# **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. 23 GIS Code MO096 **Stella Maris** 

IGH8 Lower Carboniferous Doonfeeny Upper, Dooclogh, Killerduff Killala 7 509470E 840500N GSI BEDROCK 1:100,000 SHEET NO. 11

### **Outline Site Description**

A coastal section of exposed strata on the west side of Bunatrahir Bay.

## Geological System/Age and Primary Rock Type

Lower Carboniferous age (late Tournasian-early Visean, *c.* 350-340 million years ago) alternating beds of grey-coloured marine and non-marine sandstone, siltstone (Downpatrick Formation) overlain by younger fossiliferous limestone and calcareous shale (Moyny Limestone Formation).

### Main Geological or Geomorphological Interest

Excellent coastal exposures occur along the foreshore (intertidal and splash zone) for a distance of *c*. 1km to the north and south of the pier at Stella Maris. Lithologies comprise shallow-water marine and non-marine sandstones and siltstones overlain by fossiliferous (bioclastic) limestones. The strata often exhibit their original rippled surfaces or polygonal dessication (drying-out) cracks. Low cliffs of glacial sediments overlie the Carboniferous strata. The Carboniferous rocks in this region of northwest Mayo overlie older Dalradian rocks from the headland at Port eastwards. The rocks at the site provide evidence of localised advances (progradation) of terrestrial sediments into coastal marine environments (Downpatrick Formation), followed by a significant marine flooding event (Moyny Limestone Formation) during the early Carboniferous.

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

It is recommended that this important site be designated as a geological NHA, as it exhibits excellent exposures that indicate changing environmental conditions along an early Carboniferous coastline. The site is important as a field location for student instruction and research.

## Management/promotion issues

Access along the foreshore is easy at low tide. Limited parking is available at the nearby pier. The site could be promoted as part of a greater area that includes Downpatrick Head and Kilcummin Head, all of which share an associated geological heritage, and occupy a coastal section of outstanding scenic beauty. Any coastal developments that would obscure, damage, or limit access to the coastal exposures would seriously threaten the integrity of the site.



Looking east to Downpatrick Head from Stella Maris.



Near-horizontal sandstones and shales.



Gently dipping (northwards) strata at Stella Maris.



Limestones and calcareous shales.



Ripple marks in exposed strata along the inter-tidal zone.



Fossiliferous horizon in Moyny Limestones.



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