

LIMERICK - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Lough Gur
Other names used for site	
IGH THEME	IGH1 Karst, IGH16 Hydrogeology, IGH8 Lower Carboniferous
TOWNLAND(S)	Lough Gur, Knockfennell, Ballynagallagh, Raheen, Grange
NEAREST TOWN/VILLAGE	Grange
SIX INCH MAP NUMBER	32
ITM CO-ORDINATES	563770E 640490N (centre of lough)
1:50,000 O.S. SHEET NUMBER 65	GSI BEDROCK 1:100,000 SHEET NO. 18
GIS CODE LK024	

Outline Site Description

Lake and surrounding land, including public park and private farmland.

Geological System/Age and Primary Rock Type

The bedrock is Mississippian (Lower Carboniferous) Waulsortian Limestone and crinoidal limestone of the Lough Gur Formation. The karst features may have been formed in the Quaternary or early Holocene (post-glacial).

Main Geological or Geomorphological Interest

Lough Gur is a unique shallow lake (typically $\leq 4\text{m}$) that is fed by groundwater and surface run-off. Like many shallow lakes it has a rich biodiversity, with a wide range of flora and fauna. It has been described as eutrophic or hypereutrophic lake, reflecting an imbalance between input of fresh water and nutrients that has led to the appearance of algal blooms on the lake surface, particularly during summer months. Lough Gur and the surrounding area is also one of Ireland's most important archaeological landscapes, with a large range of field monuments reflecting 6,000 years of human habitation.

The Waulsortian limestone bedrock underlying the lake is karstified and is a regionally important aquifer. The springs feeding the lake are located in Lake Bog on its southwestern side. Karst features are also visible at the surface on the northern side of the lake where there are two sinkholes, including a large doline (Pollavadra), and a small cave (Red Cellar cave). Dye tracing of these sinkholes has shown that they are connected to the Creamery Spring in Upper Grange, 1.8km to the west.

The Lough Gur area is also the type location for the Lough Gur Formation, which typically comprises grey-black cherty fossiliferous limestones. The Lough Gur Formation overlies the Waulsortian and forms the high ground around the lake. There are extensive outcrops on Knockfennell and Knockadoon. Carraig Aille, east of the lake on the road south from the car park, is a particularly accessible outcrop.

Site Importance – County Geological Site

Lough Gur is recommended as a County Geological Site, because of its hydrogeological significance, karst features and as the type locality for the Lower Carboniferous Lough Gur Formation.

Management/promotion issues

Lough Gur is a popular visitor attraction, with an interpretative centre, playground, lakeside walks and amenity area. Fencing recently erected by local landowners has prevented access to the shore of the lough outside the boundaries of the public area, including the karst features on the northern shore as well as Knockfennell. A signboard at the entrance to the public area could be improved to make reference to the geology of the lough and its surrounding area.



General view from northern end of Lough Gur, looking southwest



Doline on northern shore of lake.



View toward southwestern end of lake and bog with lake feeder springs .



Knockfennell on northern side of lake: Lough Gur Formation Limestone forming the high ground above karstified Waulsortian limestone fringing the lake.

