

## Geodiversity Records for Devon Quarries

**Geodiversity Audit of Active Aggregate Quarries : Quarries in Devon** has been carried out by David Roche GeoConsulting of Exeter and the findings have been published in February 2004 at a seminar held at County Hall in Exeter. The project is part of the Mineral Industry Sustainable Technology Programme (MIST) established jointly by the Department for the Environment, Food and Rural Affairs (DEFRA) and the Mineral Industry Research Organisation (MIRO) under the terms of reference of the Aggregate Levy Sustainability Fund (ALSF). **See Geodiversity Report on page 2 >>>>>>>>**



### 350 million years ago ...

Devon was under the sea. Climate was tropical. There were active volcanoes and the seascape was dotted with coral-reef islands and lagoons, much like parts of the Caribbean today. Following this, a cataclysmic collision of continents produced a mountain range like the Alps stretching eastwards across mid Europe. Later still, Britain was just desert, like parts of North Africa today, with intermittent flash-floods and sand dunes formed by powerful winds blowing from the east.

All this was a long time ago – before humans or dinosaurs. The Earth is many millions of years old and throughout this time there have been many changes in geography, climate and environment, changes from land to sea, from tropical forest to desert, from hot and humid to freezing cold and dry, and back again.

Difficult to imagine? How do we know? Well, the clues are all around us in the rocks. The subject of the project is to explore the great diversity of geological features to be seen in Devon. For example, the famous red rocks and soils of east Devon - as seen in active quarries producing construction materials and also along the Devon part of the World Heritage Coast - were formed during the desert conditions of the Triassic geological period about 250 million years ago. Devonian age strata in north and south Devon are even older, over 350 million years. The Chalk and Greensand of east Devon are much younger, under 100 million years. More recent are the Quaternary deposits from the Ice Ages of the past 2 million years.

**Dr Clive Nicholas**, who has been leading the project recording the geodiversity in active Devon quarries, says “Evidence of change in past climates is valuable in predicting how our climate might change in future. The origins of the rocks and the Earth’s history are increasingly subjects of general curiosity. We are trying to explain the multi-million year story in straight-forward terms based on the evidence to be seen in the rocks and the changes in the environment.”



## **Geodiversity Report**

**Geodiversity** incorporates all the variety of rocks, minerals and landforms and the processes which have formed these features throughout geological time. Best known are those rare and exceptional occurrences such as dinosaur footprints, but there are many more less-exceptional but equally important pieces of the geological jig-saw puzzle which, when added together, give insight to past climates, earlier environments and life on earth.

**16 Quarries** - the presently active aggregate quarries in Devon - have been included in the geodiversity audit. A detailed geodiversity report has been produced for each quarry, lavishly illustrated with digital photographs, providing unique factual records and interpretation of the geodiversity and context. As well as the 16 quarry reports, there is a project overview report which draws together the key highlights and conclusions of the research project.

**CD-ROM, Website and Brochure** media have been developed to disseminate the findings of the project launched at the seminar. All 16 quarry reports plus the overview report are included on the CD-ROM, while a fold-out brochure and the Devon Website on [www.devon.gov.uk/geology/geodiversity](http://www.devon.gov.uk/geology/geodiversity) provide key summary highlights and images.

**Partners and teamwork** have been key elements in carrying out the various aspects of project work. The geodiversity audits of the 16 quarries have been undertaken and reported for David Roche GeoConsulting by experienced minerals geologists Dr Clive Nicholas and Steve Parkhouse, with input by Dr Richard Scrivener of the British Geological Survey, and by David Roche. Peter Chamberlain and colleagues at Devon County Council developed the electronic media, producing the CD-ROM and website. Gordon Riddler and colleagues at MIRO provided publicity media including the brochure, as well as project steering. Devon Stone Federation and their members provided much valuable information and access to their quarries. We thank all our partners for their valuable contributions and for their cooperation and commitment to the success of the project.



*Three views of Westleigh Quarry, east Devon  
(Main front page photo of Venn Quarry, north Devon)*



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