface and extend existing pull in as required including PCC edging	Ash Tree Gorge	1	item	3,000.00	3,000.00
3.0	<b>Interpretation</b>					
2.1	Supply and install interpretation panels including all research design and artwork ( <u>refer to Intellectual access</u> )	N/A	3	item		-
3.0	<b>Site Furniture</b>					
3.1	Supply and install litter bin	Creswell Craggs	1	no	500.00	500.00
3.2	Supply and install seat	Creswell Craggs & Whitwell	2	no	500.00	1,000.00
4.0	<b>Project Design &amp; Management Fees</b>					
4.1	Allow for all project design & management costs including detailed design planning supervisor duties planning consents SSSI, SAM consents			item		1,500.00
<b>Sub total</b>						<b>14,200.00</b>

#### OTHER ASSOCIATED ELEMENTS

Item	Description	Location	Quantity	Unit	Rate	Cost
1.0	<b>Community Consultation</b>	N/A		item		
1.1	Consultation with local communities including events with schools & other local groups to promote the Heritage Area	Throughout the Heritage Area		item		20,000.00
2.0	<b>Preparation of Funding Bids</b>			item		
2.1	Prepare and submit funding applications including all supporting information	N/A		item		10,000.00



3.0	<b>Access Groups</b>	item	
	Commission Access Bolsover to Pleasley Vale, undertake an easy access survey at Anston Stones, each of the 4 key sites. Creswell Craggs, Roche Abbey		3,000.00
3.1			
<b>Sub total</b>			<b>33,000.00</b>

COST SUMMARY		
PAGE	DESCRIPTION	COST
1	Roche Abbey	23,243.00
2	Anston Stones/Lindrick	40,909.00
3	Pleasley Vale	16,300.00
4	Archaeological Way Northern Extension	19,650.00
5	View Point Location Works	14,200.00
6	Other Associated Elements	33,000.00
	<b>WORKS INCLUDING FEES</b>	<b>114,302.00</b>
	VAT	20,002.85
	<b>GRAND TOTAL</b>	<b>134,304.85</b>



## APPENDIX 8.10

### INTELLECTUAL ACCESS PROPOSALS

Item	Project Description	Qty	Unit	Rate	Cost
<b>1.0</b>	<b>Project Studies</b>				
1.1	Market Research - Trails user survey		item		15,000.00
1.2	Pleasley Vale Interpretation Plan Interpretation plan for the whole site		item		15,000.00
1.3	Community Project 'Pride of Place' style community project	1	per/year		50,000.00
<b>2.0</b>	<b>Heritage Area Guides</b>				
2.1	Heritage Area full colour guide summarising landscape & its history (£2.50/unit + copy right cost)	3000	each	3.34	10,020.00
2.2	Archaeological Way revised guidebook & route map (£2.00/unit + copy right cost)	3000	each	2.67	8,010.00
2.3	<u>Pilot Action Area guides</u> (£1.00/unit + copy right cost)				
	Detailed 'ology' guide for Roche Abbey	5000	each	1.40	7,000.00
	Detailed 'ology' guide for Anston Stones	5000	each	1.40	7,000.00
	Detailed 'ology' guide for Pleasley Vale	5000	each	1.40	7,000.00
	Detailed 'ology' guide for Creswell Hub	5000	each	1.40	7,000.00
2.4	Heritage Area Walks revised booklet	3000	no	2.33	7,000.00
2.5	Creswell Hub Walks produce walks booklet around the Creswell Hub (£2.00/uni + copy right cost)	3000	each	2.67	8,010.00
2.6	Family walks guide. Produce family walks in the Heritage Area booklets- short walks including activity sheets (£2.00/uni + copy right cost)	3000	each	2.67	8,010.00
2.7	Landowner guide Produce short guide for landowners and tenants	500	no	item	1,000.00
2.8	Professional photographer. Produce high quality photo images for guides (5 days @ £200/day)	5	days	200.00	1,000.00
<b>3.0</b>	<b>Heritage Area Display</b>				
3.1	Portable exhibition Introduces & summarises landscape & its history	1		item	3,000.00
<b>4.0</b>	<b>Interpretation/Orientation Panels/Signage</b>				
4.1	<u>Creswell Archaeological Way</u>				



	Pleasley Vale (Outgang Lane) - replace existing panel. Install new panel at Mansfield Station	2	no	2,500.00	5,000.00
	Poulter Country Park - replace existing panel	1	no	item	2,500.00
	Creswell Crags - install new panel	1	no	item	2,500.00
	Anston Stones - install new panel	1	no	item	2,500.00
	Roche Abbey - install new panel	1	no	item	2,500.00
4.2	<u>Anston Stones</u>				
	Replace three existing panels	3	no	2,500.00	7,500.00
	Install one new panel in park	1	no	item	2,500.00
	Install two 'gateway' panels at main entrances	2	no	2,500.00	5,000.00
				<b>Page Total</b>	<b>184,050.00</b>

Item	Project Description	Qty	Unit	Rate	Cost
4.3	<u>Other sites'</u>				
	Thorpe Common - Moor Mill Farm	1	no	item	2,500.00
	Thorpe Salvin	1	no	item	2,500.00
	Firbeck	1	no	item	2,500.00
	Scarcliffe Village	1	no	item	2,500.00
	Langwith Vale	1	no	item	2,500.00
	North Anston	1	no	item	2,500.00
	Car pull ins Creswell locations (small panels)	3	no	1,500.00	4,500.00
4.4	<u>Directional Signage</u>				
	Creswell Hub Signs to & from car park station etc	6	no	500.00	3,000.00
				<b>Page Total</b>	<b>22,500.00</b>

Costs excluding VAT

COST SUMMARY		
PAGE	DESCRIPTION	COST
1	Items 1.0 to 4.2	184,050.00
2	Items 4.3 to 4.4	22,500.00
	<b>TOTAL</b>	<b>206,550.00</b>
	VAT	36,146.25
	<b>GRAND TOTAL</b>	<b>242,696.25</b>



## Appendix 8.11 'Pride of Place' Project Outline

The Pride of Place community heritage project was developed by Creswell Heritage Trust following several pilot schemes. The project has been running for six years in the southern part of the Creswell Heritage Area. The project aims to:

- encourage communities to take an interest and pride in their local natural and cultural heritage through training, development of education resources and awareness raising, promoting diversity of opportunity through engagement in cultural and natural heritage activity
- provide a central resource (advice, training, co-ordination, assistance, funding) to help support and empower communities to develop, community based events and activities and interpretative materials with a cultural and natural heritage focus
- assist in providing capacity building and training opportunities for local people focussed on developing transferable interpersonal, numeracy, literacy and IT skills through workshops, work experience and training in cultural and natural heritage activity

Evidence of Need and of potential Benefit for the project had been demonstrated in numerous recent reports concerned with the process of community and economic regeneration in the coalfield and with the potential role of cultural and natural heritage based activity in this process: the Coalfields Task Force Report, the Opportunity for All Report, the National Strategy for Neighbourhood Renewal, The Coalfield Alliance (Draft) Delivery Plan, the Image of the Coalfield Survey by MORI, the DCMS report on Lottery Funding in the Coalfields, and the Meden Valley Millennium Villages project proposal.

The project is designed to take forward the concept of 'Heritage Led Regeneration' and meet key targets of relevant local strategies including the Coalfield Alliance Economic Development Strategy, the Bolsover Community Strategy and the Economic and Social Strategies of the Sub Regional Strategic Partnership. It is supported by numerous community groups and works closely alongside and in partnership with other agencies and initiatives including community economic development workers, countryside management staff etc.

The key element of the project is a Heritage Outreach Officer supported by other staff from Creswell Heritage Trust and supplied with an adequate resources budget. Other elements of the budget included overheads and administration, travel costs, and equipment.

The project has been funded through a variety of sources including HLF, SRB, ERDF.

The project has achieved, and in most case significantly exceeded, all its targets and developed an innovative and robust method of working that is serving as a model for community based heritage activity elsewhere. The success of the project in



demonstrating the potential of heritage based activity to contribute to wider social and regeneration objectives has led to the project securing SRB and ERDF funding.

Key achievements over the last two years have included:

- delivered a wide range of community based events and activities (16 in total) including festivals, photographic displays, interpreted walks delivered in a range of venues including supermarkets, farmers markets, halls and village greens attracting nearly 3000 visitors.
- engaged local people in twelve communities in developing and delivering their own programmes of heritage activity including events, guided walks, interpretative leaflets and heritage research, resulting in four interpretative leaflets and eight work experience projects for local unemployed people.
- delivered 32 heritage workshops to over 200 participants, developing capacity of local people to explore and study their own heritage. Topics included oral history, landscape history, hedgerow history, archives, interpretation, building history.
- worked with several local schools to develop local heritage resources linked to the national curriculum, adding heritage value to existing curriculum projects the schools were engaged in. Developed a 'mobile' landscape history role play project and produced four education resource packages.

### Outline Annual Budget

Item	Outline Cost (£)
Project Officer (incl NI)	18,000
Support staff	8,000
Travel & Expenses	5,000
Resources	8,000
Overheads	8,000
Equipment	3,000
<b>TOTAL</b>	<b>50,000</b>



## **Appendix 8.12 Visual Access Video CD**



## Appendix 8.13 Plans & Maps

### Drawing List

<b>Map 1-8</b>	<b>Public Rights of Way Vales &amp; Gorges</b>
Map 1	Roche Abbey & Firbeck
Map 2	Red Hill
Map 3	Anston Stones Wood & Lindrick Dale
Map 4	Lob Wells & Thorpe Common
Map 5	Whaley & Elmton Valleys Gorge
Map 6	Creswell Crags, Markland Gripps and Ash Tree
Map 7	Langwith
Map 8	Pleasley Vale
<b>Map 9-12</b>	<b>Strategic Promoted Routes</b>
Map 9	Derbyshire County Council Green Way Proposals
Map 10	Nottinghamshire County Council Proposals
Map 11	Rotherham Recreational Routes
Map 12	Derbyshire County Council Cycle Proposals
<b>Map 13</b>	<b>National Cycle Network</b>
Map 13	Route 67
<b>Map 14-16</b>	<b>Archaeological Way Proposed Northern Extension</b>
Map 14	All
Map 15	Phase 1
Map 16	Phase 2
<b>Map 17-18</b>	<b>Revised Routes</b>
Map 17	Archaeological Way - Proposed Creswell Loop
Map 18	Roche Abbey Revised Route
<b>Map 19-21</b>	<b>Site Analysis Plans</b>
Map 19	Roche Abbey
Map 20	Anston Stones Wood & Lindrick Dale
Map 21	Pleasley Vale



**Map 22      Walking In Limestone Heritage Area - Walks Booklet**

Map 22      Local Promoted Walks

**Map 23      Creswell Hub**

Map 23      Creswell Hub Concept Plan



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## Creswell Crags Limestone Heritage Area Management Action Plan

Volume 4, Chapter 9

March 2004

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By Glyn Davies, Anna Badcock, Nigel Mills and Brian Smith



## **9 CONSERVATION STATEMENTS AND MANAGEMENT ACTION PROPOSALS**

### **9.1 Introduction**

A Conservation Statement has been produced for each valley. The Conservation Statements provide a framework for action to conserve, to manage and to enhance the scientific, recreational and educational value of each valley within the Creswell Crags Limestone Heritage Area.

The Conservation Statement for each valley identifies:

- the significance of the landscape character;
- the significance of the Palaeolithic/Pleistocene remains;
- the significance of the landscape history;
- the significance of the ecology;
- the significance of access;
- issues affecting that significance.

Management Action Proposals have also been produced for the Heritage Area as a whole and for each valley as appropriate. The Management Action Proposals identify recommended actions to preserve, manage and/or to enhance significance.

The Conservation Statements and Management Action Proposals are built on the work undertaken in the different elements of the Creswell Crags Limestone Heritage Area Management Action Plan. The Conservation Statements summarise the results of the different elements of work undertaken and integrate their results and produce an integrated set of recommendations for each valley, with an emphasis on those identified as Pilot Action Areas.

The Conservation Statements and Management Action Proposals identify realistic and specific actions and activities together with estimated costs, timescales and possible implementation agencies.

The Conservation Statements and Management Action Proposals produced here include minimal reference to the ecology of the valleys as this element of the Management Action Plan has yet to be undertaken. However, some information has been included from Creswell Crags Conservation Plan (Appendix 13, Limestone Heritage Area Ecological Assessment of Key Sites). The Conservation Statements and Management Action Proposals produced here will need revising when the ecological study has been undertaken.



## **9.2 Conservation Statements**

### **9.2.1 Roche Abbey Vale Conservation Statement**

#### **9.2.1.1 Description of the Valley**

Roche Abbey Vale lies at the northern end of the Creswell Crags Limestone Heritage Area just south east of Maltby. The vale has three arms, a north western arm, a south western arm and an eastern arm. These are all of approximately equal length, of about 1.25km each, giving a total length for the valley of about 3.75km. At the centre of the gorge, where the three arms meet, lies the site of Roche Abbey, a Cistercian Abbey now under English Heritage guardianship. The eastern arm runs from the Abbey through pasture to the village of Stone, around which are patches of woodland. The south west arm is generally wooded, though at its south west end there are some arable fields and rough grassland. There is a small reservoir at the north east end of the south western arm adjacent to the abbey. The north west arm is wooded for most of its length with a sewage works at its northern end. Here the undergrowth in the woodland is generally dense.

#### **9.2.1.2 Statement of Significance**

##### **Landscape character**

- The valley is primarily agricultural or woodland

The central section and eastern arm are pasture while the north western and south western arms are wooded.

- Limestone rock faces

There are large limestone rock faces in the central section of the gorge close to the abbey. Most of the valley sides are moderately sloping with occasional rock faces, which are spread between high, mid and low level, with rock faces between 2m and 8m high.

- Designed Landscape

The valley is part of a designed landscape produced by Capability Brown.

- Settlement

The village of Stone lies at the east end of Roche Abbey Vale.

##### **Pleistocene archaeology and palaeontology**

- The valley contains numerous potential and known sites.

There are 2 caves and 14 rock shelter within the valley. Excavations at Stone Mill Shelter in Seed Hill Wood have recovered Palaeolithic and Mesolithic flints. The valley has good potential for further archaeology.

##### **Landscape history**

- Roche Abbey

Roche Abbey is a Cistercian abbey, now under English Heritage Management. This was founded in AD1147, and built from local stone.



- Designed landscape

The valley became part of the Sandbeck Estate following the dissolution of the monasteries. In the eighteenth century the grounds were landscaped by Capability Brown when the stream was altered and the abbey ruins were altered.

- Stone Mill and Mill Farm

Stone Mill and Abbey Mill Farm are former mills which lie in the village of Stone at the east end of the valley, documentary evidence suggests they may have a medieval origin, although all the current buildings are post-medieval.

### **Ecology**

- Roche Abbey Woodland SSSI (1003755)

Includes Nor Wood, Quarry Hills, Grange Wood and Kings Wood of which Kings Wood is the best example of limestone woodland in South Yorkshire.

- Maltby Low Common SSSI (1003756) and Maltby High Common LNR.

Open, uncultivated commons with scrub and calcareous grassland.

- Other habits

There are undesignated habitats including broadleaf and mixed woodland, hedgerows, the river course and waterside habitats including lakes and ponds.

### **Access**

- Already well visited

Over 9000 visitors per annum purchase tickets for the abbey and an approximate 4000 further non paying visitors use the car park.

- The valley lies on several promoted walks

The promoted walks include the Roche Abbey 5.5mile walk (*Walking in the Creswell Limestone Heritage Area*), the Maltby Area circular walk (15miles), the Laughton walk around Roche Abbey (Doorstep walk No 2), some of the short circular walks in the Dukeries (by John Merrill) and the Rotherham Ring Route.

#### **9.2.1.3 Issues affecting significance**

- Interpretation

Interpretation panels around Roche Abbey discuss the abbey, but do not provide information on other points of archaeological or historical interest. There is also potential to modify the recommended promoted route to improve access to the archaeological and geological interest.

- Vandalism

There is some litter and small patches of graffiti in and around some rock faces.

- Car park security

There have been problems with car break ins in the car park at the bottom of the gorge by the abbey.

- Sewage works in Nor Wood



The sewage works in Nor Wood provide an unsightly entrance to the valley when walking from Maltby.

- Vegetation obscures much of the limestone outcrops

In many areas the dense vegetation obscures the rock faces limiting visual access.

- Informal paths

There are several informal paths through woodland that could damage habitats and cause erosion. These have developed despite the presence of signs requesting that visitors not to leave the paths.

- Management

The Roche Abbey site is under English Heritage guardianship and the surrounding land including Maltby Commons is owned by Lord Scarborough. Current management focuses on the ecological significance and on the abbey and does not cover broader archaeological and historical elements.

## **Summary**

Roche Abbey has been identified as a Pilot Action Area. The valley provides the best 'field' opportunity to explore the Abbeys and great estates theme of the interpretation plan and to appreciate the open uncultivated commons as well as the geology and Ice Age archaeology of the gorge. The close proximity of Maltby provides opportunities for engaging with local communities. The area is well managed at present but would benefit from a more integrated approach that includes broader historical and archaeological themes and issues.

## **9.2.2 Firbeck Valley Conservation statement**

### **9.2.2.1 Description of the Valley**

Firbeck valley runs for approximately 1km south west from the village of Firbeck. A river runs along the bottom of the valley and this had been dammed to produce a series of ponds along the valley. The eastern end of the valley is a pasture field with occasional trees in it, while the western end of the valley is wooded. The valley appears to have been subject to extensive landscaping, this included the ponds on the river and paths through the woods, an ice house and a hermits cave. All of these features relate to the time when the valley formed the grounds of the demolished Park Hill Hall.

### **9.2.2.2 Statement of Significance**

#### **Landscape character**

- The valley is primarily agricultural or woodland

The east end of the valley is pasture, while the west end is woodland

- Limestone rock faces

The rock faces in Firbeck Valley were restricted to an intermittent line on the south east side of the valley. These are generally about 2m high.

- Designed Landscape



The valley was formally parkland associated with Park Hill Hall. Several parkland features are still visible in the valley.

- Settlement

Firbeck village lies at the east end of the valley and Park Hill Farm lies in the site of the former Park Hill Hall.

### **Pleistocene archaeology and palaeontology**

- No known or potential sites are located in the valley.

Although there are no known or potential sites in the valley there may be unknown buried sites. The valley has low potential for Palaeolithic and Mesolithic archaeology.

### **Landscape history**

- Designed landscape

The valley was landscaped as parkland for Park Hill Hall, several dams were built in the valley bottom and several other parkland features are still visible in the valley including an icehouse, a gateway for the former kitchen garden, a constructed folly cave and several paths.

### **Ecology**

- No designated ecological sites exist.

Although there are no designated ecological sites, habitats include broad leaf woodland, the river course, ponds, ponds and improved grassland.

### **Access**

- Access is limited

The valley is private land and there are no public footpaths through it.

- Promoted walks

Several promoted walks pass nearby or through the village, including the Maltby Area circular walk, the Round Rotherham Rides and the Rotherham Ring Route.

#### **9.2.2.3 Issues affecting significance**

- Mainly in private ownership with no direct rights of way / access to valley.
- No potential viewpoints of the valley.
- The landscape appears well managed at present. There may be an opportunity to engage with the landowner to raise awareness of the Magnesian limestone landscape and to identify opportunities for enhancement.



## **Summary**

The landscape appears well managed at present. The opportunity to develop management agreements with the landowner should be explored. Lack of access and viewpoints limits the potential of the valley as an amenity, although the valley does have some potential as an example as former parkland for a large house.

### **9.2.3 Anston Stones Conservation Statement**

#### **9.2.3.1 Description of the Valley**

Anston Stones and Lindrick Dale form a continuous valley that runs approximately south east from Anston for a total length of about 4.25km. Mid way along its length it is cut through by the A57. From Anston to the A57, through Anston Stones, the valley is fairly straight. However, the section through Lindrick Dale changes direction heading due south before heading east at the bottom.

Anston Stones Wood is mostly owned by Anston Parish Council and is a Country Park, with a railway line running through it. Lindrick Dale, is mostly privately owned and contains several large houses and gardens.

