

## MAYO - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Knock-Ballyhaunis Area</b>
Other names used for site	Knock-Ballyhaunis Mega-Lineations
<b>IGH THEME</b>	<b>IGH7 Quaternary</b>
<b>TOWNLAND(S)</b>	<b>Numerous townlands</b>
<b>NEAREST TOWN</b>	<b>Ballyhaunis, Claremorris, Swinford</b>
<b>SIX INCH MAP NUMBER</b>	<b>92, 93</b>
<b>ITM CO-ORDINATES</b>	<b>543960E 786010N (midpoint of general area)</b>
<b>1:50,000 O.S. SHEET NOS. 32, 39</b>	<b>GSI BEDROCK 1:100,000 SHEET NO. 11</b>
<b>GIS Code MO072</b>	

### Outline Site Description

An undulating landscape of broad and long, kilometre scale ridges oriented NW-SE with intermittent low ground floored by lakes (some seasonal) and streams draining NW. These megalineations form part of the largest field of features of such scale in Ireland, covering an area of almost 150 square kilometres.

### Geological System/Age and Primary Rock Type

The features are Quaternary (ice age) in age. They are formed on Carboniferous bedrock.

### Main Geological or Geomorphological Interest

Mega-scale glacial lineations (MSGs), or mega-flutings, extend across a broad part of the east County Mayo landscape in a NW direction, from Ballyhaunis, across Knock and Kiltimagh, as far as Swinford. MSGs are long corrugations in sediment produced beneath an ice sheet, similar to drumlins but much larger in all dimensions. These long, wide ridges rise above 100m ASL (above sea-level) with amplitudes of more than 50m in places.

MSGs, together with drumlins and crag and tail landforms comprise the bulk of the glacial bedforms in Ireland (altogether >23,000 features). The MSGs in the Knock-Ballyhaunis area exhibit NW oriented landform patterns, and reach lengths of over 10km and widths of 1-2 km. Recent research suggests that MSGs are formed from fast flowing ice and may indicate the location of former ice streams. The orientation of these macro-topographical lineations record palaeo-ice flow configurations and indicate ice moving northwestwards. Minor ribbed moraines have formed on the northwestern portions of the features, along the N17 road, and eskers and meltwater channels also traverse the features in their northern portion.

### Site Importance – County Geological Site; may be designated for Geological NHA

This field of pristine and beautiful examples of megalineations is not only the largest, but contains the largest individual lineations, in Ireland. The field is also one of the finest in Europe. The whole site is deemed too extensive to be designated as a geological NHA, but good individual examples of MSGs should be protected to maintain the integrity of the landscape. The features represent some of the best examples of MSGs in Ireland, and their importance is internationally recognized, alongside similar macro-scale geomorphological features identified in Canada, Scandinavia, and adjacent to and beneath the West Antarctic Ice Sheet.

### Management/promotion issues

Owing to the kilometric scale of these macro-scale features, no particular threats are identified that can alter their overall geometry or configuration. The features are too large to be promoted as sites of interest to the public (other than through website/leaflet material), as the megalineations can only be seen using DEM and satellite imagery.

The features are interesting for research into glacial processes, and are found in existing glacial landscapes in Canada and Antarctica.



View of Mannin Lake occupying low ground between two MSGL ridges, viewed from Coogue South looking SE.

