MAYO - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE Other names used for site IGH THEME TOWNLAND(S) NEAREST TOWN/VILLAGE SIX INCH MAP NUMBER ITM CO-ORDINATES 1:50,000 O.S. SHEET NO. 30 GIS Code MO031 **Clare Island (Northeast Coast)**

IGH8 Lower Carboniferous Ballytoohy More; Capnagower Clare Island 75, 85 470578E 786710N (centre of feature) GSI BEDROCK 1:100,000 SHEET NO. 10

Outline Site Description

Low cliffs, rock outcrops and boulder beaches along the northeast coastline of Clare Island.

Geological System/Age and Primary Rock Type

Lower Carboniferous age red coloured pebble-rich conglomerates, coarse sandstones and mudrocks (Maam Formation) and dark-grey coloured shale (Capnagower Formation). Fossilised plant miospores have provided an age of *c*. 346 million years (late Tournasian to early Viséan) for the Capnagower Formation rocks.

Main Geological or Geomorphological Interest

The 200m thick red-purple coloured sedimentary rocks of the Maam Formation rocks are composed of sediments and clasts (rock fragments) derived from older Dalradian rocks. The rocks were deposited in a flash-flood river (fluvial) environment. These rocks are almost entirely exposed along these NE coast sections of the island, where they are overlain by Quaternary glacial deposits. The red conglomerates exhibit angular quartz clast sizes of up to 10cm. Clasts include vein quartz, psammite, quartzite, mica-schist, jasper, sandstone and some volcanic clasts. Thick beds (<2m) of red mudrock are interbedded with the conglomerate and coarse sandstones.

The overlying (younger) rocks of the Capnagower Formation exhibit fossiliferous sandstones and mudrocks that contain poorly preserved fossil marine flora and fauna (bivalves, snails/gastropods, shrimp/ostracods). The Capnagower Formation also includes palaeosol horizons (ancient terrestrial soil layers).

Site Importance – County Geological Site

The best section of the Maam Formation is exposed along the shore between Leckaprison and Portlea. The best sections of the Capnagower Formation are exposed along the coast from Portlea south to Kinnacorra and the sandy beach near the harbour. The site is located within the Clare Island Cliffs SAC (0002243). This is an important County Geological Site.

Management/promotion issues

The site is not deemed to be under any significant threat aside from natural processes of coastal erosion. Access to the coastal sections is possible via track ways to the shoreline however access along the shoreline requires a scramble over large loose boulders and slippery outcrops. As with all coastal sections, access is advised at low tide, and during calm weather conditions. Some of the more interesting features of the site (e.g. red conglomerates with large quartz clasts and red jasper clasts) are observable in loose rocks in stone walls alongside the nearby road. Public/visitor information on the island's geological heritage could be provided alongside the existing birdlife/coastal erosion information board near the community centre. Promotion of the island's geological heritage could also be included in literature accompanying the Clew Bay Archaeological Trail.



View of NW shore of Clare Island, looking SE from Portlea. Maam Formation bedrock in foreground. Capnagower Formation underlies the glacial till cliffs in background.



Angular quartz clasts in Maam Formation conglomerates.



Coarse sandstones of the Maam Formation.



Mudrock layers and coarse sandstones at Portlea (Maam Formation), looking NW towards Corraun.



Boulder beach and glacial till cliffs at Portlea.







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