#### **9.2.3.2 Statement of Significance**

##### **Landscape character**

- Anston Stones Wood and Lindrick Dale have very different characters

Anston stones Wood is a V-shaped valley with high sides covered in dense woodland, while Lindrick dale is a flat bottomed valley with shallow vertical sides. Lindrick Dale is settled with houses and gardens.

- Limestone rock faces

In Anston Stones Wood the rock faces are most spectacular in the central section, where some are over 10m high, and tail off to intermittent outcrops at either end. In Lindrick Dale the rock faces are near continuous but only up to 8m high and usually less.

- Settlement

Lindrick Dale contains several houses which have mostly been built on the east side of the valley up against and into the rock face with gardens on the valley bottom below them.

##### **Pleistocene archaeology and palaeontology**

- The valley contains numerous potential and known sites.

There are 7 potential caves and 29 potential rock shelter within the valley. Excavations at Dead Mans Cave, a Scheduled Ancient Monument, have recovered Palaeolithic and Roman remains. The valley has good potential for further Palaeolithic and Mesolithic archaeology.

##### **Landscape history**

- Quarrying



Anston Stones has been an important area for quarrying and stone from here was used in the construction of the Houses of Parliament

- Railways

A late nineteenth century railway runs along the bottom of Anston Stones Wood.

## **Ecology**

- Anston Stones Wood is a SSSI (1003749) and Local Nature Reserve

Anston Stone Woods contains the second best example of limestone woodland in South Yorkshire. (The best example is Kings Wood, near Roche Abbey). Bee orchids and skylarks are amongst the species recorded in adjacent field which is under the countryside stewardship scheme. All fields around the recreation ground are now in Stewardship.

- Lindrick Golf Course SSSI (1004019)

Lindrick golf course, once common land, away from the greens and fairways, supports the largest and one of the most diverse areas of limestone grassland in South Yorkshire.

## **Access**

- Already well visited

Access is generally good with Anston Stones Wood containing several footpath and a public road running down Lindrick Dale.

- Interpretation panels

There are there interpretation panels in Anston Stones Wood and these provide some information but they could be improved.

- Promoted walks

There area several promoted walks through Anston Stones Wood and Lindrick Dale including, the Anston Stones and Lindrick Dale 7.25 mile walk (*Walking in the Creswell Limestone Heritage Area*), the Rotherham Ring Route, the proposed Doorstep Walk (RMBC), the Cuckoo Way (Chesterfield Canal) passes nearby, the Anston Stones Wood geological trail and some of the short walks in the Dukeries (by John Merrill).

- Access to Anston Stones Wood

Anston Stones Wood has formal entrances at either end, and access via a field under countryside stewardship

### **9.2.3.3 Issues affecting significance**

- Traffic and Parking

The two halves of the valley are bisected by a busy road. There is public car parking on lay-bys on the A57. However, the road is difficult to cross and unsafe for children. Lindrick Dale has very limited parking.

- Access

In Lindrick Vale the path along top of quarry near steel grill bridge is unstable.



- Vandalism

There is litter and patches of graffiti in and around some rock faces and numerous fires have been lit in some rock shelters and caves.

- Management

Anston Stones Wood is the largest 'leisure' facility in the parish of Anston, but current management is focused on the ecology. This needs to expand to include archaeology and geology. Bullens consultants have just been commissioned to undertake a new management plan for Anston Stones Wood, but this does not appear to be taking account of the significance of the archaeology.

## **Summary**

Anston Stone Wood and Lindrick Dale have been identified as a Pilot Action Area. Anston Stones provides opportunities to explore limestone woodlands, Magnesian limestone grassland and geology, and the Ice Age story. The area has high potential for Ice Age archaeology and palaeontology. This could provide an excellent opportunity for to involve and to engage with the local community through active participation as well as talks, site visits, school activities etc.

The three existing interpretation panels need revising, replacing and repositioning and there is scope for an additional interpretation panel inside the recreation ground, at the entrance to the woods. A hierarchy of interpretation is recommended, with additional, smaller 'gateway' signs at each entrance. As with the other Pilot Action Areas, a more detailed interpretative leaflet is needed to explore the landscape history of the area, identifying key features of interest.

The existing programme of community activity provides an excellent platform to develop understanding and engagement with the historical dimension of the landscape.

The ecological interest appears well managed through longstanding engagement with the local community. The management and interpretation process needs to expand to include archaeology and geology.

## **9.2.4 Red Hill Conservation Statement**

### **9.2.4.1 Description of the Valley**

Red Hill is a small triangular section of land between Kiveton Park and Kiveton Bridge, bounded by the B6059, the Worksop to Sheffield railway and housing on the east end of Kiveton Bridge. It is 0.75km long and up to 0.25km wide at its widest point. The area contains the north side of an east west running valley. The south side of the valley, which is lower and more gently sloping, is covered by an industrial works and arable farmland and does not contain any known rock outcrops. The east half of Red Hill valley, adjacent to Kiveton Park is wooded with heavy undergrowth and shows signs of former quarrying activities.

### **9.2.4.2 Statement of Significance**

#### **Landscape character**

- Developed landscape



Red Hill valley survives as a small area of rough ground sandwiched between Kiveton Park and Kiveton Bridge. The site valley side is a mix of grass and woodland surrounded by housing, industrial sites, roads and railways.

- Valley sides

The north side of the valley contains the cave on a step slope with other occasional rock outcrops. The south side of the valley more gently inclined and is covered by arable land or industrial units.

### **Pleistocene archaeology and palaeontology**

- The valley contains one potential site

Red Hill Cave is the only known potential site and this has never been investigated. The archaeological potential of the valley is therefore not high.

### **Landscape history**

- Roman Fort

A Roman fort is thought to have been located just north of the valley with a Roman road passing nearby.

- Deer Park

The valley lay just inside the southern end of a Medieval deer park.

- Quarrying

remains of small quarry pits are hidden in the woodland in the east half of the valley

- Development of Settlement

Kiveton Park and Kiveton Bridge have developed through the post-medieval period encroaching onto Red Hill Valley, as have railway lines and roads restricting the open space.

### **Ecology**

- There are no designated ecological sites

Although there are no designated ecological sites, habitats include scrubland, tall ruderal grassland, hedgerow and broadleaf woodland.

### **Access**

- Promoted routes

The Cuckoo Way passes nearby but the site cannot be seen from the canal towpath. There are no public rights of way / formal access across the open space on the valley although desire lines exist into the woods from opposite the lay by on the B6059.

- Visual Access

The valley is so built up that it is difficult to identify the original landscape form .



#### **9.2.4.3 Issues affecting significance**

- Landowner unknown

The lack of a known landowner makes the development of access agreements difficult.

- Current use

The land is used by local youths as evidenced by fires, rubbish and a rope swing from a tree.

- Visibility poor

The valley is not visible from road (B6059) or canal towpath and the general shape of the valley is difficult to discern due to the development around.

- Vandalism

There is some litter and small patches of graffiti in and around the cave.

- Management

The open area is not currently managed. In view of the extent of modern development, opportunities to protect and enhance significance seem very limited.

#### **Summary**

The open area is very limited and the landowner is unknown. The valley has little potential as a public amenity, but may offer an opportunity for better management of calcareous grassland.

### **9.2.5 Thorpe Common and Lob Wells Wood Conservation Statement**

#### **9.2.5.1 Description of the Valley**

Thorpe Common and Lob Wells Wood lie in the long and sinuous Bondhay Valley which runs for approximately 3.25km. From Lob Wells Wood the valley runs south west, for about 0.5km to the village of Top Hall, it then runs south south west for about 1.5km to Whitwell Wood. It then runs west south west along the northern side of Whitwell Wood for 1.25km, including a short section which turns north west at its very end. All of the land is in private ownership, although there are a number of informal footpaths that run through parts of the valley giving access to some areas.

#### **9.2.5.2 Statement of Significance**

##### **Landscape character**

- The valley is primarily agricultural and woodland

The valley is shallow sided with a patchwork of fields and small woods along its length.

- Settlement

A small hamlet has developed around Moor Mill Farm and Top Hall towards the north end of the valley. This separates Lob Wells Wood From Thorpe Common.



### **Pleistocene archaeology and palaeontology**

- The valley contains several known and potential sites

There are five rock shelters in the valley, two of which have been investigated. One contained Palaeolithic remains and one Mesolithic remains. The valley has good potential for further Palaeolithic and Mesolithic archaeology.

### **Landscape history**

- Water Mills

Moor Mill farm is located on the site of a former water mill of unknown origin.

### **Ecology**

- Woodland north of Whitwell Wood is a SSSI

Other habitats include unimproved Magnesian limestone grassland, broadleaf woodland, hedgerows, ditches and pond adjacent to the site used for private fishing with marginal vegetation.

- Countryside Stewardship Schemes

Moor Hill Farm (SK529 801) has been in countryside stewardship scheme for 10 years. Farmer has just entered into new agreement for another 10 years. This includes concessionary access to an area of unimproved grassland where limestone flora is abundant in spring and summer.

### **Access**

- Access is limited

The valley is private land and there are no public footpaths through it.

- Promoted walks

Promoted routes that pass nearby are the Rotherham Ring Route and the Cuckoo Way (Chesterfield Canal).

#### **9.2.5.3 Issues affecting significance**

- Lob Wells Wood

There is no public access to Lob Wells Wood as the land is privately owned and the owner is not keen on public access.

- Countryside Stewardship Scheme

There is the potential for installing an interpretation point in the area of unimproved grassland, managed under a countryside stewardship scheme. This could show the types of wildflowers this uncommon habitat supports.

- Visual Access

Cave and shelter sites cannot be seen from rights of way in the area.

- Management



The area appears well managed at present, as illustrated by the Countryside Stewardship scheme.

### **Summary**

The valley is a good example of the Magnesian limestone landscape and appears well managed at present through the Countryside Stewardship scheme. There is good potential for further Palaeolithic and Mesolithic archaeology. Although attractive, the valley has limited potential as a public amenity due to the restricted access.

## **9.2.6 Steetley Quarry Caves Conservation Statement**

### **9.2.6.1 Description of the Valley**

Steetley Quarry caves lie on the site of a former works. This has closed down but the site is starting to be redeveloped. The site consists of a series of large derelict industrial buildings surrounded by tarmac and hardcore surfaces. Some of the buildings had been constructed in what appeared to be old quarries and around the back of some of the buildings are cut rock faces. Also next to the site is a large quarry.

### **9.2.6.2 Statement of Significance**

#### **Landscape character**

- Limestone plateau.

The site is located on the top of the limestone plateau.

- Derelict Industrial landscape

The area is a derelict former industrial works located in old quarries

#### **Pleistocene archaeology and palaeontology**

- The area contains 2 known caves

Two caves have been recorded on the site, although only one appears to survive today. The surviving site is bricked up and there appears to be low potential for further Palaeolithic and Mesolithic sites on the site.

#### **Landscape history**

- Quarries and Industry

The site was developed as a large industrial works and quarry.

#### **Ecology**

- No designated ecological sites exist.

There is very little ecological potential on the former industrial site.



### **Access**

- No Access

There is no formal access to the site and no public rights of way cross it.

### **9.2.6.3 Issues affecting significance**

- Access

There is no access to the site and no public parking nearby.

- Management

As a derelict industrial works the site has no potential to illustrate any of the landscape characteristics of the Heritage Area of interest to this study

### **Summary**

The site, which is located on the top of the limestone plateau, consists of a derelict former industrial works. It contains no natural habitats and the one surviving cave is bricked up.

## **9.2.7 Ash Tree Gorge Conservation Statement**

### **9.2.7.1 Description of the Valley**

Ash Tree Gorge lies to the west of Whitwell, it is a small east west running valley over 0.3km long with rock outcrops for approximately 0.25km of its length. Side valleys enter the gorge from north and south approximately mid way along its length. The land is owned by the Chatsworth Settlement Trustees. The valley lies entirely within a pasture field and is mostly grass. However, trees and scrub have grown up along and on the rock faces. The sides of the gorge are divided into four different areas by the side valleys that enter the gorge and one of these, the north east area, has been fenced off and planted with saplings.

### **9.2.7.2 Statement of Significance**

#### **Landscape character**

- Pasture land

The gorge is small and all lies within a pasture field with saplings and trees growing up against the rock face.

- Rock faces

The gorge is quite shallow with rock faces generally between 2 and 4m high. The site is a designated Regionally Important Geological Site (RIGS).

#### **Pleistocene archaeology and palaeontology**

- The valley contain known and potential sites

The valley contains one cave, three rock shelters and one fissure. The Cave is Ash Tree Cave which is an important Palaeolithic site and a Scheduled Ancient



Monument. The valley has high potential for further Palaeolithic and Mesolithic archaeology.

### **Landscape history**

- Agriculture

There is no evidence that the land has been used for anything other than agricultural for hundreds of years.

### **Ecology**

- No designated ecological sites

Although there are no designated sites in the valley the Derbyshire Biological Records list includes notable species from the gorge including Wild Service (*Sorbus torminalis*) and Dwarf Thistle (*Cirsium acaule*).

### **Access**

- Public rights of way

There are no Public Rights of Way that enter the valley

- Promoted routes

The Creswell Archaeological Way, passes by the gorge with a view into it.

- Visual access

The valley provides excellent views across the wider landscape.

#### **9.2.7.3 Issues affecting significance**

- No Public Access

There is no public access, the gorge can only be seen from the road (Highwood Lane), which is on the Archaeological Way.

- No parking

The lay-by on the road is not suitable for car parking as it is used as a passing point and road is a single lane.

- Management

The site appears well managed at present. There may be an opportunity to engage with the landowner to raise awareness of the Magnesian limestone landscape and to identify opportunities for enhancement.

### **Summary**

Ash Tree Gorge is a small and attractive gorge that appears well managed at present and that may offer an opportunity for enhancement through a management agreement. It has high potential for Palaeolithic and Mesolithic archaeology. It does not currently have public access.



## **9.2.8 Markland and Hollinhill Grips Conservation Statement**

### **9.2.8.1 Description of the Valley**

Markland and Hollinhill Grips are part of the Creswell Hub Pilot Action Area. The Grips comprise a large valley with three arms which meet at the north east corner of the complex. The longest arm runs east from the centre of Clowne, where it is known as Clowne Grips before turning into Hollinhill Grips, this is over 2km long in total. The other two arms are both known as Markland Grips. The first of these runs south west to north east, and joins to the long arm of Hollinhill Grips at its east end near Upper Mill Farm, this arm is almost 2km long. The final arm runs approximately south to north, for about 0.75km, and joins the main Markland Grips arm just south west of its intersection with Hollinhill Grips. The total length of the valleys within Markland and Hollinhill Grips is around 5km.

### **9.2.8.2 Statement of Significance**

#### **Landscape character**

- Agriculture and Woodland.

The valley is mainly pasture and woodland. Most of the valley bottoms used to be pasture with woods on the valley sides. However, many of the pasture fields have been abandoned, become overgrown and turned over to nature reserves.

- Rock faces

For much of the valley there are continuous rock faces between 3m and 12m high. These break up towards the ends of the valleys and where intermittent outcrops occur on moderate slopes. In areas turned over to nature reserves the vegetation has grown excessively obscuring many of the rock faces. The site is also a Regionally Important Geological Site.

- Settlement

The west end of Hollinhill Grips, known as Clowne Grips, enters the village of Clowne where it is located in a linear park. A sewage works has been located in the valley next to Clowne. There is one farm, Upper Mill Farm at the east end of the valley.

#### **Pleistocene archaeology and palaeontology**

- There are several potential sites

Markland and Hollinhill Grips contain 13 caves, 41 rock shelter and four fissures. Of these a few have been investigated and though the contained later prehistoric material none contained Palaeolithic or Mesolithic remains. The valley has moderate potential for Palaeolithic and Mesolithic archaeology due to the absence of previous Palaeolithic or Mesolithic remains although an upper Palaeolithic flint blade has been found in the valley floor.

#### **Landscape history**

- Iron Age Hill Fort

An Iron Age hill fort is located on the promontory between Hollinhill Grips and Markland Grips.

- Railway viaduct



A railway used to cross Markland Grips and the remains of a viaduct still survive.

## Ecology

- Designated Ecological Sites

Hollinhill and Markland Grips is a SSSI (1002419) and three Sites Important to Nature Conservation (SINC) (B0096, B0098, B0099/3). The valley contains, semi-natural ancient woodland and unimproved Magnesian limestone grassland including several notable species. The marsh area of South Markland supports great-crested and smooth newts.

- Derbyshire Wildlife Trust Nature Reserves

Two large sections of the valleys are managed as Nature Reserves by Derbyshire Wildlife Trust.

## Access

- Public Rights of Way

Public rights of way in the valley are limited with only some of it accessible.

- Promoted Routes

Promoted routes that pass nearby include , the Markland Loop , the Creswell Archaeological Way and the Creswell Crags, Elmton and Markland Grips walk (*Walking in the Creswell Limestone Heritage Area*).

### 9.2.8.3 Issues affecting significance

- Access

Public rights of way only provide access to parts of the valley. Also some of the footpaths are narrow and overgrown (Derbyshire Wildlife Trust are responsible as outlined in licence agreement with Chatsworth Estates There are lay-bys to park in but they are limited.

- Vandalism

There is some litter and small patches of graffiti in and around some rock faces. and litter in the stream in Markland Grips.

- Sewage works in Hollinhill Grips

The sewage works in Hollinhill Grips is adding nitrogen pollution to the environment.

- Vegetation obscures much of the limestone outcrops

In many areas the dense vegetation obscures the rock faces limiting visual access.

- Informal paths

- There are several informal paths through woodland that could damage habitats and cause erosion.

- Vandalism

There is litter and graffiti in and around some rock faces, and fires have been lit in some rock shelters.



- Management

Derbyshire Wildlife Trust are responsible for managing much of the valley. The Trust has concerns about encouraging visitors to the area due to the risk of vandalism. Without proposing to extend access, there would appear to be opportunities to enhance current provision, for management to take account of the archaeological interest and for closer engagement with local communities.

## **Summary**

Markland and Hollinhill Grips is a large valley with extensive wildlife habitats, and several caves and rock shelters. The valley can be easily accessed from the Creswell Hub. Limited physical access and the overgrown vegetation, which interferes with visual access, restrict the potential of the valley as a public amenity. There is a need for more integrated management of the archaeological, geological and ecological interest and an opportunity for closer engagement with the local community.

## **9.2.9 Elmton and Whaley Valleys Conservation Statement**

### **9.2.9.1 Description of the Valley**

The Elmton and Whaley valley is part of the Creswell Hub Pilot Action Area. The valley runs north west to south east for 4km from Elmton at its north end through Whaley and down to Langwith. Most of the land in the valley is owned by the Chatsworth Settlement Trustees. From Elmton heading south for about three quarters of the length of the valley most of the land is fields of either pasture or arable. Where outcrops of bedrock occur in these fields they are often covered by small copses of trees or scrub as the land could not be ploughed. Towards the southern end of the fields the valley bottom is very boggy and the west side of the valley is wooded, as is the whole of the southern quarter of the valley.

### **9.2.9.2 Statement of Significance**

#### **Landscape character**

- Agriculture and Woodland

The valley is primarily agricultural with pasture and arable fields enclosed by a mixture of dry stone walls and hedges. The southern end of the valley is wooded, including Scarcliffe Park.

- Valley sides

The valley has shallow sides with occasional outcrops of limestone bedrock.

- Settlement

The villages of Elmton and Whaley are located in the valley.

#### **Pleistocene archaeology and palaeontology**

- The valley contains several known and potential sites



The valley contains three caves and seven rock shelters, one of which Whaley 2 Rock Shelter, has produced significant Palaeolithic and Mesolithic remains. The valley has good potential for further Palaeolithic and Mesolithic archaeology.

### **Landscape history**

- Scarcliffe Park

Scarcliffe Park was a medieval deer located to the south west of the valley. Earthworks from the park pale are a notable feature in the woodland at the south end of the valley.

- Settlement

Medieval settlement has been identified in several places in the valley. Earthworks identify Elmton as a Shrunken Medieval Village, with further remains found at Whaley Hall Whaley and Apsley Grange.

