MAYO - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Brookhill Delta**
Other names used for site	Brockhill Delta, Brockhill Moraine, Brookhill Quarry
IGH THEME	**IGH7 Quaternary**
TOWNLAND(S)	**Ballyglass, Killeena**
NEAREST TOWN/VILLAGE	**Ballycastle**
SIX INCH MAP NUMBER	**6**
ITM CO-ORDINATES	**499210E 841750N (centre of features)**
1:50,000 O.S. SHEET NO. 23	**GSI BEDROCK 1:100,000 SHEET NO. 6**
GIS Code MO019	

Outline Site Description
The site is located at Brookhill, approximately 1.5km west of Ballycastle, on the crest of a ridge in the Ballyglass townland, and includes two sand and gravel quarry sites.

Geological System/Age and Primary Rock Type
The two quarries are cut into thick sand and gravel deposits which overlie sandstone bedrock (Downpatrick Formation) of Carboniferous age. The glaciomarine features exposed in the quarry faces are Quaternary in age, and are understood to have been deposited in shallow sea water to the north of an ice margin located inland from the present north Mayo coastline during the last Ice Age.

Main Geological or Geomorphological Interest
The site comprises a large, flat-topped, ice pushed deltaic glaciomarine deposit, at least 40m thick, with enclosed depressions (kettle holes) on the southern surface and steep ice contact slopes on its southern margin. The quarry sections exhibit thick outwash deposits of sand and gravel, associated with glaciomarine, ice marginal deposition in a Gilbert-type delta setting.

Three distinguishable sediment units (facies) can be identified within the feature: a lower unit of parallel laminated and rippled medium sand, overlain by pebble and gravel layers that dip northwards (~15°) and poorly sorted pebble and cobble gravels in a sandy matrix. The sediments were deposited in shallow sea water in an ice contact delta. Relative sea-level/s were/was higher during this time, over 80m above present sea level. The delta feature is of similar age to the shelly glaciomarine muds located at Glenulra and Belderg.

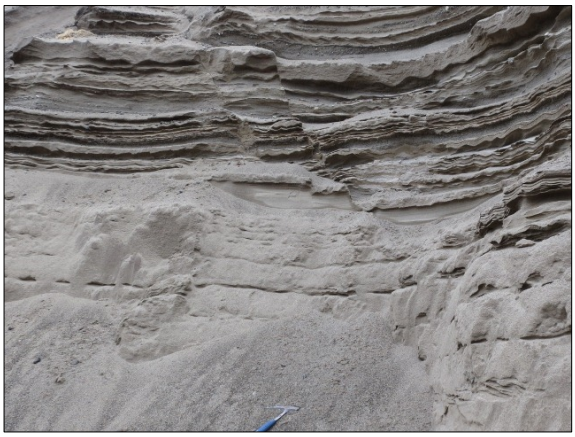
Site Importance – County Geological Site; recommended for Geological NHA
The sequence forms one of the best examples of a raised glaciomarine delta in the country. The site is of international significance because it documents re-equilibration of the ice margin following deglaciation of the continental shelf, which is a major event in the deglaciation of the North Atlantic area. The site is not within a designated SAC or NHA, and is recommended for Geological NHA designation.

Management/promotion issues
As a working sand and gravel pit, the listing as a County Geological Site has no implications for the normal operation of the quarry, subject to standard permissions and conditions under planning and environmental legislation. It would be desirable to consider retaining representative sediment faces for geological purposes during any final closure stages. Exposed sand and gravel deposits naturally degrade and vegetate. The quarry is not suitable for any general promotion other than by express agreement and permission of the owners and operators, B.P. Mitchell Sand & Gravel Ballycastle Limited.

Rounded cobbles in a sandy matrix in the eastern quarry.

Rippled and parallel-laminated layers of sand at Brookhill Quarry.

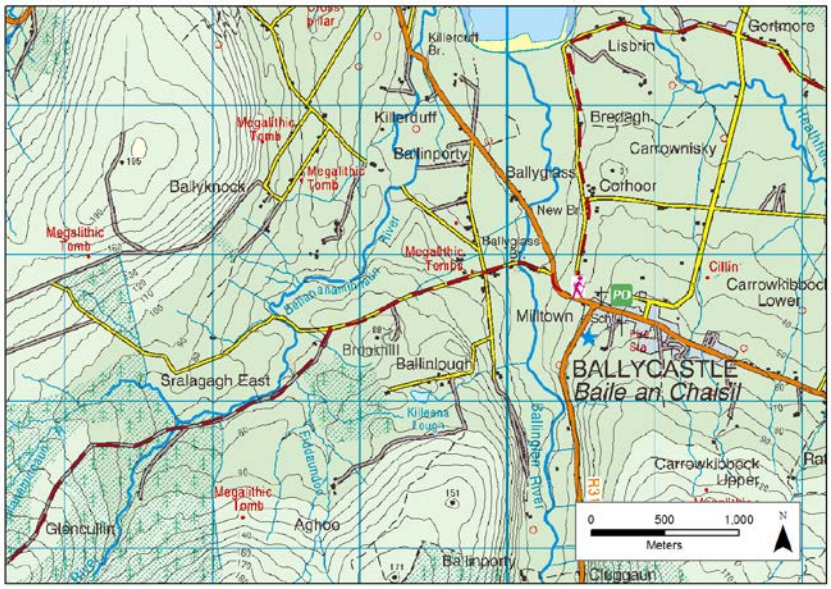
North-dipping sandy foresets underlying gravelly beds, in the east quarry.

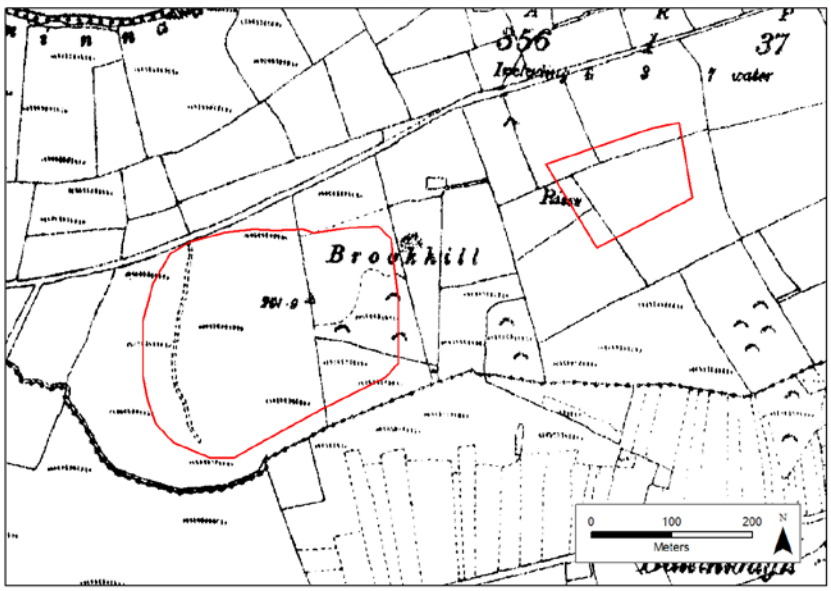


Minor displacements visible in rippled layers of sand at Brookhill Quarry.

Smaller, east quarry at Brookhill.

Sand and gravel quarry at Brookhill.





Hennessy et al. 2014 (revised 2019). Geological Survey Ireland.