

# **Mendip Rocks! - A framework for delivery**

**Draft for Consultation**



**October 2013**

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## **1. Background to this report**

There has long been interest in addressing the need to understand and raise awareness of the industrial past of the Mendip Hills focusing on lead mining and other activity directly related to the geology of the Mendip Hills.

The statutory Mendip Hills AONB Management Plan 2009 -2014 includes Historic Environment and Cultural Heritage objectives: H1 - identify, record, protect and conserve the historic environment and cultural heritage and H2 - the historic resources in the Mendip Hills to be better understood.

This also references the Mendip Hills AONB Research Strategy (1999) that identified research topics and activities including:

Continue to disseminate information about the special significance of Mendip's industrial heritage.

To promote archaeological investigations focused on particular industries.

To encourage the study of quarrying.

The Management Plan Biodiversity and Geodiversity objectives include B3 Recognise, conserve and enhance significant geological sites and features and included assessing appropriateness of Geoparc status for the Mendip Hills.

The AONB Partnership Annual Forum 2009 explored Geoparc status for the Mendip Hills. It was attended by a wide variety of bodies and interest groups who supported the idea of organising activities to promote understanding and awareness of the geology.

Further to this forum, the Mendip Rocks! annual festival and Quarry Faces, two projects supported by the AONB Partnership – have generated significant interest in the geology of the Mendip Hills. Building on the success of these, it is proposed to use Mendip Rocks! as a title and branding for an umbrella approach or framework to develop, coordinate and promote geology related activities.

### **1.1. Mendip Rocks! - Festival**

Mendip Rocks! festival - currently in its third year - is a programme of events that celebrates the diverse geology of the Mendip Hills. The programme of the festival offers guided walks, family activity days, quarry tours, talks, and practical conservation activities, all aimed at bringing alive the geology which has shaped the unique landscape and rich wildlife of the Mendip Hills. Mendip Rocks is led by a

partnership of the Mendip Hills AONB, Somerset Wildlife Trust, Somerset Earth Science Centre, and Wells & Mendip Museum.

## **1.2. Quarry Faces**

The objective of Quarry Faces is to write the history of quarrying in the Mendips and produce a major oral history and digital image archive. The project is based at the Somerset Earth Science Centre and funded by grants from the HLF, Mendip Quarry Producers, Mendip Hills AONB, and Somerset Community Foundation.

Since the project began in November 2011 there has been a steady flow of information and digitised images have been obtained from more than 50 contributing members of the public. The project already has approximately 600 digitised images covering more than 40 quarrying sites in the Mendips. Quarry Faces has organised, or participated in, 25 community events, six of which have taken the form of “Talking Teashops”. The Quarry Faces exhibition is also proving popular, and has been expanded to include more information panels and quarrying related artefacts.

The project is also working with local schools, bringing together pupils and former quarry workers, their wives and other older members of the community who wish to share their memories. The school workshops aim to bring alive the quarrying history of their local area. Elements of the programme offered include a visit to a working quarry, a session devising questions, learning interviewing techniques, and conducting interviews with elderly members of the community.

## **1.3. Initial Discussions**

The AONB Unit, Somerset County Council Heritage Services and the Somerset Wildlife Trust had informally discussed exploring the possibility of developing a project or projects to identify, interpret and manage former lead mining sites and landscapes in the Mendip Hills. On 22<sup>nd</sup> January 2013 these bodies came together with Robin Thornes from the Quarry Faces Project to :

- Identify what each body is interested in achieving and how these interests are mutually supportive, exclusive and enhancing.
- Identify and explore scope for collaborative projects.
- Agree ‘project’ area.
- Agree next steps – including developing a project brief to determine the scope of the initiative, suggest projects, and identify possible sources of funding for these.

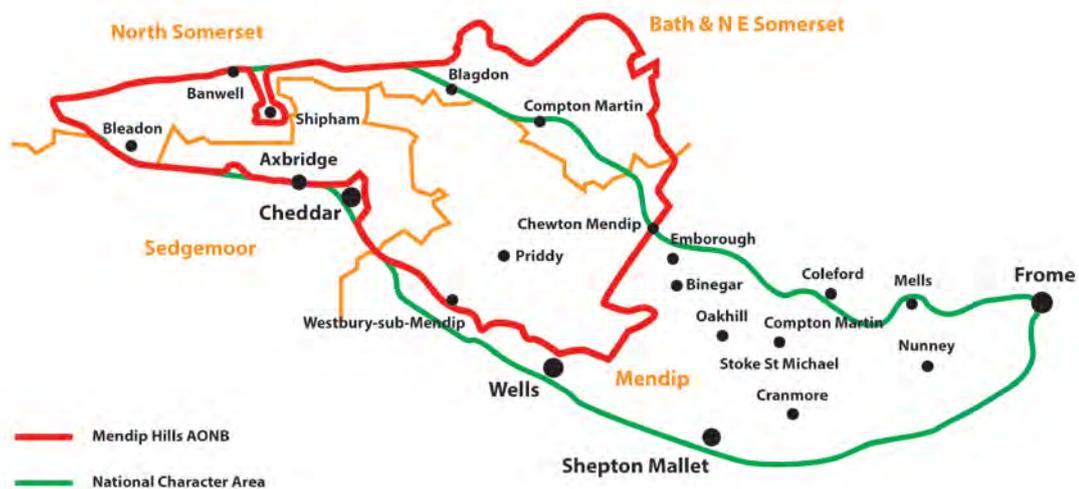
## **1.4. Scope**

Following discussion it was agreed that the scope should be wider than just the lead industry. Rather, it should also encompass a range of other activities directly linked to the geology of the Mendip Hills. These would include other extractive industries, including calamine and iron, but also cave exploration. The reasons for this decision are as follows:

- An initiative which includes all minerals activities will be easier to explain to funding bodies and will get greater support from the general public.
- It would encompass the entire geology of the area, which will be of great value when designing projects including trail guides which include interesting minerals of both a metallic and non metallic nature.
- It would link with the history of cave exploration and associated finds. An example of this is The Netherworld of the Mendips permanent exhibition launched April 2013 at the Wells and Mendip Museum.
- It would allow for a closer tie-in with the current Mendip Rocks! festival, Quarry Faces and the Netherworld exhibition, and enable it to build on the success of these.
- It would look at current and future management of specific sites and landscapes to conserve and enhance archaeology and habitats unique to post industrial activity and caves.

