

KERRY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Ballymakegoge
Other names used for site	Fenit – Kilfenora – Spa, Fenit to Spa section
IGH THEME	IGH7 Quaternary
TOWNLAND(S)	Ballymakegoge
NEAREST TOWN/VILLAGE	Fenit
SIX INCH MAP NUMBER	28
ITM CO-ORDINATES	476925E 614910N (central portion of section)
1:50,000 O.S. SHEET NUMBER	71
GSi BEDROCK 1:100,000 SHEET NO.	20
GIS CODE	KY015

Outline Site Description

This site comprises a 5 m high coastal section approximately 1.3 km long, c. 3.5 km east of Fenit.

Geological System/Age and Primary Rock Type

The cliff section along the Ballymakegoge portion of the beach on the northern side of Tralee Bay is comprised of Quaternary age glacial and interglacial sediments.

Main Geological or Geomorphological Interest

The section at Ballymakegoge exposes long-studied sediments that have made this a type-site for glacial stratigraphic work in Ireland.

The first important work on the sediments exposed in the cliffs was in 1970, and the sequence, from the base of the section upwards, was interpreted as (i) a raised, wave-cut platform in bedrock, approximately 3.5 m above mean sea level; (ii) raised beach sediments; (iii) biogenic (fossiliferous) sediments; (iv) a lower solifluction deposit (the 'Lower Head'); (v) glacial sediments and; (vi) the upper solifluction deposit (the 'Upper Head'), which caps the succession.

The raised wave-cut platform is essentially the same as the undated 'pre-glacial shore platform' that crops out all along the south coast of Ireland. The overlying biogenic (fossiliferous) deposits were assigned in 1970 to the close of the Gortian interglacial (251,000 to 195,000 years old). This was followed by the onset of a succeeding cold stage, which saw the deposition of the lower solifluction deposit. Later work dates the marine platform, raised beach and biogenic sediments as being Gortian in age, and the overlying sediments as dating from a 'succeeding cold stage or stages'.

The entire sequence was then re-interpreted in the 1980s as comprising soliflucted units only, all from the same, singular glaciation. It was at this time supposed that the locality was not glaciated at all and that the soliflucted deposits preceded the last glaciation. The cliff sections were at this time termed the stratotype for the 'Fenit Formation'.

Palynological evidence suggests that the biogenic sediments in the middle of the section at Ballymakegoge were deposited in cool, temperate conditions, and uranium-thorium dating of the biogenic material gives an age of between 114,000 and 123,000 years (118,000 (+5,000/-4,000 years)). This age implies that the biogenic part of the deposit belongs with Oxygen-Isotope Stage 5.

Site Importance – County Geological Site; recommended for Geological NHA

This is one of the most important glacial biostratigraphic and lithostratigraphic sites in the country. As a site that exhibits how interpretations of glacial sequences can change over time, it has few equals.

Management/promotion issues

The site is located at a public beach and is readily accessible, but caution is required as some of the exposure is inaccessible at high tide, and with the tide encroaching rapidly one can get stranded. Care should also be taken close to the cliffs as there may be occasional falls of rock or debris. The site merits promotion, preferably as part of a north Kerry coastal geoheritage trail, and is partially within the Tralee Bay Complex SPA (site code 004188), and the Tralee Bay and Maharees Peninsula, West to Cloghane SAC and pNHA (site code 002070).



The Ballymakegoge section, viewed from the east.



Two units of diamicton (soliflucted sediments) at Ballymakegoge. Staff is 3 m high.



Pebble clasts in a sand matrix as part of the raised beach.



Peaty mud, uranium-thorium dated to 118,000 (+5,000/-4,000 years), between silt units in the central portion of the section.



Detail of angular clast-dominated diamicton (interpreted as soliflucted deposits) overlying silts/clays, at the western end of the cliff.

