OFFALY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Croghan Hill**
Other names used for site	Cruchan Éile, Cnoc Cruacháin, Brí Éile
IGH THEME	**IGH11 Igneous Intrusions, IGH8 Lower Carboniferous**
TOWNLAND(S)	**Croghanhill, Cannakill, Ballybeg**
NEAREST TOWN/VILLAGE	**Daingean, Rhode**
SIX INCH MAP NUMBER	**10**
ITM CO-ORDINATES	**648050E 733140N**
1:50,000 O.S. SHEET NUMBER	**48 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
A prominent hill rising from an otherwise flat landscape of midland raised bogs and low-lying pasture.

Geological System/Age and Primary Rock Type
The volcanic rocks and limestones are Lower Carboniferous (Mississippian, Viséan) in age, formed around 340 million years ago.

Main Geological or Geomorphological Interest
Croghan Hill (234m OD) is the remains of an extinct volcano that erupted and rose up from the sea that covered this region during the Carboniferous Period. A variety of volcanic rocks occur on and around Croghan Hill, including extrusive alkali basalts and limburgites, and pyroclastic agglomerates and tuffs. The rocks are interbedded with the limestones which formed in the warm seas into which the volcano erupted its volcanic material. These rocks record episodes of volcanic activity consisting of lava flows and violent explosive eruptions.

Some columnar jointing in a basalt flow (formed by a similar process to The Giant's Causeway), on the northeastern side of Croghan Hill, suggests ponding and cooling of the lava in a subaerial environment.

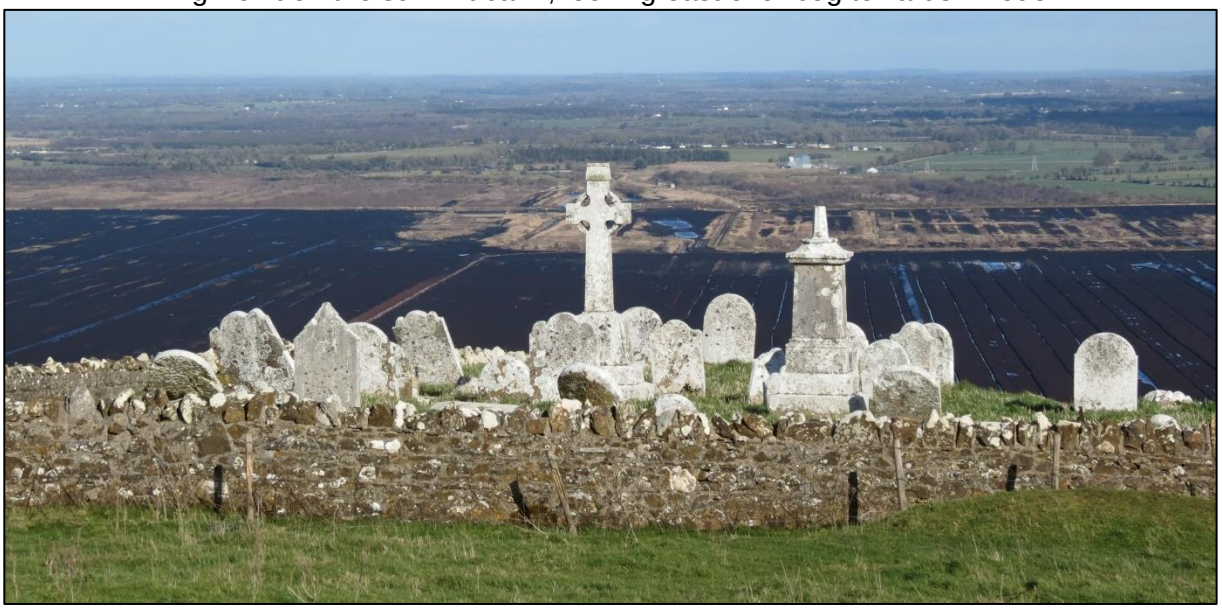
Gneiss xenoliths (fragments of rock of different composition enclosed in igneous rock) have been described (*Nature, Vol. 250 1974*) occurring in agglomerate outcrops to the west of Croghan village, and in basalts south of the village. It has been suggested that these high-grade metamorphic gneiss are derived from the sub-Palaeozoic lower crust in this region.