## **1.5. Geographical Area**

The area proposed is the Mendip Hills National Character Area (NCA) 141 with the AONB (see explanation of NCAs below). This would ensure consistency with British Geological Survey Foundations of the Mendips ([www.mendiphills.com](http://www.mendiphills.com)) and the work currently being undertaken to consider a locally determined Nature Improvement Area (NIA).



*The boundaries of the Mendip Hills AONB and National Character Area (NCA).*

### ***National Character Areas (NCAs)***

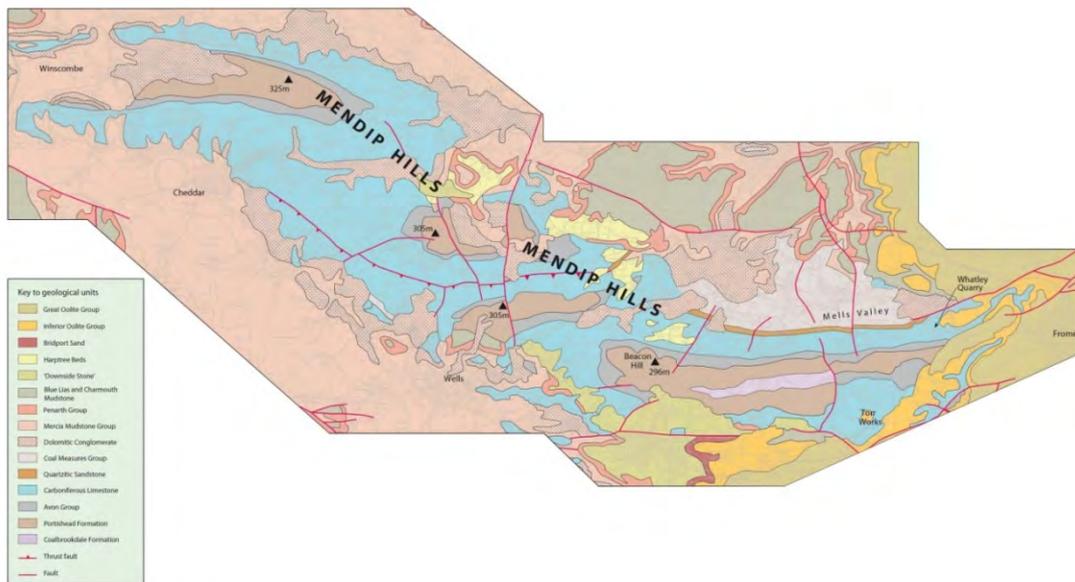
National Character Areas (NCAs) divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries, making them a good decision making framework for the natural environment. As part of its responsibilities in delivering the Natural Environment White Paper, Biodiversity 2020 and the European Landscape Convention, Natural England is revising its National Character Area profiles to make environmental evidence and information easily available to a wider audience.

NCA profiles are evidence documents that will provide a much greater level of detail to help inform decisions that affect the environment at both a local and a national scale. Each one includes:

- A detailed description of key landscape features and the most important elements of biodiversity, geodiversity, land management and use, access and engagement.
- A summary of the ecosystem services that the NCA supports and how these might be secured.
- A set of statements of environmental opportunity which set out possibilities for future enhancement of the area.

## ***British Geological Survey***

The British Geological Survey *Foundations of Mendip* is two books with accompanying maps for Western Mendip and Eastern Mendip and a web site [www.mendiphills.com](http://www.mendiphills.com) that describe the geology and natural history of the Mendip Hills area as defined by the NCA. The books are divided into a number of areas which can be explored on foot or by car. The web site provides more detail about the geology and links for further information.



*A simplified geology of the Mendips from the British Geological Survey's "Foundations of Mendip" maps.*

## ***Nature Improvement Areas (NIAs)***

Nature Improvement Areas are large-scale partnership projects which aim to put wildlife-rich areas, such as wetlands and woodlands, back on the map. These schemes will contribute towards a more joined-up ecological network in England. This network will help to improve the health of the natural environment, support food production, address habitat fragmentation, improve water quality, help with flood risk management, stimulate the local economy and prevent species loss. The aim is that NIAs should enhance the ecological network of an area by undertaking the following actions:

- Improving the management of existing wildlife sites.
- Increasing the size of existing wildlife sites.

- Increasing the number of wildlife sites.
- Improving connectivity between sites.
- Creating wildlife corridors

## **2. Mendip Rocks! Framework – outline of potential ideas**

Robin Thornes was commissioned to scope the ideas further and draft this report for discussion. Building on the success of Mendip Rocks! festival – Mendip Rocks is the title of the proposed overarching partnership framework. Quarry Faces also neatly fits into this framework. Key areas of interest are minerals activities (extraction), and historic/minerals landscapes. Initial ideas for learning and engagement activities are set out under 2.1 below.

For all 3 areas community engagement is an essential part of this process. Working with schools and community groups including local history groups and parish councils will increase public understanding not only of the history of these landscapes, but also of the need to preserve and manage them.

There is considerable scope for individuals, organisations, schools and community groups to work on aspects of this initiative, from the development of trails, management of landscapes, and researching the history of particular localities.

### **2.1. Research work**

- Combine previous data in one place, including relevant information from the Historic Environment Records held by the 3 local authorities (Somerset County Council, North Somerset, and Bath and North East Somerset), and the British Geological Survey.
- Make data accessible to all interested partners.
- Translate appropriate data into a public friendly format.
- Undertake survey work to identify:
  - Mineral extraction sites in the Mendip Hills including lead, iron, calamine, zinc, manganese, ochre and silver.
  - Habitats specific to former mineral extraction sites.
  - Archaeological features relating to mineral extraction.

- Undertake a comprehensive habitat survey of calaminarian grassland to safeguard the management of existing areas of grassland where mining has been carried-out, initially by selecting two sites and getting them under better management. Also, work to create better linkages across the landscape to make these grasslands part of a larger ecological network.
- Work with a university on a specific scientific project (e.g. Camborne School of Mines).
- Establish a timeline and sequence for mineral extraction.
- Investigate the impact of mineral extraction on the Mendip Hills and on surrounding areas and settlements.
- Investigate some popular stories (or myths), e.g. lead from Charterhouse was used in Pompeii and in the Roman baths in Bath.
- Explore links between field names on tithe maps [this has been made easier by the recent digitisation programme] and mineral mining.
- Identify current habitat and archaeological management of different former mineral extraction sites and identify best practice(s).

