

WICKLOW – COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Greystones beach
Other names used for site	Greystones
IGH THEME	IGH7 Quaternary
TOWNLAND(S)	Rathdown
NEAREST TOWN/VILLAGE	Greystones
SIX INCH MAP NUMBER	8
ITM CO-ORDINATES	728770E 713920N (centre of section)
1:50,000 O.S. SHEET NUMBER	56
	GS1 BEDROCK 1:100,000 SHEET NO. 16

Outline Site Description

Along the beach just north of Greystones, a 2 kilometre-long coastal section exposes a succession of several units of glacial till, separated in places by sand and gravel.

Geological System/Age and Primary Rock Type,

The till itself was deposited at the base of the last ice sheet to cover the area, during the late Quaternary Period, approximately 20,000 years ago. This till is deep in the locality but the sediments overlie greywacke, slate and quartzite bedrock of Cambrian age.

Main Geological or Geomorphological Interest

This sequence of sediments is one of the most renowned in Irish Quaternary literature and has been controversially interpreted as 'glaciomarine' in origin (*i.e.* deposited under a floating ice sheet in the sea) by some academics. However, the general consensus is that the sediments are the product of a terrestrial ice sheet, interpreted as 'subglacial' tills deposited at the base of an ice sheet on land. They now form part of a prominent moraine ridge in the cliff.

Examining the sedimentology of the cliff shows that there are a number of till units stacked on top of each other. The tills include gravel beds, sand pockets and clay lenses, and are dominated by erratic limestone rocks. Large boulders of Leinster granite and small pebble erratics of Ailsa Craig microgranite (from Scotland), and Cretaceous chalk, flint and Tertiary basalt (all from Antrim) can also be seen both in the section and on the beach.

The southern portion of the section, just north of the new marina at Greystones, is dominated by bedded sands and gravels.

Coastal erosion is a continued threat at Greystones, despite attempted human control of this, which involves erection of baffles and mesh-wire structures to stop recession of the cliffs. This means many portions of the exposure at Greystones are heavily slumped.

Site Importance – County Geological Site; recommended for Geological NHA

This is a particularly impressive exposure into deep glacial tills, with several sedimentological characteristics well exposed. The site is effectively included within the existing Bray Head SAC and proposed NHA (Site Code 000714).

Management/promotion issues

The site is accessible through public beach access and is therefore easily visited. The cliffs are prone to slumping, however, and care must be taken when close to the faces. The importance of the section could be highlighted in promotional material for the Bray Head SAC and proposed NHA.



The section at Greystones, looking south from the beach area just south of Cable Rock.



Left: Gravel beds resting on top of stiff, muddy glacial till sediment in the section. Note the slumping at the base of the cliff.

Right: Looking north along the section towards Cable Rock and Bray Head. The large boulders emplaced to stop erosion are clearly seen.