### **Ecology**

- No designated ecological sites

Little accurate ecological information exists for this valley. The village green at Elmton contains calcareous grassland and is being managed to conserve this habitat.

### **Access**

- Public Rights of Way

The full length of the valley is accessible via public roads and there is some roadside parking in the villages and at the Poulter Country Park.

- Promoted routes

There are several promoted routes in the area including, the Creswell Archaeological Way, Creswell Crags, Elmton and Markland Grips (*Walking in the Creswell Limestone Heritage Area*) and Creswell & Whaley Thorns (*Walks in the Meden Valley*).

#### **9.2.9.3 Issues affecting significance**

- Access and interpretation

The area is a good walking area with regular guided walks. The proposed Interpretation Point in Creswell village will help raise awareness of the landscape character.

- Car parking

Good car parking is available at the Poulter Country Park, which is a gateway to surrounding countryside.

- Visible access

Visible access is generally good, although most of the rock faces are overgrown and cannot be seen from the road.

- Vandalism



There is some litter around some rock faces.

- Management

Much of the area is owned by Chatsworth Estates and appears well managed at present. There may be opportunities to work with the landowner to enhance landscape character.

### **Summary**

Elmton and Whaley valley provides a good example of an open and shallow sided vale that can be easily reached from the Creswell Hub. The valley has good views from which the character of the valley and limestone plateau can be seen. The patchwork of agricultural and woodland that characterises the area is clear as is the nature of settlement. The village contains good examples of vernacular buildings constructed with Magnesian limestone. Opportunities to enhance landscape character through management agreements should be explored.

## **9.2.10 Langwith Vale Conservation Statement**

### **9.2.10.1 Description of the Valley**

Langwith Vale is orientated south west to north east and runs for a length of approximately 2.75km. It runs from just south of Scarcliffe at its south west end to Upper Langwith at its north east end. Most of the land in the valley is owned by the Chatsworth Settlement Trustees. The north east third of the valley contains pasture fields while the south west two thirds is wooded. At the east end the valley has a flat bottom with a small stream flowing through it, at the west end it is more difficult to determine the shape of the valley bottom as a railway line, now dismantled, had been run along the base of the valley obscuring the base of the valley.

### **9.2.10.2 Statement of Significance**

#### **Landscape character**

- Agriculture and woodland

The Langwith valley is mostly wooded and it is only at its east end that there are fields of pasture.

- Rock faces

The valley has occasional outcrops of bedrock on the valley sides. It is difficult to get an impression of the size and shape of the valley due to the woodland that limits views.

- Settlement

The village of Upper Langwith is located at the north east end of the valley.

#### **Pleistocene archaeology and palaeontology**

- The valley contains several known and potential sites

There are three caves and three rock shelter in the valley of which one, Langwith Bassett Cave, has been excavated. This produced Palaeolithic and Mesolithic



archaeology and the valley has good potential to contain further Palaeolithic and Mesolithic archaeology. Langwith Bassett cave is also a Regionally Important Geological Site.

### **Landscape history**

- Settlement

The village of Upper Langwith originates in the medieval period and the missing Bassett Hall is believed to have stood next to the church.

- Bassett Hall Hunting Park

Langwith Wood delineate the extent of the former medieval hunting park associated with Bassett Hall.

- Railway cutting

There is a deep railway cutting to the south of Upper Langwith where a former railway that ran along the valley bottom emerges from the valley. The railway cutting is also a Regionally Important Geological Site.

### **Ecology**

- Designated ecological sites

There are three SINC's (B0176, B0184, B0138) in the valley, and Scarcliffe Lanes Common includes a range of habitats including scrub, bracken, bramble, woodland and open space.'

### **Access**

- Public Rights of Way

Roads run the length of the valley and footpaths run through the woods and across the pasture fields at the east end of the valley.

- Promoted Routes

There are two promoted routes in the valley the Creswell Archaeological Way and the Scarcliffe and Upper Langwith walk.

### **9.2.10.3 Issues affecting significance**

- Vandalism

There is some litter and a fire has been lit in Langwith Bassett Cave.

- Visual access

From the paths in the woods there are limited views from which the character of the valley can be observed

- Condition of paths

Some of the paths through the woods are overgrown



## **Summary**

The Langwith Vale and Whaley Valley together illustrate a number of interesting historical features that illustrate the pre-industrial landscape away from the gorges. The area's links to the Ice Age past are represented by caves and rock shelters at Upper Langwith and Whaley respectively. A remnant of Royal hunting forest is preserved along with its defensive ditch and rides at Scarcliffe Park. Excellent examples of local vernacular architecture can be found at Langwith old hall and in surrounding villages. Evidence of milling, which was hugely popular in this area, can be found adjacent to Whaley village. Scarcliffe Park and Poulter Country Park provide excellent habitat for many of the area's indicator species.

The proposed redevelopment of the Whaley Thorns Heritage Centre close to Langwith Vale will provide an optional focal point from which to explore this area. Development of interpretative literature should be considered as part of an Interpretation Plan for this redevelopment. Opportunities to sustain and to enhance the landscape character through management agreements should be explored.

## **9.2.11 Pleasley Vale Conservation Statement**

### **9.2.11.1 Description of the Valley**

Pleasley Vale is an east west running valley about 3km long. Although orientated approximately east west the central section of the valley is sinuous. The central section of Pleasley Vale is owned by Bolsover District Council. However, the eastern and western ends are in private ownership. The central section of the valley is deep sided with substantial rock faces while both ends are shallower. The west end has no rock faces while the east end had substantial rock faces. There are several mills and water management features in the centre of the valley.

### **9.2.11.2 Statement of Significance**

#### **Landscape character**

- Industrialised landscape

The valley is unusual among the valleys in the Creswell Crags Limestone Heritage Area in being industrialised with three large mills and associated water management features in the centre of the valley. Both ends of the valley have pasture at the bottom with wooded sides.

- Settlement

The small settlement of Little Matlock is located towards the east end of the valley, as are a small group of workers houses for the mills.

- Rock faces

The most substantial rock faces are in the central and eastern parts of the valley. Many of the central faces have been cut back, probably when the mills were built, changing the shape and appearance of the valley in this area.

#### **Pleistocene archaeology and palaeontology**

- The valley contains several known and potential sites



The valley contains several known and possible sites including eleven caves, six rock shelters and five fissures. There are also substantial breccia deposits on rock faces near the mills, probably exposed when the rock faces were cut back. Two of the caves Pleasley Vale Cave and Yew Tree Cave have been excavated and produced Pleistocene and Holocene palaeontological faunas, but no archaeological remains. The presence of a Mesolithic flint scatter on the plateau above the valley demonstrates a human presence. The potential of archaeological material being discovered in the caves is moderate to good.

### **Landscape history**

- Roman Villa

A Roman villa site is located to the south of the valley on the limestone plateau.

- Pleasley Park

Pleasley Park was a medieval deer park north of the valley and this area is now woodland.

- Pleasley Forges

There were two forges run by the iron master George Sitwell in the valley during the seventeenth and eighteenth centuries.

- Pleasley mills

Construction on the mills started in the late-eighteenth century on the site of one of the former forges. The mill complex was expanded over the years until the last major addition in 1913 when the third mill was built.

- Pleasley Colliery and railway

Although located away from the valley Pleasley Colliery had a major impact through its railway which ran along the south side of the gorge.

### **Ecology**

- Designated ecological sites

There are several designated sites with and around the valley including the Pleasley Vale Railway SSSI (1002911), numerous SINC's (B0151, B0152, B0154, B0155, B0157, B0158, B0175, 2/325, 1/145, 1/117, 2/328, 2/327, 2/1069), and several proposed SINC's (5/70, 5/69, 5/73, 5/291, 5/76, 5/74, 5/72, 5/288)

- The Meden Trail Local Nature Reserve.

The Meden Trail Local Nature Reserve is said to contain some of the best remaining calcareous grassland in Nottinghamshire.

### **Access**

- Public rights of way

A road runs through the valley but is not a public right of way for vehicles. However, it is open to pedestrians. There is car parking at the western end of the valley where the Archaeological way starts but this is not in good condition.

- Promoted routes



There are several promoted routes in and around the valley including the Creswell Archaeological Way, the Meden Trail and Little Matlock (*Exploring the Robin Hood Line*), the Pleasley Trails network (Meden Trail) and Short walks in the Dukeries (John Merrill).

### 9.2.11.3 Issues affecting significance

- Access

There is a plethora of trails with no co-ordinated approach. There is evidence of motorbike use on Meden Trail and this will damage it and is a danger to walkers. Large lorries using the road through the valley to access the business park and these provide a problem for people visiting the mills.

- Redevelopment of the mills.

The mills are currently being redeveloped as a business park and this has been done with little attempt at interpreting the site and its surroundings to the public. What current interpretation is available omits ice age archaeology, geology and the history of industrialisation.

- Development of the outdoor activities centre

The District of Bolsover Leisure Services Department are proposing to develop a satellite outdoor activities centre in one of the old mill buildings with dedicated educational/interpretative space. This presents an opportunity that should not be missed.

- Maintenance

The maintenance of trails and car parks in the vale is patchy with dumping in car parks not being cleaned away rapidly.

- Management

The diversity of stakeholders, pressure for development and lack of an integrated management, development and access strategy threatens the diversity and wealth of landscape interest.

### Summary

Pleasley Vale is a Pilot Action Area and provides an opportunity to explore aspects of the industrialisation of the Magnesian Limestone, including water power, mills and mining. The valley is heavily promoted for walks and leisure. However, current interpretation omits ice age archaeology, geology and the history of industrialisation.

In view of the wealth of interest, the diversity of stakeholders and the various uncoordinated initiatives currently active, it is essential that an integrated Interpretation and Development plan be created. This should include proposals for long term management and presentation of the cultural, ecological and landscape interest. The most critical need is for an interpretation plan that sets out the story of Pleasley Vale and a strategic approach to its presentation.

As with the other Pilot Action Areas, an excellent opportunity exists to engage the local community in the interpretative and management opportunity.

Pleasley Vale is also the start of the Creswell Archaeological Way, for which interpretative recommendations have been made.



## **9.3 General Management Action Proposals**

There are a number of Management Action Proposals identified for the Creswell Crags Limestone Heritage Area. This includes general proposals applicable to the whole area and specific proposals that only apply to specific valleys. The general proposals are described in this section while the specific proposals are dealt with in section 9.4.

These proposals are simply recommendations or suggestions for actions that should be undertaken to address issues identified in the Creswell Limestone Strategy and in the Creswell Crags Conservation plan and outlined in Section 2 (Background) of this report. They form a framework and a menu for action that can be undertaken by a variety of different agencies, taking advantage of funding opportunities as they arise over the next five to ten years. It is envisaged that Creswell Heritage Trust, Groundwork Creswell and the Limestone Strategy Partnership would be the key 'championing' or co-ordinating agencies, supported by the Local Authorities, English Heritage and English Nature as appropriate.

The actions could be taken forward individually or grouped together as a package according to funding opportunities. For instance, a 'Pride of Place' project officer could work with several different communities over a period of years to implement proposals contained in the Interpretation Plan, working in parallel with a research project testing the predictive model for Palaeolithic and Mesolithic sites, a landscape management project to develop management agreements with key landowners and a programme of practical works to improve physical access and rights of way.

As a package, such a programme might be an ideal candidate for the Heritage Lottery Fund's Landscape Partnership initiative.

### **Note on Costs**

Capital costs are at 2004 prices. Salary costs are at 2003 prices and funding proposals would need to take account of university pay settlements. All prices exclude VAT, which would be charged at the standard rate as required.

### **9.3.1 GIS**

It is proposed that the Magnesian Limestone GIS is updated annually. This will be co-ordinated by Nottinghamshire County Council who manage the system. No funds will be required for this as Nottinghamshire County Council have offered to provide this service for free.

### **9.3.2 Management of the archaeological resource**

#### **9.3.2.1 Management Guides**

Section 3.15.2 has identified that public education aimed at key stakeholders is vital for the long term management of the archaeological resource. This is endorsed in the Intellectual Access Study. The stakeholders involved will include landowners, tenant farmers, local councils, land managers and visitor groups. The aim will be to educate these people as to the value and sensitivity of the archaeological resource and to provide information on best practice in managing the resource. This method is both cost effective and in the long term the best option as it is the people that have day to



day dealings with sites that can most effectively manage them. Problems like vandalism can only be dealt with by effective long term management by landowners and land managers.

It is proposed that a short information guide is produced for each valley this will include the following sections:

1. Background to the Creswell Crags Limestone Heritage Area.
2. The nature and importance of Ice Age archaeology, this would describe the nature of the archaeology, the types of sites and what it can tell us.
3. A description of the sites in the valley.
4. An explanation of what processes could damage the archaeology and natural environment. This will cover such issues as natural erosion, land use, farming practices, rubbish tipping, informal footpaths, vandalism and fire lighting.
5. Recommendations for best practice in looking after the sites and their environment. This will cover such issues as maintenance (removal of rubbish and graffiti), site use, access and management. These recommendations will cover all sites whether on farmland, in a garden or in woodland.
6. Contacts to report damage or get further advice. This will include county archaeologists for concerns about planning issues, English Heritage for general advice on archaeology and Creswell Heritage Trust for reporting concerns about the condition of sites unless they are scheduled in which case it should be English Heritage. In some cases the contacts could include land owners or managers if they are councils or wild life trusts.

Sections 1, 2, 4 and 5 can be largely generic while sections 3 and 6 will be valley specific. Section 5 may need focussing for each valley taking into account current land use and possible future developments. It is intended that the guides are not long documents but will be short and accessible. The guide will not be guide to the sites but a guide to the importance and management of the sites. It is therefore envisaged that it will be used as a reference work for people to consult when they have concerns or are looking for advice. Large numbers of the guides will not be needed, 30 copies of each guide should suffice.

In all cases the guides will be sent to land owners, tenant farmers and local councils, in areas where public access exists the guides will also be sent to bodies promoting the access such as wild life trusts, local societies and groups that use the land and local schools. Copies of all the guides should be sent to the local offices of national organisations such as English Nature, the Countryside Commission and the Department for Environment Food and Rural Affairs.

## **Costs**

Detailed costs are provided in **Appendix 3.1**

Total costs of the project are estimated at £8,250.00.

## **Timetable**

A detailed timetable has not been prepared but provisionally it is estimated that the drafting, production and distribution of the guides should take approximately 10 weeks.



## Funding Agencies

Possible funding agencies include:

English Heritage

Aggregates Levy Sustainability Fund

### 9.3.2.2 Monitoring of the archaeological resource

Management recommendations have included the development of a programme of long term monitoring for some of the valleys, details of this programme are included in **section 3.15.3**. This will aim to provide specialist archaeological assessments of site conditions to supplement any information received from members of the public through the public education programme. Monitoring is required for the sites due to the rarity of Palaeolithic remains in the archaeological record. Many of the sites are only potential sites and the presence of archaeological/palaeontological remains has not been confirmed, this can only be done through excavation. Further research on the area may well extend our current knowledge of these potential sites but until this exists the more prudent strategy will be to monitor all sites with archaeological/palaeontological potential until they are proved to be sterile. It is proposed the Creswell Heritage Trust act as the monitoring body and act as the first point of call for members of the public wishing to report damage to sites.

This long term monitoring will aim:

- to check up on any reports of damage received from members of the public;
- to identify any damage that has occurred to the sites since the last visit;
- to identify any human actions that may be detrimental to the sites through disturbing deposits or encouraging erosion;
- to identify any threats to the site from ongoing natural erosion;
- to identify any threats to the sites from bioturbation by animals or plants;
- to identify any other threats to the sites;
- to make recommendations for any actions required to protect the sites.

Monitoring will be undertaken on a valley by valley basis with the frequency of monitoring visits determined by the perceived threat of damage to the sites (**Table 1**). This is a subjective assessment based on the current condition of the sites, the degree of public access and use of the sites, potential developments in the valleys and the archaeological potential of the sites in the valley.



Table 4 Valleys to be Monitored

Vale or Gorge	Period between visits	No. of sites	Expected time duration of monitoring visits (days)
Roche Abbey Vale	2	17	1
Anston Stones	2	38	2
Red Hill	4	1	0.5
Thorpe Common and Lob Wells Wood	4	5	1
Ash Tree Gorge	4	5	0.5
Markland Grips	4	58	2
Elmton and Whaley Valleys	4	10	1
Langwith Vale	4	6	1
Pleasley Vale	2	22	1

When a valley is monitored all the terrain units identified as caves or rock shelters will be visited and checked. Rock faces without any cave or rock shelter sites will be scanned for obvious damage while passing but will not be checked in detail.

The current survey has provided baseline data which will be used in the monitoring programme to check for any changes in site condition. The description of the terrain units from the sensitivity survey will be compared to the condition during the monitoring visit and any changes noted. A guideline of the expected duration of monitoring visits is given in Table 4.

On complete of the monitoring survey for a valley a short report will be prepared this will note any damage or increased threats to sites and make recommendations if action is required. Each report is likely to take between a half and one day to produce unless damage requiring complicated actions are required.

## Costs

Detailed costs are provided in **Appendix 3.2**

The costs of the four yearly monitoring visits are estimated at £3,850.00.

The costs of the intervening 2 yearly monitoring visits are estimated at £1690.00.

## Timetable

The 4 yearly monitoring visits should take 9 days in field and 5 days to report.

The intervening two yearly visits should take 4 days in field and 2 days to report.

## Funding Agencies

Possible funding agencies include:

English Heritage



### 9.3.3 Future Ice Age Research

#### 9.3.3.1 Test pitting

A programme of test pitting has been proposed, this is to be undertaken on a number of the uninvestigated sites in the valleys. Further details of the programme are provided in **Appendix 7.1**. A total of 50 test pits will be excavated within caves and rock shelters and on the slopes below them.

The test pitting programme will:

- test the predictive model;
- investigate the relationship the sites to the slopes below;
- provide information on the distribution of sites within the valleys;
- assess the palaeoenvironmental potential of the sites;
- identify sites with the potential for future research.

#### Costs

Detailed costs are provided in **Appendix 7.1.5**.

The total costs are estimated at £35,730.00.

#### Timetable

A detailed timetable is provided in **Appendix 7.1.6**.

The test pitting programme has a 25 week timetable.

#### Funding Agencies

Possible funding agencies include:

English Heritage

Aggregates Levy Sustainability Fund

#### 9.3.3.2 Section cleaning

A programme of section cleaning has been proposed, this is to be undertaken on a number of the uninvestigated sites in the valleys where vertical sections are exposed. Further details of the programme are provided in **Appendix 7.2**. A total of 3 sections will be cleaned, recorded and sampled.

The section cleaning programme will:

- test the predictive model,
- identify deep deposit sequences with archaeological or environmental potential,
- assess the palaeoenvironmental potential of the sites,



- identify sites with the potential for future research.

### **Costs**

Detailed costs are provided in **Appendix 7.2.5**.

The total costs are estimated at £10,420.00.

### **Timetable**

A detailed timetable is provided in **Appendix 7.2.6**.

The test pitting programme has a 17 week timetable.

### **Funding Agencies**

Possible funding agencies include:

English Heritage

Aggregates Levy Sustainability Fund

#### **9.3.3.3 Borehole survey**

A programme of borehole survey has been proposed, this is to be undertaken on 7 of the valleys. The survey proposed is an evaluation survey which aims to investigate the potential of the valley bottoms to contain open air sites of archaeological or palaeoenvironmental significance. Further details of the programme are provided in **Appendix 7.3**. A total of 3 sections will be cleaned recorded and sampled.

The borehole survey will:

- identify the depth of deposits in the valley bottoms;
- determining which deposits have palaeoenvironmental potential;
- aim to develop simple deposit models for the valleys;
- determine is any valleys have the potential to contain open air archaeological sites.

### **Costs**

Detailed costs are provided in **Appendix 7.3.5**.

The total costs are estimated at £9,670.00.

### **Timetable**

A detailed timetable is provided in **Appendix 7.3.6**.

The test pitting programme has a 17 week timetable.