## **2.2. Engagement activities**

Develop an Activities Plan and interpretation plan to target a range of audiences and might include:

- 2.2.1. Work with schools** - The workshops currently being run by Quarry Faces have proved very popular -this approach could also be applied to Mendip Rocks, using a combination of classroom based and outdoor activities. Produce new educational resources, e.g. study packs for schools and adult education groups.
- 2.3.1 Talks & Community Events** - Quarry Faces has also engaged with communities by giving talks to local history societies, and holding events in individual towns and villages, taking history to those who do not normally attend talks arranged by local societies.
- 2.3.2 Guided Walks** – Undertaken by a wide range of organisations through Mendip Rocks, these have proved very popular and successful events and are used to good effect to increase awareness and understanding.
- 2.3.3 Virtual Museum** - A virtual museum project bringing together museums in the region to identify, record, and place in context objects relating to the history of

mineral industries and caving, in forms that enable it be disseminated using a variety of media, including social media, web site, blogs etc.

#### **2.3.4 Mendip Mineral Trails**

Create a number of trails, which would make use of existing footpaths and, where possible, long distance paths such as The Mendip Way, Limestone Link, and Monarchs Way. These would be designed around sites of geological and archaeological/historical interest. One such trail might run south-north from Wookey to East Harptree and take in evidence of trial coal working at Deer Leap, the quartzite/carboniferous limestone scenery of Ebbor Gorge, evidence of iron and manganese mining at Higher Pitts Farm, and the impressive lead working remains at Priddy and Harptree. Another might run east-west from the de la Beche unconformity at Vallis Vale and up the Nettlebridge Valley to Gurney Slade, a route which would take in evidence of both iron and coal working. An important element of these trails would be the production of explanatory material to explain the significance of the individual sites, and place them in the context of the geology and history of the Mendips.

#### **2.3.5 Identification, Interpretation and Management of post-industrial Landscapes**

There is a need for a project that will build on the archaeological and ecological site identification and mapping initiatives described above to identify and fill gaps in the archaeological and ecological records by a combination of research and fieldwork. It would make use of Historic Environment Record data and environmental surveys, but also take into account the geological survey work of the British Geological Survey. In addition to identifying and interpreting sites, it would also update knowledge of the threat to mining landscapes, a key element of which would be observable loss of features (e.g., rakes) and survival of calaminarian grassland, with a view to formulating site management plans.

The project would be underpinned by a programme of research aimed at producing an up to date account of extractive industries on the Mendips, including reappraisals of the mining laws and the Roman lead industry and its legacy (Charterhouse settlements, the road system, evidence for uses of Mendip lead in Britain and other parts of the Roman Empire, e.g. baths, plumbing, weights, and even lead/lead alloy “curse tablets”). It could also attempt to reconcile differences in interpretation (e.g., differing opinions on the age of some features at Charterhouse).

Among the key outcomes of this activity would be an account of the development of the mineral-based industries which can be delivered in the form of a published work, and also incorporated into other deliverables by the wider initiative, including information panels, web pages and downloadable trail leaflets.

The social history of these industries should also receive attention, the stories of the Shipham/Rowberrow calamine miners and Cornish miners at Charterhouse being two good examples.

### **2.3.6 Arts Projects**

There is tremendous scope for a wide range of arts projects in all forms including story-telling, poetry, performing arts, film and photography. Local artists have been inspired by the landscape of the Mendip Hills and their work records and interprets the post-industrial landscapes of the area. These include Christina White (photography), Peter Coates (painting), Martin Bentham (painting), Ralph Hoyte (poetry). Arts projects might include an exhibition of works linked in with Chew Valley Arts Trail and/or North Somerset Arts Week, collaborations with Somerset Art Works, a sculpture trail, virtual/actual postcards of local artists work and commissioning of new work – e.g. light installations in lead mines. Further ideas will be identified through scoping exercise.

### **2.3.7 Interpretation Boards**

A series of boards at key sites to raise awareness of mineral extraction activities.

### **2.3.8 Geocache and/or earthcache trails**

These could be an innovative way of encouraging people to explore the area.

## **3. Current State of Knowledge**

An initial assessment of the current state of knowledge and in particular, published works, heritage environment records, and museum holdings is set out below.

### **3.1. Published Works**

#### *Minerals Activities*

Despite its rich industrial heritage, the industries of the Mendip Hills have not been the subject of many major works of synthesis by archaeologists and historians. The first, and still most important work on the extractive industries of the Mendips, is Gough's *Mines of Mendip*, published in 1930. This has stood the test of time remarkably well, although more recent research has added to, and in some case modified, the story of metal extraction in the area (e.g., Schmitz 1976 and Corcos 1988). Moreover, it is not a book likely to appeal to the general reader, largely

because it is academic in style and contains only one illustration. Industrial themes are also explored in Robin Atthill's *Old Mendip* (Atthill1964), and *Mendip: A New Study* (Atthill1976).

In the last forty years there have been a number of industry specific works, including Down and Warrington's *History of the Somerset Coalfield*, which relies on documentary sources and does not deal with the early history of the industry in any detail (Down & Warrington 1971). The iron industry has attracted even less attention, the only book specifically on this subject being *Men of Iron: The Fussells of Mells* (Thornes 2010).

There is a need for new works of synthesis which incorporate the results of research and fieldwork carried out over the last forty years. It is important that these are produced in forms which are available to, and comprehensible by, the general reader. They should also be summarised and made available in a number of accessible forms, including web pages, guides, trails, information panels.

#### *Cave exploration and finds history*

The systematic exploration and surveying of the caves of Mendip began with Herbert Ernest Balch (1869 – 1958). In 1893 Balch founded Wells Museum (now Wells and Mendip Museum) and in 1907 published his first book on caves: *Netherworld of Mendip*. In 1912 the Bristol Spelæological Research Society (later the University of Bristol Spelæological Society) was formed in the with the object of studying caves in a more scientific manner than had previously been thought necessary. The society publishes a journal and maintains a museum at the University of Bristol.

A number of caving clubs were founded before World War II and in 1956 the Mendip Cave Registry was formed with the object of recording and indexing all available information on caves, mines, rock shelters and other sites of speleological interest in the county of Somerset. The Register is filed in loose leaf folders, one of which is held in Wells Museum.

The records of Mendip caves include surveys, logbooks, photographs, films, and videos. In addition, a large number of artefacts exist which relate to the development of cave exploration over the past century. Some of the latter are now on display in the Netherworld of Mendip exhibition at the Wells and Mendip Museum.

