NORTH DONEGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**An Bearnas Beag**
Other names used for site	Barnes Beg Gap
IGH THEME	**IGH11 Igneous intrusions, IGH5 Precambrian**
TOWNLAND(S)	**Barnes Upper, Stragraddy, Derriscligh**
NEAREST TOWN/VILLAGE	**Creeslough**
SIX INCH MAP NUMBER	**35**
ITM CO-ORDINATES	**609206E 925752N**
1:50,000 O.S. SHEET NUMBER 2	**GSI BEDROCK 1:100,000 SHEET NO. 1**
GIS Code ND054	

Outline Site Description
A valley gap between two hills provides a cross section through the northern end of the Main Donegal Granite. Exposures of rock are on the open hillsides, but the cuttings in an old railway line are of particular importance. The section covers more than 2km in total.

Geological System/Age and Primary Rock Type
The Main Donegal granite is of Devonian Age, intruded around 405 million years ago. This is the primary rock type exposed, but there are also complex relationships with a variety of Dalradian host rocks which are demonstrated in this granite-pelite contact zone.

Main Geological or Geomorphological Interest
The Main Donegal Granite was intruded around 405 million years ago, in the Devonian Period. It is different to most similar aged granites in Ireland in that it was intruded in small sheet-like packages over a period, within a large active shear zone, extending in a NE-SW direction. This site provides a cross section through several of these sheet-like zones, providing much information about the configuration of them, the interleaved rocks and the exotic rocks or xenoliths caught up in the shear zone movements. It also represents a very high level, near the top of the intrusion, with evidence of the interactions between the intruded granite and the Dalradian host or country rocks.

Site Importance – County Geological Site; may be recommended for Geological NHA
The site is one of the best sections in Donegal for understanding the intrusion of the Main Donegal Granite and the large scale structural evolution of the entire area and is of national importance for this type of geology.

Management/promotion issues
The large site and the extensive exposures are such that few threats can be envisaged, and most of it is protected as pNHA Derriscligh Bog (site code 1114) and as SAC Cloghernagore Bog and Glenveagh (site code 2047). The biggest problem for viewing geological exposures is the growth of vegetation and lichens obscuring the geological relationships seen on rock surfaces. Ideally, site management would include selected rock sections, mainly within the railway cuttings, being cleaned on a long period maintenance cycle. The site is amply described in a field guide published by the Geological Survey of Ireland.

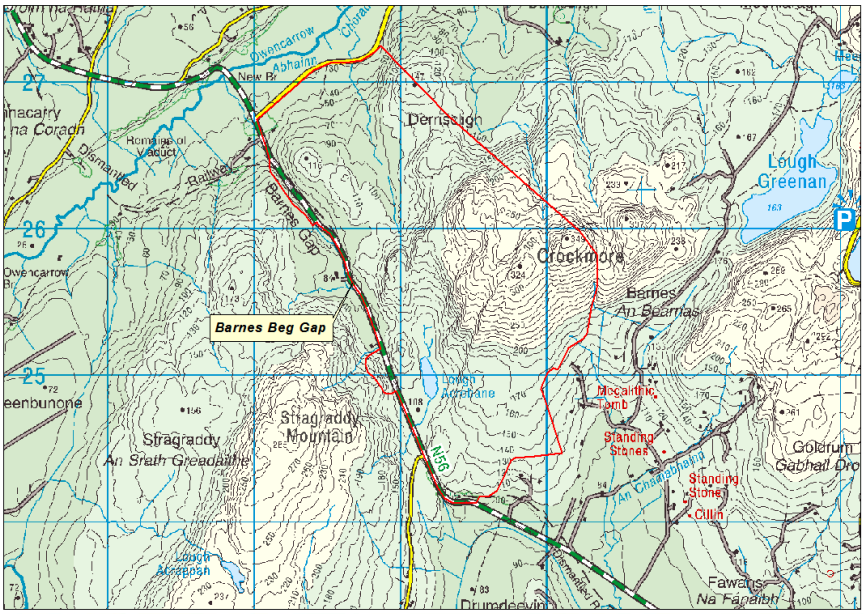
The railway cutting at the southern end of Barnes Beg Gap.

