

KERRY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Ballydeenlea
Other names used for site	Kilneedan, Ballyhar, Barry's Glyn, Barry's Glen
IGH THEME	IGH12 Mesozoic and Cenozoic, IGH3 Carboniferous to Pliocene Palaeontology, IGH9 Upper Carboniferous
TOWNLAND(S)	Ballydeenlea
NEAREST TOWN/VILLAGE	Farranfore
SIX INCH MAP NUMBER	58
ITM CO-ORDINATES	495070E 597900N
1:50,000 O.S. SHEET NUMBER	78
GSi BEDROCK 1:100,000 SHEET NO.	21
GIS CODE	KY012

Outline Site Description

Sections into bedrock in steep, woodland terrain on the west side of the River Gweestin valley.

Geological System/Age and Primary Rock Type

Ballydeenlea Chalk Breccia deposits are Late Cretaceous age (Campanian, c. 83 – 72 million years old). The Ballydeenlea Chalk Breccia is a Cretaceous outlier surrounded by mid-Carboniferous (Pennsylvanian or Namurian, 326-315 million years old) shale.

Main Geological or Geomorphological Interest

The Ballydeenlea Chalk Breccia comprises a dull-white coloured chalk containing angular fragments of dark Pennsylvanian (Namurian) shale clasts, some reportedly up to a few meters in diameter. The Ballydeenlea Chalk Breccia deposits can be considered to have formed when fragments of preexisting, hard Pennsylvanian (Namurian) shale fragments intermixed with soft lime-mud ooze on the seabed. Over the years, various possible origins for this mixing event have been proposed. One suggestion is that intermixing occurred when both the shale and overlying lime mud collapsed into a sub-seabed limestone cavern. Another suggestion is that the shale fragments broke off a submarine fault scarp and slumped down into the chalk ooze at the foot of the fault scarp. Abundant plankton fossils (bivalves, foraminifera, echinoids, bryozoan) have been identified in the chalk. Based on dating of the foraminifera fossils, of which over twenty separate types were identified, the chalk deposits are assigned a Late Cretaceous, Campanian age. Global mean sea level is understood to have been high (highstand) during Campanian times, such that most, if not all, of Ireland was submerged at this time. Small areas of Ballydeenlea Chalk Breccia also occur at nearby Kilneedan and Ballyhar townlands, as well as at Kilfenora on the north side of Tralee Bay.

Site Importance – County Geological Site; recommended for Geological NHA

This is a very important County Geological Site because it hosts the only known occurrence of Cretaceous rocks in Ireland outside of County Antrim, and is also rich in fossils. The chalk breccia deposits provide evidence of the type of marine environment that persisted in County Kerry, and perhaps much of Ireland, during the Cretaceous Period, between 83 and 72 million years old.

Management/promotion issues

Borehole, fieldwork and geophysical survey data indicate the Ballydeenlea Chalk Breccia occurs in an extremely small area of 1 to 2 hectares. The chalk exposures are overgrown and on steep, almost inaccessible wooded terrain. No development or quarrying should be permitted in this area, and it is noted that quarrying took place at the site in the past. Owing to the rarity of the deposits, the difficulty of access, and the proximity to a busy route, the site at Ballydeenlea is not suitable for public promotion. The site is partially within Castlemaine Harbour SAC (site code 000343).



Ballydeenlea Chalk Breccia on valley side, west of the Gweestin River.



Ballydeenlea Chalk Breccia outcrop on west side of Gweestin River.



Ballydeenlea Chalk breccia.



Ballydeenlea Chalk Breccia occurs at railway cutting east of the railway crossing, which itself is in Ballyhar townland.

