

NORTH DONEGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Ailt an Bhuinne
Other names used for site	Altawinny Bay
IGH THEME	IGH7 Quaternary
TOWNLAND(S)	Knockfola
NEAREST TOWN/VILLAGE	Gort an Choirce (Gortahork)
SIX INCH MAP NUMBER	23
ITM CO-ORDINATES	581615E 933315N (centre of section)
1:50,000 O.S. SHEET NUMBER 1	GS1 BEDROCK 1:100,000 SHEET NO. 1
GIS code ND047	

Outline Site Description

This site includes a high coastal cliff section that extends for several hundred metres and is c. 40m-50m high over most of its extent.

Geological System/Age and Primary Rock Type

The upper few metres of the cliff section at Altawinny Bay is comprised of Quaternary Age glacial sediments, deposited during deglaciation at the end of the last Ice Age. The basal portion is cut into bedrock, which is the late-Silurian/early-Devonian (420-390 Ma) Thorr Granite. The granite is part of the Donegal Batholith, one of a number of plutons that comprise the various granite varieties occurring in northwest Ireland.

Main Geological or Geomorphological Interest

The cliff exposes sediments that are important to an understanding of deglaciation and relative sea levels in this part of Ireland during the end of the last Ice Age. The exposure contains a number of glacial sediment facies, or units, deposited on a rock-cut platform. The glacial sediments are between 3m and 6m deep. Most of the units are dominated by gravels. On the land surface, the sediments make up low, linear ridges, which have been interpreted as moraine features.

The sediments have been interpreted as having been deposited by debris flows off an ice sheet, which were of low to high density. Some of the sediments are slightly deformed, suggesting that the ice margin was oscillating as it deposited the material. There is also evidence of tidal influence, in the form of structures associated with wave-reworking. In the upper portion of the section a number of channel features are exposed, which have been cut by glacial meltwater as the ice melted.

The evidence therefore suggests that ice had just vacated the offshore sea area and retreated onto the land when the sediments at Altawinny Bay were deposited. The flows have been studied in detail, and flows associated with the deposited sediments came from the south. The ice margin was therefore just to the south, and oscillating, when the materials were laid down.

Site Importance – County Geological Site

The section at Altawinny Bay is important as its stratigraphy provides information on regional deglaciation and the section shows excellent examples of complex glacial sediment units. It is a companion site to Altnapeaste with related glacial origins.

Management/promotion issues

The site is accessible *via* the public beach and is therefore easily visited. The cliffs are high, however, and prone to slumping, and care must be taken when close to the faces. The importance of the section and the origins of the glacial sediments could be highlighted on the signboards beside the site, which chronicle the naming of 'Bloody Foreland' after the red granite rocks of the section, and could also be recorded in promotional material for the Gweedore Bay and Islands SAC and proposed NHA (001141), of which the site forms part.



The northern portion of the section at Altawinny Bay, viewed from the south.



Detail of the sediments in the southern portion of the section.

