

GALWAY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Knockmaa
Other names used for site	Killwullaun, Pollnahallia
IGH THEME	IGH1 Karst, IGH3 Carboniferous to Pliocene Palaeontology, IGH7 Quaternary, IGH12 Mesozoic and Cenozoic
TOWNLAND(S)	Pollnahallia, Killwullaun, Kildrum, Stonepark or Bawnmore, Carrowconlaun, Bohercuill, Cave, Caltragh, Tobermina, Carheens, Fearagha, Biggera Beg, Castlehackett, Carrowbeg South, Cartron, Carrowntemple, Knockacarrigan, Ballaghbaun
NEAREST TOWN/VILLAGE	Headford, Tuam
SIX INCH MAP NUMBER	42, 43, 56
ITM CO-ORDINATES	534800E 748000N (centre of area)
1:50,000 O.S. SHEET No. 46	GSI BEDROCK 1:100,000 SHEET NO. 11

Outline Site Description

A large area of landscape between Headford and Tuam with thin glacial deposits which have only slightly modified a pre-Pleistocene karst landscape, developed on Carboniferous limestones, which contains late Pliocene sediments.

Geological System/Age and Primary Rock Type

The bedrock in the area is Carboniferous Limestone but the primary interest are the karstic features within it that are proven or indicative of a late Pliocene age (the youngest part of the old terminology 'Tertiary' – from about 5.3 to 2.6 million years ago).

Main Geological or Geomorphological Interest

The distinctive white sands and associated lignite exposed at Pollnahallia and in the area of Knockmaa have gained a wider reputation as a mineral resource and as a rare fragment of Ireland's landscape history. The Pollnahallia deposits are well described and are the subject of a separate site report within the much larger landscape site of Knockmaa. However, there are many other features focused on Knockmaa, that represent a glimpse of Ireland's pre-Pleistocene landscape, since biostratigraphical dating of the pollen assemblages within gorge and cave sediments, indicates a late Pliocene or early Pleistocene age. Pollnahallia is a sediment-filled gorge. The Knockmaa site also includes large shallow depressions, deep depressions, sand filled caverns, turloughs, isolated hills and other karstic features which must have developed in the late Tertiary. The age of this landscape is an important element of the debate as to the age and origin of turloughs within the Irish landscape. It also has implications for understanding the variation in local effect on the landscape of Pleistocene glaciation, since here there is little modification yet the glaciation is widely held to be a major influence.

Site Importance – County Geological Site; recommended for Geological NHA

The site is of international importance, and is recommended to NPWS for Geological NHA status.

Management/promotion issues

Management of a large landscape site such as this is difficult to prescribe for. It is a living, working landscape of quarries [see Knockmaa Hill Quarries site], farms and dwellings, but public spaces like Knockmaa Hill are ideally placed to be able to tell a landscape story that most people will not have heard before. Distilling it into simple concepts and visualisations should be attempted, but with strong geological input from appropriately qualified geological landscape interpreters. If any developments are permitted which involve significant ground excavation or engineering, then there should be some geological monitoring for new features and sediments which can be sampled for dating and other environmental evidence.



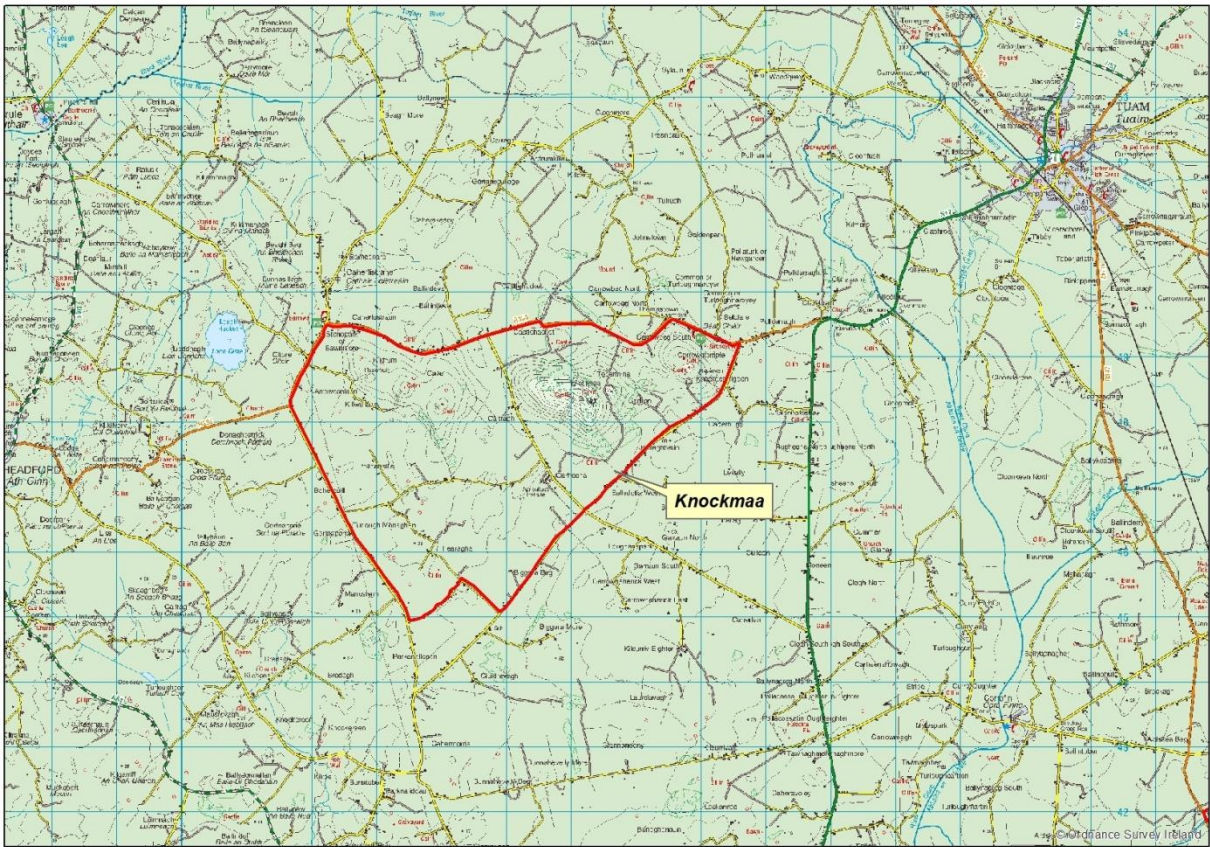
A panoramic view southward from Knockmaa Hill over the landscape area.