### **Funding Agencies**

Possible funding agencies include:



#### **9.3.3.4 Cave excavation**

It is only through the excavation of cave or rock shelter sites that some of the themes within the research priorities can be investigated. The test pitting and section cleaning programmes will both aid in the management of the archaeological resource, and will also act as a site evaluation programme to determine which sites have the best potential for further research.

Until the test pitting and section cleaning programmes have been completed it is impossible to determine which site or sites would be appropriate for excavation. Detailed methodologies and costs will be site-specific, and will be produced on a site-by-site basis, as appropriate.

#### **9.3.3.5 Revise the predictive model**

One of the aims of the test pitting and section cleaning programmes is to test and refine the predictive model. This can only be undertaken once these programmes have been completed. The additional information from the test pitting a section cleaning will be used to test the predictive model and then to revise the model.

##### **Costs**

Detailed costs are provided in **Appendix 4.3**.

The total costs are estimated at £2,375.00.

##### **Timetable**

A detailed timetable has not been prepared but provisionally it is estimated that the analysis and reporting of the revised predictive model should take approximately 4 weeks.

##### **Funding Agencies**

Possible funding agencies include:

English Heritage

Aggregates Levy Sustainability Fund

#### **9.3.4 Ecology**

It is proposed that the Ecological Study identified as Phase 2 of the Management Action Plan is undertaken. The current study has been limited due to the absence of the ecological study. Details on the proposed methodology and timetable are to be found in the Project Design for The Creswell Crags Limestone Heritage Area Management Action Plan.



In the ecological aspects of the Management Action Plan, it is envisaged that these overall objectives will be best achieved by a structured approach to assessment and management planning, based on a hierarchy of information, assessment and management proposals. The key planning processes to arrive at such a plan are as follows:

- Ecological audit and characterisation
- Management assessment and potentiality study
- Preparation of management proposals

It is proposed that ECUS will undertake the detailed ecological work programme identified in the project design, reporting directly to Creswell Heritage Trust.

An Advisory Group comprising representatives of Creswell Heritage Trust, Groundwork Creswell, English Nature, Derbyshire and Nottinghamshire County Councils, Rotherham MBC, Derbyshire, Nottinghamshire and Yorkshire Wildlife Trusts will act as an advisory panel for this element of the project. Members of the Advisory Group will be the main consultees, but extensive consultation will be needed with a wide range of other bodies including local authorities, landowners and local communities.

Groundwork Creswell will have particular responsibility for co-ordinating the advisory group, contract support and providing technical support for the action plan.

ECUS will prepare ecological action plan proposals with input from Creswell Heritage Trust, Groundwork Creswell and ARCUS.

On completion of the Ecological study the Access Study and Conservation Statements and Management Action Proposals, Creswell Heritage Trust and Groundwork Creswell will co-ordinate any revisions required in light of the ecological study and proposals, with input from ECUS and ARCUS.

## Costs

A detailed breakdown of costs is available in the Project Design for the Creswell Crags management Action Plan.

Ecological study	£32,800.00
Revise Access study	£2,500.00
Revise Conservation Statements and Management Action Proposals	£10,000.00
Project Co-ordination and Management	£6,000.00
<b>Total</b>	<b>£51,300.00</b>

## Timetable

A detailed timetable is included in the original Project Design for the Creswell Crags Limestone Heritage Area Management Action Plan.

## Funding Agencies

English Nature



### 9.3.5 Landscape history

A limited programme of Historical Landscape Research is proposed. The aims of this programme are to add flesh to the bones of the story of the landscape as set out in the intellectual access study and to provide a resource for future management and interpretation :

- identify the key historical processes operating and how they relate to the interpretive themes of the intellectual access study.
- produce a database of key historical source and illustrative material.

This proposal need further development before it can be taken forward a feasibility study should be undertaken on this proposal. The feasibility study should consider the key historical processes that have operated on the area, and that give it its distinctive character, and relate the processes to the interpretative themes of the intellectual access study. The report and database will then be available to draw upon as resources during the production of material used in public education and intellectual access.

#### Costs

The costs for the Landscape History feasibility study are estimated at £9200.00.

#### Timetable

The Landscape History programme should take three months to complete.

#### Funding Agencies

Heritage Lottery Fund

English Heritage

Aggregates Levy Sustainability Fund

Heritage Lottery Fund

### 9.3.6 Physical and visual access

#### 9.3.6.1 Archaeological Way proposed northern extension

It is proposed that the Archaeological Way is extended north to Roche Abbey. The aims and requirements are outlined in **section 8.4.2.1**.

The extension of the archaeological way will be undertaken in two phases:

- Phase1 will extend route to Anston Stones Wood. This is dependent on access being approved by Forest Enterprise and the adjacent landowner.
- Phase 2 will extend the route to Roche Abbey. This is dependent on the completion of a permissive bridleway proposed on the old Dinnington colliery



site which links to quiet lanes to the north. This proposal is due to be completed during 2004 and would be the preferred option.

Consideration should also be given to renaming the route 'The Limestone Heritage Way' or 'The Limestone Heritage Trail' as its current name leads to unfulfilled expectations, as there is little archaeological evidence to be seen.

### **Costs**

Detailed costs are provided in **Appendix 8.10**.

Cost incurred will cover:

- Site establishment
- Signage
- Interpretation
- Access and footpath works
- Project design and management fees

The total costs are estimated at £19,650.00.

Possible funding agencies are listed in **section 8.3.6.4**.

#### **9.3.6.2 View point location works**

It is proposed that existing roadside pull ins are adapted and extended to take advantage of site views at locations near Creswell Crags, Whitwell and at Ash Tree gorge. The aims and requirements are outlined in **section 8.4.1.4** and a visual presentation is provided on CD in **Appendix 8.12**.

Establishment of the view points will involve the provision of interpretation panels. These are costed under the intellectual access proposals.

Prior to undertaking this work consultation will be required and approval gained from the highways department, landowners and tenants.

### **Costs**

Detailed costs are provided in **Appendix 8.10**.

Costs incurred will cover:

- Site establishment
- Pull ins
- Interpretation
- Site furniture
- Project design and management fees

The total costs are estimated at £14,200.00.

Possible funding agencies are listed in **section 8.3.6.4**.



### 9.3.6.3 Other associated elements

The physical and visual access has identified additional costs. These relate to issues that have relevance to the whole heritage area. These costs cover elements related to community involvement and funding proposals.

#### Costs

Detailed costs are provided in **Appendix 8.10**.

Costs incurred will cover:

- Community consultation
- Preparation of funding bids
- Access groups to undertake easy access survey of Pilot Action Areas

The total costs are estimated at £33,000.00.

Possible funding agencies are listed in **section 8.3.6.4**.

### 9.3.6.4 Funding Agencies

Heritage Lottery Fund

Rotherham Metropolitan Borough Council

Woodland Grant Scheme

Countryside Stewardship Scheme

English Nature

European Regional Development Fund

Sports Lottery Fund

New Opportunities Fund

Landfill Tax (Environmental Trusts such as WREN and Derbyshire Environmental Trust)

Aggregates Levy Sustainability Fund

Coalfield Regeneration Trust

English Partnerships

Sustrans (Sustrans may consider the addition of loops and links to its Millennium Routes so that access can be created to other features. The potential of such linkages should be attractive to many potential funding partners.)

### 9.3.7 Intellectual access

The intellectual access proposals provide an integrated approach to provision of information to the public. It is therefore not sensible to subdivide the proposals and describe them separately for each valley. The proposals are outlined below and are not detailed in the valley specific section (**section 9.4**).



### 9.3.7.1 Project Studies

Three project studies related to intellectual access are proposed.

#### Market Research

More market research is needed to identify the current usage of the trails network. This will look at the use of the network by the local community, leisure visitors, schools and other education groups and disabled visitors.

#### Pleasley Vale Interpretation Plan

As identified by the access study (**section 8**), Pleasley Vale has a diversity of stakeholders implementing various uncoordinated initiatives currently. Therefore, it is essential that an integrated Interpretation and Development plan is created. This should include proposals for long term management and presentation of the cultural, ecological and landscape interest. The most critical need is for an interpretation plan that sets out the story of Pleasley Vale and a strategic approach to its presentation.

#### Community Project

A 'Pride of Place' style community project is proposed to:

- Engage with the local communities
- Develop a programme of guided walks designed to present and interpret the landscape to visitors. It would be most appropriate to operate this through local people.
- Develop the local education market.

Appendix 8.11 outlines how the 'Pride of Place Project' works.

#### Costs

Detailed costs are provided in **Appendix 8.10**.

Costs for these elements are estimated at

Market Research	£15,000.00
Pleasley Vale Interpretation Plan	£15,000.00
Pride of Place project officer	£50,000.00 per annum.

Possible funding agencies are listed in **section 8.3.6.4**.

### 9.3.7.2 Heritage Area Guides

A number of guides to the Heritage Area are proposed. The guides proposed provide comprehensive coverage of the area through guides aimed at the area as a region, or through guides aimed at specific valleys. The following is a list of the proposed guides.

Heritage Area Full Colour Guide summarising the landscape and its history.

Archaeological Way revised guidebook and route map.



Pilot Action Area Guides for:

- Roche Abbey
- Anston Stones
- Pleasley Vale
- Creswell Hub

Heritage area walks revised booklet

Creswell Hub Walks booklet

Family Walks Guide, short walks including activity sheets

Landowners guide

Professional photographer, to produce high quality photo images for guides

### **Costs**

Detailed costs are provided in **Appendix 8.10**.

The total costs are estimated at £71,050.00.

Possible funding agencies are listed in **section 8.3.6.4**.

#### **9.3.7.3 Heritage Area Display**

Produce a portable exhibition of the Creswell Crags Limestone Heritage Area which introduces and summaries the landscape and its history. This can be taken round and displayed at various centres in the area to raise public awareness of the area and promote it.

### **Costs**

Detailed costs are provided in **Appendix 8.10**.

The total costs are estimated at £3,000.00.

Possible funding agencies are listed in **section 8.3.6.4**.

#### **9.3.7.4 Interpretation/Orientation Panels/Signage**

A number of replacement and new panels and signs are required. These will provide interpretation and orientation information and provide directional information to the Creswell Hub. A list of the main panels and signs required is given below.

Creswell Archaeological Way Panels

- Pleasley Vale
- Poulter Country Park
- Creswell Crags
- Anston Stones
- Roche Abbey



#### Anston Stones Wood Panels

- replace existing panels
- install a new panel in the park
- install gateway panels at the main entrances

#### Panels at other sites

- Thorpe Common – Mill Moor Farm
- Thorpe Salvin
- Firbeck
- Scarcliffe Village
- Langwith Vale
- North Anston
- Car pull in locations around Creswell

#### Directional signs to the Creswell Hub.

- Creswell Hub signs to and from the car park and station.

#### Costs

Detailed costs are provided in **Appendix 8.10**.

The total costs are estimated at £52,500.00.

Possible funding agencies are listed in **section 8.3.6.4**.

## 9.4 Specific Management Action Proposals

### 9.4.1 Roche Abbey Vale

#### 9.4.1.1 Physical and Visual Access

Roche Abbey Vale has been identified as one of the Pilot Action Areas (**section 8.4.2.2**). A programme of works has been identified to improve physical and visual access to the valley.

A number of issues have been identified in the access study:

- Create an informal limestone path 1.5m wide and install a new wheel chair access in place of the narrow kissing gate, along with a new maintenance gate and fencing at the same point.
- Install a simple informal bollard combined with limestone boulders near the path entrance.
- Replace steel chain link fencing around perimeter of Abbey with timber post & wire mesh (sensitive operation - consultation required with English Heritage)



- A seat should be placed adjacent to the interpretation panel.
- Additional motorcycle barrier at other end of Gypsy Lane path.
- Reintroduce woodland management at Norwood to create more light.
- Revise the walk contained in the booklet “Walking in the Creswell Limestone Heritage Area ” to reflect the area to its best advantage.
- Way mark revised Roche Abbey Walk 1.
- Close consultation required with English Heritage due to site sensitivity & current management.

### **Costs**

Detailed costs are provided in **Appendix 8.10**.

Cost incurred will cover:

- Site establishment
- Car park and access road improvements
- Signage
- Footpath construction
- Fencing and gates
- Drainage works
- Site furniture
- Interpretation
- Planting
- Specialist Consultants
- Project design and management fees

The total costs are estimated at £23,243.00

Possible funding agencies are listed in **section 8.3.6.4**.

#### **9.4.1.2 Intellectual access**

Proposals relating to the improvement of intellectual access for Roche Abbey are covered in **section 9.3.7**.

#### **9.4.2 Firbeck**

There are no proposed site specific recommendations relating to the Firbeck Valley.



### 9.4.3 Anston Stones

#### 9.4.3.1 Physical and visual access

Anston Stones Wood and Lindrick Dale has been identified as one of the Pilot Action Areas (**section 8.4.2.2**). A programme of works has been identified to improve physical and visual access to the valley.

A number of issues have been identified in the access study:

- Improve main entrances off the B6060 and A57.
- Create easy access loop through site.
- Create picnic area and provide benches throughout the site.
- Resurface and widen the main paths.
- Create disabled access parking area.
- Additional way marking in Lindrick quarry area.
- Install motorcycle prevention barriers at strategic locations.

#### Costs

Detailed costs are provided in **Appendix 8.10**.

Cost incurred will cover:

- Site establishment
- Car park improvements
- Signage
- Footpath construction
- Fencing and gates
- Drainage works
- Site furniture
- Interpretation
- Planting
- Specialist Consultants
- Project design and management fees

The total costs are estimated at £40,909.00.

Possible funding agencies are listed in **section 8.3.6.4**.

#### 9.4.3.2 Intellectual access

Proposals relating to the improvement of intellectual access for Anston Stones Wood and Lindrick Dale are covered in **section 9.3.7**.



#### **9.4.4 Red Hill**

There are no proposed site specific recommendations relating to Red Hill Valley.

#### **9.4.5 Thorpe Common and Lob Wells Wood**

##### **9.4.5.1 Management of the archaeological resource**

###### **Backfill the open trenches**

Two Trenches at Thorpe Common Rock Shelter have been left open by previous excavations. These should be backfilled as the sides of the trenches are starting to erode (see **section 3.8.3.1**).

###### **Costs**

Detailed costs are provided in **Appendix 3.3**.

The total costs are estimated at £530.00.

###### **Timetable**

It will take one day to arrange access and set up the work and one day in the field to undertake the work.

###### **Funding Agencies**

Possible funding agencies include:

English Heritage

Aggregates Levy Sustainability Fund

##### **9.4.5.2 Physical, visual and intellectual access**

There are no proposed site specific recommendations relating to Thorpe Common and Lob Wells Wood. Improvements to the physical, visual and intellectual access are recommended as part of wider proposed access programmes.

#### **9.4.6 Steetley Quarry Caves**

There are no proposed site specific recommendations relating to Steetley Quarry Caves.

#### **9.4.7 Ash Tree Gorge**

There are no proposed site specific recommendations relating to Ash Tree Gorge. Improvements to the physical, visual and intellectual access are recommended as part of wider proposed access programmes.



#### **9.4.8 Markland Grips**

There are no proposed site specific recommendations relating to the Firbeck Valley. Improvements to the physical, visual and intellectual access are recommended as part of wider proposed access programmes.

#### **9.4.9 Elmton and Whaley Valleys**

There are no proposed site specific recommendations relating to the Firbeck Valley. Improvements to the physical, visual and intellectual access are recommended as part of wider proposed access programmes.

#### **9.4.10 Langwith Vale**

There are no proposed site specific recommendations relating to the Firbeck Valley. Improvements to the physical, visual and intellectual access are recommended as part of wider proposed access programmes.

#### **9.4.11 Pleasley Vale**

##### **9.4.11.1 Physical and visual access**

Anston Stones Wood and Lindrick Dale has been identified as one of the Pilot Action Areas (**section 8.4.2.2**). A programme of works has been identified to improve physical and visual access to the valley.

A number of issues have been identified in the access study:

- Consider providing additional promoted routes through Pleasley Park and around Little Matlock.
- Provide a small picnic area adjacent to the Archaeological Way car park on Outgang Lane.
- Remove gates and fences which are excessive and unnecessary along the start of the Archaeological Way and maintain steps and way markers and paths.
- Replace log obstruction at Little Matlock with a post and rail fence and gate.
- Improve Car parks to make them more welcoming to visitors.
- Improve signage to car parks.
- Request signage to deter lorries entering the vale from Little Matlock.

##### **Costs**

Detailed costs are provided in **Appendix 8.10**.

Cost incurred will cover:

- Site establishment
- Car park improvements



- Traffic signage
- Footpath construction
- Fencing and gates
- Drainage works
- Site furniture
- Interpretation
- Planting
- Specialist Consultants
- Project design and management fees

The total costs are estimated at £16,300.00.

Possible funding agencies are listed in **section 8.3.6.4**.

#### **9.4.11.2 Intellectual access**

Proposals relating to the improvement of intellectual access for Pleasley Vale are covered in **section 9.3.7**.

## **9.5 The Way Forward**

As indicated previously, the management action proposals are recommendations or suggestions for actions that should be undertaken to address issues identified in the Creswell Limestone Strategy and in the Creswell Crags Conservation plan and outlined in Section 2 (Background) of this report. They form a framework and a menu for action that can be undertaken by a variety of different agencies, taking advantage of funding opportunities as they arise over the next five to ten years. It is envisaged that Creswell Heritage Trust, Groundwork Creswell and the Limestone Strategy Partnership would be the key 'championing' or co-ordinating agencies, supported by the Local Authorities, English Heritage and English Nature as appropriate.

The actions could be taken forward individually or grouped together as a package or packages according to funding opportunities. A co-ordinated programme might be an ideal candidate for the Heritage Lottery Fund's Landscape Partnership initiative.

A possible programme structure might be envisaged as follows:

- Steering group of local authority and agency representatives (an expanded version of the existing Limestone Strategy Partnership), chaired and co-ordinated by Creswell Heritage Trust and Groundwork Creswell.
- Pride of Place community heritage project officer employed by Creswell Heritage Trust with a brief and support funding to take forward the Intellectual Access programme.
- Ecological Study followed up by appointment of a project officer (or 'tasking' of an existing officer) to follow up opportunities to enhance landscape character and Magnesian limestone habitats through management agreements.



- Programme of capital works spearheaded by Groundwork Creswell in partnership with local authorities to improve physical and visual access, including training opportunities for local people.
- Programme of archaeological and historic landscape research spearheaded by the University of Sheffield designed to test the predictive model.





