

## MAYO - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Lough Furnace Moraines</b>
Other names used for site	Furnace Lough, Lough Feeagh, Burrishoole Fishery
<b>IGH THEME</b>	<b>IGH7 Quaternary</b>
<b>TOWNLAND(S)</b>	<b>Furnace, Doontrusk, Derrycooldrim, Lettermaghera South, Inishower,</b>
<b>NEAREST TOWN/VILLAGE</b>	<b>Newport</b>
<b>SIX INCH MAP NUMBER</b>	<b>67</b>
<b>ITM CO-ORDINATES</b>	<b>496120E 797260N</b>
<b>1:50,000 O.S. SHEET NO. 31</b>	<b>GSi BEDROCK 1:100,000 SHEET NOS. 6, 10</b>
<b>GIS Code MO077</b>	

### Outline Site Description

Situated on the west side of Lough Furnace, the site comprises a series of elongate, near-parallel, boulder-studded glacial till ridges (moraines).

### Geological System/Age and Primary Rock Type

Using cosmogenic radionuclide dating techniques to determine the length of time that the loose Carboniferous quartz-pebble conglomerate and sandstone boulders have been exposed on the surface of moraines, a Late Pleistocene age of  $15,600 \pm 500$  years (Oldest Dryas period) has been given for the moraines at Lough Furnace (age acquired by Beryllium 10 ( $^{10}\text{Be}$ ) dating). These ribbed moraines form part of the Clew Bay drumlin field.

### Main Geological or Geomorphological Interest

The NE-SW trending moraines comprise thick (up to 30m), hummocky glacial till ridges, with large boulders protruding at the surface. Several narrow, NE-SW trending elongate lakes occupy the depressions between the moraines. The moraines at the site range in elevation from 10m to 39m above sea level (asl). Moraines on the northeastern side of Lough Furnace are up to 79m asl. Classed as thrust-moraines, the Lough Furnace moraines are part of an extensive moraine called the Tawnywaddyduff Moraine that extends from Lough Furnace, into the Lough Conn lowlands east of the Nephin Beg range, northwards toward Killala Bay, and offshore towards Donegal Bay. This extensive moraine marked the western limit of the Irish Ice Sheet roughly 15,600 years ago, prior to the onset of the widespread retreat of the Irish Ice Sheet margin towards the end of the last Ice Age. The bedrock underlying the moraines on the western side of Lough Furnace (e.g. Doontrusk townland) comprises Carboniferous flat-bedded red sandstones, and conglomerates (Maam Formation). The moraine(s) on the isthmus between Lough Feeagh (north) and Lough Furnace (south) occupy an area of Dalradian schist and metamorphosed volcanics (Bunaveela Lough Formation). Two major ice flow events have been identified from glacial bedforms (ridges, drumlins, moraines) in the Clew Bay area. The first was from east to west, and the subsequent flow was from southeast to northwest. These moraines are associated with the later flow event, marking the northern limit of the last ice sheet re-advance in west of Ireland.

### Site Importance – County Geological Site; recommended for Geological NHA

This County Geological Site is recommended for geological NHA designation owing to its importance in providing evidence of the timing of deglaciation in the region. The majority of the site is presently located within the Clew Bay Complex SAC (1482).

### Management/promotion issues

The moraine features form an interesting landscape of long ridges and intermittent lakes, through which a quiet road weaves. Owing to the proximity of the site to the Greenway Cycle Route, the site could be promoted to cyclists and general visitors alike.

A public information board could be mounted near Burrishoole Fishery, to promote the geological, marine and fisheries significance of the area. Extraction of the moraine sediments should be controlled accordingly.



View of Buckoogh hill (588m) from the pastures on the moraine by the Burrishoole Fishery Salmon Leap Trap (white building on right).



Looking west from east side of Lough Furnace. Boulder strewn fields are typical of the morainic landscape.



View of Lough Skahaghrant from the morainic ridge between the lough and Lough Pollagowly (south).



Typical boulder strewn moraine landscape looking across Lough Furnace from Doontrusk.



Moraine isthmus separating Lough Feeagh (left) and Lough Furnace (right).



Quarried face (north facing) of moraine on west side of Lough Furnace.



