

## CONSERVING MINERALOGICAL SITES IN AFFORESTED AREAS: PROBLEMS AND STRATEGIES

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In 1992 a symposium entitled Conserving Britain's Mineralogical Heritage was organised by the Joint Nature Conservation Committee. Over 27 papers were delivered to the three day event at Manchester University. They concerned mineral collecting, the research potential of sites, botanical potential, mining history, educational and tourism roles, planning, safety and conservation issues. Many, if not a majority, of the sites were former mines and quarries, and well known to industrial historians. Sadly, the JNCC failed to publish the proceedings.

This paper relates to the Forest of Dean in addition to general principles. The paper was contributed to the symposium on behalf of the Historical Metallurgy Society.

About 2.2 million hectares of Britain are covered with woodland of varying types. These may range from game covers to substantial forests and some of them contain mineralogical sites.

Sites in woodland or areas for proposed afforestation may face problems additional to those affecting sites elsewhere in the landscape. Modern forestry is a large and complex business; some insight may be gained from the standard works, eg (Hart 1991). Specific challenges to the survival of sites arise from four sources. These are groundworks in preparation for forestry, practical forestry, the trees, and pressures arising from the multi-use of forests.

Preparing the ground for forestry operations may include the making of new forest roads or the upgrading of existing rides and tracks; establishing loading bays; creating drainage systems, especially on uplands for new plantings, and fencing schemes. All of these may use heavy machinery. Whilst there is always a possibility of discovering new sites, there may also be a natural tendency to fill in old excavations and natural pitfalls and to tidy up anything resembling the traces of former industry.

Forestry operations have changed markedly during the last two decades. The days of rustic labourers with horses or an old Fordson tractor are over. During the life of a single crop of trees the land on which it grows may be subjected to mechanical ploughing, ridging or scarifying to establish new crops. As growth proceeds successive thinnings by periodic felling are

made. At the end of the rotation a final crop of mature timber will be felled and harvested using specialised heavy vehicles such as forwarders and harvesters which roam among the trees. In some areas, timber logs are extracted by winching, or skidding, to a collection point. Delicate mineralogical sites and associated features in the landscape may not survive.

A further factor compounding the potential for damage is growing use of contractors in forestry. Contractors will often be working to tight financial margins and may not have the same knowledge, or affection, for sites as landowners, quangos and conservationists.

Sites in woodland may enjoy some advantages compared with those on open ground. They are often less visible and the steady accretion of humus tends to bury them. However, tree growth may be destructive to standing structures. More dramatic is the damage caused by root plates lifted by windblow or the destruction caused by falling trunks.

The multi-use of woodland brings further problems for sites. With the increasing use of woodlands by the public, foresters and owners may feel uneasy about the presence of ruins, quarries and abandoned mines. We should not be surprised to find them being treated as receptacles for rubbish, broust or landfill, especially if this provides financial revenue.

Other and, perhaps less orthodox, examples of multi-use include the various development schemes which hopeful investors continuously propose for Britain's forests. The Forest of Dean is an example; it is a National Forest Park and clearly designated as an area for silviculture and amenity in the county Structure Plan. Yet schemes for opencast coal mining, major rubbish tips, mine tip reclamations, large holiday camps, industrial sites and major quarries are commonplace. Such schemes are rarely advanced for city suburbs, but forests, perhaps because some are state owned, seem to be regarded as fair game.

## **Strategies for Conserving mineralogical sites in woodland and proposed afforestations.**

### General considerations

Conservation is often depicted in the media as the province and pastime of mild eccentrics in response to a threat to a single site. The clamour reminds one of a sudden outbreak of bush fires. The results for all concerned, and for the site, tend to be unpredictable.

Successful conservation requires a combination of knowledge and skills and the production of effective strategies before threats arise. Strategies must be realistic in their objectives

and capable of being achieved. They need also to be comprehensible and acceptable to landowners and, if possible, to be compatible with existing land uses.

The first need is to identify and evaluate sites. Which sites are unique or of very high quality? Which are regionally important? Which are good ones for public use and for education? Which are robust and which are fragile? Do they possess other features which increase their significance or broaden their appeal?

The last question seems to me to be at the heart of this symposium - joint approaches - and I hope that what I am about to say will be taken constructively. Historically, geological and mineralogical conservation has fallen to the ambit of the nature conservation movement and its associated legislation. Yet these sites have far closer affinities with archaeological sites than with wildlife. They are, so to speak, 'fixed' to the earth's surface. They are prone to use by treasure hunters and collectors, or being carted away by experts in the name of research or science. Unlike much wildlife, but in common with archaeological sites, they are non-renewable; they do not reappear, colonise or multiply in response to management.

