

WICKLOW - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Glencullen River
Other names used for site	<i>Abhainn Ghleann Cuilinn</i> , Glendoo, Knocksink Wood
IGH THEME	IGH14 Fluvial and Lacustrine Geomorphology
TOWNLAND(S)	Knocksink, Monastery, Killegar, Ballybrew, Parknasilloge
NEAREST TOWN/VILLAGE	Enniskerry
SIX INCH MAP NUMBER	7
ITM CO-ORDINATES	721699E 718000N (Knocksink Woods Car Park)
1:50,000 O.S. SHEET NUMBER	56 GSI BEDROCK 1:100,000 SHEET NO. 16

Outline Site Description

A narrow, steep-sided wooded valley in the northeast Wicklow Mountains through which the fast flowing Glencullen River flows south-eastwards towards Enniskerry.

Geological System/Age and Primary Rock Type

The northwest-southeast oriented glacial meltwater valley is cut through bedrock (Devonian granite in the northwest section; Ordovician schist in the southeast section) and glacial drift. The valley was formed by glacial meltwaters flowing south-eastwards during the deglaciation at the end of the last Ice Age.

Main Geological or Geomorphological Interest

Glencullen is the most northerly of the eastern Wicklow Mountains' glens. The valley runs for a distance of 9.5km in a northwesterly direction from Enniskerry, crossing the county boundary to Tibbradden, Co. Dublin (valley called Glendoo). The valley floor is partially filled with glacial till and glaciofluvial gravels. Slope instability and mass movement (mass wasting) is confined to the glacial drift materials and several different styles of slope failure occur along the valley, which themselves are controlled by drift topography and the bedrock surface underlying the drift. The greater extent of the valley sides is vegetated (gorse, bramble, broadleaf deciduous woods). Nearer the riverbank, the terrain vegetated with wet woodland, heath and a number of tufa (springs and seepage areas) can be seen, such as the path-side seepage area near Knocksink Wood car park.

Slope instabilities have resulted from the excavation by the post-glacial (in the last c. 12,000 years) Glencullen River of a new valley in the drift, and slope failures occur on the steep slopes of this 'new' valley. The different types of failure vary from shallow to deep landslips, to steep bluff (cliff) failures where bluffs are undercut by the river (Knocksink Wood area), to earthflows (Ballybrew area).

Bedrock is sporadic and best seen in the stream channel where the river has eroded through drift down to bedrock. The valley formed along a geological fault, in a similar way to the Glencree and Dodder valleys 4km to the south, which also have NW-SW orientations.

Site Importance - County Geological Site

This important County Geological Site is located within the Knocksink Wood SAC and proposed NHA (000725). This site includes petrifying springs with tufa formation (Cratoneurion) [7220], an Annex 1 Priority Habitat protected under the EU Habitats Directive.

Management/promotion issues

Knocksink Wood is a popular amenity area, and has great potential as a glacial landform field teaching site. A public information sign (beside the existing NPWS sign at Knocksink Wood car park) would be useful in communicating the heritage aspects of this landscape feature. Slope collapse and river erosion of the valley-sides is an ongoing, if irregular, natural process, so future development of e.g. paths should take this into consideration.



Cobble/boulder bar on northeast bank looking upstream (between the two wooden bridges in Knocksink Wood).



Slope failure (mass movement) on NE bank of river (north of second bridge in Knocksink Wood). Low river flow conditions.



Stone reinforcements on NE riverbank river (between two wooden bridges in Knocksink Wood).



Seepage beside path near first (south) wooden bridge in Knocksink Wood.



First (south) wooden bridge over Glencullen river, Knocksink Wood.