The hill is largely surrounded by low-lying pastures and peatland underlain by limestone and shale beds of the Carboniferous Lucan Formation.

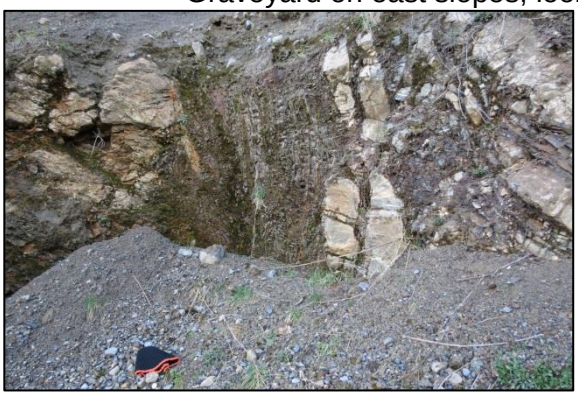
Site Importance – County Geological Site; recommended for geological NHA
This is an important County Geological Site in terms of volcanic igneous geology, particularly in this region of the low-lying midlands, which is predominantly underlain by Carboniferous limestones covered by bog. The site should also be recognised as a geological NHA owing to its importance in understanding the environmental conditions during the Carboniferous, and as it is one of only a few such Carboniferous-age volcanic sites in Ireland.

Management/promotion issues
The hill is capped by a cairn (RMP OF010-00401), believed to be a Bronze Age burial place. An enclosed graveyard on the SE slopes occupies the site of a 5th century Early Christian church. The *Clustucka* (RMP OF010-014) standing stone in Barrysbrook townland on the SE slope of the hill is a fine example of an agglomerate.

Trig Point on the summit cairn, looking east over bog towards Rhode.