A glance at the provisional programme of this symposium might give an outsider the idea that mineralogical sites only occur at old metal mines with botanical interest. Of course some do, but what about quarries, clay pits, collieries and a host of other extractive sites? In common with metal mines, these places may have seen centuries of human activity and phases of production. They have witnessed changes in methods of working and attracted processing techniques, buildings and settlements. The variety and age range may be gauged from a recent publication by the Historical Metallurgy Society (Blick, 1991). Many mineralogical sites have complex archaeological deposits in which their extractive history is recorded. They require expert archaeological assessments and conservation strategies (Cranstone, 1992). Guidelines for prioritising research and preservation are available (Historical Metallurgy Society, 1991).

Given these facts one is tempted to ask why this symposium omits speakers on industrial archaeology other than metal mines, speakers from County Sites and Monuments Records, or from English Heritage and the Royal Commission on Historical Monuments? And what of sites beyond these fields? For example, the publications of the Geologist's Association and the British Cave Research Association contain much of relevance.

## **Conservation Strategy for Sites in the Forest of Dean and Lower Wye Valley, Gloucestershire.**

This strategy refers to land owned by the Forestry Commission. It comprises some 1200 hectares of which most is woodland. The latter is of several types including managed commercial crops, woods of high landscape value and some prime SSSIs. Much of it was royal forest until 1924 when it passed to the Forestry Commission. Within these woodlands mineral based industries operated for centuries.

Wildlife conservation has a long history in the area and since 1978 local members of the Gloucestershire Wildlife Trust and others have sat on a Nature Conservation Advisory Committee with Forestry Commission staff. In practice this committee has identified sites, logged them in registers and developed systems of management. Many of the sites are habitats which enjoy no legal protection but are designated as Trust Nature Reserves and managed to agreed plans by volunteers. There is contact with English Nature. Very few, if any, sites have been selected primarily for geological reasons and none for mineralogy. However, several dis-used quarries are managed as nature reserves and thus gained a degree of protection. Geological SSSIs are scant.

The rocks of the area range from Silurian to Jurassic in age and are much used for their teaching potential. Education staff from two local field centres and from Bristol City Museum compiled the list of Regionally Important Geological Sites during the early 1980s and these included some with mineralogical heritage. The Soudley Geological Teaching Trail was established in 1980 (Matthieson, 1981) and published by NCC. Generally, the conservation of mineralogical sites has received very little attention from the wildlife and geological movements. This is curious because many of the iron-ore field sites have high natural history value in addition to their mineralogy and extractive history.

Perhaps because of their relative antiquity and industrial origins, the sites have attracted far more attention from cavers, industrial historians and archaeologists. In the early 1970s requests were made to the Ancient Monuments Secretariat of the DoE to schedule the best sites as Ancient Monuments. This was not successful, partly because of uncertainties at that time about scheduling underground sites and partly because many lay upon Crown land. The first conservation to a standing structure at a mineralogical site was in 1976-7 when the Royal Forest of Dean Caving Club, with support and encouragement from the Forestry Commission, repaired a mine ventilation chimney at Soudley (Court & Standing 1979). Since 1970 perhaps 50% of surface iron-ore mining sites have been lost through tipping and landfill; most, but not all, lay outside Forestry Commission land. A few have been lost for reasons of public safety including water supply.

In 1988 the Forestry Commission appointed Professor P.J. Fowler as their archaeological consultant and established a policy for archaeological sites in their estate. At local level, Dean and Three Counties District of the Commission invited national, county and local societies to nominate representatives to form a Dean Archaeological Consultative Committee to review matters. At Professor Fowler's suggestion an archaeological strategy was drawn up by the Committee for the conservation and management of Dean sites.

The strategy recognised that sites ranged in age from the prehistoric to the present century, identified potential threats from practical forestry and from archaeologists, and laid down a system for recording and communication information about sites. From the outset it was decided to use the County Sites and Monument Record to supply lists and details. The input from the County Archaeologist and staff amounted to over 1200 sites, of which perhaps 60% relate to minerals. Without this input and its acceptance and processing by the Forestry Commission, the scheme would have floundered.

At the Forestry Commission District Office the sites are logged in the compartment management registers and on the stock maps alongside information on nature conservation sites and other constraints. Because all forestry work is planned from these documents, the information is in the right place at the right time, and is taken into account. Often it is a simple matter of keeping machinery away from sensitive areas but occasionally extensive consultation is required. One feature of the strategy is the inclusion of all sites recorded in the SMR.