### **3.2. Heritage Environment Records (HERs)**

The Mendip Hills are covered by three HERs – those of Somerset County Council, North Somerset Council & Bath and North East Somerset Council. All three HERs hold information on sites relating to mineral extraction and working, although coverage reflects the state of current knowledge about individual industries and

therefore has a significant gaps.

There is a need for projects which can help fill in these gaps in the HERs, by identifying and documenting sites not currently included. A current example of this is the Quarry Faces project, which is creating records on sites relating to the quarrying industry and will be adding new records to the Somerset HER. Any new projects connected with industrial sites on the Mendip Hills should also have the enhancement of HER records as an objective.

### 3.3. Museums holding relevant material

Axbridge, Radstock, Wells, and Weston-super-Mare museums recognise the importance of the area's mineral heritage, and have displays incorporating material relating to extractive industries and caving. At Radstock and Wells the minerals industries are placed in the context of the geology of the Mendips. In addition, there are objects relating to Mendip Hills geological sites, minerals industries and cave finds held at Bristol Museum, the museum of the University of Bristol Spelaeological Society, and at the Museum of Somerset.

As well as having exhibits on display, all these museums hold objects in store; while some have significant collections of photographs recording aspects of these industries. Although none of these collections is in itself large, taken as a whole they do help tell the story of Mendip Hills minerals. To this end, consideration should be given to creating an online virtual museum which included many of the objects, whether on display or in store, together with the photographs held in the archives of these museums. Indeed, it could also be extended to include objects and photographs in private hands, thereby making them accessible to a larger audience.



*Left to right: A kibble from Lamb Leer Cavern on display in the Wells & Mendip Museum. A reconstruction of a miner's wheel barrow in Axbridge Museum. Bellows from the Priddylead works in Weston-super-Mare Museum.*

## **4. Relevant national and local Frameworks/Research**

There a number of other initiatives and frameworks which are relevant to developing the Mendip Rocks initiative.

### **4.1. South West Archaeological Research Framework**

In 2012 the South West Archaeological Research Framework (SWARF) published its research strategy for the period 2012-2017. The framework comprises a number of themes, of which theme B (Artefacts and the Built Environment – technologies & resources) and theme F (Widening Access and Interpretation – engaging the public, accessing resources) are particularly relevant to this initiative.

#### ***Theme B:***

44. Develop an understanding and identification of Early Medieval Technologies.

44. Raise awareness among museums and researchers so that additional material might be identified in existing collections.

45. Broaden understanding of Post-Medieval to Modern technology and production.

#### ***Theme F:***

11. Improve knowledge and study of under-utilised museum collections.

13. Identify and bring to publication key unpublished excavations.

### **4.2. English Heritage/SCC/AONB Aerial Photography & Lidar Survey**

In 2005 the Somerset Aggregates Levy Sustainability Fund (SALSF) funded the Somerset County Council Historic Environment Service to commission an aerial photographic and Lidar survey of the Mendip Hills. The purpose of the project was to support the analysis of sites of archaeological, historic and scientific interest within the aggregate producing areas. The project was designed to complement similar surveys commissioned by the Mendip Hills AONB Partnership to assist the understanding and management of the historic environment.

The sites identified and mapped now form part of Somerset County Council's HER. The Lidar surveys, which were carried-out by Cambridge University Landscape

Modelling Unit (CULM), are regarded by EH as complete. Unfortunately, the data was not processed for tree penetration and this has meant that it is not possible to identify and map sites in a number of key areas, including East Harptree Woods, Esker Hill Wood, Rowberrow Warren, Stockhill, and the Nettlebridge Valley. However, EH believes that individual tiles could be processed to remove tree cover, although this work would need to be commissioned and would have a cost attached.

#### **4.3. English Heritage Mendip Hills AONB Research Project**

Linked with the above English Heritage undertook a four year research project to research the evolution of the Mendip Hills landscape. Surveys and research were completed in 2009. The final publication on the AONB has yet to be published by English Heritage but a number of related reports have been and are available on EH web site.

#### **4.4. National Heritage Protection Plan - English Heritage (EH)**

Although EH does not have any plans to continue survey and mapping in connection with the above, it is currently considering funding a project to identify and interpret nationally important coal mining remains in the Nettlebridge valley. Discussions indicate that EH might also consider applications for projects involving other industries and industrial landscapes.

#### **4.5. Calamanarian grassland survey - Somerset Wildlife Trust**

Somerset Wildlife Trust (SWT) has been identifying its own priorities for the identification, management and preservation of the ecologies of the Mendip Hills. Included among the SWT's interests are the calaminarian grasslands of the Mendips which occur in areas where lead and calamine have been extracted in the past. Although the heavy metals present in these soils, combined with a low nutrient status, maintain the open vegetation and stop the grasslands from naturally changing to woodland over time, calaminarian grassland is still dependent on grazing of sheep and rabbits to prevent gorse encroaching. It may also require a degree of active management, including scarifying, to prevent continuing habitat loss.

The identification, surveying, and implementation of management regimes for these former industrial landscapes are a priority for the SWT. This is just one example of where there is a convergence of interests between the priorities of the SWT and those of the archaeological/historic community, and where there is scope for collaboration

on initiatives which take a holistic approach to the industrial landscapes of the Mendips.

#### **4.6. On-going research - Charterhouse Environs Research Team (CHERT)**

Since 2002 CHERT has have been surveying remains of lead working remains in Charterhouse area. A number of reports and measured drawings have been produced. The latter are currently held by the Wells & Mendip Museum, but the group has commenced a programme of making digital copies and is considering lodging these with the Somerset Heritage Centre. CHERT is run by volunteers and has received a small HLF grant in the past to produce a leaflet on the remains at Charterhouse.

#### **4.7. The Netherworld of the Mendips - Wells and Mendip Museum**

This exhibition opened in April 2013 and further information /research is held by Wells and Mendip Museum. The building in which the museum is housed was the home H.E. Balch and is an important part of the areas cultural history.

### **5. Recommendations**

#### **5.1 Mendip Rocks! Framework**

There is a need for a framework which takes a strategic role seeking to ensure that there is co-ordination and consistency between various influencing key initiatives/policy – AONB Management Plan, National Character Area and Nature Improvement Area.

This framework will identify and facilitate the implementation of individual projects seek to ensure information is correct and guide design and branding of published information and interpretative material including on site interpretation..

