

Fact file

- The Cotswold escarpment is part of the largest, continuous geological feature in the country. It can be traced from Bath to Market Weighton in east Yorkshire.
- The first ever officially recognised dinosaur, described in 1824, was from Stonesfield in the the Cotswolds.
- 36 Geological Sites of Special Scientific Interest (SSSIs) and 97 Regionally Important Geological and Geomorphological Sites (RIGS) - a total of 133 important geological sites.
- Cotswold Oolitic rocks were formed in warm tropical seas such as those found around Bermuda today.
- The Cotswolds contain what is probably the most intense accumulation of landslips in inland Britain.
- A fantastic area for finding fossils with a great variety and abundance.
- The Jurassic limestone provides an important aquifer supplying drinking water for a large area.

PLACES TO VISIT:

Geological trails can be found at:

Crickley Hill Country Park

Leckhampton Hill

Cleeve Common

Bredon Hill (west)

Trail leaflets for Crickley Hill, Leckhampton Hill and Cleeve Common are available from the Gloucestershire Geology Trust. The Crickley Hill Geology Trail is also available from the Warden's office in the Country Park.

The Bredon Hill Trail leaflet is available from the Herefordshire and Worcestershire Earth Heritage Trust.



Geology and the Cotswolds



CELEBRATING
40
YEARS
1966 | 2006

Further information

Many museums in and around the Cotswolds have a good collections of fossils. Here are just a few: Stroud, Cheltenham, Gloucester, Oxford, Bath and Bristol.

There are a number of groups and societies that study the geology of the Cotswolds, organising talks, field trips and work parties.

Avon RIGS Group	0117 953 2140
Gloucestershire Geology Trust	01452 864438
Herefordshire and Worcestershire Earth Heritage Trust	01905 855184
Oxfordshire Geology Trust	01367 243260
Warwickshire Geological Conservation Group	024 76523533
Wiltshire Geology Group	01380 830369

Cotswolds Conservation Board

The Old Police Station
Cotswold Heritage Centre
Northleach
Gloucestershire
GL54 3JH

Tel: 01451 862000

Fax: 01451 862001

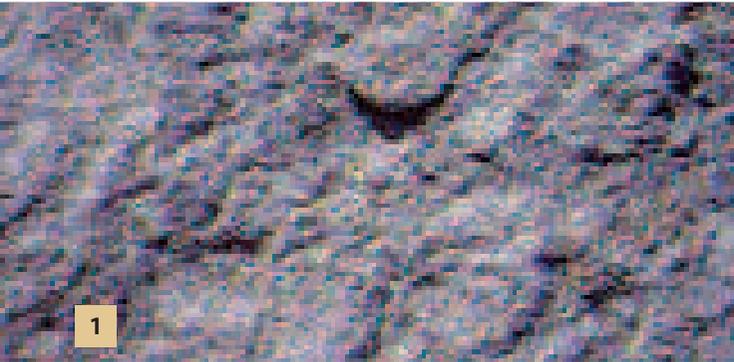
Website: www.cotswoldsaonb.org.uk



Dry valley photograph: Rob Fraser

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1

Close up of Oolite which resembles 'fish eggs'

The Cotswolds Area of Outstanding Natural Beauty (AONB) covers 2,038sq kms (790sq miles) stretching from Warwickshire and Worcestershire in the north to Wiltshire and Bath in the south. It is the largest of 40 AONBs in England and Wales and sits upon an outcrop of Jurassic rocks that run from the Dorset coast to the North Sea, off Yorkshire. Not only does the geology of the area have a very strong influence on the landscape and wildlife, it has also played a significant role in its industry and heritage.

The western edge of the Cotswolds is marked by the steep escarpment or scarp, where the Middle and Lower Jurassic rocks are exposed. These rocks, and the landscape, then dip gently eastwards towards Oxford and London making the Cotswolds a classic example of 'scarp and dip' landscape.

The rocks are sedimentary and were laid down during the Jurassic period between 210 and 140 million years ago. The typical Cotswold rock is Oolitic limestone. **1**

It resembles tightly packed fish eggs, hence its name Oolite or 'egg stone'.

This stone not only forms the natural landscape but has also been used to build the thousands of miles of drystone wall, churches, manor houses and the cottages so typical of the Cotswolds.



2

Gorse indicates a change in underlying geology

Cotswold stone has been used for over 6,000 years as a building material as it can be cut and shaped easily. It is the unifying effect of the geology and the built environment that is so distinctive of the Cotswolds. The area's towns and villages owe their special qualities to the use of the limestone as a building material as do places such as Bath, Cheltenham and Oxford.

Cotswold stone was traditionally dug from mines and quarries across the AONB. Some quarries are still in use today, producing stone for drystone walls, traditional Cotswold stone slates and crushed stone. A number of old quarries have access and are good places to explore the geology of the Cotswolds and find fossils. However, old quarries can be

Part of a quarry face showing strata



3



4

A classic Cotswold dry valley near Bibury

dangerous places and care must be taken. Children and young people should always be accompanied by an adult.

The soil and vegetation of the Cotswolds change as the underlying geology changes, influencing the development of different habitats and plant and animal species. **2**

Some of the most important research in the early days of geology was undertaken in the Cotswolds and so the area is strongly connected to the history and development of geology as a science.

William Smith, the 'Father of English Geology', was born in Churchill in Oxfordshire and developed his theory of strata in the area around Bath during the 1790s. He found that rock strata could be identified, wherever you are, from fossils and that rocks containing the same assemblage of fossils were the same age. **3**

This was the foundation of the science of Geology. Eminent geologists have studied the Cotswolds ever since.

Many landscape features in the Cotswolds, such as dry valleys, landslips and outlier hills, once part of the scarp, are the result of erosion. Bulges on valley sides indicate that the landscape is still actively evolving. These are distinctive features of the Cotswolds and are part of the geomorphology of the area – that is physical features, strongly influenced by geology. **4**