

CORK - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Lough Hyne
Other names used for site	Lough Ine, Loughine, <i>Loch Oighinn</i>
IGH THEME	IGH13 Coastal Geomorphology, IGH7 Quaternary
TOWNLAND(S)	Highfield, Pookeen, Barnabah, Coomavarrodig, Glannafeen, Ballyoughtera, Ballyisland, Dromadoon
NEAREST TOWN/VILLAGE	Baltimore
SIX INCH MAP NUMBER	150
ITM CO-ORDINATES	509600E 508450N (centre of lake)
1:50,000 O.S. SHEET NUMBER	89 GS1 BEDROCK 1:100,000 SHEET NO. 24
GIS CODE	CK062

Outline Site Description

Lough Hyne is a fully marine sea lough approximately 4 km east-northeast of Baltimore.

Geological System/Age and Primary Rock Type

The depression hosting lake itself is Quaternary in age, having been gouged out of the surrounding bedrock by ice during the last Ice Age. The bedrock is mostly sandstone of the Devonian (419 to 359 million years ago) Sherkin Formation, and part of the Old Red Sandstone succession of south and west Cork.

Main Geological or Geomorphological Interest

Lough Hyne and the depression hosting it was gouged out of surrounding bedrock by ice during the Ice Age, and most of the ground around the lake comprises bedrock at surface or rock subcrop. Many of the rock surfaces around the lake are ice moulded and host striations oriented generally north to south. The bedrock forms themselves reflect moulding by ice in a northeast to southwest direction, so the rock surfaces seem to reflect cross-cutting ice flows, which may have been separated by a significant period of time.

The lake was probably a freshwater lake until about four millennia ago (2,000 BC, during the Bronze Age), when rising sea levels flooded it with saline, ocean water. The lake is now fed by tidal currents that rush in from the Celtic Sea through Barloge Creek, and the stretch between the creek and the lake is known as "The Rapids". With an area of only 0.8 km by 0.6 km, the lake's small size creates an unusual habitat of highly oxygenated yet warm seawater that sustains an enormous variety of plants and animals, many of which are not found anywhere else in Ireland. A wide variety of environments such as cliffs, salt marsh, beach, and areas of greatly varying water movement add to the area's biodiversity.

The first scientific investigation of the area around Lough Hyne began in 1886, when Reverend William Spottswood Green first recorded the presence of the purple sea urchin *Paracentrotus lividus* in the lake. Professor Louis Renouf resumed the scientific work in 1923 and promoted Lough Hyne as a 'biological station' and sustained studies have been carried out there ever since. The lake is now one of the most-studied lake sites of its size in the world. Several laboratories were constructed near the shores of the lake, supporting ground-breaking ecological research under Professor Jack Kitching and Dr. John Ebling. An illustrated history of the marine research was published in 2011 'Lough Hyne: The Marine Researchers - in Pictures'.

Site Importance – County Geological Site

Lough Hyne is Ireland's first Marine Nature Reserve, designated in 1981, and is also a Special Area of Conservation (Site Code 000097) and a proposed Natural Heritage Area. The site is of geological importance and merits designation as a County Geological Site.

Management/promotion issues

Much of the area around the site is located on private land, but there are some well-marked walking trails and the lake is popular for water sports. Permission should be sought for access to any private lands. Despite being a significant landmark on the Wild Atlantic Way, few signboards have been erected and much more information could be provided to describe the host rock geology and to illustrate the glacial processes that led to formation of the lake basin.



Lough Hyne, viewed from the southwest.



Ice-sculpted Devonian sandstone bedrock beside “The Rapids” channel to the sea.

