

## DONEGAL - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Bánna Dhún na nGall agus Inbhir</b>
Other names used for site	Donegal and Inver Bays, South Donegal Drumlin Field, South Donegal Ribbed Moraine Field, also the northwestern portion of the traditionally-termed 'Drumlin Belt'
<b>IGH THEME</b>	<b>IGH7 Quaternary, IGH13 Coastal Geomorphology</b>
<b>TOWNLAND(S)</b>	<b>Too many to list ... the field covers over three hundred individual townlands, across an area of 280 km<sup>2</sup></b>
<b>NEAREST TOWN</b>	<b>Donegal</b>
<b>SIX INCH MAP NUMBER</b>	<b>92, 93, 94, 98, 99, 100, 103, 104</b>
<b>NATIONAL GRID REFERENCE</b>	<b>587357E, 873117N</b>
<b>1:50,000 O.S. SHEET NOS. 11, 12, 16, 17</b>	<b>GS1 BEDROCK: 1:100,000 SHEET NOS. 3, 4</b>
<b>GIS Code DL011</b>	

### Outline Site Description

This field of discrete drumlins and drumlinised ribbed moraine forms a discrete body of subglacial features around Donegal and Inver Bays, in a wide coastal embayment. It covers an area between 5 km and 10 km wide, along a coastal strip of almost 40 km, on the northern and eastern side of the bay, and includes hundreds of features. The field stretches as far west as Killybegs, and includes the St. Johns Point peninsula, as well as the areas around Inver, Mountcharles and Donegal Town, and then stretches as far northeast as Lough Eske and the Barnesmore Gap. To the south of Donegal Town, the features extend as far inland as the Pettigo Plateau, through Laghy, Ballintra and Cavangarden, as far as Ballyshannon, and forms many small, 'rounded' islands in the bays.

### Geological System/Age and Primary Rock Type

The ribbed moraines are formed primarily on bedrock of Lower Carboniferous limestone. The features themselves are Quaternary in age, having been deposited at the base of an ice sheet that was moving northeast to southwest during the maximum period of the last Ice Age.

### Main Geological or Geomorphological Interest

The low-lying shores of Donegal Bay include low cliffs of Carboniferous limestone covered with glacial drift, and drumlins that form peninsulas and ovoid islands. The ribbed moraines contain many superimposed drumlins on their crests, and discrete drumlins are also found, with the area traditionally having been known as the northwestern portion of the 'Drumlin Belt'. Owing to their large size the ribbed moraines can only be seen using DEM and satellite imagery.

These features contain many superimposed drumlins on their crests, and the area is unusual in that it is bounded on all sides by high ridges, forming a 'drumlinised-basin'. The drumlins were first described by W.B. Wright in 1912. This drumlin swarm is notable as parts of it form the only series of subglacial bedform features deposited on schist and gneiss bedrock in Ireland.

The drumlins are high and rounded, up to 60m in amplitude and generally up to 1 km long. Their length-width ratio is generally in the order of 2.5:1, which is much lower than most other drumlins in Ireland. Many of the drumlins in the bays have been significantly eroded by the sea, providing excellent cliff exposures of their internal stratigraphy. The Donegal Bay drumlins are linked by spits and barriers of shingle which shelter salt marshes. Sandy beaches and spits are backed by grassy dunes, and extensive sandy and muddy flats are exposed at low tide.

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

This is one of the finest fields of ribbed moraines and associated drumlins in the country.

### Management/promotion issues

This is an excellent site in terms of macro-scale Quaternary subglacial geomorphology. The features are too large to undertake any conservation efforts on their part, but the landscape itself is noteworthy and should be promoted as unique amongst landscape elements within the Donegal County Development Plan and in Landscape Characterisation.



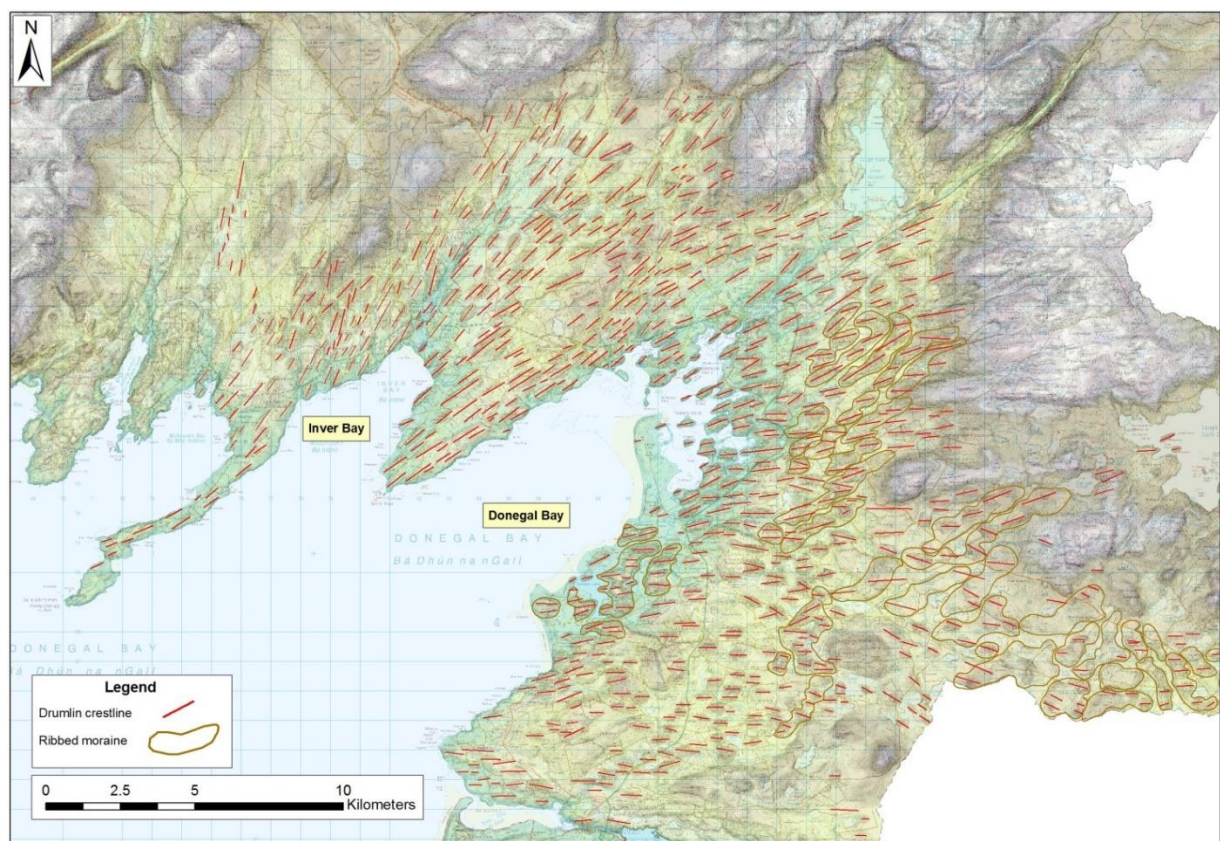
Cool Strand and Ballyboyle Island in the Eske Estuary (left). Drumlin at Letterbarra near Donegal Town (right).



Loughtone Hill, with exposed drumlin section, Ballintra, August 2003.



Views across Donegal Bay (left) and towards Murvagh (right).



The Donegal and Inver Bay drumlins shown on a Digital Elevation Model of the region. Drumlins are shown by red lines along their crestlines, while ribbed moraines are shown with brown outlines.