A need to protect sites from inappropriate archaeological work is recognised by the strategy. It therefore lays down procedures for the seeking and granting of permission which include the referral of all proposals to the County Archaeologist. The Forestry Commission have also recognised the need for conserving standing structures and have raised an annual budget for sites recommended by the committee. One complex site is managed by a small sub-committee.

On 1 April 1992 a re-organised Forestry Commission came into being. It consists of two parts; the Forestry Authority deals with national forestry policy and private woodlands whilst Forest Enterprise manages the Forestry Commission's own woodlands and estate. In England the Commission's old conservancies disappear and are replaced by two new large Regions. Each has a senior officer overseeing environmental matters.

## **Sites in Private Woodlands or New Afforestations**

Over 60% of British woodland is privately owned and at first sight conservation matters may seem less certain. However, many woodland owners are deeply interested in conservation, as instanced by the Forestry and Woodland Code, agreed by private forestry groups (Timber Growers UK, 1985).

Most fellings require licences and theoretically, there may be opportunities to offer advice. More important are the financial grants available from the Forestry Authority for many private woodland management schemes and almost all replanting and afforestation schemes. In Gloucestershire all proposals pass through the County Archaeologist's office and on occasions advice is offered to minimised potential damage. Many simple solutions are available such as the deliberate planning of small glades to keep trees and vehicles off fragile areas (Darvill, 1987). However, advice can only be offered for known archaeological sites.

Private landowners do not, of course, have to accept grants, but prior to 1 April 1992, the Forestry Commission had in place Regional Advisory Committees to assist in cases in cases of dispute. These Regional Advisory Committees possess non-forestry expertise from various disciplines including archaeology and are able to advise if requested. Hopefully, Regional Advisory Committees will continue under the Forestry Authority.

## **Conclusions**

The situation for conserving sites in the Forest of Dean could hardly be better and it is mirrored in some other forests such as Coed y Brenin. This has not happened by chance or through legislation. It has developed from decades of good communication between enthusiastic specialists, often local amateurs, and local Forestry Commission staff. The national policies came later; and served to strengthen initiatives which were already up and running. This good state of affairs highlights the first and most important area for joint approaches - that of enthusiasts and landowners working together.

I believe that conservation workers still have a long way to go in working together. We must stop classifying sites by antiquated academic disciplines, each with its own conservation lobby, quango and legislation. We need to view all sites as the components of a broader landscape, to assess them with multi-disciplinary eyes and to direct our joint approaches at that level. Some landowners and authorities are already well ahead in this field eg the National Parks, the National Trust, some Forestry Commission Conservancies, and the Structure Plans of

some Local Authorities, especially at District and Local Plan levels.

There are also encouraging signs coming from enthusiasts at local level. In the Forest of Dean, for example, the Local History Society and the local branch of the Gloucestershire Wildlife Trust organise at least one joint meeting a year to exchange ideas and to bridge the gap between the past and the living environments. There are also overlapping membership and frequent informal consultations. In 1987 the Gloucestershire Society for Industrial Archaeology secured the conservation of a large mineralogical site using a multi-disciplinary approach (Standing, 1987). Are similar contacts and approaches up and running between English Nature and English Heritage?

We also need to achieve a better grasp of the complexity of sites and their multi-use. Archaeologists can destroy botanical worth, explorers and commercial developers can wreck both the archaeology and the botany whilst the worst excesses of the bat brigade seem capable of stopping everyone else completely. There is a danger of bemusing rather than conserving. I hope that the sub theme of this symposium, 'Joint Approaches' will tackle these difficult areas as part of the initiative.

## **Bibliography**

Blick, C.R. ed 1991, Early Metallurgical Sites in Great Britain, BC 2000 to AD 1500.

Court, D. and Standing, I.J., 1979, A Ventilation Furnace on the Findall Iron Mine, GSIA Journal, pp 9-15.

Cranstone, D., 1992, Excavation: the role of Excavation, IAR, forthcoming.

Darvill, T., 1987, Ancient Monuments in the Countryside.

Historical Metallurgy Society, 1991, Metallurgical sites in Britain: Priorities for research and preservation.

Hart, C.E., 1991, Practical Forestry for the Agent and Surveyor.

Matthieson, A, 1981, Staple Edge Geology Teaching Trail, NCC.

Standing, I.J., 1987, The Industrial Heritage of Bixhead and Bixslade, GSIA Journal, 1987, pp 17 - 32.

Timber Growers UK, 1985, The Forestry and Woodland Code, London.

Note: The Society holds a copy of the document, published in 1992. Anyone wishing to see it should contact the Secretary.