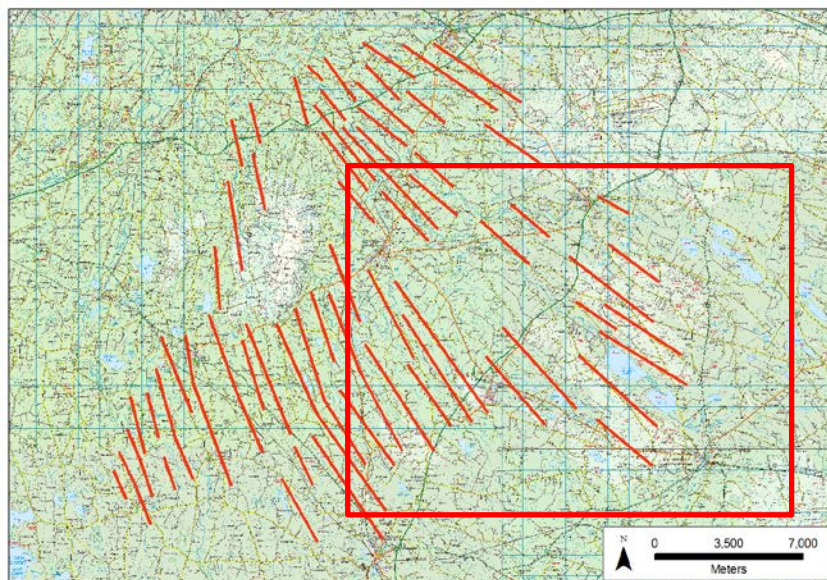
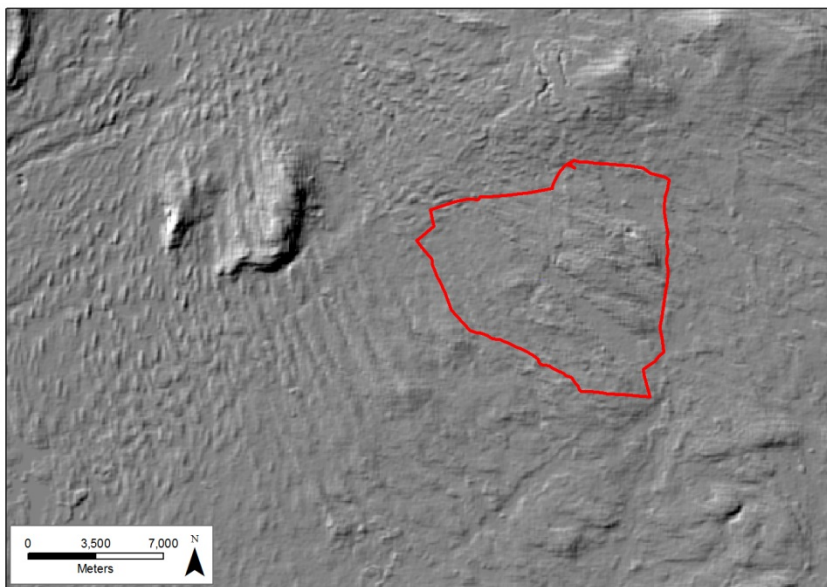
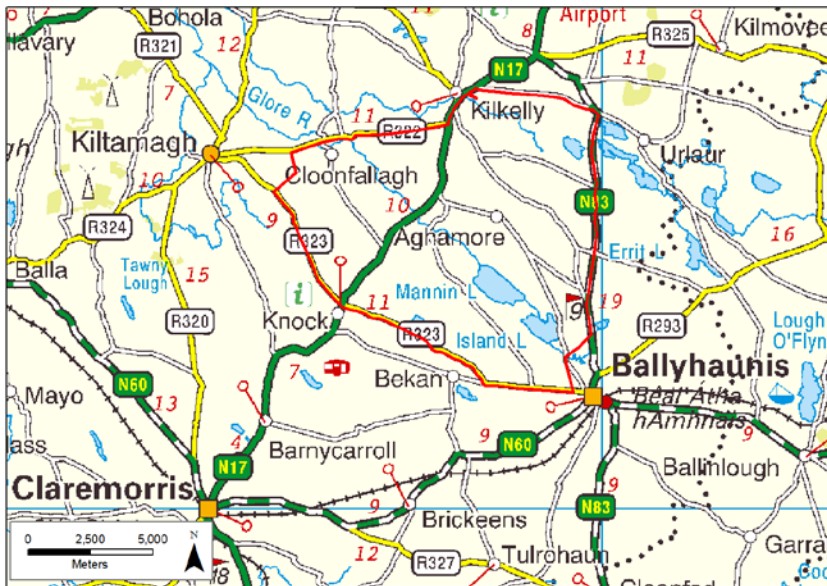


View of Began Lough looking east. The lake occupies low ground between MSGL ridges.



View of MSGL looking north toward MSGL ridge on the north side of the Glore River flowing NW from Mannin Lough (right to left).





(MSGL lineations adapted from Greenwood, S.L. & Clark, C.D. (2008)  
*Subglacial bedforms of the Irish Ice Sheet, Journal of Maps*, 4:1, p. 332-357)