

GALWAY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Mannin Thrust
Other names used for site	Errislannan
IGH THEME	IGH4 Cambrian-Silurian, IGH5 Precambrian
TOWNLAND(S)	Ballinaboy, Derryeighter, Derrigimlagh, Maum
NEAREST TOWN/VILLAGE	Clifden
SIX INCH MAP NUMBER	35
ITM CO-ORDINATES	464610E 747780N
1:50,000 O.S. SHEET No. 44	GSI BEDROCK 1:100,000 SHEET NO. 10

Outline Site Description

This site includes an extensive, almost 2 km-long set of abundant, large, outcrops on the southern foreshore of the Errislannan peninsula, and several large outcrops on the landward side.

Geological System/Age and Primary Rock Type

Dalradian (Ordovician) Ballyconneely Amphibolite metagabbro, part of the 475 – 462 Ma Connemara Metagabbro and Orthogneiss Complex, thrust over felsic rocks of the Ordovician Delaney Dome.

Main Geological or Geomorphological Interest

In south Connemara rocks of the Connemara Metagabbro and Orthogneiss Complex were thrust southwards over the Ordovician felsic igneous rocks of the Delaney Dome Formation. The thrust fault is referred to as the Mannin Thrust and thrusting is considered to have occurred at a late stage in the evolution of the complex, possibly c. 450 Ma, i.e. late Ordovician. The southward thrusting of the metagabbro and gneiss complex, along with the Dalradian rocks to the north, is considered to be a major event in the evolution of Connemara geology. The Mannin Thrust is a major mid crustal semi-ductile shear zone.

The rocks on either side of the Mannin Thrust are mylonitized, i.e. have undergone intense shearing during thrusting. This site contains good exposures of the lithologies on either side of the Mannin Thrust. The Ballyconneely Amphibolite forms the hanging wall of the Mannin Thrust, dipping northwards away from the Delaney Dome. The amphibolite is a schistose variant of the more massive metagabbros found elsewhere in the Connemara complex. The intensity of the schistosity increases closer to the thrust. The Delaney Dome comprises a felsic igneous rock of uncertain origin, possibly volcanic or intrusive, although it is formally referred to as “meta-rhyolite” in GSI’s classification. It has been mylonitized throughout.

The Ballyconneely Amphibolite and Delaney Dome contact zone can be observed at low tide on the foreshore near the centre of the site. Shallow-dipping amphibolites abut an upstanding outcrop of strongly sheared felsic rock, along a contact zone that trends approximately northeast-southwest.

Site Importance – County Geological Site; recommended for Geological NHA

The part of the site that lies to the south of the main road on the peninsula is within the Slyne Head Peninsula SAC and proposed NHA (Site code 002074); it largely comprises foreshore outcrops that are readily accessible from the road. The site contains good, accessible exposures of an important structural boundary in south Connemara and of the lithologies on either side of it. This is a significant County Geological Site and merits consideration as a NHA.

Management/promotion issues

North of the road, housing development may in future threaten access to outcrops. Consideration should be given to erecting a signboard overlooking the foreshore to provide a summary of the significance of the site, perhaps in conjunction with a description of the various habitats of the Slyne Head Peninsula pNHA.



View of site from the west. Ballyconneely Amphibolite outcrops in foreground.



Ballyconneely Amphibolite comprising schistose mylonitized metagabbro, west end of site.



Highly sheared felsic rock of Delaney Dome on foreshore near eastern end of site.



Ballyconneely Amphibolite (left) – Delaney Dome contact along the Mannin Thrust on foreshore near centre of site. Hammer shaft points northeast along line of contact.