#### **5.2 Mendip Rocks! Partnership**

It is proposed that a small advisory body- The Mendip Rocks Partnership coordinates and submits strategic project applications for funding. Currently the partners are the AONB Unit, SCC Historic Services and SWT. Membership of this group can change as required and sub groups can be set up to oversee individual projects.

#### **5.3 Key stages and timetable**

It is proposed to hold preliminary discussions with the Somerset Earth Science Centre and Wells and Mendip Museum as key partners who are already directly involved.

This draft document will then be sent to those organisations listed under 5.4 for comment.

A flier will be produced for circulation to those taking part in the Mendip Rocks! festival to invite comment on a wider Mendip Rocks! initiative.

A public consultation exercise will be undertaken in the Autumn following Mendip Rocks! festival. This will include public drop-in events at the Wells & Mendip Museum and Burrington Inn to scope ideas further and invite interest in undertaking work and proposing potential Mendip Rocks! projects.

Having gathered evidence of interest and support, work will begin to seek funding, where required, and coordinate activity through the suggested Mendip Rocks! Partnership (5.2).

#### **5.4 Local Societies and other organisations to be consulted in development of Mendip Rocks!**

Avon Wildlife Trust  
Axbridge Archaeological & Local History Society  
Blagdon History Society  
BRERC  
Bristol Industrial Archaeological Society  
Charterhouse Environs Research Team (CHERT)  
Compton Martin History Society  
Council for Southern Caving Clubs

#### **5.4**

English Heritage  
Forestry Commission  
Frome Society for Local Study  
Harptree History Society  
Langford History Group  
Mendip Society  
National Trust  
Natural England  
Oakhill History Society  
Parish Councils  
RSPB  
SERC  
Shepton Mallet History Society  
Shipham, Rowberrow & Star History Society

Somerset Archaeological & Natural History Society  
Somerset Industrial Archaeological Society  
University of Bristol Spelaeological Society  
Waldegrave Estate  
Wells Archaeological Society  
Westbury Society  
Weston-super-Mare Archaeological & History Society  
Worle History Society  
Yatton History Society

Artists known to date:

Martin Bentham – painter  
Peter Coates – painter  
Ralph Hoyte - poet  
Christina White - photographer

## Appendices

### Appendix 1: A Summary of Mendip Minerals

#### 1.1 Lead

Lead mining and smelting is the best known Mendip industry, and the one which has left the largest mark on the landscape. The industry has a history which stretches from the Bronze Age until the early 20<sup>th</sup> century. The presence of lead ore (galena) led to the development of a major Roman mining settlement at Charterhouse. Mining of lead continued in this area into the post medieval period, particularly around Charterhouse, Stockhill and Chancellor's Farm. The last phase of the industry in the 19<sup>th</sup> century took the form of the reworking of lead-bearing slags and slimes which ended with the closure of St Cuthbert's Works at Priddy in 1908.

The best account of the organisation of the lead industry in the Mendips is Gough's *Mines of Mendips* of 1930, and there is a need for an updated history of the industry which incorporates more recent research and archaeological fieldwork, explains the technology of mining and smelting, illustrates the narrative with photographs and measured drawings, and presents the information in an accessible as well as informative manner. This could also form the basis of other interpretive information, including panels at sites of interest, downloadable explanations (accessed through QR codes), and geology/industrial history trails.



*St Cuthbert's Lead Works, Priddy (archive of Wells & Mendip Museum).*

## 1.2 Calamine

It is usually claimed that calamine ( $\text{ZnCO}_3$ ) was first worked in the Mendips at Worle in the 1560s, although there is evidence to suggest that it might have been discovered by German miners as early as the 1520s (Corcos 1988). By the 1660s it was being at Shipham and Rowberrow, and by the end of the century was a major local industry. With the growth of the Bristol brass industry in the 18<sup>th</sup> century demand soared, and by the middle of the century new sources of ore were being sought in the Harptree area and as far east as Mells.

In the late 18<sup>th</sup> century the industry was booming, Collinson reporting that the inhabitants of Rowberrow and Shipham were mostly miners and claiming that there were upwards of one hundred mines in Shipham alone, some of which were in the streets, yards and even houses. This activity was explained by the fact that mining was then a reasonably well-paid occupation, as the same author noted: “So very lucrative is this subterraneous occupation of the inhabitants...that a miner with proper assiduity may earn a guinea a day.” Not all benefited from the boom, Hannah More being appalled by the poverty in the area and the living conditions of the mining community. In 1790, with the help of William Wilberforce, the well-known social reformer, she was instrumental in setting up a Sunday school and day school, as well as the first of the “female clubs” on Mendip.

The boom conditions did not last, and in the early 19<sup>th</sup> century the industry was in decline. The incomes of the miners fell and there is evidence that the truck system had come into use, miners being paid in food rather than cash by at least one shopkeeper/calamine dealer. In 1830 meetings were held to discuss the economic distress of the miners, and by 1831 the populations of Rowberrow, Shipham and Star had peaked at 1,083 (a figure that would not be reached again for a 100 years).

A number of factors brought about the end of the Mendip calamine industry. Cheap competition from ores overseas, the exhaustion of the near-surface ores, problems draining the mines, the decline of the calamine-brass industry in Bristol, and the removal of protective duties against imported zinc all combined to make mining an unprofitable business.

Calamine has had an impact on the ecology of the area, Collinson noting in 1791 that “Very little wood thrives near the village, the fumes arising from the burning of calamine being very destructive of their foliage.” The legacy of mining also remains in the form of heavy metal contamination of the soil. The British Geological Survey reported that Shipham has the highest levels of cadmium in the soil anywhere in the UK. Cadmium is a toxic metal associated with old zinc mine workings. However, a study found that the cadmium in the soil is tightly bound up in minerals, and is not readily available for uptake by plants and therefore does not enter the food chain. The

Shipham “Cadmium Scare” of 1979 made national news headlines, and is now part of the history of the village. The scare reconnected the village with its mining past and became the subject of a publication produced by the Shipham, Rowberrow & Star History Society.

The presence of heavy metals has also have promoted the development of calaminarian grassland in former calamine working areas and makes these sites of interest to the Somerset Wildlife Trust.

