

Geologists' Association South Wales Group

Dinosaur footprints at The Bendricks



The coastal section at The Bendricks is a **Site of Special Scientific Interest** because of the dinosaur tracks exposed here. It is the **best site in Britain for dinosaur tracks of the Triassic Period** and should be preserved for all to see and study. Please do not collect or damage the footprints.

Location: The footprints can be seen in beds of rock on the shore to the west of a small slipway in a bay to the east of Bendrick Rock. The National Grid reference for the site is ST 13349 67029.

Access: The site can be reached by walking west on the path along the coast from Sully; or by taking the path around the R N V R base of HMS Cambria to the coast and walking west; or from the industrial estate immediately inland from the site.

When to go: The footprints can be difficult to see. Many are covered at high tide so it is best to go after high tide when the tracks may retain small puddles of water. It is also easier to spot the footprints when the sun is low in the sky as longer shadows will help throw the footprints into relief.



The dinosaur footprint site

Caution: The rocks can be slippery when wet or seaweed covered. Some of the boulders on the beach are loose and unstable. Be careful when you walk on the beach and on the cliff top. Stay away from the base of the cliffs and from the edges of the cliffs as they are loose and overhanging in places.

The geology

220 million years ago, in the later part of the Triassic Period, this area lay in the arid belt north of the equator (currently occupied by the Sahara), and South Wales was a hot desert. The Vale of Glamorgan was an area of rocky limestone hills.

Although annual rainfall was low, when it did rain, the rain fell in torrents causing flash floods. The floods created rivers which carried boulders, pebbles, sand, silt and mud down to low ground and to a large lake or inland sea which lay where the Severn Estuary is today.

The deposits of these flash floods can be seen in the almost flat-lying beds of rock along the shore between Bendrick Rock and Sully Island. Look out for beds of conglomerate with rounded limestone pebbles, bands of gravel within the sandstones, and cross-bedding (inclined layers within some sandstone beds) all of which indicate that these rocks were deposited by rivers. The top surfaces of some beds of sandstone or siltstone may display sets of low, parallel ridges. These are ripple-marks, like those exposed on a modern sand beach when the tide goes out. They are formed by the sand being moved by waves in the shallow water of lakes and ponds

Fine sand-filled cracks in some of the beds also tell us that these were once wet muds and silts which dried out and cracked when exposed to the sun.

Although this area was a desert, it was not devoid of life. That is clear from the footprints of animals preserved in the sandstone and siltstones exposed at the Bendricks.



River-deposited sandstone and conglomerate



Conglomerate of grey limestone pebbles



Mud cracks

The footprints

There are several different sizes and kinds of footprints in the rocks here. Small, three-toed footprints were probably made by small, meat-eating (theropod) dinosaurs which walked on their hind legs. Large three-toed footprints may belong to a larger theropod. Some wider, four-toed footprints may belong to a plant-eating dinosaur which usually walked on all fours.



Dinosaur footprints nearer the low water mark



Dinosaur footprints near the top of the beach

These are the footprints of some of the earliest dinosaurs in the world. At this time, 220 million years ago, dinosaurs had not long evolved from other crocodile-like reptiles and these ancestral animals were still present. They were soon to become extinct and leave the dinosaurs to dominate the land during the following Jurassic and Cretaceous Periods. Some of the footprints exposed here probably belong to some of these dinosaur ancestors.

Help preserve the footprints

In 2005 it was discovered that a large area of the footprint site had been dug up and removed illegally. Slabs of rock with one or two footprints on them began to appear for sale on the internet and at fossil shops and fairs in the UK and the USA. Many were recovered by the police and a man was cautioned.



Rock surface where a collector has removed tracks

Please help to preserve the site for everyone to see by not damaging or removing the footprints. Please report anyone you see removing the rock to the Countryside Council for Wales, the Geology Department of the National Museum of Wales, or the Geologists' Association South Wales Group.

Tom Sharpe. Produced by the Geologists' Association South Wales Group for Cardiff. June 2007. Registered Charity 1054303.

If you want to know more about rocks, fossils and the geology of south Wales, contact the Geologists' Association South Wales Group, Cymdeithas y Daearegwyr Grwp De Cymru, Dept of Geology, National Museum of Wales, Cardiff CF10 3NP.

You can also find us at www.swga.org.uk

