

Rocks of Westfield Point sea defences



A great variety of rocks has been brought in as **sea defences**.



Sandstone block. This is a **sedimentary** rock, deposited in layers. As the environment changed, so the layers gained different sized grains, and may be stained by different types of iron minerals.



Shap Granite. This **igneous** rock is easy to spot. It contains large pink crystals which glint in the sun. It started life deep underground as a molten rock. As it started to cool large pink

crystals of orthoclase feldspar began to grow. These are rectangular in outline, and are said to be twinned - only half of the crystal will shine at any one time. The molten rock then moved nearer to the surface where it cooled more quickly and smaller crystals grew of glassy looking quartz and tiny black specks of biotite mica.



Borrowdale Volcanic Rock. These rocks have a greenish colour, and they may show many textures. They were formed by explosive volcanoes

around 390 million years ago. The volcanic products sank into crater lakes or calderas and so were protected from erosion and are present on the Earth today. These rocks probably came from Elterwater quarry.

Cumbria GeoConservation is a voluntary group working to record and protect important Local Geological Sites (LGS), formerly Regionally Important Geological and Geomorphological Sites (RIGS). It is a specialist group of **Cumbria Wildlife Trust**. There are 280 LGS in the whole of Cumbria. LGS in the Barrow area include *Walney cliffs*, *Hawcoat quarry* and *Dunnerholme Point*.



Rampside salt marsh (LGS 6 / 004)

This holds an important and complete record of modern sedimentation, and is important for research purposes.

The salt marsh built up after the Causeway to Roa Island was built in 1847; old maps before this time showed a water filled hollow known as Conck Hole.

The Causeway sheltered the area from the south-westerly waves, and fine mud and silt built up in layers. Salt marsh plants trapped more sediment over time. The salt marsh provides an important feeding area for wading birds.

A RAMPSIDE RAMBLE

A short circuit north from the Concle Inn at Rampside to Westfield Point, with an optional return on a footpath to Rampside Village Hall.



Rampside Tower

Walk details

Start from: The Concle Inn **Length:** 3 miles
Map: Ordnance Survey OL6 **Time:** 2 hours
Surface: The walk can be done wholly on a tarmac path, though the return via Rampside Village Hall needs boots. The main path is wheelchair accessible - and is a good cycle path too.

Route text and photos: Sylvia Woodhead
Design: John Shippen 2018



Flood near drumlin

From the Concle Inn, take the **Westfield Nature Trail** northwards. The route goes over **scenery of glacial deposition**. The small hills are made of glacial debris, called till, which was shaped by ice in the last Ice Age into smooth rounded mounds, known as **drumlins**.

Soon the path dips down. To either side are glimpses of ponds. These are

kettle holes. They formed at the end of the Ice Age when ice sheets were melting and depositing lots of mixed rock and ice. Blocks of stranded ice melted to form these



Rampside kettle hole

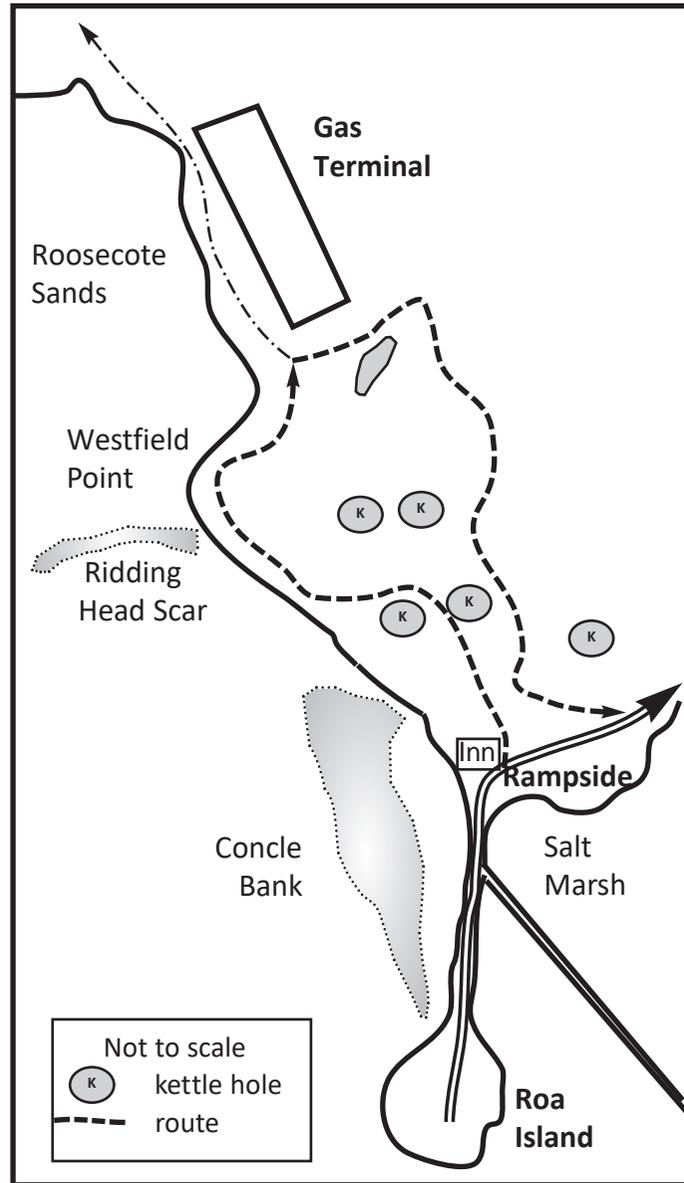
small lakes. These kettle holes formed about 10,000 years ago, and are slowly filling with sediment and vegetation growth. The pond to the northeast (your right) is almost completely vegetated, forming a distinctive waterlogged woodland at present.

Continue along the track to the coast. Just before Westfield Point you can see, at low tide, **Ridding Head Scar**, a deposit of boulders below low water mark. It is believed that these scars are the remains of **drumlins**,



Sea defence boulders

where all the smaller rocks have been washed away by the sea, just leaving large boulders visible now.



Beyond the Point stop to look more closely at the great variety of rock types in the blocks of rock brought in as coastal defences. You should be able to distinguish boulders of layered sandstone and Shap Granite. Others are greenish volcanic rocks of the Borrowdale Volcanic Group, which forms the high mountains of the central Lake District.



The ponds here are probably constructed rather than natural.

Continue on the trail, cross the road with care and go up the steps to the viewing cairn. To the left (north) are more **drumlin** hills. Some of the boulders encountered on the path are examples of glacial erratics, brought south from the central Lake District by ice.

As you continue to walk south back towards Rampside Village Hall, there is a small shallow valley, on your left, marked by some wet ground. This may be an example of a **glacial drainage channel**. Water from a melting ice sheet may have coursed down this valley at the end of the Ice Age about 15,000 years ago.



Drumlin country



produce fields with heavy clay soils, which can easily become waterlogged.

To go back to Rampside by another route, take the footpath signed to the right, at **SD 22690 67304**, through Westfield Nature Reserve. This can be muddy.

The whole of the Rampside area is largely composed of deposits left by the ice. These deposits cover the solid sandstone rock beneath. They contain a lot of clay and tend to produce