The extensive “Rowberrow Run” to the north of Shipham was ploughed in the 1980s, destroying much evidence of former mining activity and it is not clear if calaminarian grassland species survive in this area (HER ). Little can now be seen on the ground in this area, although Lidar images do show that some evidence of mining does survive at the west end of the run. The “Shipham Run” to the south of the village is better preserved, with an extensive area of gruffy ground still remaining, with the possibility of calaminarian grassland surviving. This area stand above the workings of the Singing River Mine. Less is known about the calamine industry in Harptree, although the Waldergrave Papers do include returns which provide information about the outputs of mines on the estate. The industry in Harptree does seem to have been relatively short lived, compared with Shipham and Rowberrow, and seems to have been in decline by 1810. Relatively, little seems to be known about the location of the mines, and more research and fieldwork needs to be done to identify and record calamine working sites in this part of the Mendips.



*The west half of the “Rowberrow Run” on Old Down, Rowberrow looking west from ST 444 58.*



*Lidar image of the same area showing rows of pits under the west half of the field.*



*The "Shipham Run" today showing an extensive area of shafts and spoil heaps (ST 458 575).*

### **1.3 Iron**

The earliest iron worker to which Somerset lays claim is St Dunstan of Glastonbury. Dunstan was born at Baltonsborough around the year 909 and took holy orders in 943, after which he returned to Glastonbury and is said to have built himself a small monk's cell where he practised the craft of metalworking. The story has it that while working at his forge one day he was visited by the devil, whom he seized by the nose

with red-hot tongs. Hearths uncovered during archaeological excavations indicate there was an iron industry in Glastonbury in Dunstan's time, while a century later the Domesday Book recorded the presence of no less than eight smiths.

The archaeological evidence for iron working in the Mendips is widespread, iron slag having been identified in fields in Stoke St Michael, Downhead, Leigh-on-Mendip, and Holcombe. There is also ample field and place name evidence for iron extraction, including "Great Iron Pits" and "Little Iron Pits" at Stoke St Michael, "Irepitts" at Ashwick, "Iron Pits" and "Cinder Hill" in Holcombe, "Orrpitts Farm" at Lypeate, and "Orrpitt Lane", Babington.

Documentary evidence for the presence of the iron industry in 11th century Somerset is provided by the Domesday Book, which lists a number of places where rents were paid to the lord of the manor in blooms of iron. There are indications that iron was being sought in the Mendips by the 13th century, the Bishop of Bath obtaining permission in 1235 to mine for iron ore in the royal forest of Mendip and to make iron from the ore raised. At the east end of the Mendips there is evidence for the presence of iron makers, then referred to as smiths, by the end of the century - a perambulation of Elwood Forest in 1298 mentioning the settlement of "Smethwek", now Smithwick, in Marston Bigot.

More importantly, there is evidence for smiths working with, and possibly making, edge-tools in the East Mendips by the 13th century. Abbot Amesbury's survey of Glastonbury Abbey, made in the middle of the century, recorded that Henry the Smith of Mells was paying a rent of 12 pence for something called a stangrist. The term stangrist has been taken to mean a blacksmith's grindstone, but appears to have also been applied to a water-powered mill for the grinding of tools. It is significant that in a document of 1265 Henry the Smith's stangrist was described as a "mill for smith's work" ("MolendinoFabrili").

Such water-powered tool grinding mills are known to have existed in France by the early 13th century, where they were known by a variety of names, including "molendena ad cultellos" (a mill for cutlery) and "molendenum . . . ad quod ferramenturmolentur" (a mill that is for grinding ironwork). The presence of the Mells Stangrists indicates that the technology may have been introduced into England not long after its adoption in mainland Europe and been well established by the mid-12th century. By the early 14th century there were no fewer than three stangrists in the Manor of Mells, one at the west end of the manor at Wulfwell leased by Robert the Smith and his brother Adam and two close to Mells village on a stretch of the stream then called Peter's Pool.

The first specific reference to an edge-tool mill in the valley appears in an inquisition taken at Wells in December 1583 after the death of James Pewe, yeoman of Stoke Lane (Stoke St Michael). This states that Pewe held a corn mill [molendiumbladum]

called an “edgetolemyll” now in the tenure of Robert Toplyffe and Joan Townsend. The mill appears to have been on the stream at East End and was probably a grinding mill not dissimilar to the stangrists of previous centuries.

The late 17th century saw an expansion of the edge-tool industry in the Nettlebridge Valley. Under a lease of 11th February 1688 James Everett “Blacksmith” was given permission to erect a grinding mill at Vobster, and a year later Richard Hoddinott set up a mill in the village of Mells. However, it was the 18<sup>th</sup> century that the industry began its period of greatest growth, an expansion that was largely due to the efforts of one family, the Fussells of Mells. In 1734 James Fussell leased a small grinding mill in Stoke St Michael, and in the following 100 years this business empire grew until it included three mills on the Mells Stream, two on Whatley Brook, and one on Nunney Brook. The output of the Fussell businesses was large and the tools produced at their Mendip works gained an international reputation.

The last Fussell works closed in 1895, but edge-tool making continued in the Mendips until the closure of Steeds mill at Gurney Slade in 1933 brought to an end an industry which had existed in the Mendips for 800 years. The evidence for edge-tool grinding mills on the Mells stream from the 13<sup>th</sup> century, coupled with the scale and importance of the more recent manufacturers makes the iron industry one of the most important in the Mendips, and one which merits further study, interpretation and celebration.

As late as the second half of the 19<sup>th</sup> century there were attempts to establish commercially viable iron and manganese mines and open cast sites in the Mendips. These included workings at Ham Wood, Croscombe in the 1860s, Nunney in the 1870s, and at Higher Pitts Farm above Ebbor Gorge in 1890. These operations are mentioned in Gough, but considerably more information has since been found.

## **1.4 Ochre**

Ochre is an iron oxide and could have been included in the section on iron above. However, because the use of the material (as a pigment) and the history of its extraction are very different from those of iron working it has, for the purposes of this paper, been treated as a separate industry. Ochre is found along the length of the Mendips and a summary of the history of the industry appeared in Gough’s *Mines of Mendip*. A number of ochre workings survived until World War II and the processing of the mineral continued in north Somerset until the 1960s.

Former ochre workings have been explored and surveyed by cavers for a number of decades, and their records have been preserved by the University of Bristol Speleological Society and Mendip Cave Registry. The history of the Mendip and Bristol ochre industry is the subject of “Earth Colours” (MCR 2012).



