

# WICKLOW - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Lough Dan Granite Contact</b>
Other names used for site	
<b>IGH THEME</b>	<b>IGH11 Igneous Intrusions</b>
<b>TOWNLAND(S)</b>	<b>Cloghogue, Carrigeenduff</b>
<b>NEAREST TOWN/VILLAGE</b>	<b>Roundwood</b>
<b>SIX INCH MAP NUMBER</b>	<b>17, 18</b>
<b>ITM CO-ORDINATES</b>	<b>714300E 704650N (centre of feature)</b>
<b>1:50,000 O.S. SHEET NUMBER</b>	<b>56 GSI BEDROCK 1:100,000 SHEET NO. 16</b>

## **Outline Site Description**

Glacial valley terrain at the NW end of Lough Dan, where the granite-schist contact zone is clearly visible on the mountain slopes flanking the valley.

## **Geological System/Age and Primary Rock Type**

Late Caledonian Leinster granites were intruded into pre-existing Ordovician slate country rock 405 million years ago (Devonian). The slates were thermally altered and metamorphosed to silver-coloured mica-schists along a zone of thermal contact (aureole). The valley is Quaternary in age, its current shape formed by glaciers during the last glaciation.

## **Main Geological or Geomorphological Interest**

At the northwestern end of Lough Dan, where the Inchavore River flows into the lake, the contact of the Devonian granites (to the west) with the Ordovician schist (to the east) is easy to recognise on the mountain sides. The contact, where two very different rock types (igneous and metamorphic) of different ages are found side-by-side, marks the eastern margin of the Leinster Granite in this part of the Wicklow Mountains. This contact zone is called a metamorphic aureole, which formed when heat and pressure of the rising granite 'baked' and altered the mineralogy of the slate bedrock into which it was intruded. Elsewhere in the general proximity of Lough Dan, such as at Glenmacnass Waterfall and Luggala, the granite-schist contact is marked by a severe drop in topographic elevation. The contact at Lough Dan however is demarcated by a change in vegetation and terrain on the mountain sides, particularly on the flanks of Knocknacloghoge (534m). At ground-level, the contact is buried beneath marsh and the alluvial sediments of the Inchavore River delta. The steeper sides of Knocknacloghoge on the north side of the lake are footed by massive granite boulders, the result of mass wasting (slope failure), similar to that seen on the shores of nearby Lough Tay. In contrast to the granite, the Ordovician schist on Knocknacloghoge weathers and erodes on a less severe scale, such that large boulders are absent on the schist slopes. A small lead-zinc lode occurs within a short distance of the granite/schist contact on the hillsides flanking the southern side of northwest Lough Dan, near the abandoned village of Inchavore. This mine was the site of small-scale mining activities in the eighteenth century and the ore deposits were reportedly exhausted by the turn of the nineteenth century.

## **Site Importance - County Geological Site**

This is an excellent educational site, used by third level student groups, and is accessible along a lengthy track leading from the Cloghogue Valley and from the southeast.

## **Management/promotion issues**

Access to this scenic and remote site requires a trek. The significance of the site as a granite-schist contact zone should be highlighted in any literature or media content pertaining to Lough Dan, particularly as the feature is recognisable even from a distance.



Contact zone (dashed line) at north part of Lough Dan - looking west from Cloghoge River delta.



Ordovician (green hillslopes on left)-Leinster Granite (dark coloured patchy terrain) contact at north end of Lough Dan (Kanturk Mountain side).



Leinster Granite (left)-Ordovician (right) contact zone – on the slopes of Knocknacloghoge Hill (northwest end of Lough Dan).



Granite boulders at the foot of the south-facing granite slopes of Knocknacloghoge Hill looking west.



