

Fairhead and Murlough

Information Sheet



Location: FAIRHEAD AND MURLOUGH

Conservation designations: AONB and ASSI

Grid reference: Doonmore Car Park - 317579, 442589, Coolanlough Car Park - 318172, 442351, Murlough Bay - 319091, 441743 (Irish Grid)

Address: BT54 6RD or BT54 6RG

Parking available: Yes, at Doonmore (prior arrangement with landowner), Coolanlough or Murlough Bay. None of these locations are suitable for coaches

Personnel to be contacted prior to visit: Landowner at Doonmore

Useful equipment:

- Stationary
- Camera
- Metre stick
- Hand lens

Relevance national curriculum:

Key Stage 4/5 Geology

- Petrology
- Glaciation

Rock types and geological processes observed: Pre-Cambrian (metamorphosed sandstones and mudstones), Carboniferous (Sandstones, Conglomerates and Coals), Triassic (Sandstone), Paleogene (Dolerite)

Geological structures: Intrusive Sill, bedding

Earth processes: eg. Continental drift, orogeny, coastal flooding and glaciation

Geological periods present: Pre-Cambrian, Carboniferous, Triassic, Paleogene and Quaternary

Site specific hazards and risks:

- Tides and wave zone
- Loose and slippery rocks and paths
- Cliffs
- Livestock
- Traffic

It is advisable to carry out a dynamic risk assessment before embarking upon a study visit.

Mitigation measures:

- Stay away from the wave zone
- Wear appropriate clothing and footwear
- Avoid the base or steep edge of cliffs
- Do not disturb livestock
- Embark and disembark vehicles in the designated parking area of bus / coach stops

Did you know: The rocks and landforms at Fairhead and Murlough Bay, provide some of the most extensive evidence of geological activity in this part of Ireland over an extensive period of geological time from the Pre-Cambrian to the Quaternary (last 600 million years). In this area, there is clear evidence of the deposition of sands and mudstones in a marine environment during the Pre-Cambrian, metamorphism of this material during the Caledonian-Appalachian Orogeny during the Silurian, deposition of coal in deltaic environments during the Carboniferous, deposition of desert sandstones during the late Triassic, intrusion of a dolerite sill during the Paleogene and erosion of the dolerite cliff face throughout the Quaternary. Few other locations in Northern Ireland have such a variety of geological features in such a small area.

Topics to cover before visit: Rock cycle, geological time, depositional environments, plate tectonics, weathering and erosion, intrusive and extrusive igneous activity, formation of coal, orogeny.

Keywords: Pre-Cambrian, Carboniferous, Triassic, Paleogene, Quaternary, Plate Tectonics, Sandstone, Mudstone, Conglomerate, Coal, Dolerite, Basalt, Glaciation, Weathering, Erosion, Bedding, Orogeny, Intrusive and Extrusive Activity.



Limestone with Belemnite Fossil



Extensive Sand Dune Systems at Whitepark Bay



Basalt Rock

Geological history*:

The oldest rocks found in the Fairhead and Murlough area are heavily metamorphosed sands and muds which were deposited during the Precambrian Period approximately 600 million years ago. These sands and muds were deposited on the floor of an ancient ocean known as the Iapetus. During the Silurian Period they were metamorphosed during a mountain building event known as the Caledonian-Appalachian Orogeny as the Iapetus Ocean closed. Carboniferous age rocks (approximately 320 million years old) are exposed in Murlough Bay and continue beneath Fairhead Sill and along the Ballycastle Coastline. The rocks are mainly a mixture of sandstones, pebbles, conglomerates and coal. In this part of Ireland, it is known that over a period of approximately 20 million years' sea levels fell and delta and swamp conditions prevailed. This enabled the formation of coal deposits which were mined commercially in Ballycastle until the 1960s. The youngest rocks at Fairhead and Murlough Bay are those of the Fairhead Sill, which represents the thickest and most extensive Paleogene age sill in County Antrim. The sill forms the distinctive headland known as Benmore or Fairhead, and is composed of columnar jointed olivine rich dolerite, an igneous rock, some 60 million years old. The sill reaches a maximum of 85m depth and its upper surface dips and thins to the south. The sill has transgressed through the underlying Carboniferous, Triassic and Cretaceous rocks which are best seen in Murlough Bay.