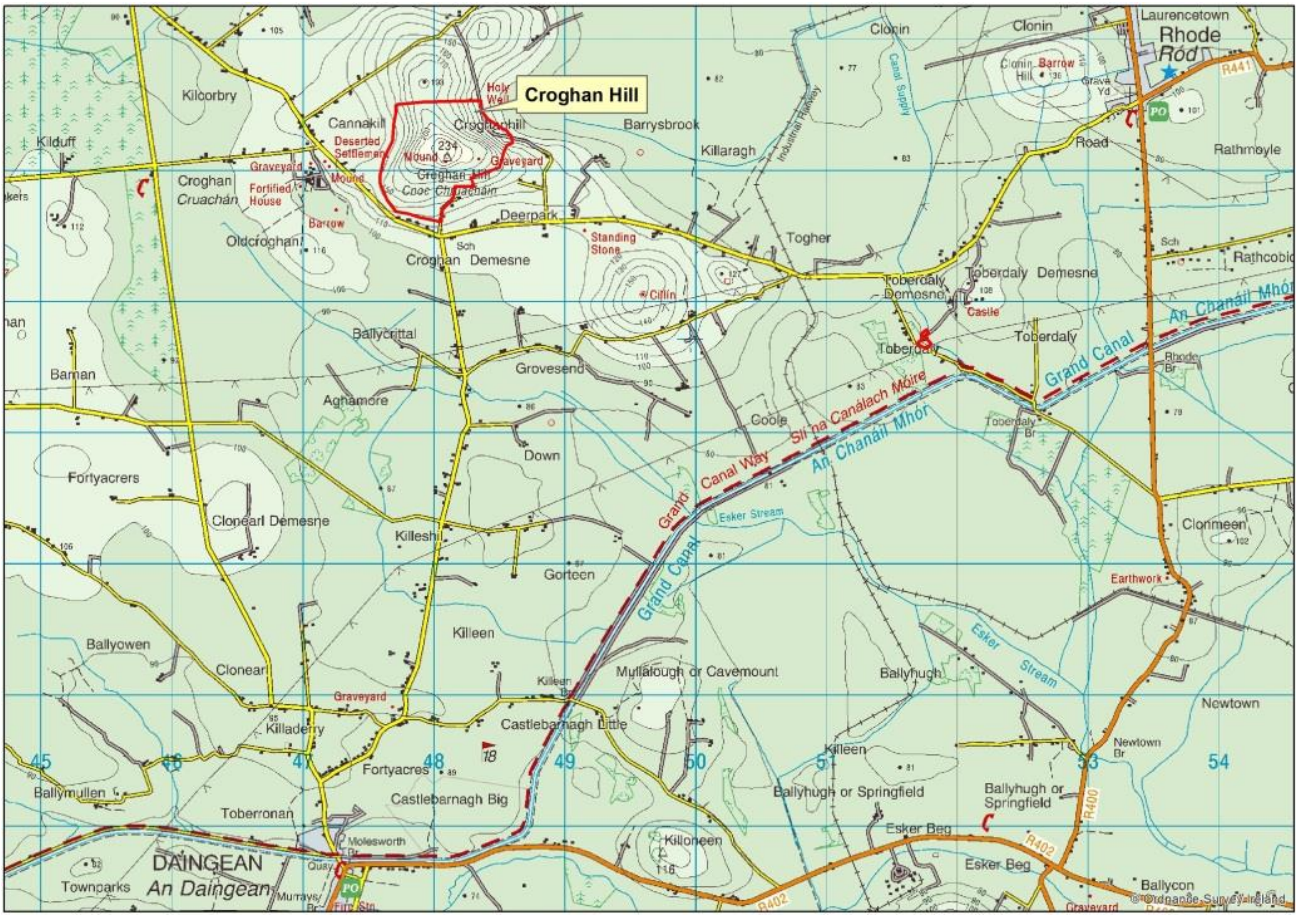


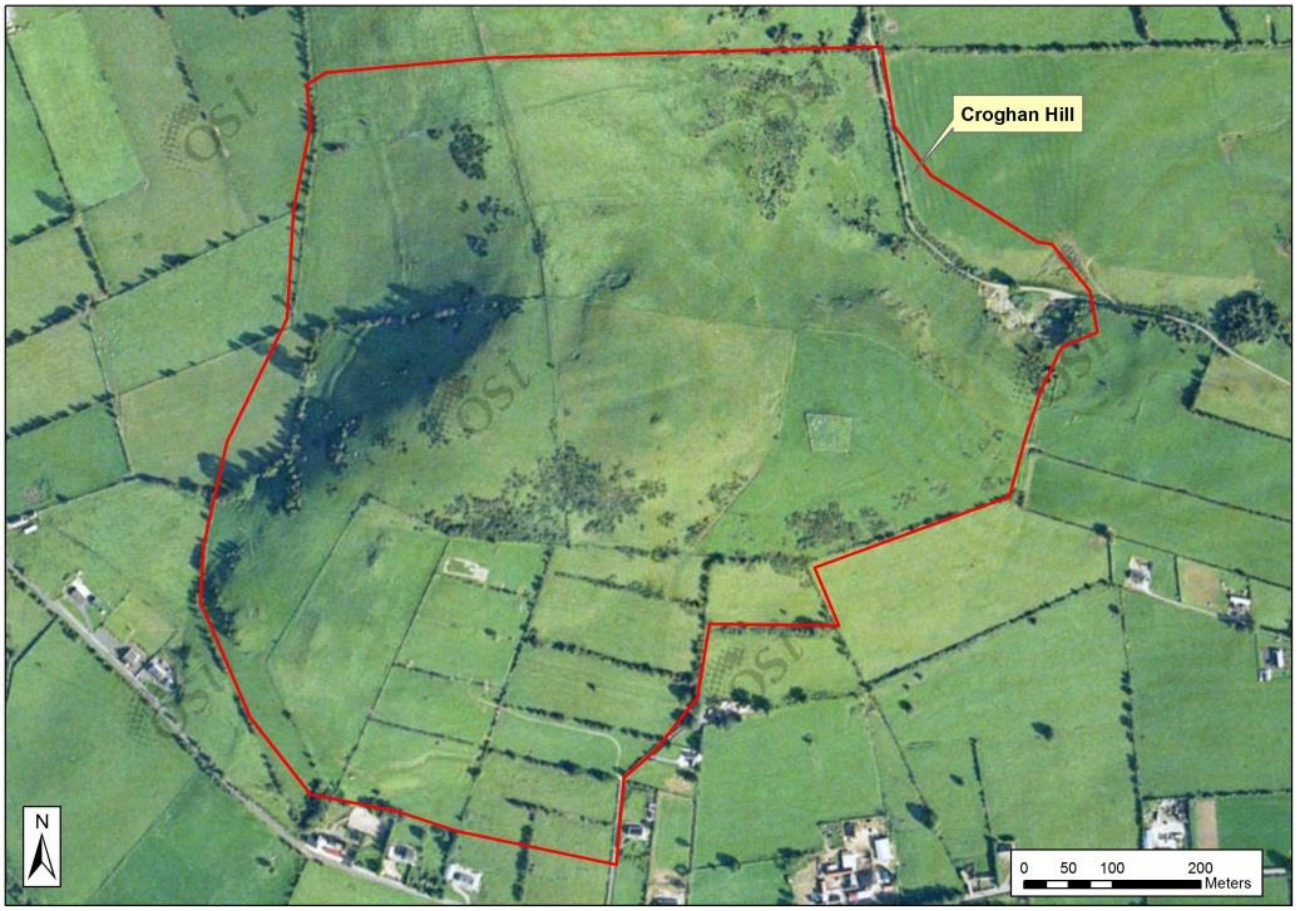
Graveyard on east slopes, looking east over bog towards Rhode.

