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## 38 Hale Moss

**Theme:** Climate and landscape change

### Location

38 Hale Moss Caves. The caves are on the northern verge of a minor road southwest of Hale [SD 501 777].

### Description

Going deep into caves is best left to cave explorers, but at Hale Moss you can peep into the entrance of one from the roadside.

Natural caves can occur in lots of different rocks but most caves form when the rock can be dissolved by water. There are caves in Cumbria where there is gypsum, as it dissolves very easily and quickly, but the most common rock that has caves is limestone. Limestone was once limey mud and the shell debris of billions of fossils and is, essentially, calcium carbonate. Limestone rocks also have lots of cracks and joints in them and that provides a pathway for underground streams which progressively dissolve the rock away. South Cumbria has a lot of thick limestones that slope downwards and as a result a lot of caves. Precisely how did they form? Rain absorbs carbon dioxide from the air, and also from organic matter in the soil and as the water percolates through it becomes a weak acid dissolving the rock.

Hale Moss caves, like the others in this part of Cumbria, are in one of the thick Carboniferous Limestones (here the Urswick Limestone). This limestone is around 335 million years old and 120 metres thick. The cave is over 200 metres long and at the entrance you can see it has a 'slot' like shape, evidence that this part of the cave was dissolved by water flowing above the water table. Caves eroded beneath the water table are usually more rounded in shape. When was the cave formed? Probably in the last 500,000 years at times when groundwater levels were much higher than they are now. This complex of limestone caves is within diverse woodland. Patches of species-rich limestone grassland also occur within the site and add greatly to the wildlife interest.

### Photographs

(Photo 38-1) 38 Cave entrance at Hale Moss.

(Photo 38-2) 38 Hale Moss.



*(Photo 38-1) Cave entrance at Hale Moss.*



*(Photo 38-2) Hale Moss.*