# Creswell Crags Limestone Heritage Area Management Action Plan

Volume 5, Maps

March 2004

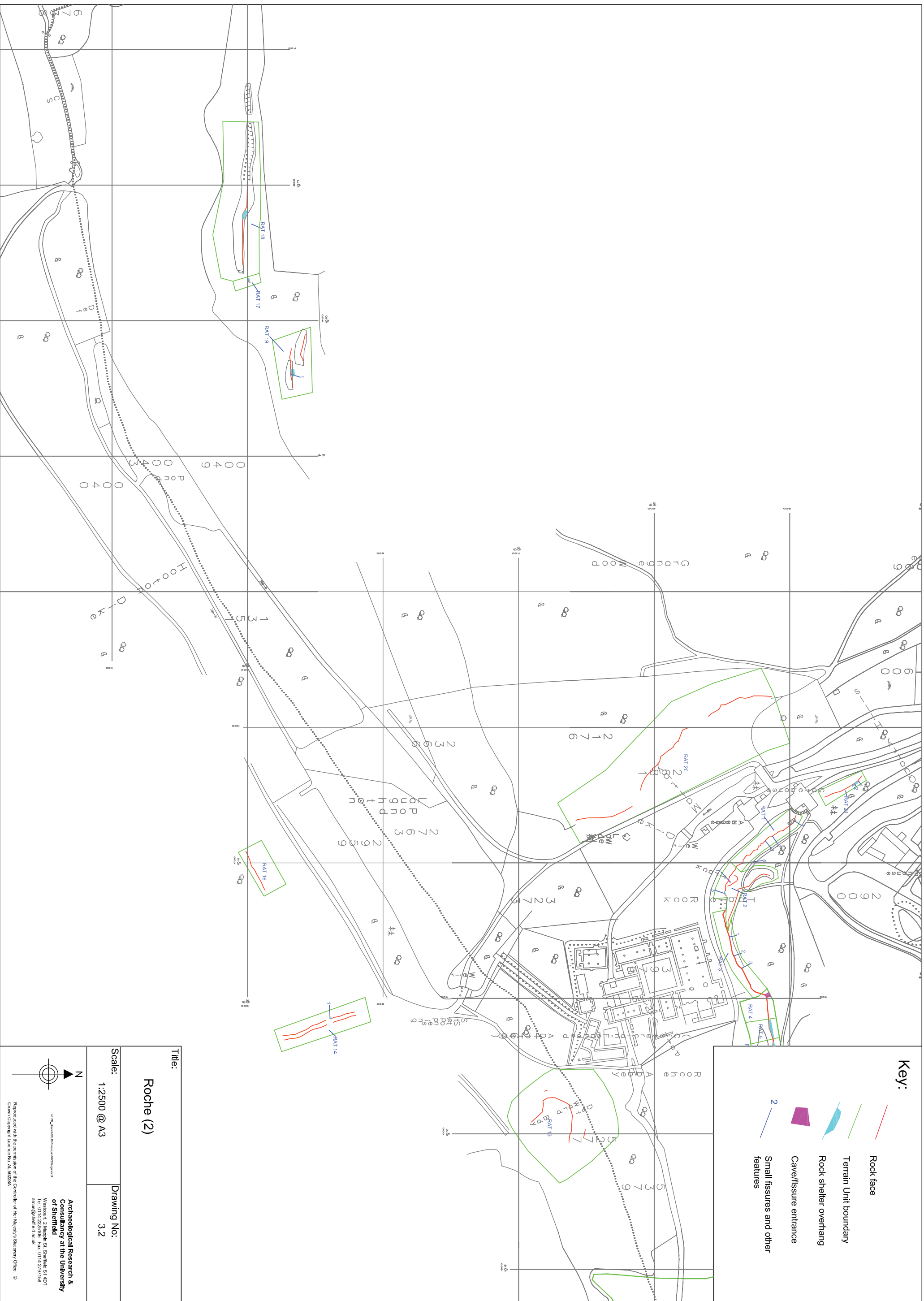
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By Glyn Davies, Anna Badcock, Nigel Mills and Brian Smith











**Key:**

- 
- Rock face
- Terrain Unit boundary
- Rock shelter overhang
- Cave/fissure entrance
- Small fissures and other features
- 2

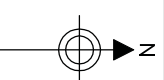


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Drawing No:	3.3
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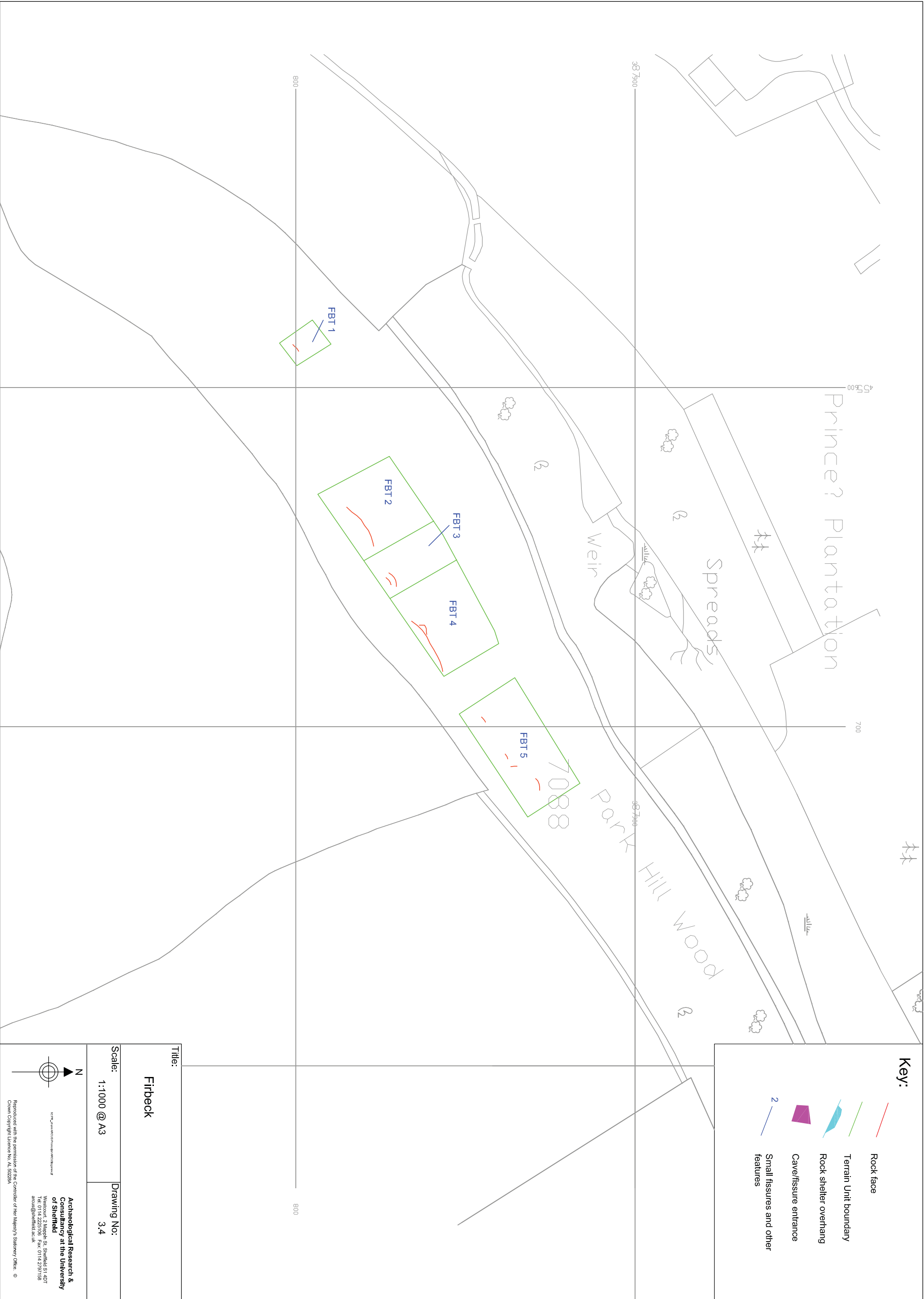


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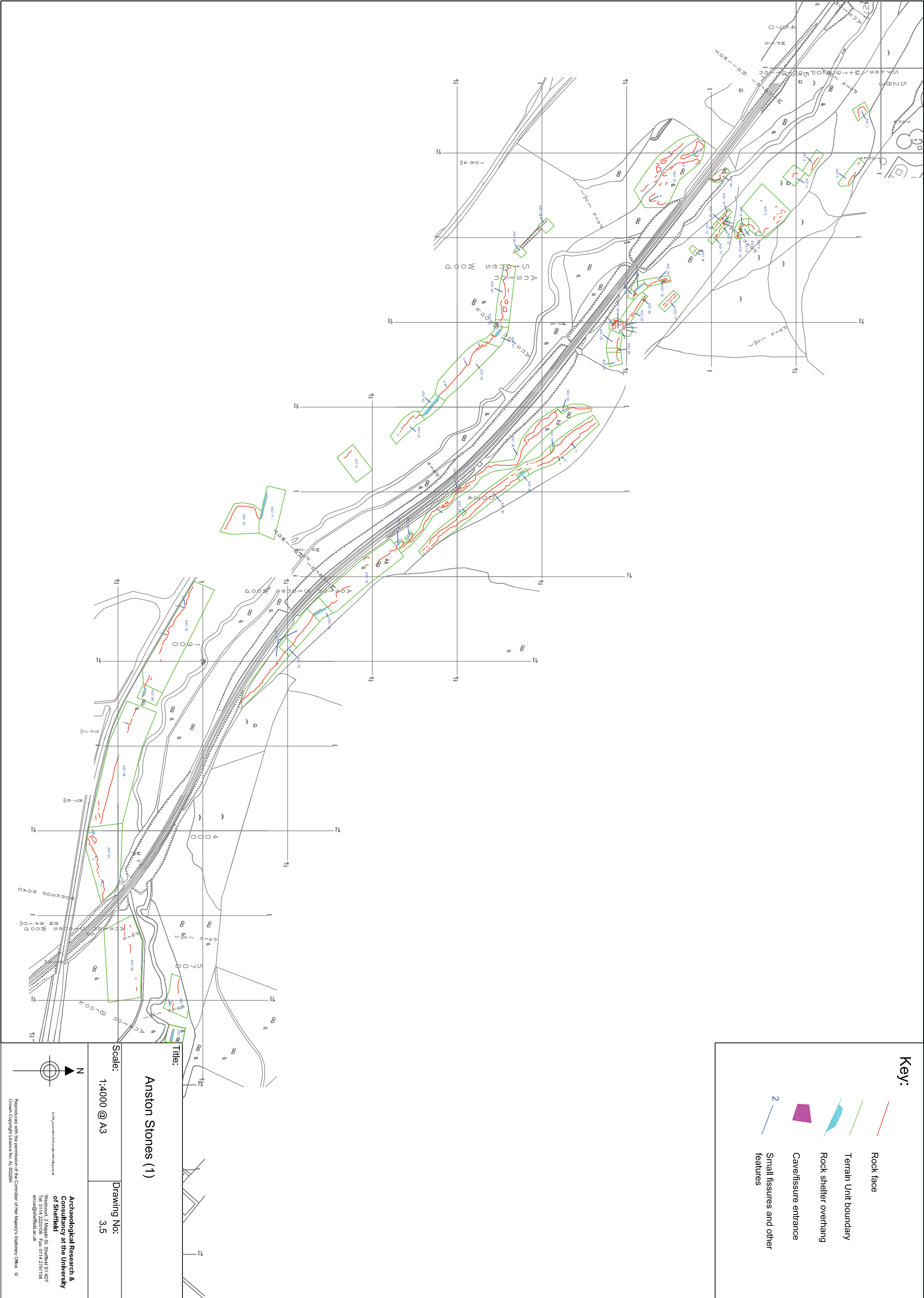
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- Key:**
-  Rock face
  -  Terrain Unit boundary
  -  Rock shelter overhang
  -  Cave/fissure entrance
  -  Small fissures and other features





Key:

Rock face

Terrain Unit boundary

Rock shelter overhang

Cave/fissure entrance

2

Small fissures and other features

This is a detailed archaeological site plan of Anston Stones (2). The plan shows a series of rock faces (red lines) and terrain unit boundaries (green lines) arranged in a linear fashion. Various features are marked, including rock shelter overhangs (blue lines), cave/fissure entrances (purple lines), and small fissures and other features (blue lines with the number 2). The plan also shows the location of the site relative to the A630 road and the A630 road. The plan is oriented with North at the top. The plan includes a grid system with coordinates ranging from 11 to 12 on the horizontal axis and 11 to 12 on the vertical axis. The plan also shows the location of the site relative to the A630 road and the A630 road. The plan includes a grid system with coordinates ranging from 11 to 12 on the horizontal axis and 11 to 12 on the vertical axis. The plan also shows the location of the site relative to the A630 road and the A630 road. The plan includes a grid system with coordinates ranging from 11 to 12 on the horizontal axis and 11 to 12 on the vertical axis.

Title:

Anston Stones (2)

Scale:

1:4000 @ A3

Drawing No:

3.6

N

10° 14' 22.5106° N

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Key:

Rock face

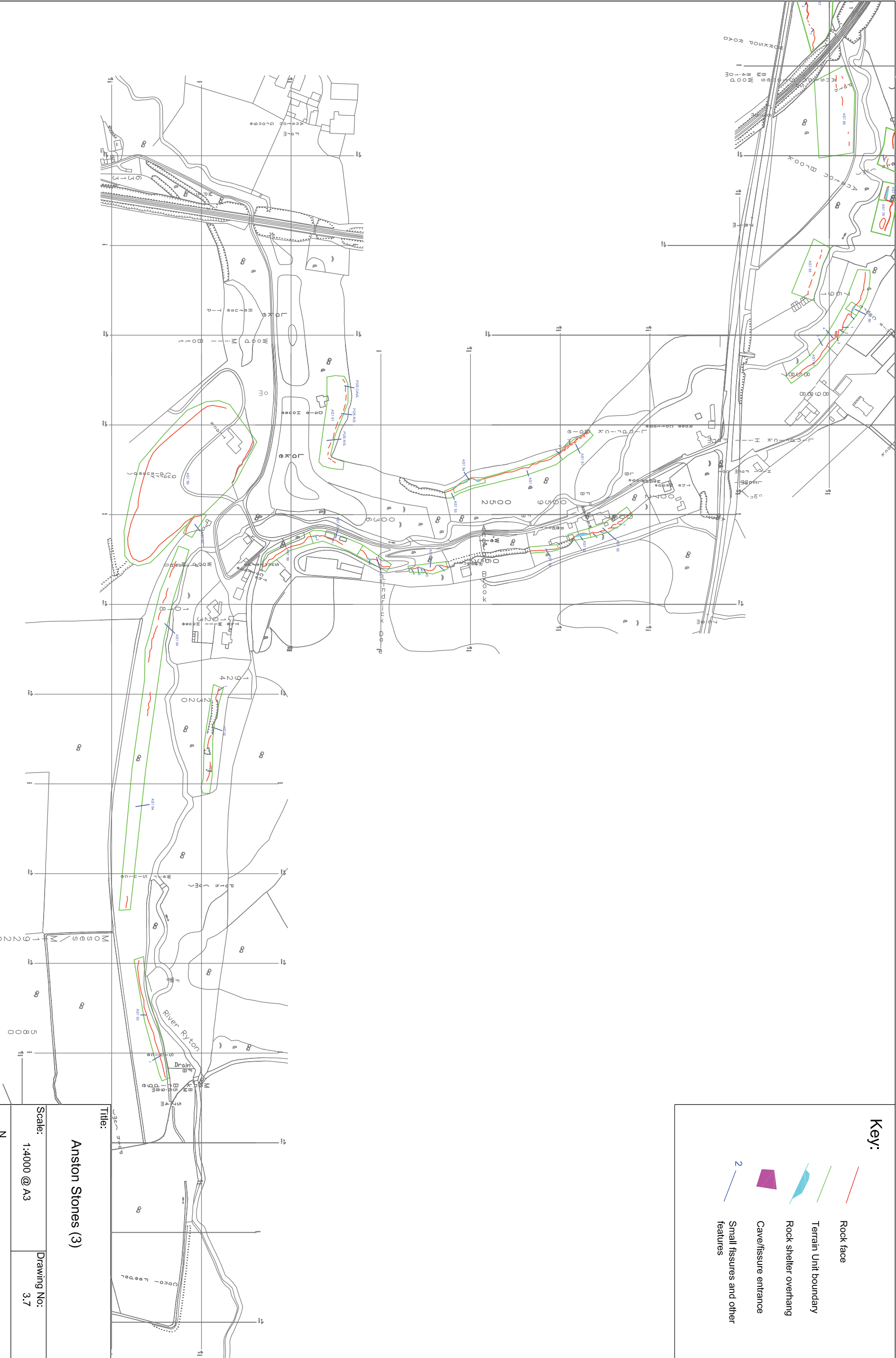
Terrain Unit boundary

Rock shelter overhang

Cave/fissure entrance

2

Small fissures and other features



Anston Stones (3)


Scale: 1:4000 @ A3

Drawing No: 3.7


Title:




Key:




Rock face




Terrain Unit boundary



Rock shelter overhang



Cave/fissure entrance



Small fissures and other features



Title:

Red Hill

Scale:

1:1000 @ A3

Drawing No:

3.8



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Key:

Rock face

Terrain Unit boundary

Rock shelter overhang

Cave/fissure entrance

2

Small fissures and other features



Title:

Thorpe Common (1)

Scale:

1:2500 @ A3

Drawing No:

3.9

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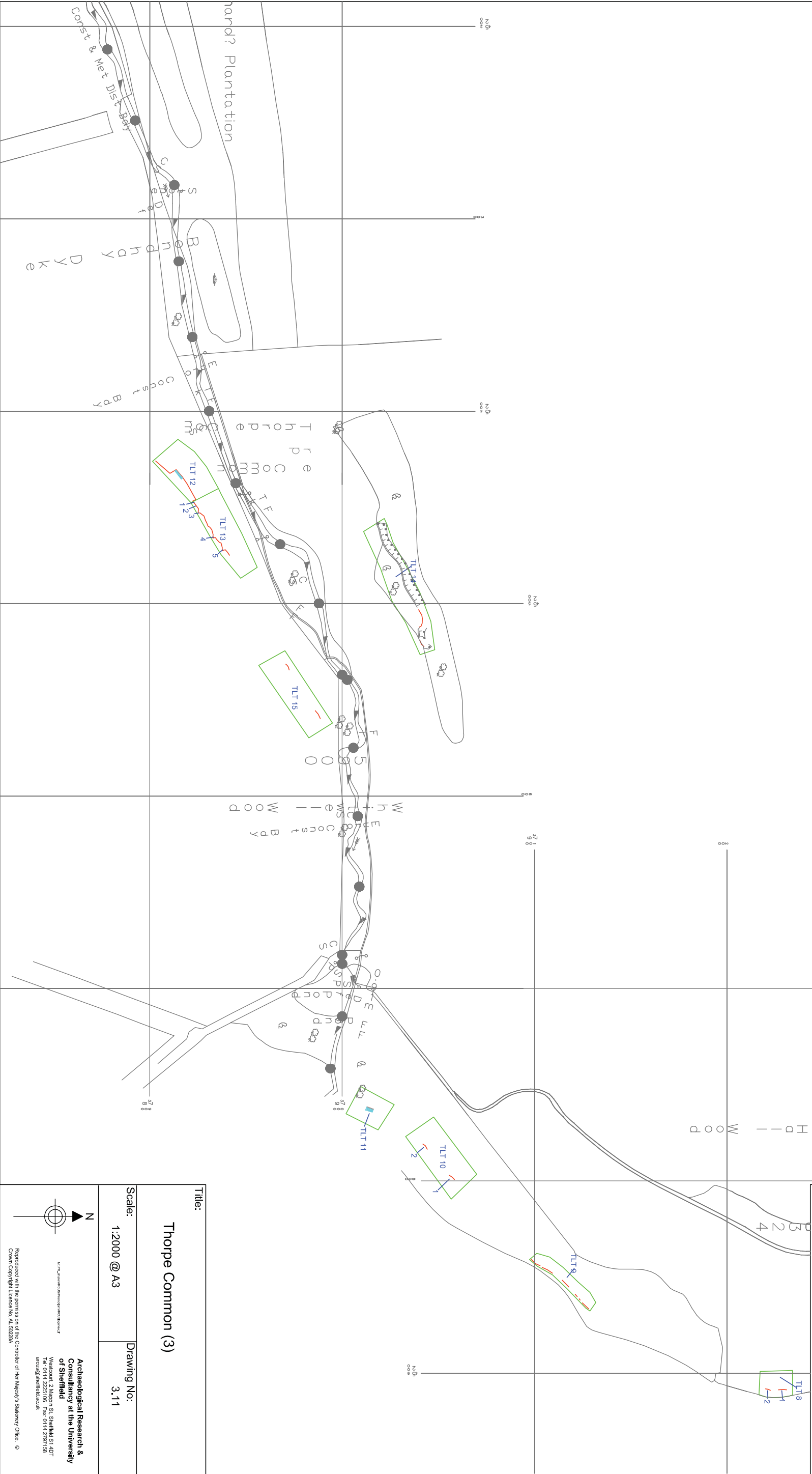
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- Key:**
- Rock face
  - Terrain Unit boundary
  - Rock shelter overhang
  - Cave/fissure entrance
  - Small fissures and other features



**Title:**

**Thorpe Common (3)**

**Scale:**

**1:2000 @ A3**

**Drawing No:**

**3.11**

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Key:

Rock face

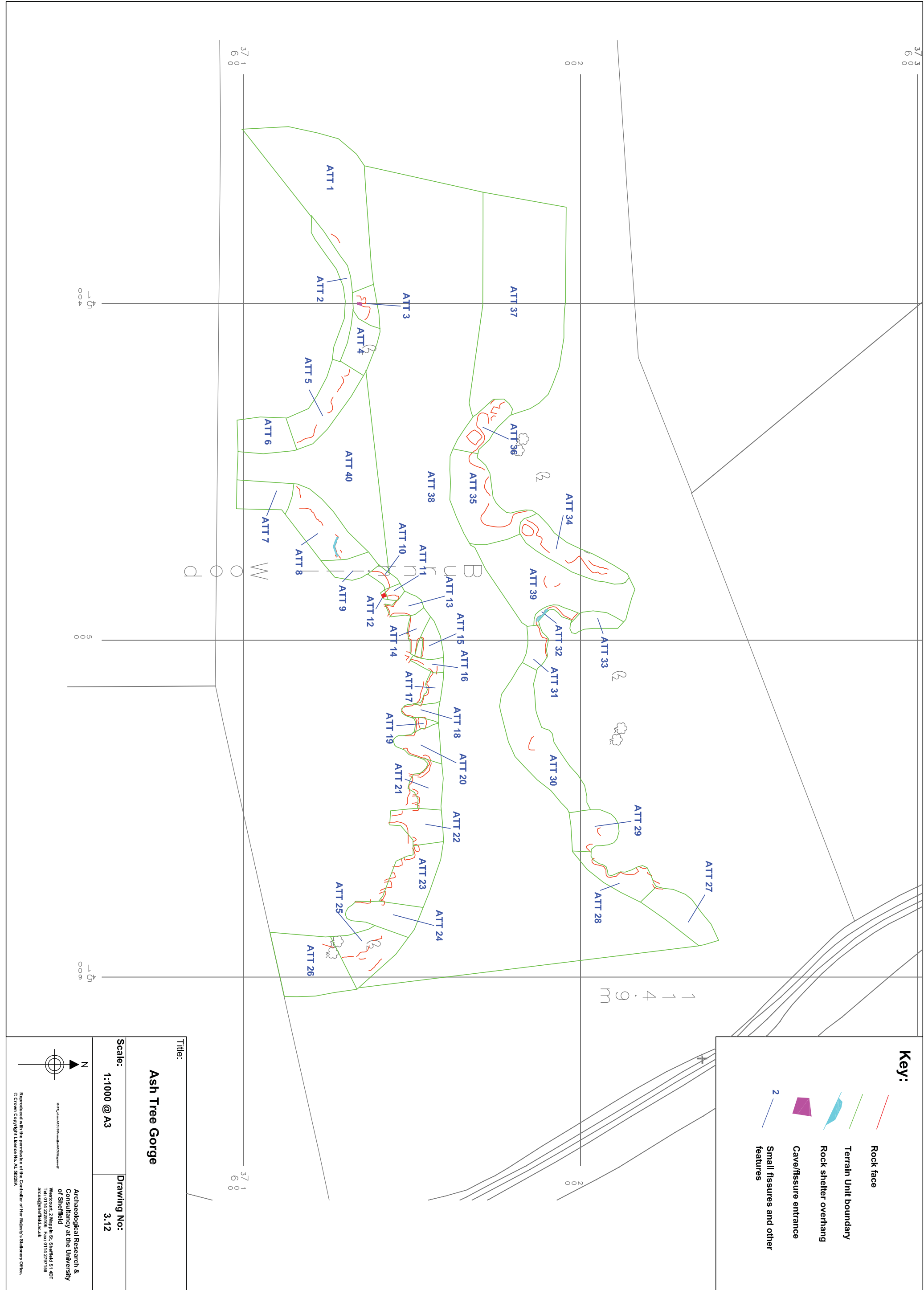
Terrain Unit boundary

Rock shelter overhang

Cave/fissure entrance

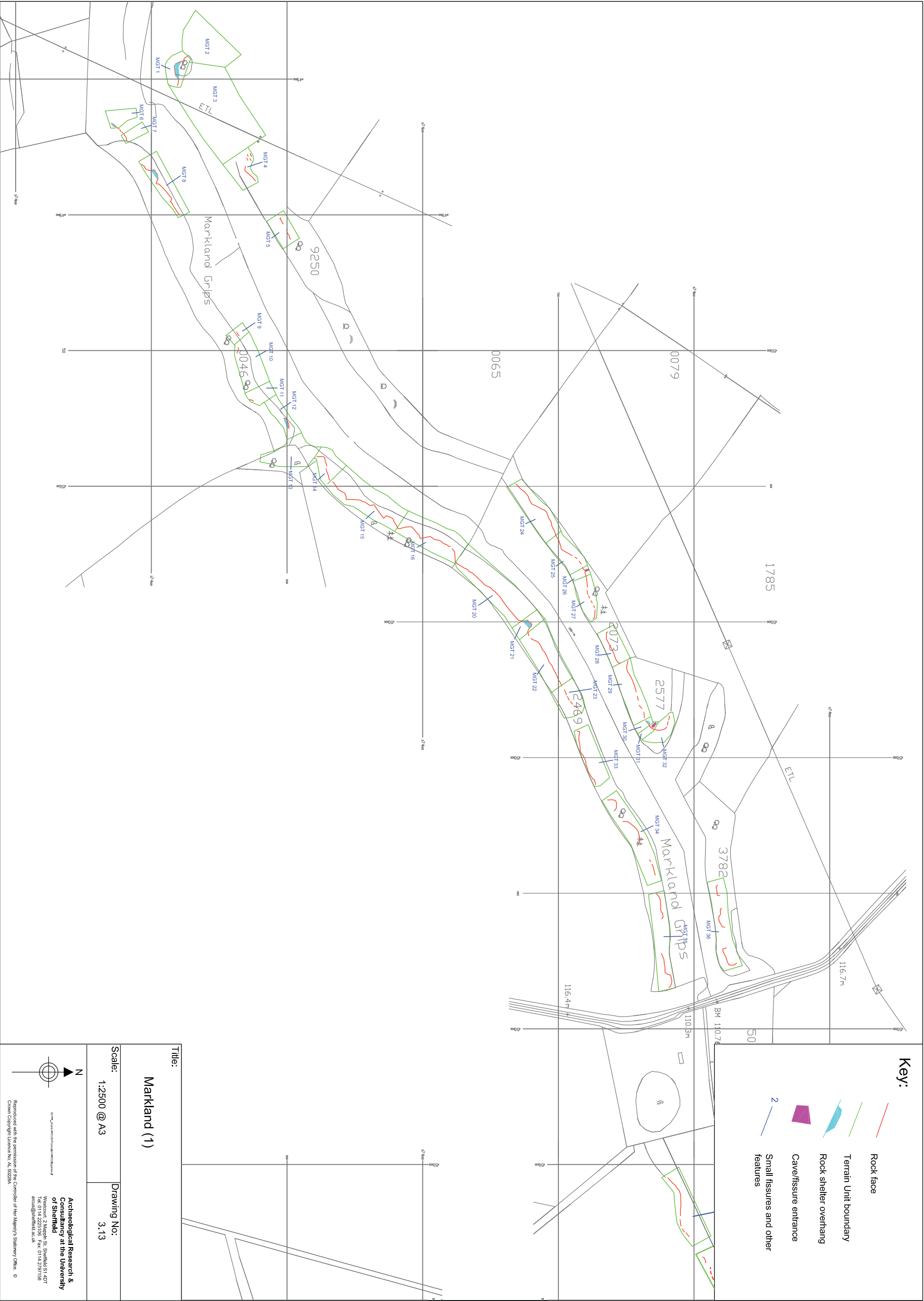
2

Small fissures and other features





- Key:**
- Rock face
  - Terrain Unit boundary
  - Rock shelter overhang
  - Cave/fissure entrance
  - Small fissures and other features



Title:	
Markland (1)	
Scale:	Drawing No:
1:2500 @ A3	3.13

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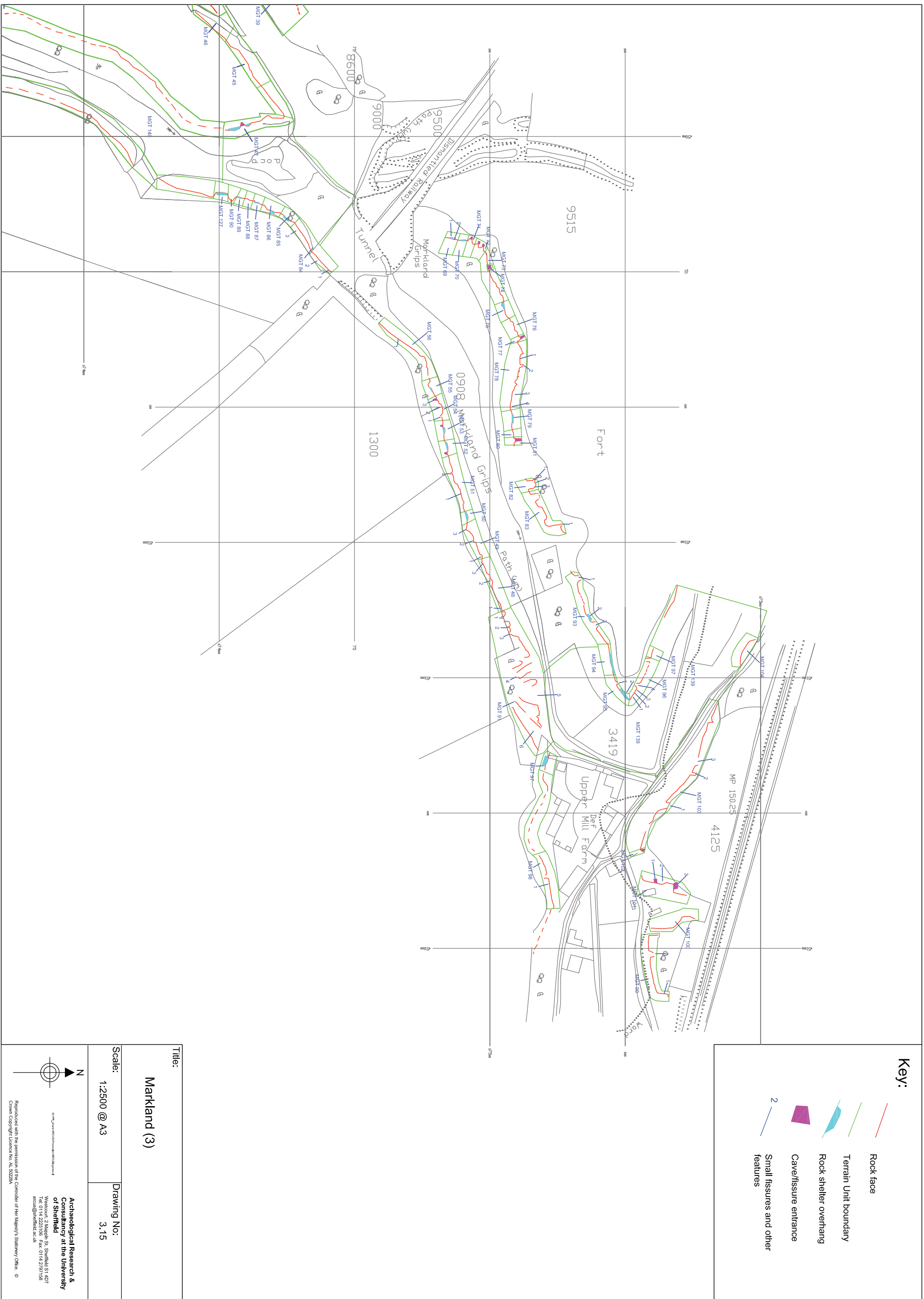
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Title:

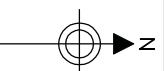
## Hollin Hill (1)

Scale:

1:2000 @ A3

Drawing No:	
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3.16



NOTE: Where ARCLUE Promotes ARCLUE Ignored

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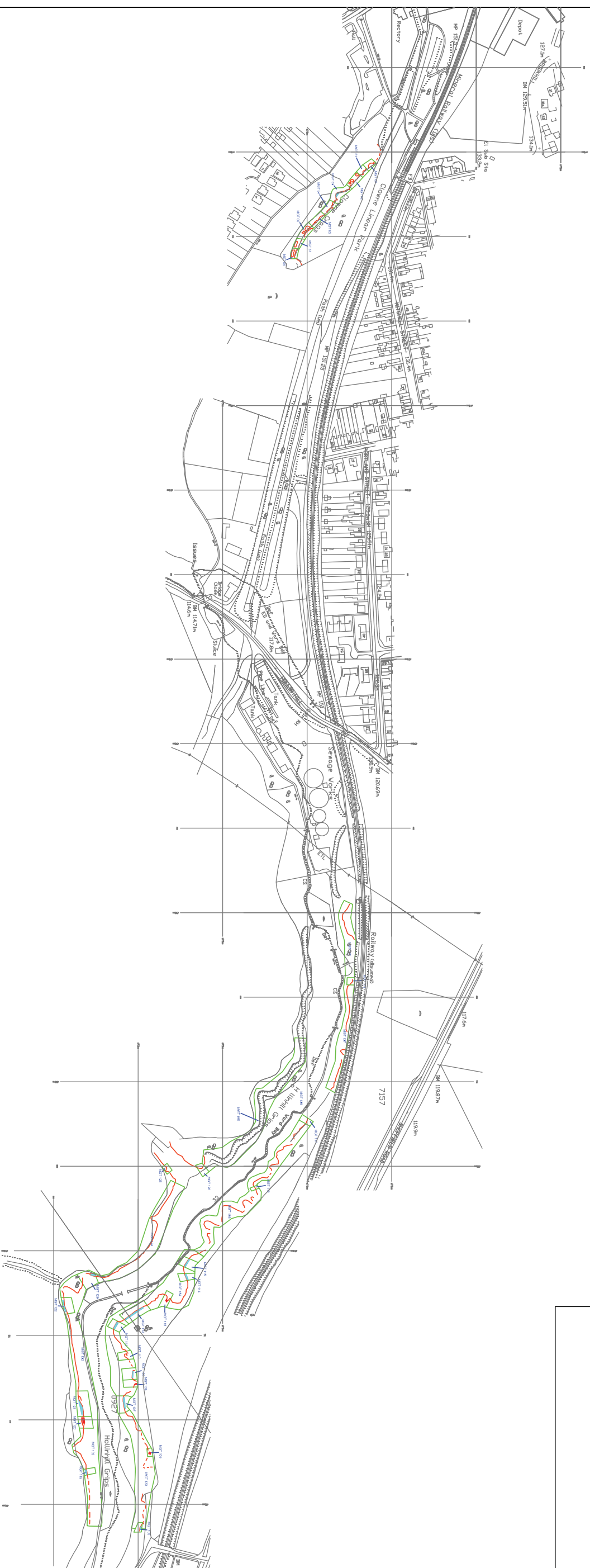
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**Key:**

- 
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  - Terrain Unit boundary
  - Rock shelter overhang
  - Cave/fissure entrance
  - Small fissures and other features

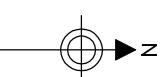


Title:

## Hollin Hill (2)

Scale: 1:5000 @ A3

Drawing No:	3.17
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My PR share ARCU's Promo for ARCU's Ignora

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Key:

Rock face

Terrain Unit boundary

Rock shelter overhang

Cave/fissure entrance

Small fissures and other features

This topographic map of Hollin Hill (2) displays a series of management units (MG106 to MG135) outlined in green. The terrain is characterized by contour lines and a prominent 'Rock face' indicated by a red line. A 'Rock shelter overhang' is shown as a blue-shaded area, and a 'Cave/fissure entrance' is marked with a purple pentagon. 'Small fissures and other features' are indicated by blue lines. The map includes a 'Railway (disused)' and 'SHEFFIELD ROAD'. Key locations such as 'Hollin Hill Grips', 'Ward Bay', and 'Hollin Hill Grips' are labeled. A grid system with coordinates (e.g., 51, 100, 150, 200) is overlaid on the map. A north arrow and scale bar are located in the bottom right corner.

Title:

Hollin Hill (2)

Scale:

1:5000 @ A3

Drawing No:

3.17

N

10° 00' 00" N

10° 00' 00" W

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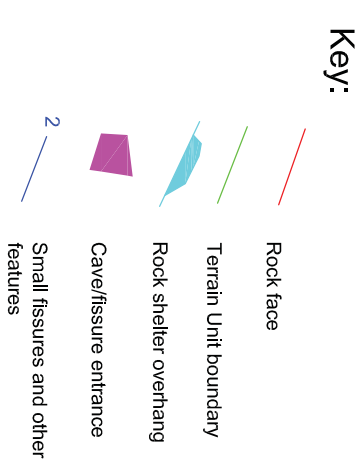
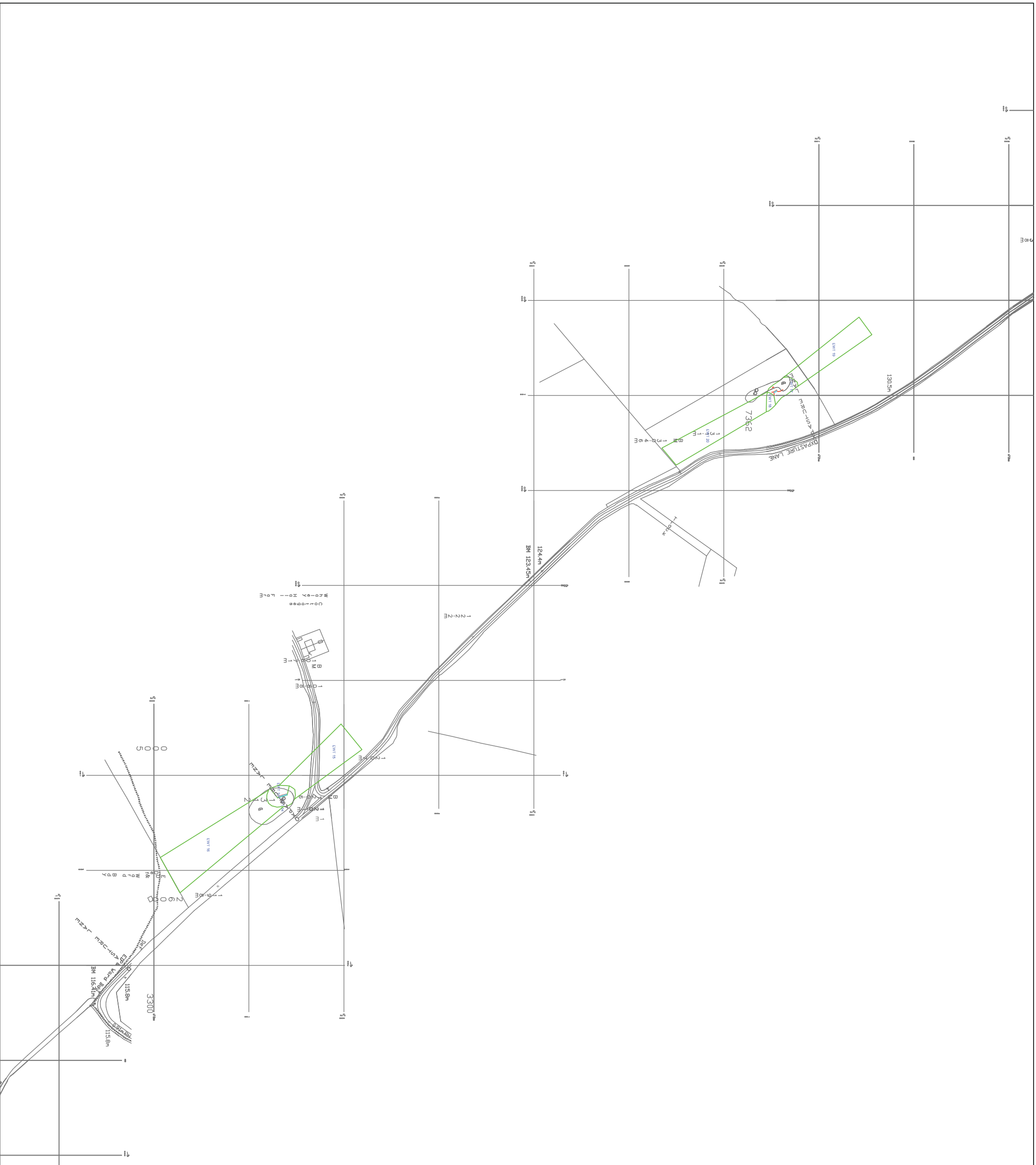
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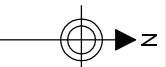


