

KERRY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Kilmurry Bay
Other names used for site	Kilmurry Bay to Minard Castle
IGH THEME	IGH10 Devonian, IGH13 Coastal Geomorphology
TOWNLAND(S)	Acres, Kilmurry, Minard East
NEAREST TOWN/VILLAGE	Annascaul
SIX INCH MAP NUMBER	54
ITM CO-ORDINATES	455770E 599300N (first outcrop on east side of beach)
1:50,000 O.S. SHEET NUMBER	70
GSi BEDROCK 1:100,000 SHEET NO.	20
GIS CODE	KY058

Outline Site Description

Outcrops on foreshore in a small bay with a boulder beach.

Geological System/Age and Primary Rock Type

The bedrock comprises sandstone and siltstone of the mid-Devonian Kilmurry Sandstone Formation (c. 385 million years old). The modern boulder beach comprises large, rounded boulders of locally-derived red and grey sandstone, formed in the recent Holocene Epoch.

Main Geological or Geomorphological Interest

The Kilmurry Formation comprises pale red sandstones that have been interpreted as aeolian in origin, *i.e.* deposited as sand dunes. The first large outcrop along the eastern end of the beach displays very well the large-scale cross bedding that is a feature of the formation. In this case, the cross-bedding can be observed in three dimensions. The Kilmurry Formation is considered to represent an ancient dune field and the cross-bedding is interpreted to have been formed by a series of migrating sand dunes, with erosion causing truncation of the dune bedding of one set of dunes followed by deposition, on top of the truncated set, of a further set of dunes. The Kilmurry Formation is considered to represent a sedimentary environment downstream of the alluvial fans of the older, underlying Inch Conglomerate Formation. Further eastwards the cliff sections reveal large-scale channel structures. On the west side of the bay, beneath Minard Castle, red siltstone interbedded with sandstone displays prominent shrinkage cracks, infilled by sand, indicating desiccation of the fine silt after deposition in subaerial conditions.

The boulder beach at Kilmurry Bay sits above the sandy intertidal zone, separated by a sharp boundary. It comprises well-rounded boulders of red and grey sandstone derived from the local bedrock. This is a storm beach where boulders are moved only at times of highest energy, during the most intense storms.

Site Importance – County Geological Site; recommended for Geological NHA

This is a good and readily accessible site for examining the aeolian sandstones of the Kilmurry Formation and its characteristic large-scale cross-bedding. The structures are arguably among the best examples of these structures in NW Europe. The boulder beach is an excellent example of a storm beach in Ireland.

Management/promotion issues

Most of the site, including the Kilmurry Formation exposures east and west of the beach, is within the Dingle Peninsula SPA (site code 004153) but otherwise the site enjoys no formal protection, albeit it is not under any threat other than from coastal erosion. There is a signboard beside the road at the western end of the beach that describes the key geological features of the site as well as providing an overview of Dingle's geological history. The signboard is heavily weathered, partly illegible and requires replacement.



Close-up view of outcrop, at east end of beach, of aeolian sandstone of the Kilmurry Sandstone Formation that displays large-scale dune cross-bedding. Yellow dashed line shows steeply dipping foreset beds while red dash line is parallel to erosion or truncation surface.



Main part of outcrop, at east end of beach, showing steeply dipping foreset beds above truncation surface.



Close-up of fine laminae within steeply dipping foreset beds in main part of outcrop of Kilmurry Sandstone Formation, at east end of beach. Lens cap for scale.



Close-up of outcrop of red siltstone of Kilmurry Sandstone Formation below Minard Castle with desiccation cracks infilled by grey sandstone.



Storm beach in Kilmurry Bay: large boulders deposited during storms on the inner part of the beach at high-tide level. View west towards Minard Castle.

