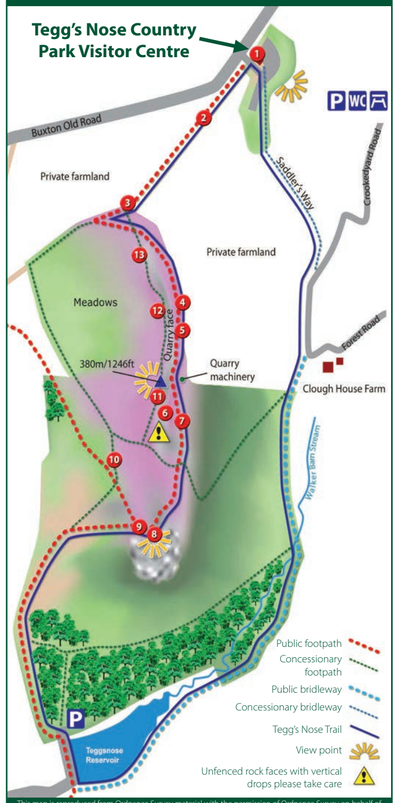
Tegg's Nose Rocks! Trail Map



Location 8 - Look along the edge of the hills

Using the information panel at the view point you can work out the names of the hills in front of you. Bosley Minn and Mow Cop are made of Millstone Grit rock. This coarse grained rock was suitable for shaping into grinding stones to grind corn and wheat into flour.

Millstone - Mow Cop

Millstone - Stretton Mill

In Millstone Grit the individual sand grains are quite large and naturally well cemented, making it perfect for hard wearing millstones. At Stretton Water Mill near Farndon, the millstone on display was cut from the rock at Mow Cop. It is possible to see evidence of millstone quarrying at Mow Cop and Windgather rocks.

Location 9 - Look at the quarry spoil

This slope is made from quarry waste because the poor quality stone was tipped down the hillside. This quarry spoil looks similar to a natural scree slope which forms after rock falls or when weathering dislodges stones from a rock face. Tegg's Nose has been quarried since the 17th century. Quarrying continued until the mid 20th century. The stone was blasted off the rock face and then collected and cut into smaller pieces using stone saws.

Men at work in Tegg's Nose quarry

Location 10 - Gritstone Trail

The trail is close to where rocks of different ages meet.

The flat Cheshire plain is made of soft sandstone rock formed from desert sands. These rocks were formed 250 - 230 million years ago in the Triassic Period. Tegg's Nose rocks are harder and older Carboniferous age rocks.

The Red Rock Fault brought the two different aged rocks next to each other. The ice sheets scoured away the softer rocks of the Cheshire plain, whilst the harder rocks of east Cheshire, as at Tegg's Nose, remained as hills.

The Gritstone Trail includes other geologically interesting sites such as Kerridge Hill and Mow Cop.

Summit wall sculpture

Location 11 - Stand on Tegg's Nose summit

As you stand at the summit of Tegg's Nose, try to imagine the area back through time. You can use the timeline on the next page to help you.

You would be inside an ice sheet 20,000 years ago.

About 250 million years ago you would be in a hot desert.

The rocks directly beneath your feet are Carboniferous age around 325 million years old. Here you would be standing in a tropical swampy river delta.

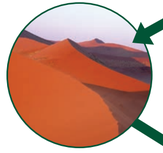
As you look to the west over the Cheshire plain, you can see Jodrell Bank radio telecope, where scientists explore deep into space and detect radio frequencies produced by stars millions of years ago. Jodrell Bank is a world leader in radio astronomy-related research.

Tegg's Nose Rocks Timeline

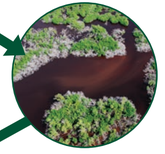
Key dates in the geological history of Tegg's Nose Country Park

Today
You are here

Quaternary
2.6 million years ago to present day
Ice sheets covered this area over 20,000 years ago

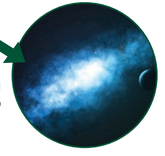


Triassic Period
251- 200 million years ago
Tegg's Nose stood in the middle of a hot desert



Carboniferous Period
359 - 299 million years ago
Tegg's Nose was part of a river delta on a tropical coastal plain

Lower Palaeozoic
542 - 416 million years ago
Tegg's Nose was under the sea



At the beginning
4.6 billion years ago
Earth was formed

Location 12 - Industry on the plain

The streams and rivers flowing down onto the Cheshire plain from the hills were ideal for powering the cotton and silk mills of Macclesfield, Congleton and Bollington. Stream water made soft by the chemical composition of the local sandstones, known as Millstone Grit, is ideal for spinning fine quality cotton. Macclesfield was once the world's biggest producer of finished silk with over 70 silk mills in the town. The Silk Museum in Macclesfield is well worth a visit.