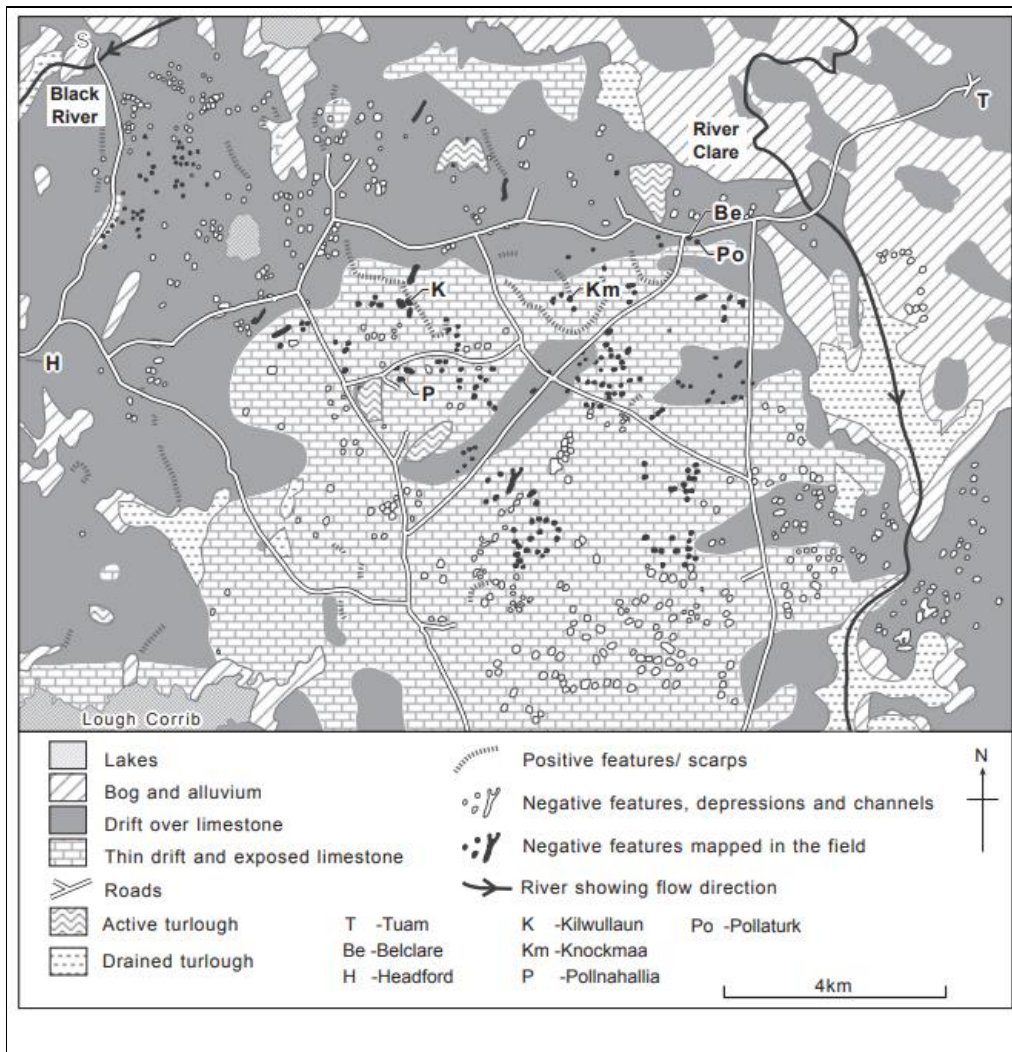


View east across a number of shallow depressions, with Knockmaa Hill in the distance.



A deep enclosed depression in Carheens Townland.





Detailed map from Pete Coxon's 2005 paper on the Knockmaa area.