

FINGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Portraine Shore
Other names used for site	Portrane
IGH THEME:	IGH 1, 2, 4, 7, 12 (Karst, Precambrian to Devonian Palaeontology, Cambrian-Silurian, Quaternary, Mesozoic and Cenozoic)
TOWNLAND(S)	Quay
NEAREST TOWN	Portrane, Donabate
SIX INCH MAP NUMBER	8, 12
NATIONAL GRID REFERENCE	325960 249990 = O 2596 4999
1:50,000 O.S. SHEET NUMBER	43, 50 1/2 inch Sheet No. 13

Outline Site Description

Coastal cliffs and foreshore.

Geological System/Age and Primary Rock Type

Ordovician volcanic lavas and associated debris flows, slumped limestones, palaeokarstic doline and Silurian sandstones. There is a very small exposure of earliest Carboniferous conglomerate.

Main Geological or Geomorphological Interest

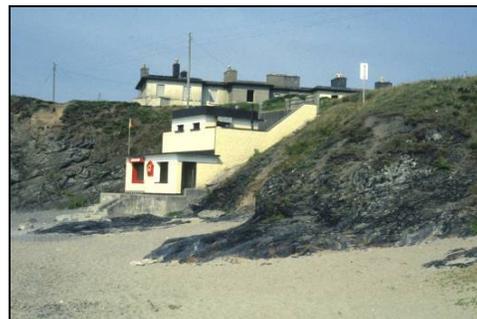
This headland displays a great geodiversity and complex geological history in the cliffs and foreshore exposures. Most rocks are distal equivalents of the volcanic Lambay Island succession which provide an easier opportunity to interpret the geological development. Eruption of andesite lavas was accompanied by instability and numerous submarine debris flows, which include some black slates. After these events limestone reefs developed around the volcanic island, again with instability as the sediments are often slumped and disturbed. These limestones supported a rich fauna which is now preserved as fossils in the rocks. At the end of the Ordovician Period, the sea level dropped dramatically due to a global glaciation event and these limestones were exposed, and a karstic doline formed which is now visible in the cliffs, infilled with younger sediment. A series of unfossiliferous sandstones were deposited on top of part of the limestones during the Silurian Period. The more recent events seen in the record of the rocks include karstification including two caves, and glaciation which planed off the top of the cliffs.

Site Importance

The section at Portraine is one of the finest in Ireland and has interest under several different geological themes. It has already been proposed as a biodiversity pNHA (Portraine Shore - 1215).

Management/promotion issues

This site is publicly accessible from the Council car park on the headland and from the beaches and is a popular amenity area for walking. An explanatory signboard in the car park may enhance people's enjoyment by making the geology accessible. Alternatively a leaflet/guidebook available in local outlets could be produced.



Left: The Portraine Limestone Formation to the east of the bay south of the car park, showing the widespread soft sediment deformation.

Right: The black slates in Tower Bay from the east side.

Portraine Shore

