

Location & Access:

Millook Haven is located on the north Cornwall coast. The hamlet of Millook Haven is at the end of a deep coastal valley and is not easily accessible. The site is reached via one of a number of narrow minor roads leading off the road to Crackington Haven, or from a similarly difficult to navigate minor road from Poundstock or Widemouth Bay. Parking at Millook is a nightmare unless you are fortunate enough to grab one of the three or four spaces by the side of the road at the bottom of the valley. From here, the beach and cliffs are just a short stroll away, indicated by a wooden footpath sign.



Millook folding — photo: Paul Berry

Key Geography: Spectacular example of chevron folding.

Description: One very special but not often visited location on the North Cornwall coast is Millook Haven. Just four miles north of Crackington Haven, this geological treasure boasts the most dramatic example of chevron folding in the whole of the United Kingdom. In 2004, the cliffs of Millook were voted by the Geological Society as top 'folding and faulting' sites in UK, and one of the top 10 geological sites in UK.

The TOP TEN

- 1 Assynt, Highlands
- 2 Ironbridge Gorge, Shropshire
- 3 Siccar Point, Berwickshire
- 4 The Rotunda Museum in Scarborough, Yorkshire
- 5 Staffa, Inner Hebrides
- 6 Stonehenge, Wiltshire
- 7 Hunstanton Cliffs, Norfolk
- 8 Craster, Northumberland
- 9 Millook Haven, Cornwall
- 10 Glencoe, Highlands



Millook cliffs — photo: Paul Berry



(continued overleaf)

Curiosity Questions:

- # The South West Coast Path runs through Millook Haven. Where does this long distance footpath start and end?
- # A number of submarine cables land in Widemouth Bay, linking the UK with the rest of the world. Which country does the Apollo cable link with?
- # If you were to enjoy a traditional cream tea at Millook Haven, what would you put on first - cream or jam?

Further information:

<https://devongeography.wordpress.com/2023/07/12/chevron-folds-at-millook-haven/>

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There was a working mill at Millook Haven up until the end of the nineteenth century, and this tiny cove once supported its own fishing fleet. There are many tales of smugglers operating from here, and the nearby village of Poundstock is a well-known smugglers' haunt.

The jewel in the crown of this location is Penhalt Cliff and its incredible chevron folds - classic evidence of the geological upheaval caused by the Variscan Orogeny.

"... dropping down into Millook, a lovely wooded glen with a tiny, stony beach, where the cliffs are twisted into strange contortions, another of the ironic 'havens' in which this iron bound coast specialises." (S H Burton, 1955)

The Variscan Orogeny was a period of mountain building that took place in the late Carboniferous / early Permian periods, that lasted for around 100 million years. At this time, the Atlantic Ocean did not exist, and plate movements resulted in the northern land mass of Laurasia (containing Europe and North America) colliding with the southern continent of Gondwanaland (containing South America, Africa, Antarctica, Australia and India). This closed the Rheic Ocean that was located between these two giant land masses, and buckled the sea bed up into mountain summits high above sea level while also creating the new super-continent of Pangea.

The mountains created have been eroded away over the years, leaving a landscape from around 145 million years ago dominated by the actions of the sea. In the Carboniferous period, 290 - 350 million years ago, and before the plate collision, erosion of the mountains to the south fed vast quantities of muddy sediment via rivers draining the northern slopes and a series of deltas into the basin that contained a shallow, brackish sea. As flow velocity of these rivers decreased, heavier grains of sand settled out, followed by silts, and then finally muds. Some of these layers may have been deposited in just a matter of hours.



Cliffs at Millook — photo: Paul Berry

The cliffs of Millook Haven make it easy to identify the hard and massive sandstones interbedded with finer, less-resistant shales of the Carboniferous Crackington Formation. Although originally deposited over 300 million years ago as flat, horizontal layers, these turbidite beds of lighter coloured sandstones and darker mudstones have been lifted and twisted and spectacularly deformed into a majestic cascade of zig-zag folds (representing anticlines and synclines) lying on their sides (recumbent folds). Where folding is extreme like this, it is often referred to as 'chevron folds' or 'accordion folds'. It is a real challenge picking out a single strata and trying to follow its path through numerous upfolds and downfolds. In geological terms, the Crackington Formation is similar to the Bude Formation (which was deposited immediately above before the folding took place), but lacks the typical thick sandstone units (from 3 to 10 metres).

On the beach, the near-vertical sedimentary layers have been eroded by the sea to produce a wave cut platform of ridges and gullies exposed at low tide. The sandstones are more resistant to wave action, meaning they stand prouder as ridges, while the less resistant mudstones have been worn away faster to produce gullies. Numerous fault lines are clearly visible.

Images of the landscape at Millook have been reproduced in many a textbook, and a selfie in front of Penhalt Cliffs is a must for any budding physical geographer / geologist.

Answers to Curiosity Questions:

The South West Coast Path runs through Millook Haven. Where does this long distance footpath start and end? (*Minehead in Somerset and Poole in Dorset*) # A number of submarine cables land in Widemouth Bay, linking the UK with the rest of the world. Which country does the Apollo cable link with? (*USA*) # If you were to enjoy a traditional cream tea at Millook Haven, what would you put on first - cream or jam? (*As you are in Cornwall, it should be jam. In Devon, cream is added first*)

