

MAYO - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Castle Lake (Lough Mask)
Other names used for site	Lough Mask, Mouth of the Cong Canal, Dringeen Bay
IGH THEME	IGH1 Karst
TOWNLAND(S)	Inishard, Inishcoog, Knocknamucklagh, Killimor
NEAREST TOWN/VILLAGE	Ballinrobe/Cong
SIX INCH MAP NUMBER	120
ITM CO-ORDINATES	513070E 759520N
1:50,000 O.S. SHEET NO. 37	GS1 BEDROCK 1:100,000 SHEET NO. 11
GIS Code MO027	

Outline Site Description

The site comprises the subterranean drainage system between Lough Mask and Lough Corrib. The site is part of the Cong Isthmus site, an 18km² hydrogeomorphic landscape that includes springs, sinks, caves and karst surface features. The Cong Canal traverses the southwest end of the Castle Lake, a solutional lake at the southeast end of Lough Mask.

Geological System/Age and Primary Rock Type

The site occupies a region of Lower Carboniferous (359–326 million years ago) fossiliferous limestone bedrock (Cong Canal Formation). The lake and surrounding karst features are post-glacial (Holocene).

Main Geological or Geomorphological Interest

Lacustrine *karren* (solution features formed by the dissolution of limestone by acidic water) are well developed along the shoreline zone of seasonal lake-water. Lime-muds (*marl*) are deposited on the lake floor, of which shallower sections are exposed in low water conditions. Large fissures (both dry and water filled) with depths of up to 47m are present near Lough Mask House (NE end of lake), and are related to the subterranean movement of water between Lough Mask, Castle Lake and Lough Corrib. *Mushroom stones* are also present at the site. *Epikarst* features are well developed around the lake shore. The pitted limestone surface is a significant characteristic of the site. The Cong Canal traverses the SE end of the lake. Prior to construction of the canal in the 1850s, Castle Lake was isolated from the Lough Mask under summer conditions. However, the channel excavated between the Lough Mask and Castle Lake now allows constant flow into Castle Lake even under low water conditions. The SE side of the lake consists of a chaotic abundance of collapsed limestone blocks in the zone of maximum *swallow-hole* (sink) development near the Boat House (and Pollnacorra). The gently SE dipping exposures surrounding the lake are strewn with large sharp-edged, water-worn, limestone blocks and smoother edged sandstone boulders (glacial *erratics*). Fossils (e.g. coral, crinoid) can be identified in the weathered limestone blocks along the lakeshore.

Site Importance – County Geological Site; recommended for Geological NHA

This is a site of international importance. Lacustrine karren are as well developed here as anywhere in the world. The site is located within Lough Carra/Mask Complex SAC (001774). Some key karst features are situated outside this SAC, at the margin of the Cong Canal in the Caherloughlin townland. The site has been unequivocally recommended for geological NHA designation, and is part of the greater Cong Isthmus site. Approximately 2.5km long, and 500m wide at the widest point, the lake functions as one vast sink, engulfing 55% of the sinking waters under low flow conditions and 85% under high flow conditions.

Management/promotion issues

Public access to the site is restricted, and permission to access the site must be sought from the landowner(s). The site has excellent potential as a field study site owing to the abundance of karst features, and presence of the Cong Canal.



Overturned limestone block showing (1) tube karren (röhrenkarren) resting on (2) egg box pitted karst surface.



Castle Lake viewed from north bank of Cong Canal, looking NE towards Long Rock and Lough Mask House woodlands in distance.



Limestone and sandstone boulders resting on partly moss-covered, sub-aerial egg box pitted surface (a past high-water flood area).



The Cong Canal (flowing right to left) viewed from the NE canal bank, looking NW. Maumtrasna Mountains visible in the distance.



Tube karren (röhrenkarren) on underside of limestone bedding plane on lakeshore.



SE dipping limestone strata on west shore of Castle Lake. Looking towards Lough Mask House (upper left corner).