*Ochre workings photographed by Mendip cavers showing methods of working and objects left behind by miners.*

## 1.5 Coal

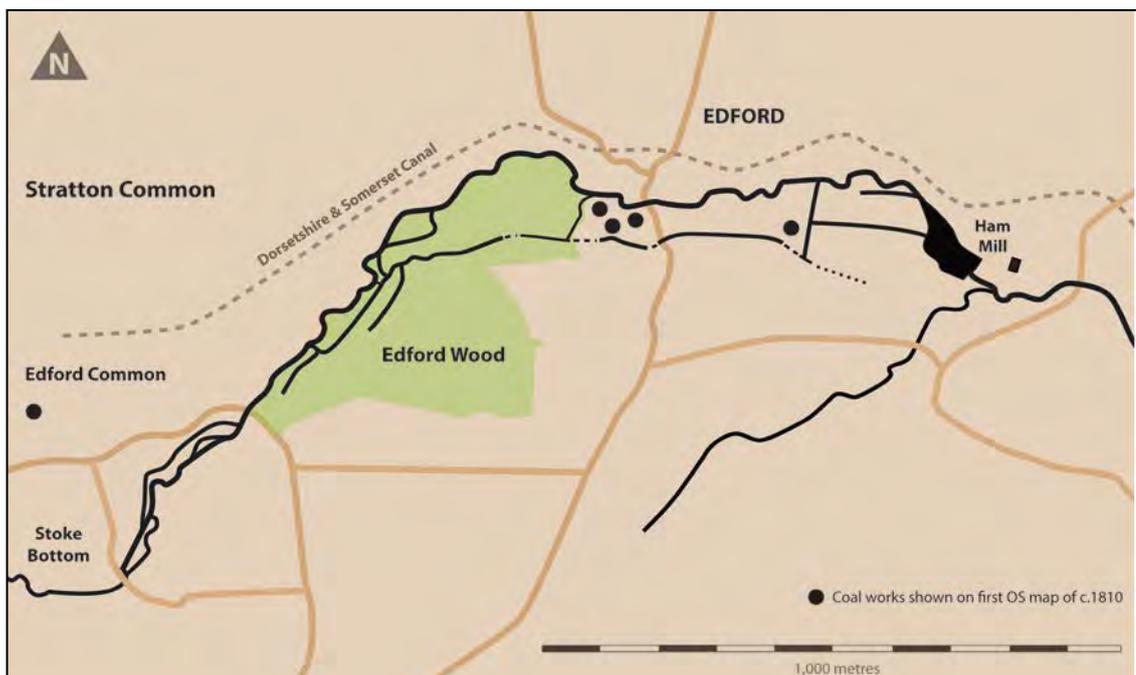
The earliest evidence for coal mining in the area is four pits in the Nettlebridge valley between Stratton and Mells Park. By the early 14th century coal was being mined in the vicinity of Mells, the manor's accounts recording in 1301 that 18 quarters of coal were raised and used for the burning of lime. Two hundred years later the Mells Terrier of 1516 mentions that "William Feyerman" had a 12-year lease of the nearby common at Whitehole to work "the coal pits without damage to the ground within the manor of Mells". In this period Mendip coal was still only of relatively little importance economically, and it is significant that as late as 1586 the coal of the nearby manor of Stratton was said to be used only by smiths for iron working. The coal of the southern coalfield was, indeed, particularly suitable for use by smiths in their forges, a factor which may have encouraged the development of an edge-tool industry in the area. Writing in 1795 John Billingsley of Ashwick noted that it was "excellent for the forge", and in 1840 Richard Boodle of Radstock confirmed that Vobster coal was "of superior utility for smith's work, which is proved by the fact, that in all the smiths shops in our own Coal works, they use Vobster small Coal instead of their own".

As pits went deeper in the 16<sup>th</sup> and 17<sup>th</sup> centuries the largest and most costly problem for their operators was that of keeping their workings free of water, particularly in pits in the valley bottoms. By the early 17th century waterwheel-powered pumps were used to drain collieries in the Nettlebridge valley, a document of 1610 recording that miners at Holmes in Stratton-on-the-Fosse had "latelie found meaneswith much facilitie to exhaust the water...namelie with pumpes, whose wheeles are moved by fall of a stream conducted to the same". Writing later in the century, James Twyford of Kilmersdon said a Mr Salmon had drained his coalworks on Vobster Marsh using four mills - "two at the east end and two at the west end". Unfortunately, these proved

inadequate to the task, Twyford reporting “the water being too great the mills could not discharge, and so Mr Sallmon that had a lease for lives, on it was forced to quit the works”.

By the late 18<sup>th</sup> century to coalfield of the Nettlebridge valley - sometimes referred to as the Mendip Collieries - was already less important than a newer field to the north that had been developing around Radstock since the 1760s. Writing in 1795, John Billingsley observed that “The southern district is on a more limited scale of working”, employing 500-600 men and boys. By the first decade of the 19th century there were 10 pits in the area, four of which were at or near Vobster. He estimated the output of pits at only 800-1,000 tons a week and reported that the profits for their operators were “very trifling, if any, owing to the consumption of timber and expense of drawing water”. Water was still being used to drain Vobster colliery as late as the mid 1860s, and possibly until that pit closed in the late 1870s.

Today the valley still shows the visible signs of its coal-mining past in the form of shafts, spoil heaps, and a complex network of leats for water-powered mine pumps, the development of which has not been fully researched, dated and documented. Among the best of these sites are the Somerset Wildlife Trust’s sites in Harridge Wood and Edford Wood, both of which include well preserved features relating to their mining past. English Heritage are becoming aware of the need to survey and interpret what is coming to be recognised as a coal-mining landscape of national importance.



*Watercourses associated with coal mine drainage systems in Edford Wood. Similar systems are being identified along the valley from Nettlebridge to Mells Park.*

## 1.6 Stone Quarrying

Stone extraction and processing has for more than a century been the single most important industry in the Mendips, affecting both directly and indirectly the lives of many who live and work in the area. Many million tonnes of stone have been extracted from the Mendips and it is still one of the largest production areas in the country. Yet despite its economic importance, the industry has been little studied and its history is not well understood. Unfortunately, the business records of many quarries have not survived, and so the memories of former quarry workers and the photographs collected by members of the local community are of great importance.

