MAYO - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Kilsallagh**
Other names used for site	
IGH THEME	**IGH4 Cambrian to Silurian**
TOWNLAND(S)	**Kilsallagh; Fallduff**
NEAREST TOWN/VILLAGE	**Louisburgh**
SIX INCH MAP NUMBER	**86**
ITM CO-ORDINATES	**485290E 781900N**
1:50,000 O.S. SHEET NO. 30	**GSI BEDROCK 1:100,000 SHEET NOs. 10, 11**
GIS Code MO70	

Outline Site Description
A low coastline of rock outcrops and small beaches on the southern shore of Clew Bay.

Geological System/Age and Primary Rock Type
The age of the Killadangan Formation is debated as either Ordovician or Silurian age. The Killadangan mélange (mixture) comprises quartz-rich sandstone, conglomerate and chert blocks enclosed in a black shale matrix. The mélange is deformed (soft-state and tectonic deformation).

Main Geological or Geomorphological Interest
The site exposes large blocks of sandstone and chert enclosed in a black shaley matrix. Blocks of sandstone exhibit evidence of soft-state disruption and injection by the matrix, indicating the mélange formed while some of the sediment blocks had not been fully lithified (turned to stone). Chert blocks, on the other hand, do not show soft-state deformation.

These beautifully coloured blue-green rocks have been studied in detail for over 40 years and geologists continue to debate the age and origin of the Killadangan mélange. Some geologists consider the mélange to have its origins in an oceanic trench (subduction zone) along an oceanic volcanic arc during the Early-Middle Ordovician period (485 – 465 million years ago), and that the Killadangan mélange marks the subduction suture and the sediments were derived from the Laurentian continental margin. Other geologists place the formation of the mélange in the Silurian period (Wenlock, *c.* 425 million years ago). The Silurian age was proposed after the identification of microspore fossils (palynomorphs), tubular structures and sheets of plant cuticles in turbidite rocks. However, some controversy exists over the Silurian microfossils from the mélange matrix.

The Killadangan Formation has been correlated with the Ballytoohy Formation and Portruckagh Formation on Clare Island.

Site Importance – County Geological Site, may be recommended for Geological NHA
This County Geological Site is very important to understanding the geological history of this part of western Ireland.

Management/promotion issues
Access to the site is not easy, as there is a band of agricultural land between the shore and R335 road along this stretch of coastline. The coastal section comprises a very discontinuous rocky shore that is only safely accessibly at low tide. Obvious caution should be exercised in any such Atlantic-edge site. The site is not considered suitable for promotion to visitors owing to the safety and access concerns.

Kilsallagh coastal section viewed looking east. Croagh Patrick in cloud in the background.

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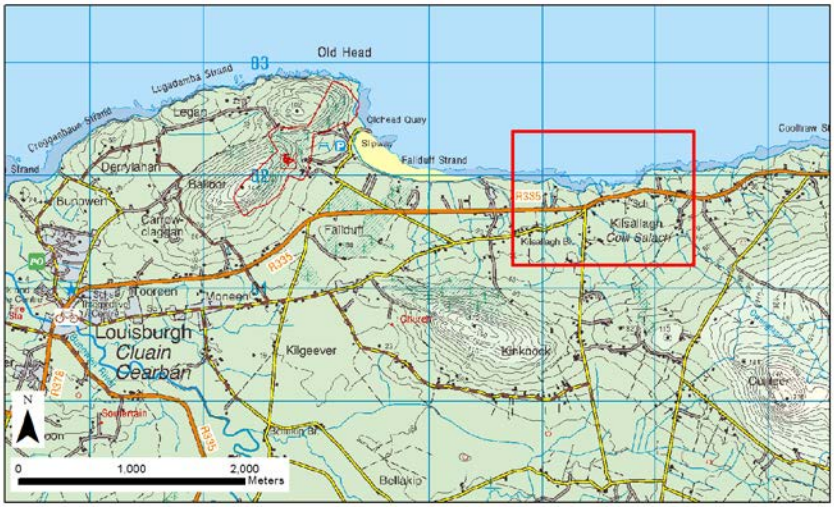
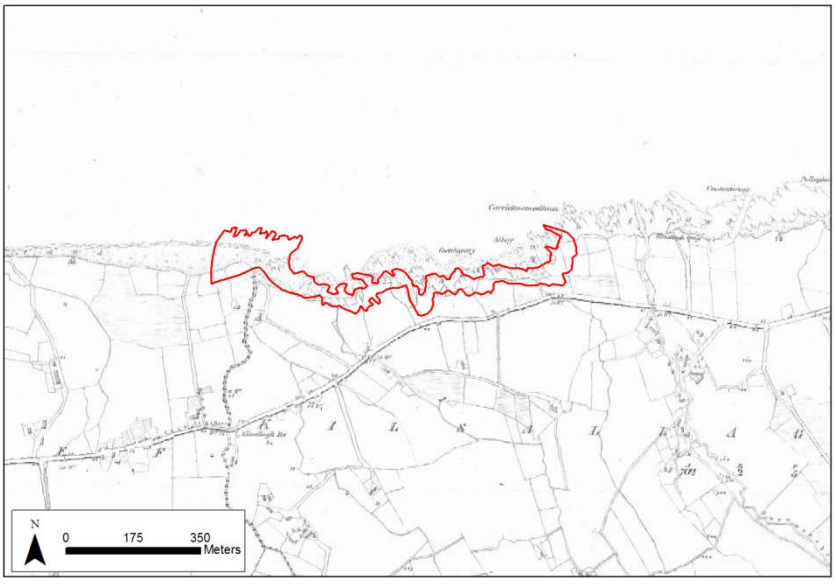
Kilsallagh coastal section viewed looking west. Old Head in the background.

Killadangan Formation mélange rocks at Kilsallagh. Sand polished grey-blue outcrops contrast with weathered darker outcrops of same lithology.

Block of sandstone in Killadangan Formation mélange rocks, cut by quartz veins.

Dark grey shaley layers of Killadangan Formation mélange rocks.





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