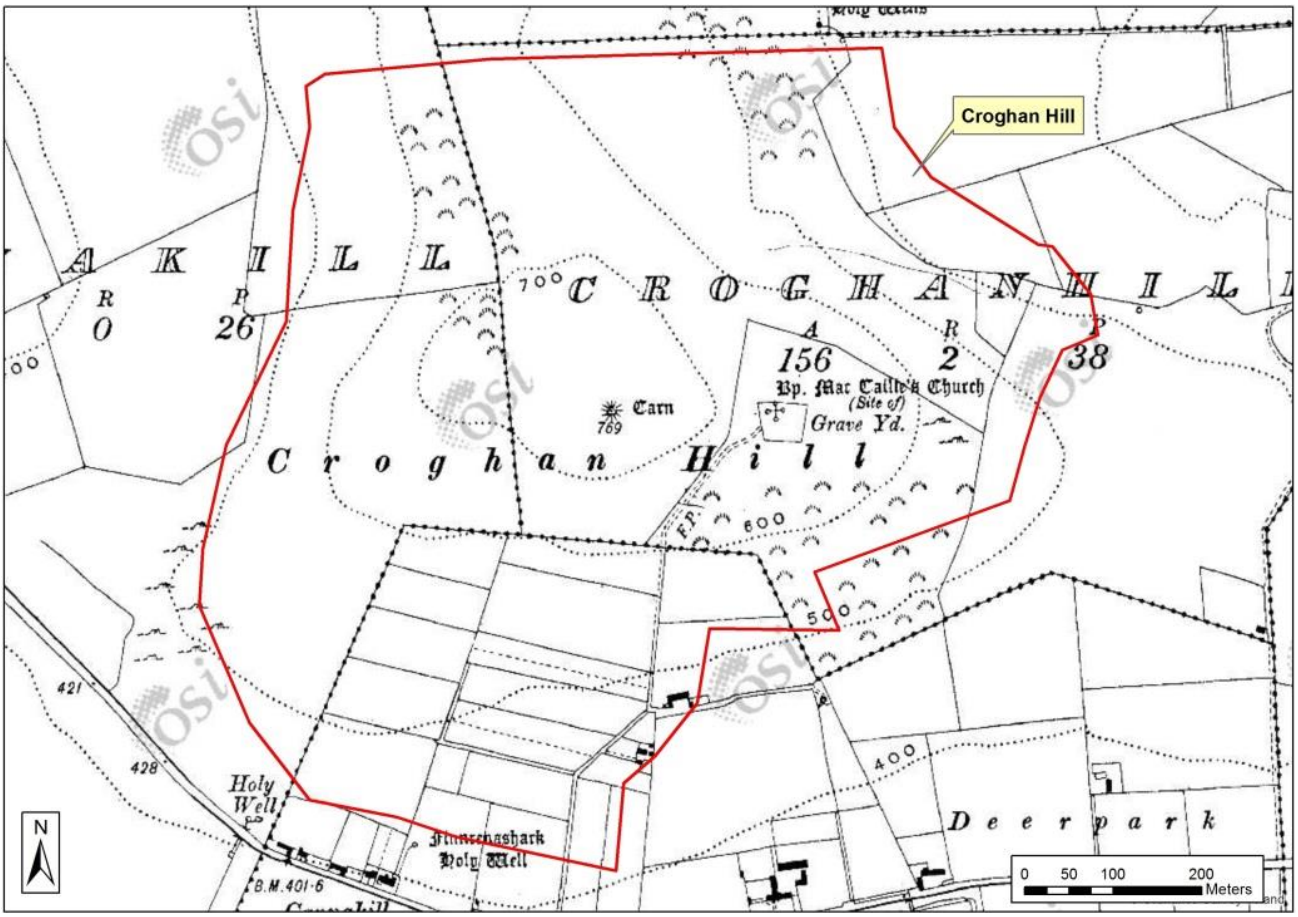


Inclined carbonate strata in sand quarry at NE foot of hill.

Agglomerate rock forms the *Clustucka* standstone southeast of the hill.


Croghan Hill
Kilcorbry
Kilduff
Cannakill
Croghanhill
Barrysbrook
Killaragh
Clonin
Laurencetown
Rhode
Rathmoyle
Croghan
Cruachán
Oldcroghan
Deerpark
Croghan Demesne
Togher
Toberdaly Demesne
Toberdaly
Rathcobic
Ballycrittal
Baman
Grovesend
Aghamore
Coole
Down
Fortyacrers
Clonearl Demesne
Killeshil
Gorteen
Clonmeen
Killeen
Ballyowen
Clonearl
Killadeny
Castlebarnagh Little
Mullalough or Cavemount
Ballyhugh
Newtown
Fortyacres
Castlebarnagh Big
Ballymullen
Toberronan
Killeen
Ballyhugh or Springfield
Esker Beg
Killoneen
DAINGEAN
An Daingean
Townparks
Ballycon
Grand Canal
Grand Canal Way
Slí na Canálach Móire
An Chanáil Mhór
Esker Stream
Industrial Railway
Canal Supply
Holy Well
Graveyard
Mound
Deserted Settlement
Fortified House
Barrow
Standing Stone
Castle
Earthwork
R441
R400
R402
0 50 100 200 Meters
N


Croghan Hill
N
0 50 100 200 Meters


Croghan Hill
A K I L L
C R O G H A N H I L L
Croghan Hill
Carn
769
Bp. Mac Caille's Church
(Site of)
Grave Yd.
156
2
38
26
0
700
600
500
400
421
428
Holy Well
Holy Well
B.M.401·6
Deer park
N
0 50 100 200
Meters