The rocks of Mendip span over 300 million years of geological time, beginning with the oldest rocks in Somerset – igneous Pyroxene Andesite – which was formed around 420 million years ago and is found between Beacon Hill and Downhead in the East Mendips. This was discovered in the 1860s by Somerset geologist Charles Moore, and since the 1880s has been quarried for road stone at Stoke St Michael. Next in age come the Old Red Sandstone beds of the Devonian period. These form the highest points of the Mendips and have been used since at least Roman times as a building material and for making grindstones. The most important geological period in economic terms are the Carboniferous deposits, which have been used as a building materials, burnt for lime, worked for coal, and in the last 150 years have formed the basis of a major roadstone industry. The rocks of the Triassic period have provided a number of locally important building stones, including Draycott Stone, Mercian Mudstone, and Dolmitic Conglomerate – all of which have been used extensively for building purposes in the West Mendips. The youngest rocks to be worked are oolitic limestones of the Jurassic period. These include Forest Marble, much in evidence in Frome, and the better known Doultong Stone - a high quality freestone used in Wells Cathedral and many medieval parish churches in the area.

The need to “encourage the study of quarrying” was one of the recommendations made by SIAS at the seminar hosted by the Mendip Hills AONB in 1999 to discuss an archaeological and historical research strategy for the AONB (Jackson 1999). In the decade that followed little progress was made, but in 2010 the Somerset Earth Science Centre was successful in securing funding for the Quarry Faces project.

## Appendix 2 : “The Lead Legacy” (Derbyshire)

The above frameworks and strategies have all being developed in the context of the Mendip Hills, but it is also worth looking at how another part of the country has faced up to the challenge of identifying, interpreting and managing a similar industrial landscape.

A particularly relevant example is the Lead Legacy initiative in Derbyshire. This noted that many surface remains of lead mining industry in the Peak had been lost in last 100 years so that only 25% remains, with degradation continuing through quarrying and agricultural activity. It argued that there was an urgent need to act to safeguard remaining mining sites and landscapes of high conservation value. It recognised that a number of sites were protected as scheduled monuments or because they were within SSSIs or on land conserved within agri-environment schemes, but these did not provide the necessary safeguards for the majority of high-priority sites. It believed there to be a need to work with local communities to promote understanding of the strong links with the past and the importance of safeguarding these unique features for future generations. The action plan for this initiative was as follows:

- Reach a fuller understanding of the resource and its many types of interest.
- Identify high-priority sites and landscapes that cover the full range of interests where conservation efforts should be focused.
- Take urgent action, where possible, to safeguard these places of high conservation interest before irreplaceable examples of the very varied resource are lost forever.
- Identify, and find solutions to, the conservation challenges that stand in the way of achieving this.
- Take further action, once implementation measures are in place, to secure the future of all high-priority sites and landscapes.

It also has the following aims:

- Promote the value of lead mining heritage so that owners, managers and the public will better appreciate the importance of lead mining remains and will be enthusiastic advocates of their protection.
- Continue to take action at sites of lesser priority to secure the survival, where possible or where future development is permitted, to minimise the impact on the existing

resource.

- Encourage more-sustainable development so that, as far as possible, this can contribute positively to the conservation value of the lead mining resource in the Peak District.

The above is directly applicable to the Mendip Hills and could be used with benefit in the formulation of an action plan for Mendip Rocks.

## Appendix 3: Potential Funding sources

### 1.7 Heritage Lottery Fund

The HLF is, without doubt, the most likely source of funding for the types of project under consideration. The outcomes for the heritage it seeks (identification, interpretation, and better management) are met by the objectives outlined above, as are its outcomes for people (developing skills, learning about the heritage, volunteer time), and outcomes for the community (engaging a wider range of people with the heritage, reducing environmental impact, and making communities a better place to live in). Another advantage of the HLF is that it funds fixed-period posts, as well as activities.

#### **Grants currently on offer:**

##### *Our Heritage (£10,000 to £100,000)*

The Our Heritage programme is for any type of project related to national, regional or local heritage in the UK.

##### *Heritage Grants (over £100,000)*

Heritage Grants is our open programme for any type of project related to the national, regional, or local heritage in the UK.

##### *Landscape Partnerships (£100,000 to £3m)*

The Landscape Partnerships programme is for schemes led by partnerships of local, regional and national interests which aim to conserve areas of distinctive landscape character throughout the UK.

##### *All our Stories*

Grants to enable local groups and communities to investigate their own pasts.

### 1.8 Landfill Companies

The major landfill companies – Biffa, SITA, and Viridor – are all potential sources of funding, although they tend to have a preference for funding activities, rather than posts. However, this need not necessarily be a problem if the approach taken is to have an umbrella initiative within which a number of smaller projects are implemented. For example, an activity which involved the creation of way-marking

and interpretive panels on a trail might have a reasonable chance of support.

## **1.9 English Heritage**

The best hope for funding from English Heritage appears to lie in the National Heritage Protection Plan (NHPP), which runs until 2015. This aims to identify those parts of England's heritage that matter to people most and are at greatest risk - then concentrates efforts on saving them. EH have expressed interest in the early coal mining remains of the Nettlebridge Valley, and might be persuaded to look at other industrial sites and landscapes in the Mendips.

### **1.10 Mendip Quarry Producers**

The Mendip Quarry Producers (MQP) is a trade organisation representing the five companies currently operating in the Mendips – Aggregate Industries (Holwell, Merehead and Callow Rock quarries), Hanson (Batts Combe and Whatley), Morris & Perry (Gurney Slade), Tarmac (Halecombe), and Wainwright (Moons Hill). The members of MQP fund the Somerset Earth Science Centre at Stoke St Michael, but the body does make grants in its own right. The Quarry Faces project made an approach to the MQP, and having made a presentation to one of its meetings, secured grants from all the member companies. There is no reason why a similar approach could not be made in the future, particularly if the scope of the initiative included stone as well as metals.

### **1.11 Other grant giving bodies**

There has not been sufficient time to explore other potential sources of funding in any depth, but a number of possibilities do exist. One such is the Esmee Fairbairn Foundation, which has a funding strand for education and is interested in organisations which engage with schools, the home and communities. However, given the amount of time that could be involved in identifying other potential funders, it is better to define projects in more detail, and then decide which funders are the best fit.

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## **Appendix 5: Organisations consulted in compiling this report**

Michele Bowe, Somerset Wildlife Trust  
John Chapman, Axbridge Museum  
Simon Crutchley, English Heritage  
Bob Croft, Somerset County Council  
Shane Gould, English Heritage  
Esther Hoyle, Somerset County Council  
Sarah Jackson, Mendip Hills AONB  
Barry Lane, Wells & Mendip Museum  
Clem Maidment, Radstock Museum  
Andy Mallender, Mendip Hills AONB  
Gill Odolphie, Somerset Earth Science Centre  
Vince Russett, North Somerset Council  
David Walker, Somerset County Council  
Chris Webster, Somerset County Council

Dr Robin Thornes

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