

NORTH DONEGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Trá Inis Fraoigh
Other names used for site	Inishfree Bay,
IGH THEME	IGH13 Coastal Geomorphology
TOWNLAND(S)	Inishinny, Inishfree Lower, Carnboy, Dunmore, Carrickfin, Braade, Mullaghdoon Irish, Magheraroarty, Drumnacart, Mullaghderg, Gortnasate, Kincaslough, Belcruit, Cruit Upper, Cruit Lower
NEAREST TOWN/VILLAGE	Cionn Caslach (Kincasslagh), Anagaire (Annagry)
SIX INCH MAP NUMBER	32, 40, 41
ITM CO-ORDINATES	577000E 922000N (centre of bay)
1:50,000 O.S. SHEET NUMBER 1	GS1 BEDROCK 1:100,000 SHEET NO. 1
GIS Code ND021	

Outline Site Description

Inishfree Bay is a large coastal embayment in northwestern County Donegal.

Geological System/Age and Primary Rock Type

The beach, spit, dune, tombolo and estuarine features have been formed in the Holocene Period, since the last glaciation, and the bay field hosts soft silt and sand sediment washed into it, or blown across the locality, during that time. It is likely that the macro-structure of the bay dates back through the Quaternary (Ice Age) to the Tertiary Period. The bedrock exposures along portions of the bay perimeter are granite, which is late-Silurian/early-Devonian age (420-390 Ma).

Main Geological or Geomorphological Interest

The beach, spit and estuarine sediments in the bay have formed as a result of deposition by longshore drift, which is the movement of sand and silt along the coast by the waves. The beach, spit and estuary features are formed when the silt and sand material - that is being carried by the waves - gets deposited due to a loss of the waves' energy, because the rivers entering the bay slow it down. The bay has then been the result of wind erosion and deposition over the millennia since the Ice Age and several large dune fields have formed alongside it. Dune slacks occur between these, which are low, narrow, marshy localities.

Inishfree Bay is flanked by well-defined protruberances of bedrock which form headlands. The sand spits and associated beaches in the bay are highly impressive features, with the beach/spit system that hosts Donegal Airport almost 2 kilometres long and up to 1 kilometre wide. This feature has formed a tombolo as it has connected what was an island, at Carrickfin, to the mainland. The dune fields in the bay are up to 500m wide, with individual dunes up to 25m high. A number of islands also occur in the bay, formed from ice-polished granite bedrock.

Site Importance - County Geological Site

Inishfree Bay is an impressive locality and the associated estuarine flat, beach, spits, dune and slack features, as well as the surrounding headlands and tombolo, make the bay a textbook locality for the recognition of coastal erosion and deposition features.

Management/promotion issues

The location of the bay means it is easily accessible, and Cionn Caslach (Kincaslough) is a popular holiday destination. An information board at the viewing point in Cionn Caslach, or at the car park in Mullach Dearg (Mullaghderg), might prove worthy additions to the site, explaining the formation of the bay feature and its associated habitats, flora and fauna. The site is already part of a proposed SAC and NHA (001141, Gweedore Bay and Islands) for biodiversity reasons and the geodiversity of the locality should be highlighted in any promotion of this.



View across the intertidal flats and islands of the southern end of Inishfree Bay, Kincaslough.



Dunmore Strand, at the northern end of Inishfree Bay.



The high sand dunes at Dunmore.



Rocky headland and islands at Mullaghderg.

