

## DONEGAL - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	Reaclainn Uí Bhirn
Other names used for site	Rathlin O'Birne Island
<b>IGH THEME</b>	<b>IGH13 Coastal Geomorphology</b>
<b>TOWNLAND(S)</b>	<b>Rathlin O'Birne Island</b>
<b>NEAREST TOWN</b>	<b>Glencolumbkille</b>
<b>SIX INCH MAP NUMBER</b>	<b>85</b>
<b>ITM CO-ORDINATES</b>	<b>546565E, 879932N</b>
<b>1:50,000 O.S. SHEET NUMBER: 10</b>	<b>GSI BEDROCK 1:100,000 SHEET NOs. 3, 4</b>
<b>GIS Code DL035</b>	

### Outline Site Description

Rathlin O'Birne Island lies about 2 km west of Trabane. It comprises a group of flat elevated platforms covering 34 ha, typically about 17m above sea level and bounded by steep cliffs that rise to 26 m above sea level at the south of the island. The charted depth of sea floor just offshore is 50–80m.

### Geological System/Age and Primary Rock Type

The island is entirely made up of the Caledonian (c. 400 Ma) Rathlin O'Birne Granite, variously referred to as felsite and feldspathic porphyry. The coastal features for which the island is notable are late Quaternary (Holocene) in age.

### Main Geological or Geomorphological Interest

Coastal erosion has formed a narrow cleft between the area containing the lighthouse and the remainder of the island, almost separating the two parts. The remaining narrow strip of land forms a natural bridge or "sea arch" on the southwest side. Other features of coastal erosion include cliffs, headlands, coves, arches and stacks. As no glacial sediments, or other soft sediments or soils occur on the island, no coastal depositional features are in evidence as there is no source of such deposits; so no beaches, bars, spits, dunes or marshes are seen along the coastline of the island.

Rathlin O'Birne is one of several granite plutons, collectively known as the Donegal Batholith, that were intruded during Caledonian times. Little is known about the island's geology and no modern work has been done since the GSI mapping of the 19<sup>th</sup> century. The full extent of the granite intrusion is uncertain, but contact metamorphic effects have been observed on the mainland, suggesting the intrusion may be much bigger than the island itself. Features within the metamorphic aureole include coarse andalusite crystals in schists near Malin Beg tower, 2 km from the island (see Trabane site report).

### Site Importance: County Geological Site

The island is of geomorphological interest in that several well-formed coastal erosion features are displayed there.

### Management/promotion issues

The island requires no promotion due to its remote location. It is possible to hire a boat at Telling during calm weather, but only a helicopter visits the automated lighthouse regularly. The geomorphological features are subject to constant modification through the effects of coastal erosion. The island is within the Rathlin O'Birne Island SAC and proposed NHA (00181), its designation reflecting the importance of the presence of reefs around the island.



Oblique view southwestwards of southwestern part of Rathlin O' Birne island showing lighthouse and natural bridge. (Photo © Apple Maps.)

