

GALWAY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Lettershinna Hill
Other names used for site	
IGH THEME	IGH11 Igneous intrusions
TOWNLAND(S)	Lettershinna
NEAREST TOWN/VILLAGE	<i>Sraith Salach</i> (Recess)
SIX INCH MAP NUMBER	51
ITM CO-ORDINATES	483040E 743620N
1:50,000 O.S. SHEET No. 44	GSi BEDROCK 1:100,000 SHEET NO. 10

Outline Site Description

Abundant large outcrops on hillside above a minor road and a small roadside quarry.

Geological System/Age and Primary Rock Type

Ordovician granitic gneiss, quartz diorite gneiss and metagabbro, all part of the 475 – 462 Ma Connemara Metagabbro and Orthogneiss Complex.

Main Geological or Geomorphological Interest

The rocks at Lettershinna Hill are part of the extensive Connemara Metagabbro and Orthogneiss Complex. This complex formed the root zone of the Ordovician magmatic arc that developed above the northward-dipping subduction zone on the northern margin of the Iapetus Ocean. The Ballyconneely – Roundstone area in south Connemara is host to most of the complex. The orthogneisses range in composition from quartz diorite, the dominant gneiss lithology, to volumetrically less important K-feldspar granite gneisses. Lettershinna Hill is particularly noteworthy for the extensive exposures of pink K-feldspar granitic orthogneiss but also includes abundant exposures of quartz diorite gneiss and metagabbro and is an excellent and readily accessible location to view rocks of the complex.

The Metagabbro and Gneiss Complex was intruded during the D2 and D3 phases of the Grampian Orogeny, with gabbros followed by the felsic igneous rocks. Fracturing of the gabbros during deformation and intrusion of the felsic rocks led to net-veining of gabbro by quartz diorite and granite. The gabbros have been extensively altered while the quartz diorite rocks were converted to gneisses owing to deformation and metamorphism contemporaneous to their intrusion during D3. The K-feldspar granite appears to represent the youngest component of the Connemara Complex and is relatively undeformed compared to the quartz diorite gneiss.

Apart from the abundant exposures of pink K-feldspar granite in the western end of the site, there are numerous exposures of quartz diorite gneiss and some spectacular examples of metagabbro intruded and net-veined by orthogneiss.

Site Importance – County Geological Site

The site is within the Connemara Bog Complex SAC and proposed NHA (sitecode 002034). This site contains excellent exposures of the main lithologies of the Connemara Metagabbro and Orthogneiss Complex, readily accessible in roadside exposures on a low hill. It is notable as a location where the subordinate, late K-feldspar granite orthogneiss is well exposed. This is a significant county geological site.

Management/promotion issues

The site is reached by a minor road, and the land is used for sheep grazing and is unfenced. The hilly nature of the site is likely to preclude housing development although several dwellings and farm buildings are present along the road 0.5 km east of the site. Consideration should be given to promoting the site by way of inclusion in geoheritage publications or perhaps a signboard.



General view of peridotite outcrop, looking west. Outcrop with mineral layering is on right.



Quartz diorite gneiss, western end of site. Fine-grained; alignment of minerals giving rise to fabric.



Pink K feldspar granite (gneiss), western end of site. Note coarse grain size and lack of fabric.



Large blocks of gabbro pulled apart with granitic material infilling spaces. Note damage to outcrop by borehole sampling.

