# **TIPPERARY - COUNTY GEOLOGICAL SITE REPORT**

NAME OF SITE	Killough Hill
Other names used for site	
IGH THEME	IGH8 Lower Carboniferous, IGH7 Quaternary
TOWNLAND(S)	Killough, Sallsquarter, Aughnagomaun, Gaile
NEAREST TOWN/VILLAGE	Horse and Jockey
SIX INCH MAP NUMBER	47, 53
ITM CO-ORDINATES	611000E 651000N (centre of quarry)
1:50,000 O.S. SHEET NUMBER 66	GSI BEDROCK 1:100,000 SHEET NO. 18

# **Outline Site Description**

An extensive quarry cut into a long, prominent, steep-sided limestone ridge, which itself is a well-moulded crag-and-tail feature.

# Geological System/Age and Primary Rock Type

Bedrock comprises Lower Carboniferous (359-323 Ma) fossil-rich limestone of the Ballyadams Formation, deposited in open marine conditions. The ridge has been shaped and moulded during the Quaternary Period, by glacier ice abrading the ridge top and flanks.

# Main Geological or Geomorphological Interest

Killough Hill itself is a well-expressed crag-and-tail feature, with an up-ice 'crag' of bedrock moulded with a down-ice 'tail' of softer glacial till sediment. The quarry into Killough Hill produces stone for aggregates, chippings, railway ballast, lime dust, screenings, and drainage stone.

The Ballyadams Formation limestone rocks are the typical 'Burren' type limestone, and fossiliferous, clean and pale grey in colour. Some micritic beds are present near the base of the quarry. Fossils of coral colonies and bryozoa are found in places within the quarry rocks.

The beds in the quarry get much thicker with depth, and dip gently towards the south. These have been studied in detail and are considered to be ramps and flat thrusts associated with the Variscan orogeny (320-280 Ma), and also have Variscan age north to north-northwest trending veins. These weaknesses are again offset by Palaeogene and Neogene age (65-2 Ma) strike-slip faults. Joints in the rock are also present and visible, closer to the surface, and were formed more recently than Neogene times.

The limestone in Killough Hill has a well-developed layer of epikarst – enlarged fractures from dissolution of the limestone, in the upper few metres. This forms the limestone pavement at the northern end of the ridge, and is also seen in section in the quarry in the hill. Evidence of karstic cavities is also present at depth in the quarry, and a number of clay-filled pipes may be seen throughout the faces.

### Site Importance – County Geological Site

This County Geological Site is an important representative site exhibiting fresh and extensive exposures of limestone of the Ballyadams Formation. The northern extremity of the quarry area, and the flanks of the ridge around it, have been designated a pNHA (sitecode 000959) owing to the presence of limestone pavement and calcareous grassland there.

### Management/promotion issues

As a working quarry, the listing as a County Geological Site has no implications for the normal operation of the quarry, subject to standard permissions and conditions under planning and environmental legislation. In the event of any future changes in quarrying operations, it would be desirable to consider retaining representative faces for geological purposes. As an operating quarry, the site is not suitable for any general promotion. The crag and tail feature is well seen from the M9 motorway, to its east.



Killough Hill crag and tail, viewed from the east.



Gently dipping beds in the southern face of Killough Hill quarry.



Epikarst in the uppermost portion of the exposed limestone, and a clay-filled 'pipe' within the rock.

Thick bedded, micritite limestone towards the base of the quarry.



Gallagher et al. 2019. Geological Survey Ireland.