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## Interpreting earth science within County Durham

Geological interpretation embraces all methods of communicating information on aspects of earth science to specialist and non-specialist audiences alike.

Describing and interpreting the nature and importance of earth science features is an important aspect of the county's geodiversity. Well-planned earth science interpretation not only highlights the importance and relevance of geological interest, but also has enormous potential to contribute to, and enhance, the understanding of features and sites of parallel interest including the area's ecological habitats, many of the historic buildings and some historical mine sites. Thus, the understanding of, for example, a limestone grassland, a population of metallophyte plants, or the features visible at a mining site can be greatly enhanced if the geological factors responsible for these are explained in an appropriate context.

A substantial portion of the west of the county lies within the North Pennines European Geopark. High quality and well-planned earth science interpretation is a vital function of a European Geopark.

### Target audiences for earth science interpretation in County Durham

Earth science interpretation is relevant to a very wide spectrum of interests. The following main end-users may be recognised, though the list is neither exhaustive nor mutually exclusive:

- Specialist earth scientists
- Professional specialists in fields other than earth science
- Educational users, including school groups at every level, and higher educational groups
- Specialist recreational users, such as members of special interest societies
- The general public, including residents and visitors

### Requirements of target audiences

#### Specialist earth scientists

As with all specialist fields, a wide range of avenues exist for communicating the results of original survey and research findings in earth science through scientific journals and other publications. Such information is generally of a very technical nature and aimed at a clearly identifiable and specialised audience or readership.

#### Specialists in fields other than earth science

Many practitioners in a number of specialist fields recognise a requirement for relevant earth science information as a means of informing or enhancing work in these fields. However, great scope exists to expand the inclusion of such relevant earth science information. Vital to the employment of earth science information is its presentation in a form comprehensible and relevant to the needs of such users.

#### Educational users, including school groups at every level, and higher educational groups, teachers and lecturers

Relevant information in a form accessible to the needs and abilities of both the students and teachers is needed.

Earth science offers excellent opportunities to engage the curiosity of children in the natural world and to use this as a means of introducing them to the wider concepts of natural science. Many children develop a fascination with fossils and minerals and may be extremely receptive to gaining some understanding of geological materials and processes. Provision of suitable publications, displays and specially planned events are all means of harnessing this enthusiasm.

The 'Rock Watch' scheme operated by the Geologists' Association has been extremely successful in this field in other parts of Great Britain. The scheme currently has little representation in County Durham or most of its immediately surrounding areas, though attempts could be made to encourage its growth here.

### **Specialist recreational users, such as members of special interest societies**

The requirements are very similar to those of educational groups, though greater emphasis perhaps needs to be directed to understanding those topics which are likely to be of greatest interest, and to appreciating the very varied levels of technical understanding of the groups involved.

### **The general public, including residents and visitors**

A substantial proportion of the area's residents have a strong sense of regional identity and a significant level of understanding of the natural heritage of their home area. With its long tradition of extractive industries, the important role of rocks and minerals in the natural, historical and cultural heritage of the county is already recognised, though this not generally fully understood and interpretation is limited.

County Durham attracts many visitors on a daily or longer-term basis. Most are attracted by aspects of the natural or cultural landscape. Many are attracted by the historical legacy of the former mining industries.

Residents and visitors represent a very substantial pool of interest for explanation and interpretation of those natural features of the area which give it its distinctiveness and which have been at the heart of the area's historical development. A very substantial audience exists for clear and authoritative, though non-technical and accessible interpretation.

### **Delivery of earth science interpretation**

Detailed technical descriptions and interpretations, targeted at specialist earth scientists, are delivered through a variety of scientific journals, publications etc.

Communication of appropriate technical earth science information to specialist workers in fields other than earth science currently relies very much upon those specialists being able to access and interpret a range of specialist literature. The establishment of working relationships between earth scientists and other specialists is a fruitful means of enhancing such work. Very considerable scope exists to further encourage and build closer working relationships between earth scientists and other specialists.

Interpretation to educational groups can be delivered through specially prepared literature, booklets, worksheets etc. Classes, workshop sessions, field excursions etc. organised and run by, or in association with, relevant experts and local visitor or educational centres can be tailored to all educational levels. Input of professional expertise, or collaboration with, sections of the extractive industries, e.g. through quarry visits, talks etc. delivered by industry staff or representatives, can be extremely effective.

A variety of interpretation methods, aimed at all levels of interest and ability, can be employed at visitor centres. These may include interpreted displays of geological materials e.g. rocks, fossil or mineral specimens, borehole cores etc., maps, diagrams and geological models, a variety of interactive displays and 'hands on' interpretation.

Classes and 'day schools' built around one or more geological themes, and involving relevant experts, can be highly successful.

Local community groups with interests in natural history, archaeology, heritage etc. may be instrumental in identifying and initiating locally based interpretation projects, in collaboration with suitable expert advice and assistance.

Guided tours or walks can be organised, either by local authorities, visitor centres, or various interest groups, perhaps involving public participation in specialist society activities.

Display panels explaining key aspects of geological features, 'on the ground', can be extremely useful.

Interpretation leaflets, geological trail leaflets, thematic booklets and books all offer excellent, and potentially commercially viable, means of delivering high quality interpretation.

## **Current earth science interpretation in County Durham**

### **Visitor centres**

Earth science interpretation relevant to County Durham is currently available at Killhope Lead Mining Museum, Weardale and the Dales Centre, Stanhope. Small displays of geological materials relevant to the county, though without significant interpretation, may be seen at the Weardale Museum, Ireshopeburn and Bowlees Visitor Centre, Teesdale.

### **On-site interpretation panels**

On-site panels provide interpretation of a variety of features throughout the county. Erected at various dates, by various organisations, and today in varying condition, a very small number of these include some element of earth science interpretation, though at only a handful of sites, e.g. West Rigg in Weardale, Stanhope Church Yard in Weardale, Cow Green in Teesdale, and at a few sites on the Durham coast is the earth science interest the principle focus of the interpretation.

### **Interpretation leaflets**

Specially designed leaflets which explain the geological features visible at two sites have been produced by Durham County Council as part of a new series style Geotales of the North Pennines.

Titles so far published are:

- Old Moss Vein, Weardale
- Slitt Wood & West Rigg, Weardale

Leaflets produced by English Nature for the Moorhouse–Upper Teesdale National Nature Reserve include some elementary geology.

A new leaflet, and accompanying on site interpretation material, is in preparation by English Nature for the Castle Eden Dene National Nature Reserve.

These leaflets draw attention to the important links between the geology and the ecology of the area.

### **Guided walks**

The annual programme of guided walks run by the County Council, usually includes a few walks in which aspects of geology and landscape are interpreted at an elementary level.

## **Photographs**

(Photo 90) Interpretation panel. West Rigg Opencut, Westgate, Weardale. DJD Lawrence, BGS, ©NERC, 2004.

(Photo 91) Interpreting lead mining at Killhope Lead Mining Museum. B Young, BGS, ©NERC, 2004.

### **[Full references](#)**



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