

accessing *The Lomonds*

Rock History

Fife's Twin Peaks.....

You can see the Lomond Hills from as far away as the Cairngorms in the north and the Borders in the south. Their profile is Fife's most distinctive landmark. East Lomond (also known as Falkland Hill) is 434 metres high. West Lomond (522 metres) is the highest point in Fife. They lie near the edge of a high plateau which tilts down to Glenrothes and the Firth of Forth.



Why are they here?

These hills have survived 300 million years of erosion, thanks mainly to a hard layer known as the Midland Valley Sill. Molten Rock ('magma') injected between layers of existing rock is called a 'sill'. The hot rock is clamped between its cooked neighbours like jam in a sandwich.

305 million years ago, from a source somewhere off Norway, a mass of magma forced its way to Central Scotland. It cooled into a huge underground structure, up to 150km thick and extending over 1,600 square km. This is the **Midland Valley Sill**. It has been exposed in places by erosion, mostly round its edges. In Fife it forms the prominent steep slope on the Lomond Hills, Bishop Hill and Benarty. The approach roads to the Forth Road Bridge were cut through the Sill.

The Sill is harder than the rocks it invaded. Its edge protected the rocks around it, allowing them to survive 300 million years of erosion.

The Sill rock is quartz-dolerite, a dense rock which weathers into very distinctive rounded shapes. Air and water react with the minerals in the dolerite, going for its weak spots first, the places where it cracked as it cooled. Weathering works inwards from these weaknesses, rounding off the blocks between the joints. The softened rock flakes off in layers, like onion skins.

Sharks in the hills

345 million years ago the piece of crust that we call Scotland lay over the Equator, on its long journey north to its present position. 'Fife' was at the bottom of a warm tropical sea. Lime-rich muds were building up on the seabed, trapping remains of creatures.

Scotland's journey north has not been smooth. This piece of crust has been bent, buckled, worn away, submerged and up-lifted. Finding old sea bed at 420 metres above present sea levels is not unusual. The sea-floor rocks of the Himalaya have been lifted up more than 8km.

You can find out some more in this walk, between Craigmear and East Lomond car parks. It covers a distance of about 5.5km out and back. You can find the numbered stops using the map, text and photographs.

The path to East Lomond summit is steep in places. You can miss it out if you want and go from sites 4 to 6 along the old Limekiln Track. The views are still very good from this path. There is also a steep section between Craigmear and point 2. Please use an OS map for more detail. Strong footwear and outdoor clothing are recommended.

KNOW THE CODE BEFORE YOU GO.....

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the key things are to:

- **Take responsibility for your own actions**
- **Respect the interests of other people**
- **Care for the environment**

Find out more by visiting: www.outdooraccess-scotland.com or by phoning Scottish Natural Heritage on 01334 654038.



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3 Dumped by the Ice

18,000 years ago, a kilometre of slow-moving ice was grinding its way over and round these hills, flowing east to the North Sea. Armed with rock fragments, the ice sheet sculpted the land surface below. Today the hills are littered with large stones, dumped as the ice melted 14,000 years ago. The old dry-stane dykes which criss-cross the hills were mostly built from these rocks.

2 Walking on the Sill

You can walk on top of the Sill where the East Lomond path steepens above Craigmead. There was once hundreds of metres of sandstone, limestone, and mudstone above this level. They have been worn off by 300 million years of rain, flood, wind and ice.

1 Cooked Contact

In Craigmead Quarry you can get close to the contact between the Midland Valley Sill and the older rock beneath it. The rounded blocky brown rock is the Sill. As molten rock ('magma') at 1200°C, it forced its way between layers of sandstone, mudstone and limestone, setting slowly into quartz-dolerite. The grey rock at the base of the cliff as sandstone baked hard by the Sill.

4 The Limekiln

During the 18th and 19th centuries, limestone was quarried wherever it was found at the surface in the hills. It was burnt with local coal to make lime for fertiliser and building materials. The old Limekiln on East Lomond has been restored and an interesting trail tells the story of the site and the people who worked there.

5 Volcanic Plumbing

At the summit of East Lomond you are standing on the feeder pipe of an extinct volcano. 10 million years after the Midland Valley Sill event, molten rock punched its way through the Sill to the surface, building ash and lava cones hundreds of metres high. As the volcanoes died down, magma and debris hardened inside them, setting as 'plugs' in the pipes. East and West Lomond are the worn stumps of two of these plugs. The volcanic cones are

6 Where are you?

EAST Lomond is one of the best viewpoints in Central Scotland. From the summit you can relate your position to the rest of Fife, the Highlands, Edinburgh, and the Borders. Looking out over the landscape, questions may come to mind. Why is the Howe of Fife beyond Falkland so flat? What created the hills and the mountains to the north? Why are there so many small islands in the Firth of Forth? If you see one of our Rangers in the hills, they will be very happy to answer your questions or help you in any way they can.



This site is managed by Fife Coast and Countryside Trust, on behalf of Fife Council.

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