

DONEGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Loughros More Bay
IGH THEME	IGH13 Coastal Geomorphology
TOWNLAND(S)	Derryness, Sandfield, Magheramore, Liskeeraghan Longfield, and Shanaghan.
NEAREST TOWN	Ardara
SIX INCH MAP NUMBER	73
ITM CO-ORDINATES	570316E, 893957N
1:50,000 O.S. SHEET NUMBER: 10	GSi BEDROCK 1:100,000 SHEET NOs. 3, 4
GIS Code DL026	

Outline Site Description

The Loughros More Bay estuary is flanked by extensive sand dunes on both sides of the channel entrance which bound rocky outcrops upslope. The sand dunes are subject to continual modification.

Geological System/Age and Primary Rock Type

The dunes are Holocene in age, having been formed within the last 10,000 years since the end of the last ice Age. Tills on the backslopes of the surrounding hills were deposited by ice during that time, and the bedrock geology itself dates from c. 400 Ma (granite) to c. 750 Ma (Dalradian).

Main Geomorphological Interest

Loughros More Bay trends dominantly northwest–southeast, reflecting the bedrock orientation. It is a sand-dominated estuary with extensive intertidal and supratidal sand deposits. It has a sandy threshold at the seaward end and a muddy intertidal zone with salt marsh bordering the estuary up to Ardara. At Ardara the Owenlocker River cascades down to the sea over boulders. Tidal flow and aeolian transport across the sand flats at low tide compete with river erosion as agents that shift the sand budget around the estuary. Sand banks grow and diminish close to the dunes, while farther inshore mud and silt are exposed at low tide. River flow in saltmarsh areas is augmented by the outgoing tide and the delicate balance of land and water is continually being modified. In areas like this any significant change in mean sea level will soon become noticeable as intertidal sediment is easily eroded and transported.

The shorelines are predominantly of bedrock and have not undergone significant change in historical times, with the bedrock providing a structural framework that contributes to controlling sedimentary processes and hence geomorphological evolution of the estuary. Thus, shifts in the position of the channels within the estuary have mainly been reflected in changes to the dune-strand system of Magheramore on the northern side of Loughros More Bay where bedrock does not form the shoreline. In recent decades northward extension of a main channel meander has realigned the dune front of Magheramore, causing erosional retreat of over 500m and also 400m of foredune progradation to the east.

Site Importance – County Geological Site; maybe recommended for Geological NHA

The site shows sediment sorting and redistribution in an estuarine environment. The ecological importance of Loughros More Bay is recognized by NPWS through its inclusion with the West of Ardara / Maas Road SAC and proposed NHA (00197). All the sensitive habitats listed in that proposal have geological and geomorphological parameters that need to be integrated into a comprehensive policy for conservation of this extensive area.

Management/promotion issues

Many competing land-use issues converge within Loughros More Bay, but the area is also affected by natural factors, such as wind, rain and tidal influences, that are beyond human control. Careful investigation by experienced geomorphologists can help to manage inevitable modification induced by nature.



Loughros More Bay at high tide, viewed from southeast.



Detail of the Magheramore dunes in Loughros More Bay, viewed from south.

