

DONEGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Clooney
IGH THEME	IGH11 Igneous Intrusions
TOWNLAND	Clogher West
NEAREST TOWN	Portnoo
SIX INCH MAP NUMBER	64
ITM CO-ORDINATES	572974E, 898928N
1:50,000 O.S. SHEET NUMBER: 10	GSi BEDROCK 1:100,000 SHEET NOs. 3, 4
GIS Code DL008	

Outline Site Description

Small exposure of the Ardara pluton contact close to an old quarry path, 30 m south of the R261 road. The site also extends northwards across the road to include part of Clooney Hill.

Geological System/Age and Primary Rock Type

The primary rock type of the Ardara Granite G1 variety is quartz monzodiorite (c. 400 Ma) intruded into the Upper Falcarragh Pelite Formation of the Dalradian Appin Group (deposited c. 800 to 700 Ma and metamorphosed between 475 and 385 Ma). The Ardara Granite is interpreted to pre-date the Main Donegal Granite.

Main Geological or Geomorphological Interest

The Clooney site shows the contact zone and metamorphic aureole of the Ardara pluton. The outer G1 Ardara granite has been interpreted as a magmatic granitoid contaminated by assimilation of country rock, seen as a variety of xenoliths including metadolerite, appinite and pelitic schist. The G1 monzodiorite is in sharp contact with pelites of the Upper Falcarragh Pelite Formation. The contact metamorphic aureole is developed within the Upper Falcarragh Pelite Formation and extends out into the Falcarragh Limestone Formation up to 1500m from the granite contact. It is well seen along Clooney and Cashelgolan Hills, north of the R261 road. The pelites within the aureole have been completely recrystallized to schist, a strongly foliated biotite-muscovite-plagioclase-quartz rock. Within 500m of the granite contact, porphyroblasts of andalusite and sillimanite have grown within the schistosity.

Wherever the Dalradian rocks are visible around the Ardara pluton, the strata are seen to be sub-vertical and parallel to the granite contact. A short distance farther away the strata generally dip towards the granite contact. This supports the interpretation of the Ardara Granite as a subvertical, almost cylindrical body, tapering downwards. A disrupted (boudinaged) metadolerite sill in the Upper Falcarragh Pelite can be seen in a new road cutting on Clooney Hill directly opposite the granite contact at this site. A little further north again, the schists in the inner 40 m of the contact zone exhibit a swirling flow pattern of irregular folds that testifies to the degree of mobility attained near the pluton.

Site Importance: County Geological Site

Although the granite contact crops out at several sites around the pluton, the Clooney site is the most accessible as some of the others are in private gardens. Though small, it shows a variety of features within the outer zone of the Ardara pluton and its relationship with the country rock in the northern aureole.

Management/promotion issues

The outcrop and adjacent area would benefit from some clearance. Public access would probably need to be negotiated with the landowners along the contact zone and the new roadway opposite, although interest in the site is probably mainly for the student and specialist. There is already an introduction to the geology of the area in the Kilclooney Dolmen Centre, and the exhibition could be expanded to provide an explanation of this site in the context of Donegal's geology.



Ardara pluton (light colour, left) in contact with sub-vertical country rock strata.



New roadway through contact metamorphic aureole; metadolerite sill visible on left (grey colour).