Location 13 - The stone walls

People have used the natural resources of the landscape for thousands of years. Gritstone makes good dry stone walls. Dry stone walls are built without using cement or mortar to hold them together.

The rock underneath influences the quality of the soil on the surface. The soil in this area is very thin and acidic so typical Cheshire hawthorn hedgerows can't survive and farming is limited to grazing.

So, geology affects our lives, more than we realise.

Enjoy your walk back to the visitor centre and see how many other landscape features you can spot that are related to the geology of the area.

Stone wall at entrance to Tegg's Nose Country Park

The Tegg's Nose Rocks Geological Trail has been created with support from

Production date Aug 2022

Tegg's Nose Rocks!

The Tegg's Nose Country Park Geological Trail

Take a walk around the summit and discover some amazing rocky facts

This information is available in other formats on request

Cheshire East Council Countryside Ranger Service
Tel: 01625 374833 **Email:** rangers@cheshireeast.gov.uk

www.cheshireeast.gov.uk/rangers

Cheshire East Council

Get rocking with some amazing geological facts along the Tegg's Nose Rocks Trail.

The Tegg's Nose Rocks Trail is a circular walk around Tegg's Nose summit and quarries and is approximately 3.2 km / 2 miles long. The points of interest are numbered on the map on the back of this leaflet and on the trail by a marker post at each location.

The Trail will take you about 1 hour to complete, unless you linger longer to ponder on some of the amazing facts behind the features in the landscape.

Location 1- Escape burrows in the visitor centre

There are trace fossils in the walls of the visitor centre. Trace fossils are footprints, trails or burrows, evidence of ancient life preserved in the rocks.

The trace fossils in the visitor centre were made by freshwater mussels in a sandy river bed some 325 million years ago.

The visitor centre trace fossils are called escape tubes and indicate where the shelled animal burrowed down into the sand for protection.

Bivalve escape structures in Kerridge Stone.
Kerridge is situated between Tegg's Nose and Bollington

Did you know?

World famous Palaeontologist Arthur Smith Woodward (1864 -1944) was born and educated in Macclesfield. Woodward was famous for his work on fossil fish. His reputation was damaged with his involvement in the Piltdown Man hoax.

Location 2 - Spot the erratic

On your way to the Country Park look for the rounded boulders next to the path. These boulders look out of place, almost like someone has just dropped them there. These are glacial erratics.

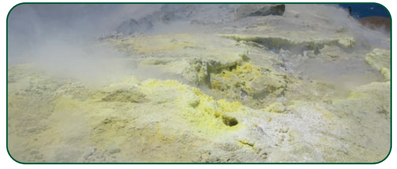
Within the past 2.6 million years ice sheets have covered the area. These ice sheets came from the north and picked up rocks as they travelled southwards. When the ice melted, the rocks were dropped as rounded boulders called 'erratics'. We can use the location of these erratics to work out the direction of ice movement.

One of the erratics by the path is a volcanic rock probably from the Lake District. This rock has holes in it and some of the holes have crystals in them. The holes were gas bubbles in the lava as it exploded out of a volcano.

Pathside erratic

The explosive volcano was probably similar to active and dangerous Mount Etna in Sicily.

The summit of Mount Etna in Sicily which is active and dangerous today!



Sulphurous vents emitting gas from the dormant Vulcano volcano off Sicily

Another erratic is of a local rock and could be from Windgather Rocks, near Kettleshulme.

Location 3 - Looking at the landscape

Looking across Cheshire there is a big difference in the landscape from hilly Tegg's Nose in the east to the flat Cheshire plain further west.

