

## LOUTH - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE:	Carlingford (OVERVIEW)
IGH THEMES:	IGH 6 Mineralogy; IGH 8 Lower Carboniferous IGH 11 Igneous Intrusions
TOWNLAND(S)	Liberties of Carlingford
NEAREST TOWN/VILLAGE	Carlingford
SIX INCH MAP NUMBER	5
ITM CO-ORDINATES	713679E 811367N (centre of area)
1:50,000 O.S. SHEET NUMBER	36 GSI BEDROCK 1:100,000 SHEET NO. 8/9

### Outline Site Description

The Carlingford geological heritage area embraces much of the Cooley Peninsula and most of the sites described here are found in the foothills and on the flanks of the mountains that form the core of the peninsula.

### Geological System/Age and Primary Rock Type

The Carlingford area is principally underlain by the Palaeogene (formerly called Tertiary) Carlingford Igneous Complex, a 59 million-year-old (Ma) complex comprising basalt, gabbro, dolerite and granite. The igneous rocks were emplaced into both Silurian metasediments (445 Ma) and Lower Carboniferous limestones and associated clastic rocks (330 Ma).

### Main Geological or Geomorphological Interest

Palaeogene volcanic and intrusive igneous rocks, emplaced during crustal rifting that accompanied the opening of the Atlantic, form the North Atlantic Thulean Volcanic Province that includes the Carlingford Complex, much of the bedrock in Northern Ireland (the Antrim Basalts, Mourne Mountain granites and the Slieve Gullion complex) as well as large igneous complexes in the Hebrides of western Scotland. Minor Palaeogene intrusions, principally dolerite dykes, are known to occur elsewhere in Ireland, e.g. in Donegal and Galway, but the Carlingford Igneous Complex, is the only example of large-scale Palaeogene magmatism in the country and, as such, is of national importance.

Research in the 20<sup>th</sup> century led to numerous publications on the geology of the Carlingford complex. As well as providing accounts of the timing and development of the complex, detailed descriptions of the mineralogy and petrology of the igneous rock types that comprise the complex and the complex interrelationship between gabbro, dolerite and granite, they also describe the effect of igneous intrusion and accompanying thermal metamorphism on the surrounding country rocks. In addition, several comparatively rare minerals that were previously unknown in Ireland were first reported from Carlingford.

### Site Importance – County Geological Site; may be recommended for Geological NHA

As the only example of large-scale Palaeogene magmatic activity in the country the Carlingford Igneous Complex is of national importance and should, in its entirety, be designated as a NHA. Within the area, numerous individual sites display specific features of the complex and these are described in the following pages. Some sites are, as far as is known, unique; others offer particularly good or interesting examples of features that are present throughout the area. Most should be designated as CGS.

### Management/promotion issues

A significant proportion of the Carlingford Igneous Complex and many of the various individual sites described here are within the proposed Carlingford Mountain and Carlingford Lough NHAs. Both are already SACs. The Cooley Peninsula is also part of the proposed Cooley-Mournes-Gullion Geopark. There is considerable scope for developing new signage and information packs as guides to this unique geological landscape.