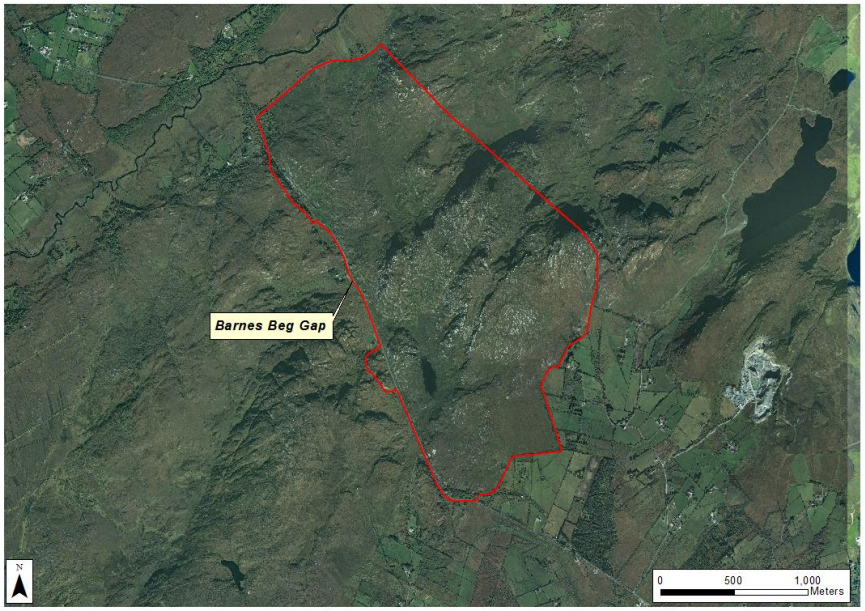
One of the granite – pelite (Devonian-Dalradian) contacts in the cutting.

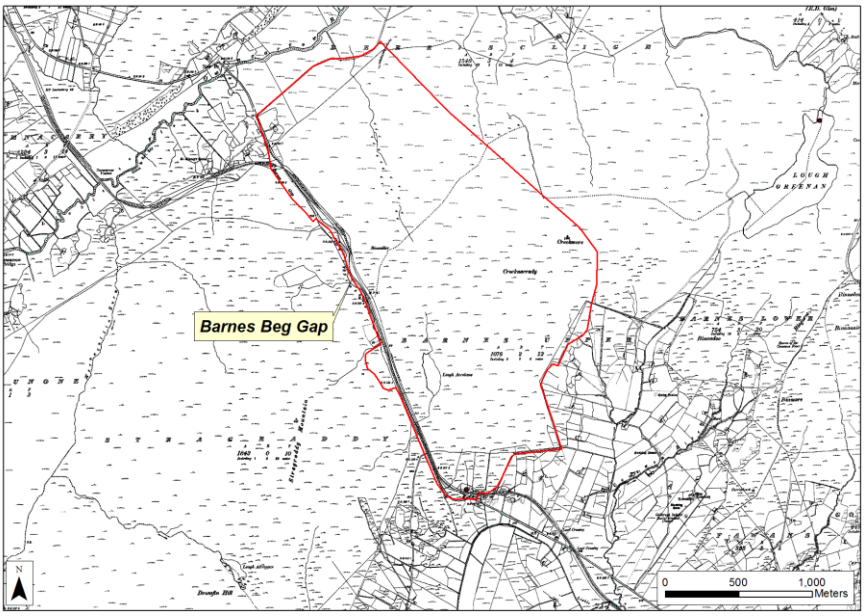
The railway cutting towards the northern end of Barnes Beg Gap.

Pelite xenoliths of the Crockmore septum [a septum is a metasedimentary rock partition between granite intrusions] around 100m from the road junction at the southern end of the Gap.

Quartz diorite xenoliths in granite pegmatite in the railway cutting adjacent to the pillars of the old railway bridge, at the northern end of the Gap.







Hennessy *et al.* 2019. Geological Survey Ireland.