W YORKSHIRE GEOLOGY TRUST

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A WALK AROUND CROSLAND MOOR, HUDDERSFIELD, TO LOOK AT ROCKS AND LANDSCAPES

A good starting place is on Sands Lane at Grid Reference SE 116 143

Cross bedding in sandstones in Wellfield Quarry

This face in Wellfield Quarry is protected for educational use.

The rocks of the Crosland Moor area are **Upper Carboniferous** (Yeadonian) in age, so they are about 315 million years old.

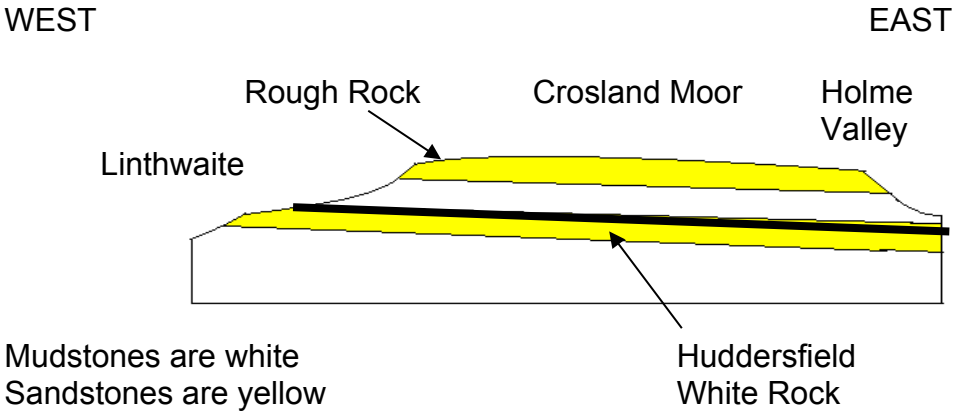
These rocks were laid down in **deltas** on the edge of a shallow sea, with mountains to the north and south. Sands and muds were deposited by rivers in shallow water. Because the continent was close to the equator, the climate was warm and wet so that tropical rain forest flourished. Dead plant material became trapped in stagnant swamps between river channels. Over geological time it was buried by muds and sands as the rivers in the delta changed position and built up more **deposits**. The water, oxygen and hydrogen were driven out of the plant remains, leaving only the carbon in **coal seams**, such as the Upper Meltham Coal.

After the sediments were formed close to sea-level, they were buried by hundreds of metres of sediment and **compressed**. As the sea water moved upwards it carried minerals which **cemented** the sand and mud grains together to make **sandstones** and **mudstones**.

The sandstones and mudstones form alternating layers which gives the Yorkshire landscape its distinctive appearance. The sandstones are more resistant than the mudstones and form the upland moors such as Wessenden Moor and Holme Moss. The mudstones are less resistant and are weathered and eroded more easily, so are usually only exposed in the cloughs or valleys. This pattern of erosion on the sandstones and mudstones is common and gives West Yorkshire its characteristic landscapes.

Most of Crosland Moor is underlain by a sandstone called the **Rough Rock**, which has been quarried on Crosland Moor for many centuries. The Rough Rock is a thick bed of sandstone which forms many gently sloping plateaux in the Huddersfield and Halifax areas. It can be worked into an excellent building stone so has been widely quarried throughout West Yorkshire.

<u>Cross section to show the geology of the Crosland Moor area</u>



Mudstones are white
Sandstones are yellow
Upper Meltham Coal is the thick black line

Quarrying on Crosland Hill has been taking place for several centuries, initially in small quarries providing stone for local farms and cottages. In the nineteenth century larger buildings in Huddersfield used Rough Rock for their main construction stone, as it is strong and uniform in texture.

However, it is not fine enough for intricate carving, so other sandstones were brought in from different parts of West Yorkshire for intricate carvings, on headstones, for instance.

In 1909, 13 quarries were listed in trades directories, under many proprietors. By 1937, an advertisement for Johnson Wellfield Quarries listed 11 quarries on Crosland Moor.