
Devonian rocks

Devonian rocks were formed during the episode of Earth history known as the Devonian Period between approximately 409 and 363 million years ago. The name 'Devonian' is derived from Devon, where rocks of this age were first recognised and studied.

Other representative sites in the area

Melmerby Beck and field track [NY 6280 3705]–[NY 6287 3704]

Devonian rocks in Great Britain

In Devon and Cornwall, Devonian sedimentary rocks comprise a thick succession of mudstones and some limestones which yield fossils giving clear evidence of deposition in marine conditions. Elsewhere in the Great Britain, Devonian sedimentary rocks most commonly comprise thick sandstones, mudstones or conglomerates which are typically red or reddish brown in colour. These rocks are commonly referred to as 'Old Red Sandstone', to distinguish them from the 'New Red Sandstone', a succession of rocks of similar appearance and origin, formed during later Permo-Triassic times. The Old Red Sandstone rocks are believed to have been deposited mainly under desert conditions. Fossils are generally very rare, though beautifully preserved fish fossils in some of these rocks in parts of Scotland suggest the local presence of large lakes. Igneous rocks of Devonian age in Great Britain include a variety of lavas, notable examples of which include those in the Cheviot Hills and Central and Western Scotland.

Devonian rocks in the AONB

Outcrops of rocks assigned to the Devonian Period occupy only 65 hectares, or 0.03%, of the surface area of the AONB. These rocks closely resemble the Old Red Sandstone rocks seen elsewhere in Great Britain. A series of conglomerate, known in older geological literature as the 'Polygenetic Conglomerate', crop out at several places on the lower part of the North Pennine escarpment. They are composed of blocks, up to 1 metre across, comprising a variety of rock types, including slates, volcanic rocks and microgranites, typically embedded in a purplish red sandy matrix. The included rock types are recognisable amongst the Ordovician rocks of the Lake District and Cross Fell Inlier, from which areas they were almost certainly derived.

Because fossils have not been found in these rocks their age cannot be established with certainty. However, by comparison with other areas, and in view of their geological setting, they are generally considered to be of Devonian age.

These rocks are of extremely limited extent and are known from only a handful of very small outcrops along parts of the lower slopes of the North Pennine escarpment.

Impact on the landscape and biodiversity

Because of their extremely limited outcrop Devonian rocks have little impact upon the landscape and biodiversity of the AONB.

Economic use

Devonian rocks are not known to have had any economic use within the AONB.

Wider importance

Despite their very limited outcrop, and although they cannot be conclusively shown to be of Devonian age, these rocks are of importance in understanding both the geological history of northern England and the area's place in the geological evolution of Great Britain.

Conservation issues

The very limited outcrops of Devonian rocks appear robust and there are not currently perceived to be any threats to their integrity.

Currently protected sites of Ordovician and Silurian rocks within the AONB

The single exposure of these rocks within the AONB is not afforded any statutory protection.

Selected references

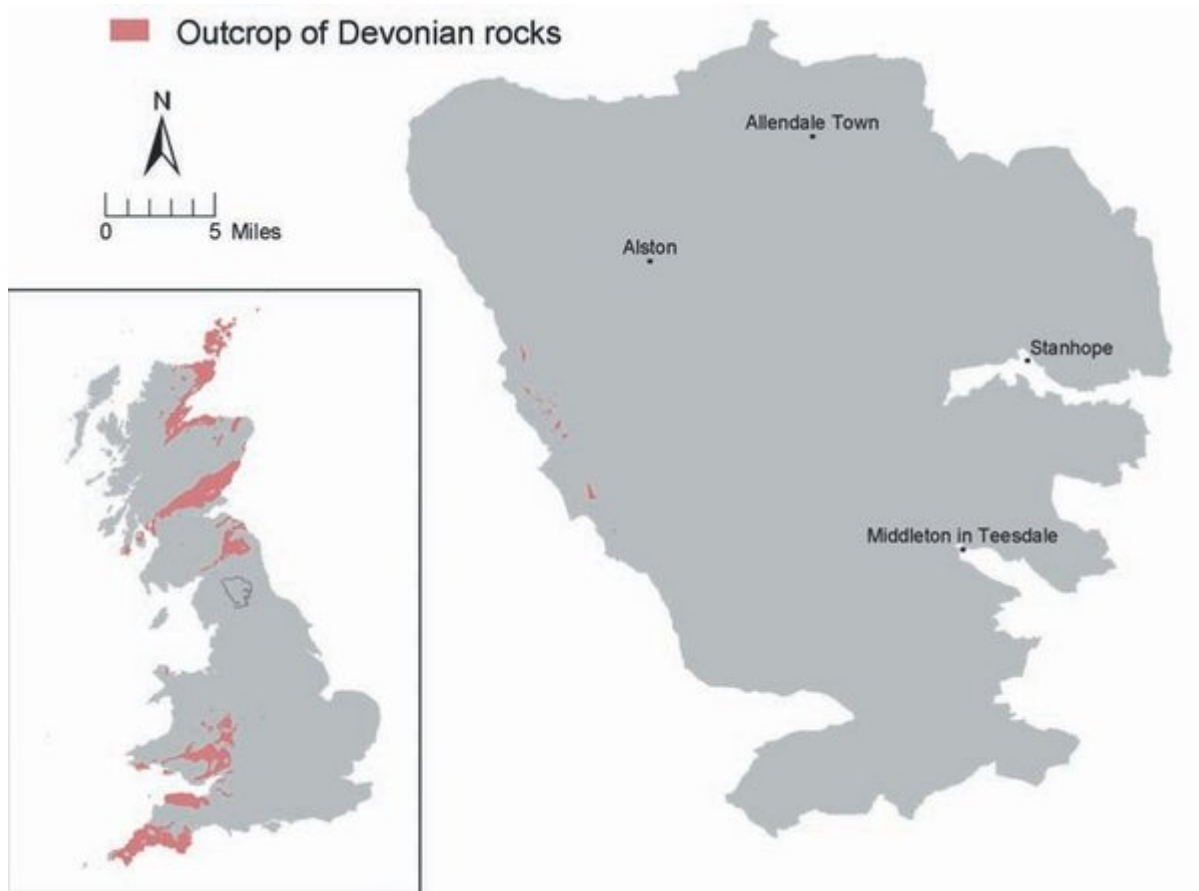
Arthurton and Wadge, 1981; Burgess and Wadge, 1974; Stone et al, 2010.

Figures

(Figure 12) Outcrop of Devonian rocks

(Figure 13) Exposure of the 'polygenetic Conglomerate' near Melmerby. © B. Young, BGS, NERC

[Full references](#)



Outcrop of Devonian rocks.



Exposure of the 'polygenetic Conglomerate' near Melmerby. © B. Young, BGS, NERC.