

## DONEGAL - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Lough Boyle</b>
Other names used for site	Ballykillowen Hill
<b>IGH THEME</b>	<b>IGH 5 Precambrian</b>
<b>TOWNLAND(S)</b>	<b>Meenacargagh or Raneany Barr</b>
<b>NEAREST TOWN/VILLAGE</b>	<b>Laghy</b>
<b>SIX INCH MAP NUMBER</b>	<b>100</b>
<b>ITM CO-ORDINATES</b>	<b>601798E, 875811N</b>
<b>1:50,000 O.S. SHEET NUMBER: 11</b>	<b>GS1 BEDROCK 1:100,000 SHEET NOS. 3, 4</b>
<b>GIS Code DL023</b>	

### **Outline Site Description**

The site comprises good isolated scarp exposures in boggy moorland adjacent to Lough Boyle, including along the track northwest of the lough.

### **Geological System/Age and Primary Rock Type**

The Lough Derg Slide forms the tectonic boundary between the structurally underlying Precambrian Sliswood Division (Lough Derg inlier), comprising dominantly psammitic paragneiss (pre-Dalradian or very oldest Dalradian), and the overlying Croaghgarrow Formation distal turbidites (part of the Dalradian Easdale Subgroup, ~600 Ma).

### **Main Geological or Geomorphological Interest**

A northerly-dipping, low angle mylonitic (ductile) thrust, called the Lough Derg Slide, separates the structurally overlying Croaghgarrow Formation in the north from the Sliswood Division to the south.

Sliswood Division paragneisses are largely psammitic at this location and include semi-pelitic gneisses and rarer pelitic gneisses. The paragneisses underwent high-pressure granulite facies metamorphism at great crustal depth. The Croaghgarrow Formation comprises interbedded pelitic, semi-pelitic and psammitic schists, metamorphosed initially to the low amphibolite facies. Large garnets (20–30 mm) and smaller staurolite and kyanite crystals can be found in the pelitic parts of the Croaghgarrow Formation. Both formations are well exposed on and near the track just northwest of the lough (east-southeast of Ballykillowen Hill).

The relatively narrow contact zone between the Croaghgarrow Formation and the Sliswood Division can be seen in exposures, where the rocks are mylonitic with a highly platy appearance. The Dalradian bedding and main schistosity, the Sliswood Division gneissose foliation and the mylonitic fabrics of the Lough Derg Slide all have a northerly dip. Further to the east, southeast of Lough Derg, they all swing around to dip generally east.

### **Site Importance: County Geological Site; may be recommended as Geological NHA**

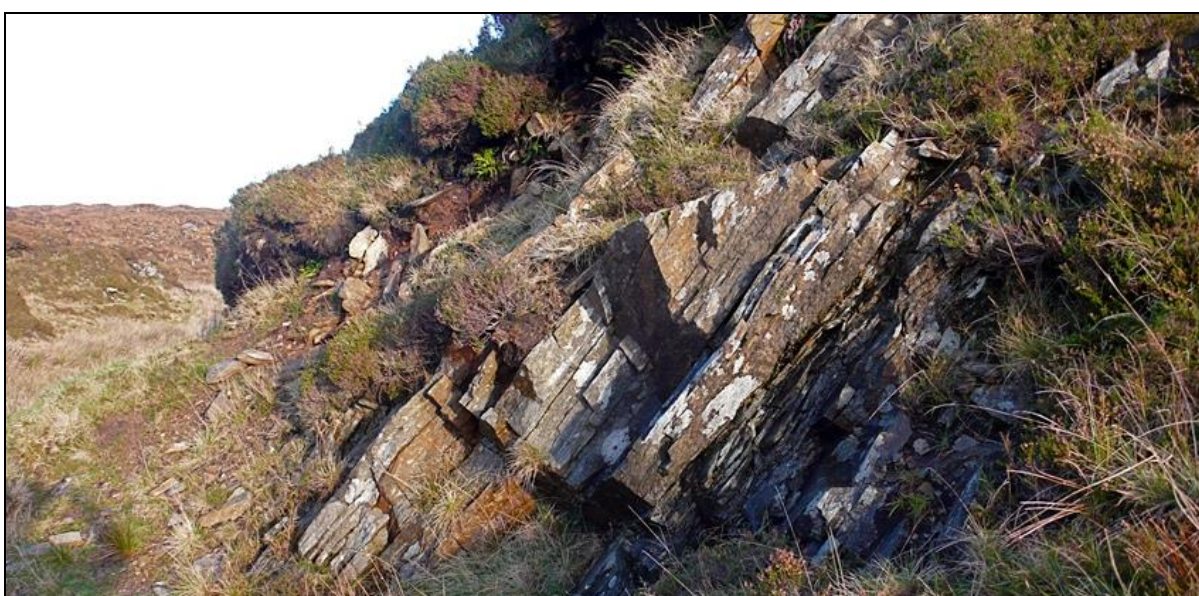
The Lough Derg Slide is clearly exposed at this site in intermittent outcrops and its tectonic, mylonitic nature is clearly illustrated. The Sliswood Division rocks demonstrate features of the pre- (or oldest) Dalradian structural and metamorphic history that are not developed elsewhere in Donegal. This site is quite accessible, close to the Laghy–Castlederg road, whereas much of the rest of the Sliswood Division exposure is remote from public roads.

### **Management/promotion issues**

The site lies within the boundaries of the Dunragh Loughs–Pettigo Plateau SAC and proposed NHA (001125) and is under no threat. Several Coillte tracks reach into the area, some of which require a key for access. It is advisable to enquire about access from Coillte if further investigation of the area is intended.



General view of Lough Boyle site, looking southeastwards from northwestern part of site.



Sliswood Division rocks, below the Lough Derg Slide.



Dalradian Croaghgarrow Formation above the Lough Derg Slide.

