GALWAY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE
Other names used for site
IGH THEME
TOWNLAND(S)
NEAREST TOWN/VILLAGE
SIX INCH MAP NUMBER
ITM CO-ORDINATES
1:50,000 O.S. SHEET No. 39

Croaghill Turlough

IGH1 Karst, IGH16 Hydrogeology Croaghill, Parkbaun, Carrowneany, Brierfort Williamstown 1, 6 559400E 770650N (centre of feature) GSI BEDROCK 1:100,000 SHEET NO. 11

Outline Site Description

This site comprises a small turlough in a wide basin about 2 km northwest of Williamstown.

Geological System/Age and Primary Rock Type

The bedrock under the site is pure bedded, Lower Carboniferous limestone, but the turlough feature itself is post-glacial, formed in the last 11,000 years.

Main Geological or Geomorphological Interest

Croaghill Turlough is a 'wet' turlough, parts of which stay flooded well into July. The topography of the surrounding, impounding hills is dominated by deposits of till (glacial sediment), with some glaciofluvial sands and gravels at the northwest, and an esker just outside the site boundary at the west. The floor of the feature is notably undulating, which means that the vegetation of the basin floor has a complex pattern. A number of marked, deep, karstic, enclosed depressions (dolines) are seen at the northwestern and western ends of the turlough basin.

The feature reflects the interaction of the groundwater table with the land surface, and is a seasonal lake. There are many erratics of pure limestone in the stone walls around the turlough, many of which are moss covered up to a certain elevation. Such moss provides a watermark which allows an approximation of the high-water level when the turlough is in flood.

The centre of the main basin is subject to very little grazing because of its wetness and soft terrain. Surrounding land is used for hay, pasture and oats. In general, the site is relatively undisturbed.

The wetness of the turlough has led to the accumulation of deep peat, and a 3 m depth is recorded. The turlough has been monitored over the last ten years by the Department of Environmental Engineering in Trinity College Dublin, which has shown that during flood a maximum water depth of 4.4 m is found in the centre of the turlough basin, and the feature has an average daily inflow when filling of 0.496 m^3/s (496 litres per second).

Site Importance – County Geological Site

This turlough is worthy of recognition as a County Geological Site owing to the local-scale geomorphological diversity across the feature, across a relatively small area. The feature is already designated as an SAC (Site code 000255).

Management/promotion issues

Issues such as cattle encroachment and soil disturbance of the margins may cause problems. Threats to the site would include drainage of surrounding lands or the release of polluting substances, *e.g.* silage effluent, into the system. At present, the site seems naturally eutrophic.



Croaghill Turlough, viewed from the west, September 2018.



One of the deep, enclosed depressions at the northwestern end of the turlough feature.



A line of enclosed depressions at the western end of the main turlough basin.



The esker at the western edge of the feature.





Water table map for area around Coolcam and Croaghill turloughs, from a report 'Turloughs Hydrology, Ecology and Conservation' by a multi-disciplinary team from the Departments of Botany, Zoology, Geology, Civil Structural and Environmental Engineering, and the Centre for the Environment, at Trinity College Dublin, for the National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin.



Stage-discharge curve of Croaghill Turlough, from the same report. This curve shows that the turlough empties more rapidly the 'fuller' it is, but takes a longer time to empty when the water level reaches low flood levels.