Title:

## Elmton and Whaley Valleys (1)

Scale: 1:4000 @ A3

Drawing No:	3.18
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NOTE: share/ARCUS/Primo/AROUND/ignore/

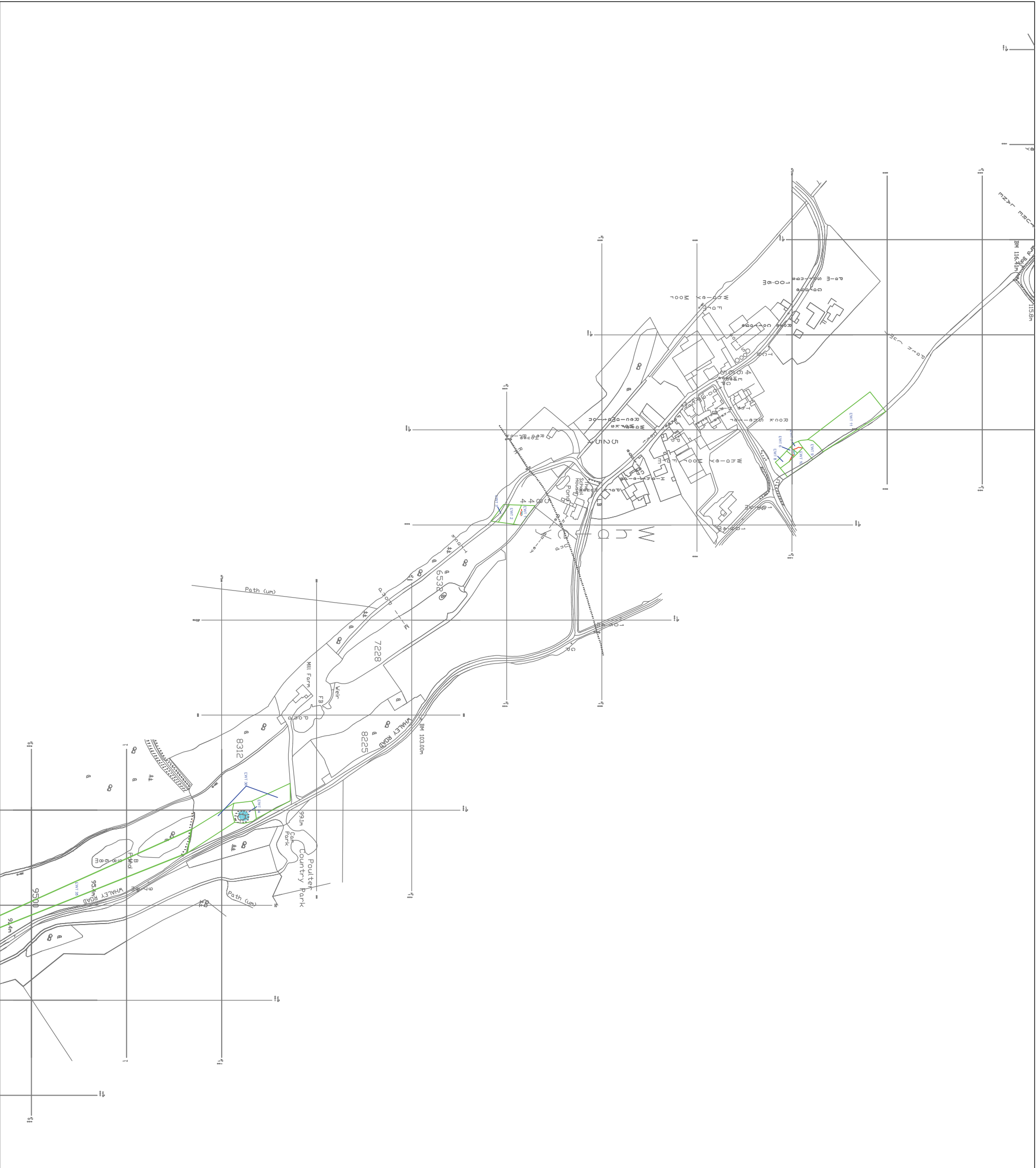
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- Key:**
- Rock face
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  - Rock shelter overhang
  - Cave/fissure entrance
  - Small fissures and other features



Title:

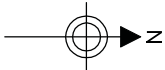
Elmtun and Whaley Valleys (2)

Scale:

1:4000 @ A3

Drawing No:

3.19

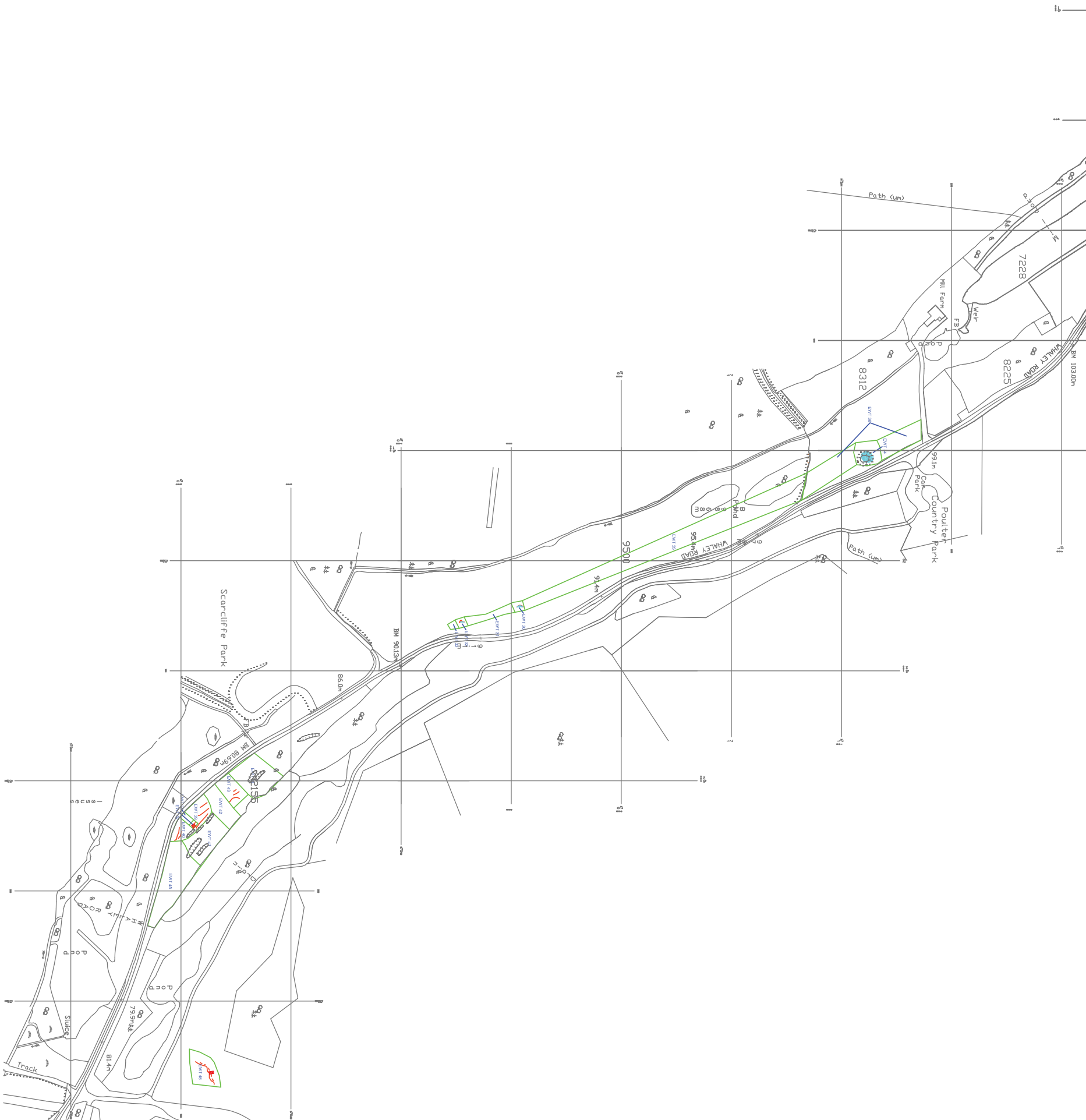


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  - Rock shelter overhang
  - Cave/fissure entrance
  - Small fissures and other features

**Title:**

**Elmtun and Whaley Valleys (3)**

**Scale:** 1:4000 @ A3

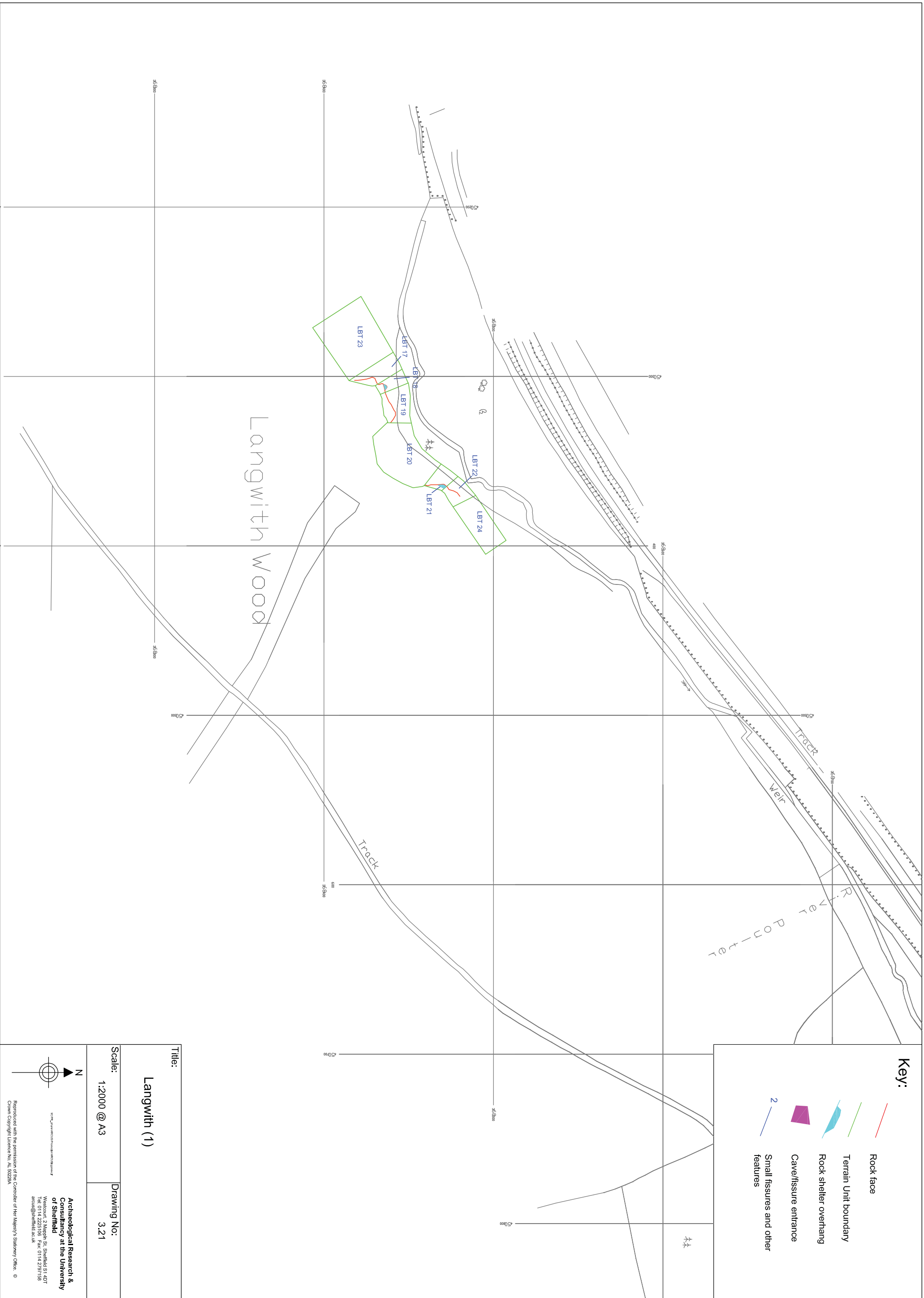
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- Key:**
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  - Terrain Unit boundary
  - Rock shelter overhang
  - Cave/fissure entrance
  - Small fissures and other features






Title:	
Pleasley (1)	
Scale:	Drawing No:
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  -  Terrain Unit boundary
  -  Rock shelter overhang
  -  Cave/fissure entrance
  -  Small fissures and other features



Title: **Pleasley (2)**

Scale: **1:2500 @ A3**

Drawing No: **3.24rev**

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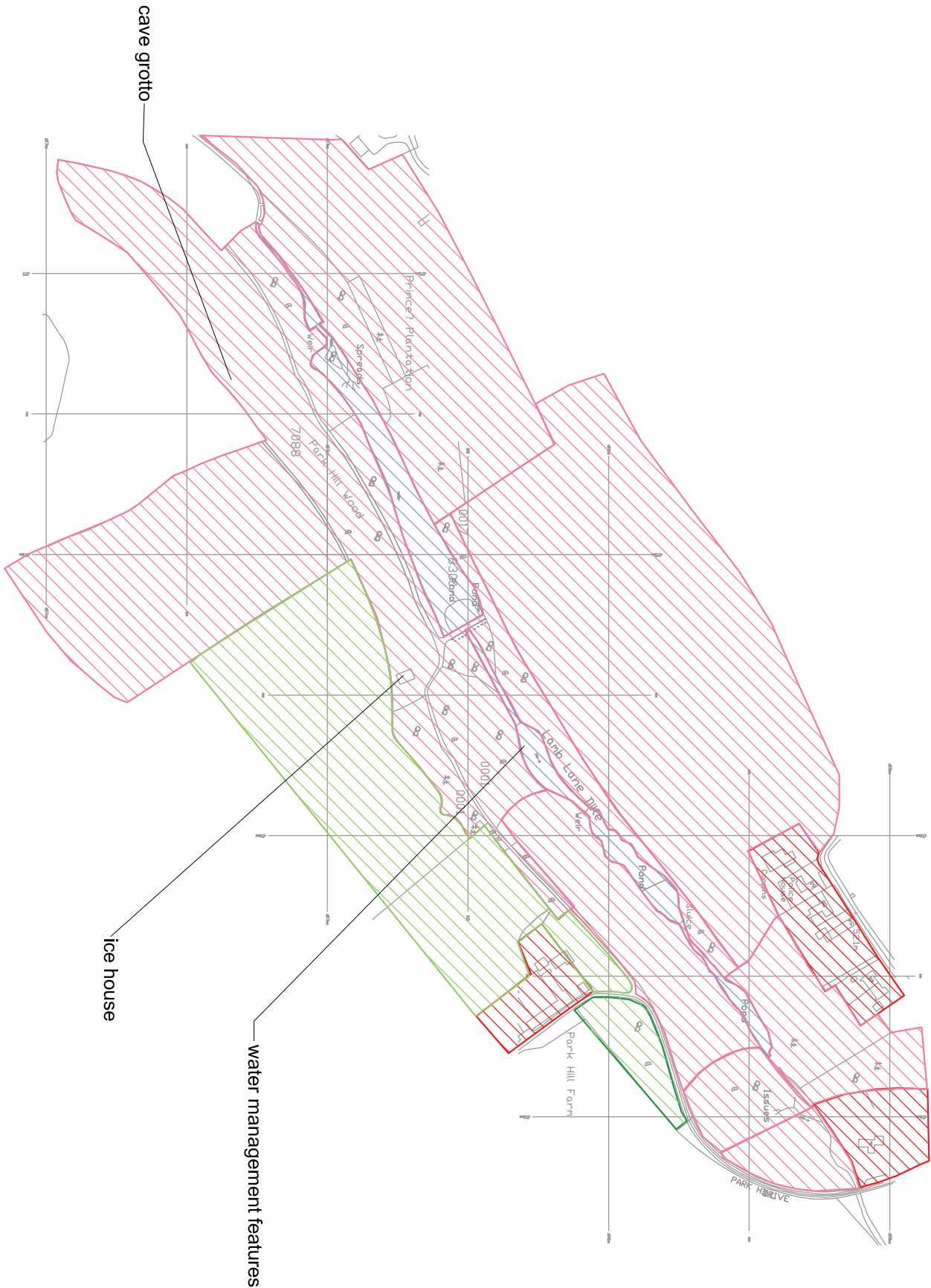
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Key:

- Settlement
- Agricultural or open land
- Woodland
- Historic parkland and designed landscapes
- Transport
- Managed watercourse
- Industry
- Minerals extraction



Title:

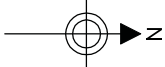
Firbeck Historic Landscape

Scale:

1:4000 @ A3

Drawing No:

5.2



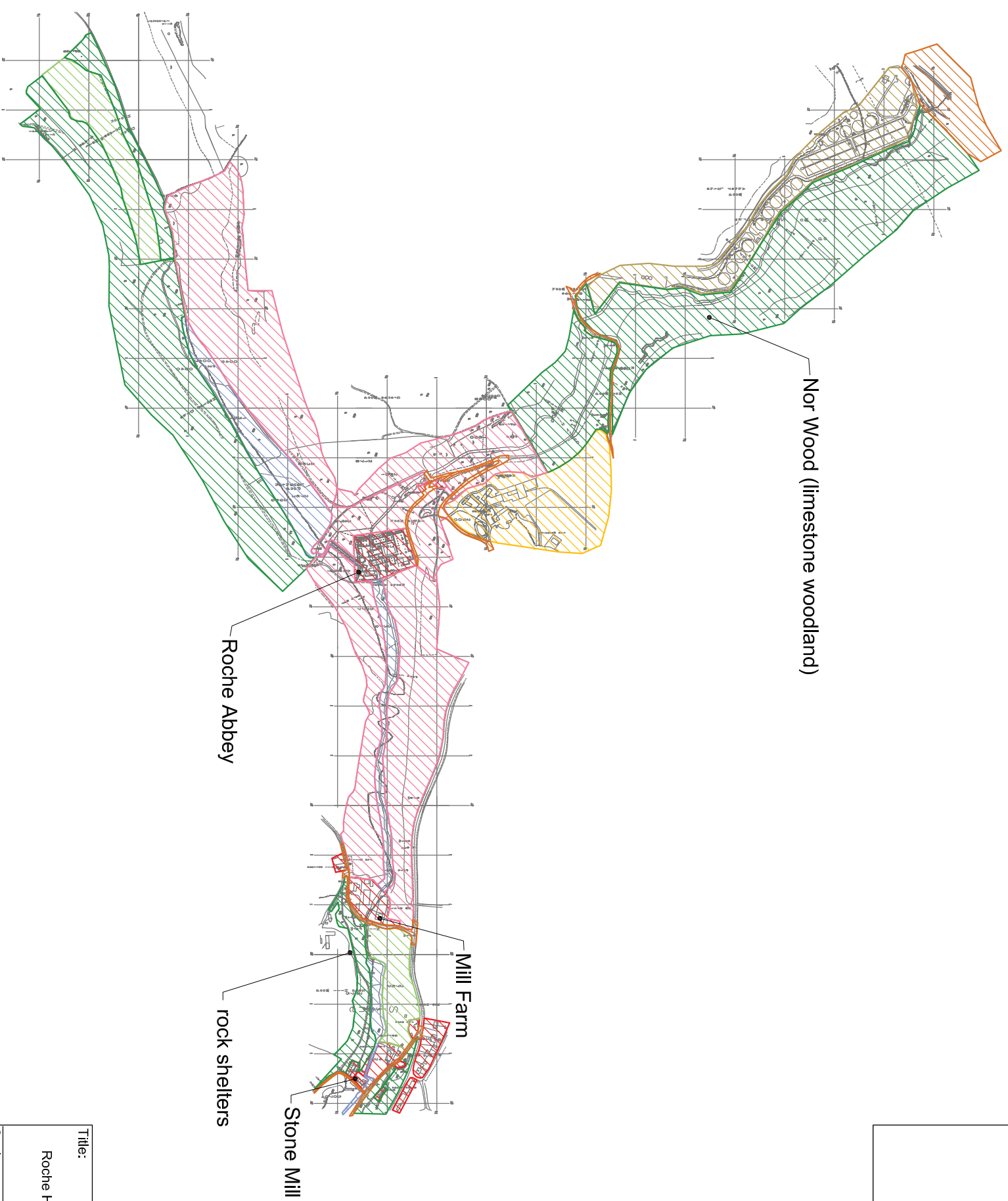
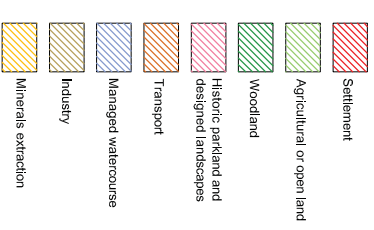
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**Key:**