The hills are made of harder older rocks than those forming the Cheshire plain. These rocks have been moved upwards by a crack in the Earth's surface, called the Red Rock fault.

View along the east Cheshire Red Rock fault zone

Alderley Edge can be seen from here, where copper has been mined for centuries. Millions of years ago, water carrying dissolved minerals travelled upwards through the rocks at Alderley Edge depositing minerals such as azurite and malachite, both copper carbonates and galena a lead sulphide.

Location 4 - Look at Shutlingsloe, the Matterhorn of Cheshire, rising above the forest.

During the ice age, the whole area was covered in vast ice sheets. Only Shutlingsloe protruded above the ice sheet.

Ice flows and nunataks

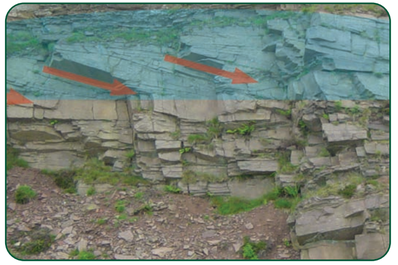
The ice shaped the landscape here into what we see today. Shutlingsloe is an ice sculpted hill called a nunatak. The ice flow eroded rock and deposited the ground up material as sands, gravels and clays.

Millstone Grit is made of sand grains, grit particles and small stones. These sediments were washed down from a mountain range and deposited on a large flood plain by a meandering river. Over time the sands and gravels built up into layers of gritstone.

Rock face near quarry display showing evidence of cross bedding

Location 5 - Look at the quarry face

Can you see curved shapes in the rock layers? These shapes were formed as layers of sediment were deposited by the water current. The resulting geological structures are called 'cross bedding'. Quite often the direction of the cross bedding can help to identify the direction of water flow. Here at Tegg's Nose some of the cross bedding occurs in an ancient preserved river channel structure.



River channel shaded in blue with red arrows highlighting cross bedding structures.

Ripple marks with mobile 'phone for scale

Location 6 - Find the ripple marks in the path behind the quarry hole

These ripple marks are preserved in 325 million year old rocks.

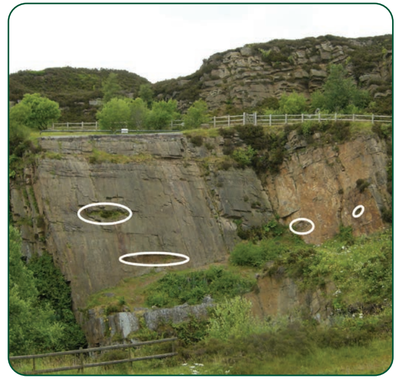
Ripple marks are formed by flowing water. When ripple marks are formed on a shoreline by the action of the tides they are symmetrical in shape because the water swirls in both directions as the waves break on a beach. River-formed ripples are asymmetrical, with one flank of the ripple at a shallower angle than the other side. The ripple marks at Tegg's Nose were therefore formed on a riverbed.

The river was flowing around 325 million years ago when the UK formed part of a large supercontinent, called Gondwanaland, near the equator.

A river the size of the Mississippi!

The massive river swept down millions of tons of grit and sand particles as it flowed down from rapidly eroding mountains in the east. On reaching the flat lying flood plain, the sand and grit particles were dropped from the water flow as the current slowed.

The sands and grits built up, over millions of years, into thick layers of sandstone and gritstone rocks.



White circles show the position of concretions which have eroded out of the surrounding harder rock

Location 7 - The deep quarry

The oldest rock is at the bottom of the quarry hole rock face and is best viewed from the opposite side of the quarry hole.

At the bottom of the rock face the gritstone beds are much thicker than those higher up. It is not possible to say how long it took for these rocks to have been deposited. It may have happened quickly, or very slowly – what do you think?

On this large quarry face it is also possible to see oval or irregular shaped depressions. These are formed where nodules of softer rock have eroded away. The grains of sand in the softer rock would have been more weakly cemented together.

The rock at Tegg's Nose is called Chatsworth Grit. This is part of the Millstone Grit sequence of rock which reaches great thicknesses in the Pennines. The sediments that make up the rock were laid down about 325 million years ago, during the Carboniferous Period when the UK was close to the equator.