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 NOs. 24, 31 GIS Code MO086 **Pontoon Bridge**

IGH7 Quaternary, IGH11 Igneous Intrusions Cuing More, Laughil, Cuing Beg Foxford 48; 60 521500E 804950N (coordinates at bridge) GSI BEDROCK 1:100,000 SHEET NO. 6

Outline Site Description

The site comprises a land bridge and surrounding landscape at the very northern part of Lough Cullin and the very southern part of Lough Conn.

Geological System/Age and Primary Rock Type

The rocks at Pontoon Bridge are mainly Ox Mountains Granodiorites (late Caledonian age, *c*. 412Ma), of similar age to other Irish granite batholiths (Leinster, Donegal, Galway, Newry). A major fault trending SW-NE runs north of Cliff Island, separating the southerly Ox Mountains Granodiorites (e.g. on Cliff Island) from the Slieve Gamph Igneous Complex muscovite granites (e.g. on Burnt Island). The glacial-erosion features are Quaternary in age.

Main Geological or Geomorphological Interest

The rocks at Pontoon Bridge show excellent banding in granodiorite (pale) and tonalite (dark). Banding features indicate intrusion of magma in successive phases. The minerals show planar alignment (foliation), and lineations are clearly evident in stretched quartz crystals. Foliation and lineation indicates that magma was intruded during compression, which also caused shearing during the emplacement and crystallization of the granodiorite and tonalite. Shear zones present along the shoreline show no signs of disturbance, suggesting that shearing occurred when the rock was still hot enough to weld together. Folding is also evident in bands of pale coloured granodiorite. The granodiorite weathers proud of the darker tonalite. Bands of pink, coarsely crystalline pegmatites cut granodiorites and tonalites, indicating that pegmatite was intruded at a later stage. Inland exposures occur at road cuttings on the R310 (beside school) and where vegetation is sparse to absent. Rock outcrops and islands record the movement of ice from south to north by their smooth and polished southern (up-ice) flanks that rise to elevated and plucked northern (down-ice) scarps (30m–60m high). Many such roches moutonnées are small (2m-3m across and < 0.6m high), but are found upon larger crags that also demonstrate roche moutonnée morphology. Surfaces on the roches moutonnées display chattermarks and crescent-shaped gouges that provide further evidence of the ice flow direction from south to north.

Site Importance – County Geological Site

This County Geological Site is important for geological research, field study groups, and for geologyinterest groups. The relative ease of access to the outcrops along the lake shore makes the site an important location for presenting aspects of the region's geological history. The site is located within the River Moy SAC (002298). The geological significance of the site should be emphasised within the existing SAC, and subsequently protected.

Management/promotion issues

Pontoon Bridge is a scenic and much visited location, and is a major crossing point between the east and west sides of Loughs Conn and Cullin. Whilst the features of geological significance are not readily observable from the bridge, road or parking area, an information board could be of benefit to the local community and to visitors in explaining specific points of interest relating to the geology, hydrology and biodiversity in the area.



Ox Mountains Granodiorite exposures on the south side of the R310 road, 100m west of Pontoon Bridge.



View of Cliff Island (*roche moutonnée* feature) 400m north of Pontoon Bridge, looking north from the bridge. The elevated scarp on the N/NW side of the island rises to 33m.



Pink band of pegmatite (coarse crystalline rock) cutting N-S across the granodiorites and tonalites (Pontoon Bridge Hotel in distance).



Folding is visible in pale-coloured granodiorite bands along the shoreline (looking east towards Lough Cullin).



Pale coloured, foliated granodiorites and dark coloured tonalites.



Shearing – cutting across bands of pale coloured granodiorite and dark coloured tonalite.



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