Title: \_\_\_\_\_

## Roche Historic Landscape

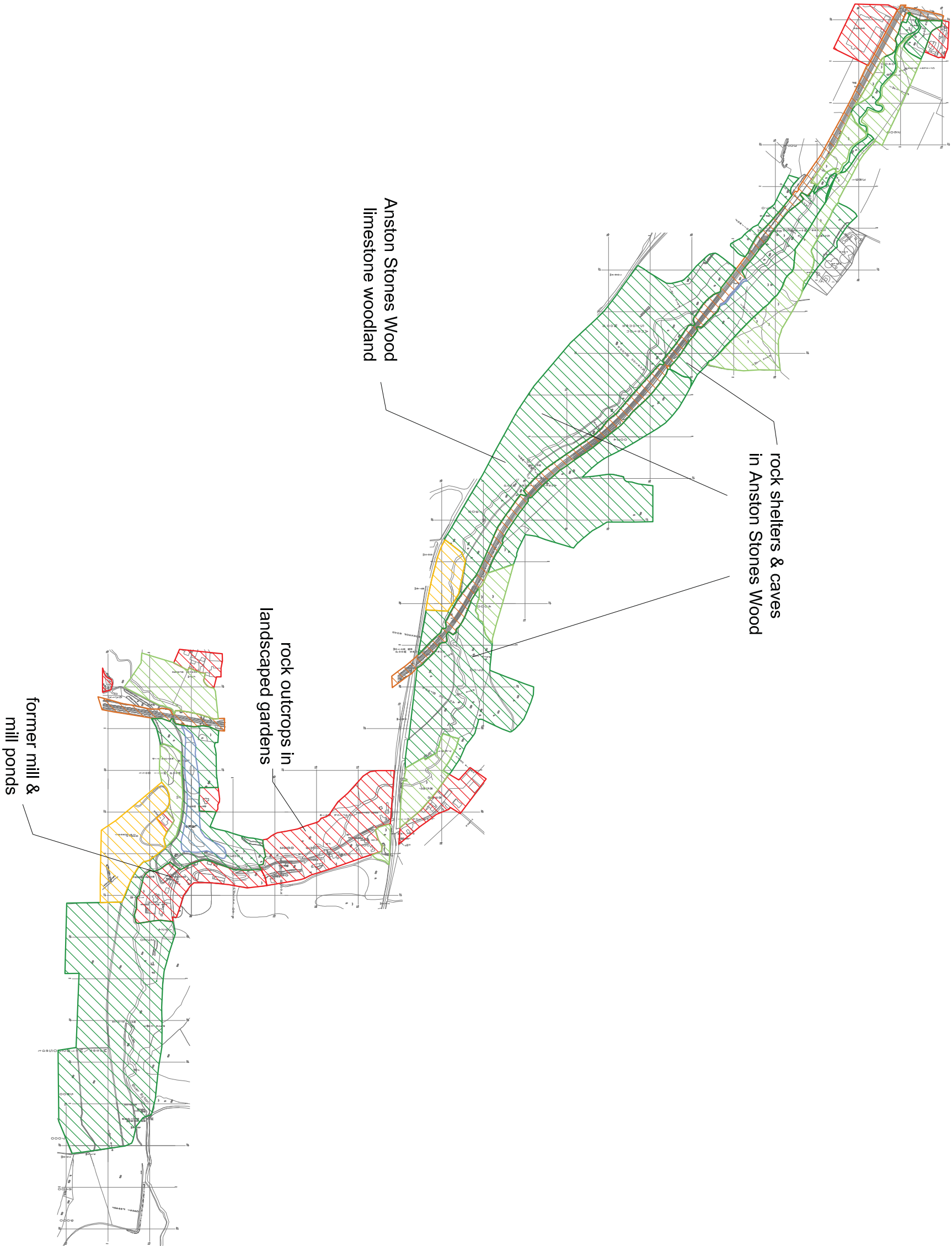
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**Key:**

- Settlement
- Agricultural or open land
- Woodland
- Historic parkland and designed landscapes
- Transport
- Managed watercourse
- Industry
- Minerals extraction

**Title:**

Anston Stones and Lindrick Historic Landscape

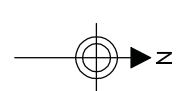
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Key:

- Settlement
- Agricultural or open land
- Woodland
- Historic parkland and designed landscapes
- Transport
- Managed watercourse
- Industry
- Minerals extraction



Title: Red Hill Historic Landscape

Scale: 1:2000 @ A3	Drawing No: 5.4
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- Settlement
  - Agricultural or open land
  - Woodland
  - Historic parkland and designed landscapes
  - Transport
  - Managed watercourse
  - Industry
  - Minerals extraction

Title:

Markland Historic Landscape

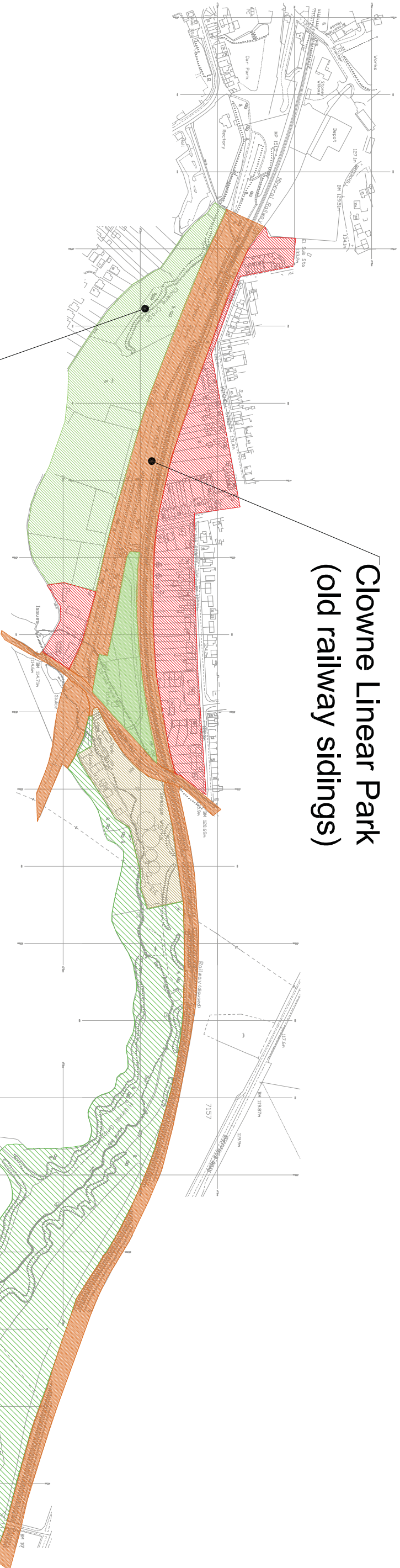
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Clowne Linear Park  
(old railway sidings)

Clowne Crags

Iron Age hillfort

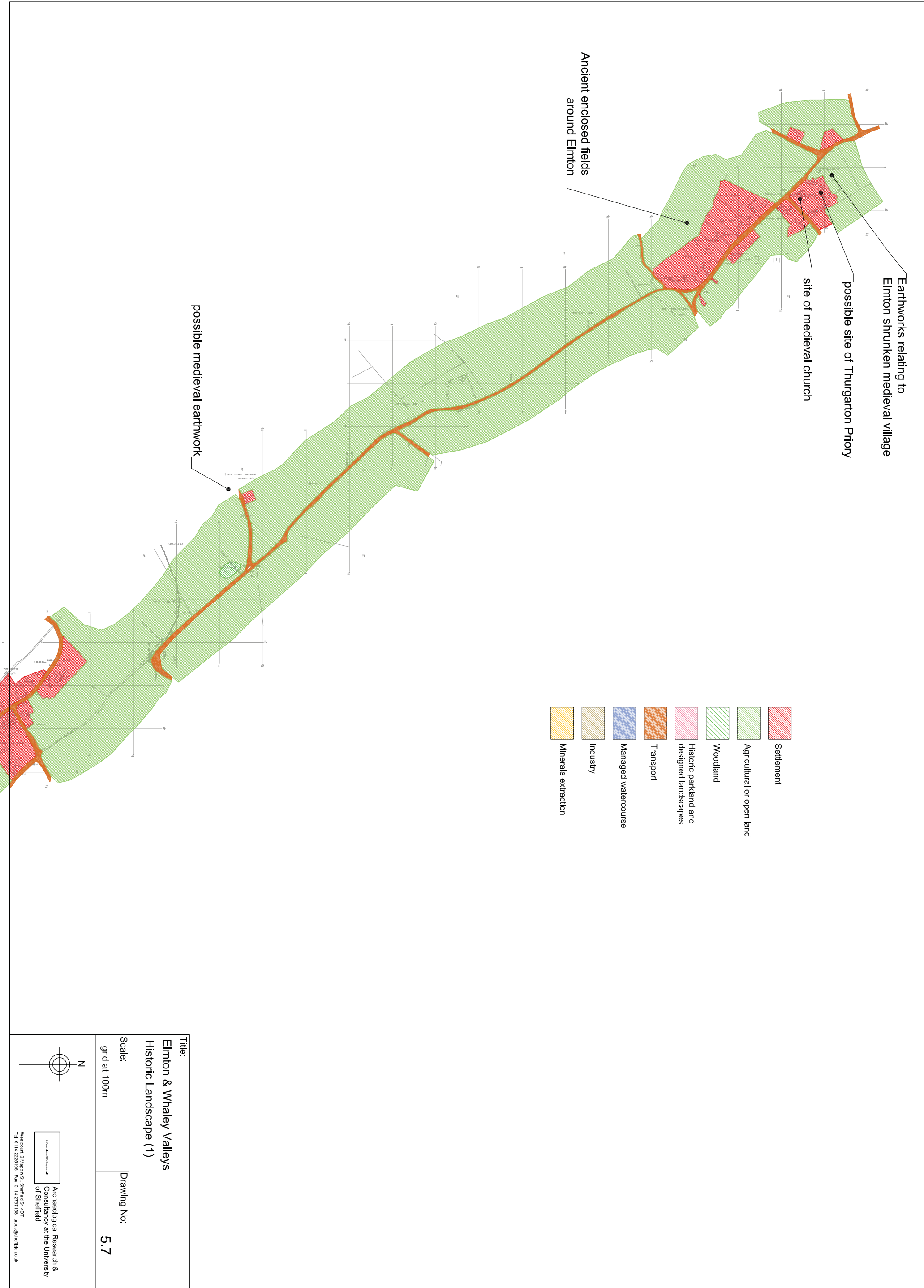
- Settlement
- Agricultural or open land
- Woodland
- Historic parkland and designed landscapes
- Transport
- Managed watercourse
- Industry
- Minerals extraction

Title:

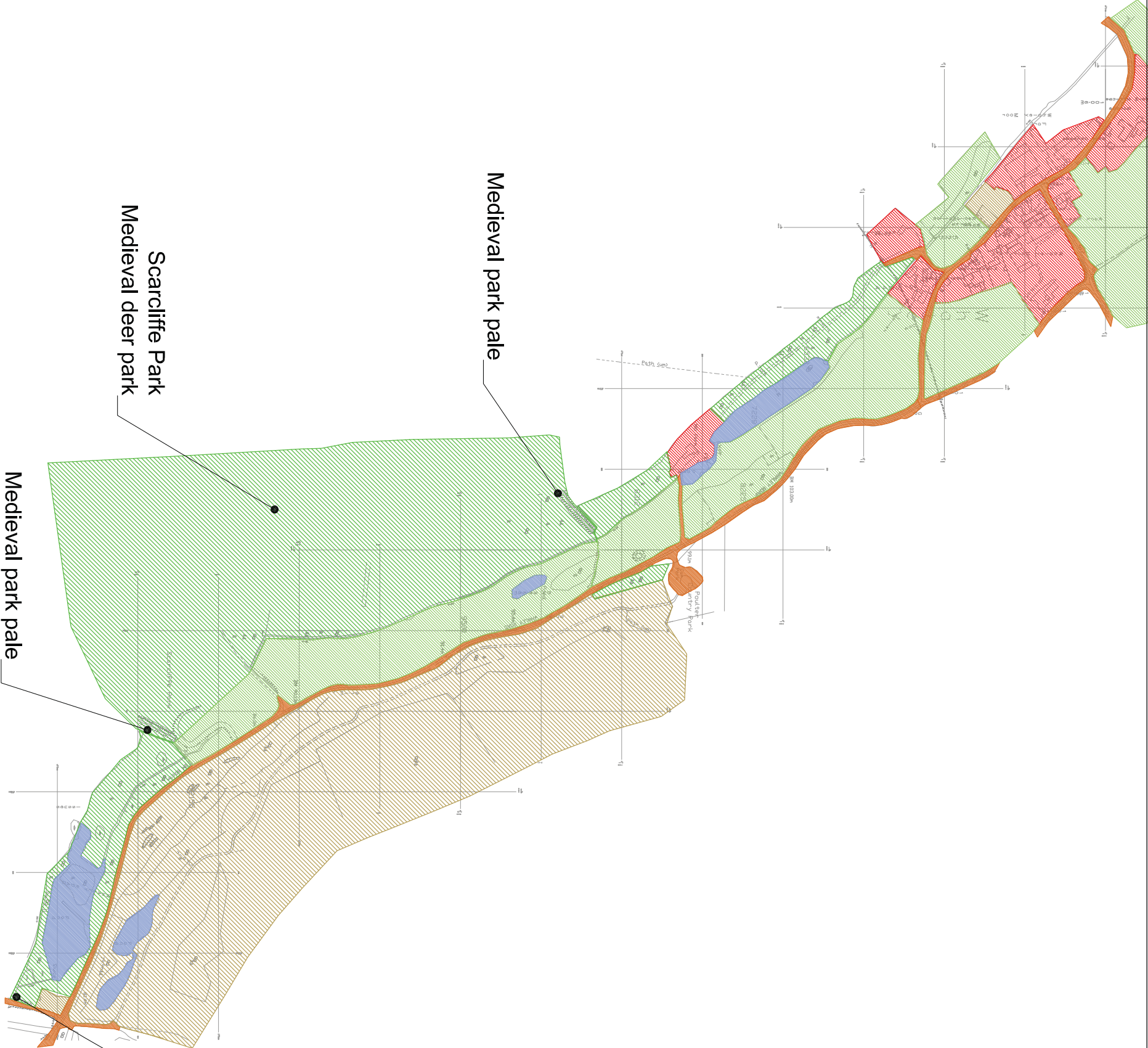
Hollinhill Gips Historic Landscape

Scale: 1:10000 @ A3  
Drawing No: 5.6.2









Medieval park pale

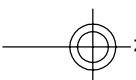
Scarcliffe Park

Medieval deer park


Medieval park pale

site of  
Whaley Blast Furnace (17thC)

Title: Elmtun & Whaley Valleys Historic Landscape (2)	
Scale: grid at 100m	Drawing No: 5.8



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- Settlement
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designed landscapes
- Transport
- Managed watercourse
- Industry
- Minerals extraction

Langwith Bassett cave

Possible site of chapel

Church of St Helena

Possible site of  
Bassett Hall



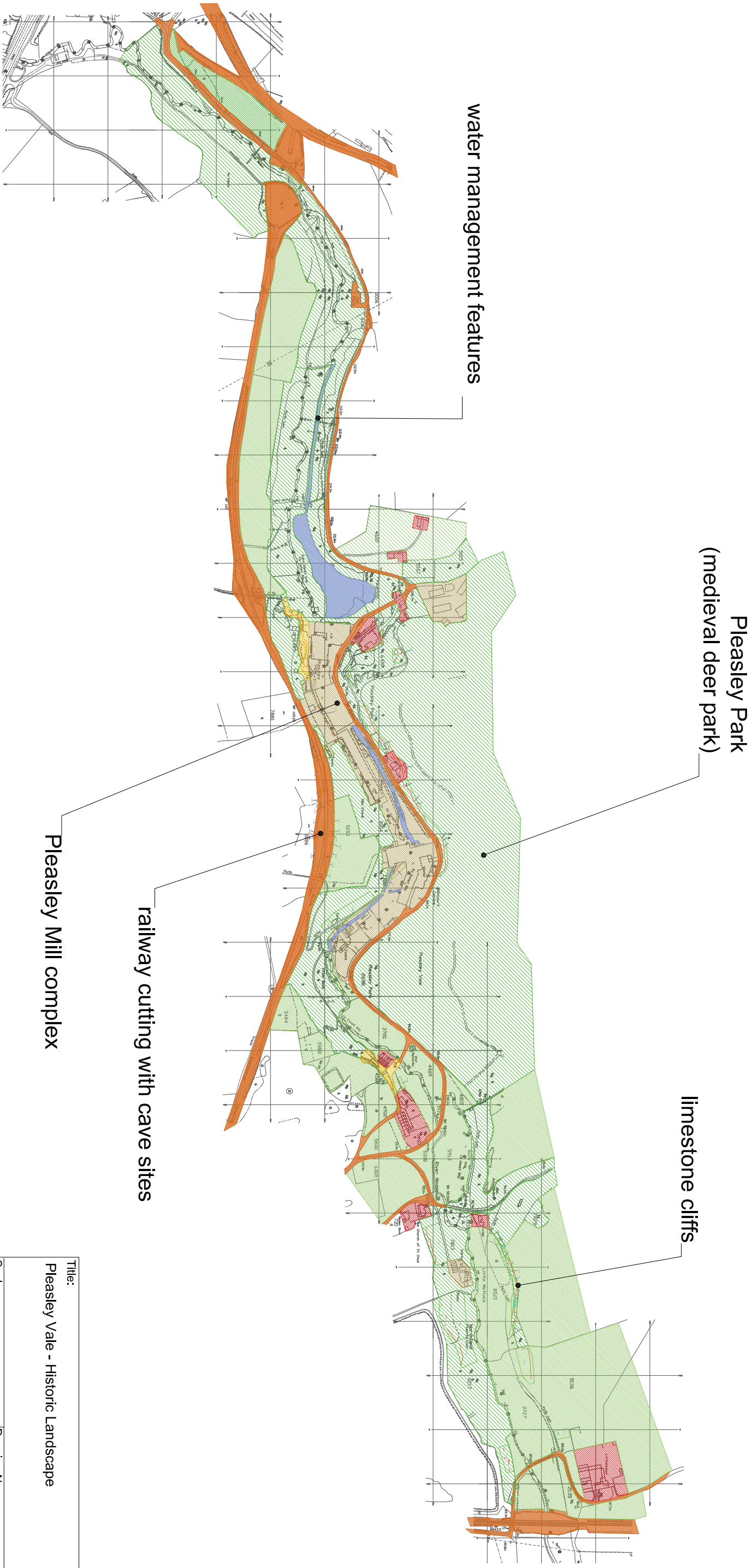
Title: Langwith Vale - Historic Landscape	
Scale: grid at 100m	Drawing No: 5.9

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Pleasley Mill complex

railway cutting with cave sites

Pleasley Park  
(medieval deer park)

limestone cliffs

water management features

Title: Pleasley Vale - Historic Landscape	
Scale: grid at 100m	Drawing No: 5.10

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