# **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 MO014 Bolinglanna (Coast) Buaile an Ghleanna;Gubacarrigan; Altapheebera IGH8 Lower Carboniferous Bolinaglanna Mulranny 65, 66, 75 475000E 792400N to 478800E 793000N GSI BEDROCK 1:100,000 SHEET NO. 6

## **Outline Site Description**

Approximately 4km of coastal exposures of red sandstones (red-beds) slope (dip) south-eastwards into Clew Bay. The shoreline comprises extensive deposits of large, wave-rounded boulders (mainly sandstone), below cliffs (<56m) of unconsolidated glacial deposits that are subject to coastal erosion.

### Geological System/Age and Primary Rock Type

Lower Carboniferous (Late Tournaisian) sedimentary rocks (cross-bedded, coarse-grained sandstones and conglomerates, with finer grained mudstones in the upper part), aged 359-345 million years old. The red-beds belong to the Maam Formation sequence. The sandstones are often pebbly (with embedded pebbles of white-pink quartz, and jasper).

#### Main Geological or Geomorphological Interest

This site displays a variety of interesting red-beds of Carboniferous age, ranging from fine and soft mudstones to cross-bedded, coarse sandstones with centimeter scale, angular quartz pebbles. Evidence of the terrestrial, fluvial environment in which the sediments were deposited can be seen in the well-preserved exposures at Bolinglanna boulder beach, near Gubanalt.

Studies of palaeocurrent indicators in the Maam Formation red-beds suggest the sediments had a northwesterly provenance. Whilst Old Red Sandstone strata such as these are commonly associated with Devonian times, these red-beds indicate the continuation of terrestrial sedimentation into early Carboniferous times in the northern half of Ireland (whilst the sea encroached over southern parts, progressively flooding northwards during the Carboniferous). The strata can be seen to dip southwards into Clew Bay alongside the coastal road.

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

This site is of national importance owing to the variety of Carboniferous red-beds, and is therefore recommended for geological NHA designation. It is immediately west of the most westerly, coastal section of the Corraun Plateau SAC (000485).

#### Management/promotion issues

Sea erosion is the main threat to the condition of this significance coastal exposure. Access to the coast is via small boreens or concrete steps in places. Permission should be sought as fences must be crossed to gain access to the boulder beach. Promotion of the site is not recommended owing to the immediate and precarious proximity of the features of interest to the Atlantic waves.



Southeast dipping red-beds along coast. Looking west from the Atlantic Drive route.



Thick red mudstones with interbedded sandstone layers at western end of Bolinglanna boulder beach.



Angular quartz pebbles in coarse sandstone layers at Bolinglanna boulder beach.



350 million year old mud-cracks in strata at Bolinglanna boulder beach.



SE dipping red-beds, at the trace fossil exposures near Bolinglanna. The cliffs at Gubacarrigan are visible in the distance, looking eastward.



Bunclady River, at eastern boundary of Bolinglanna townland. The river runs through a 'gorge' in the sandstones. Viewed from the road-bridge, looking north. (Hammer in lower right corner for scale).







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