



Lough Carra LIFE





An tSeirbhís Páircenna Náisiúnta agus Fiadhúla
National Parks and Wildlife Service



An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine



Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann



Comhairle Contae Mhaigh Eo
Mayo County Council



Lough Carra LIFE Project LIFE/20 NAT/IE/000172

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European Commission LIFE Programme

The European Commission LIFE Programme is an instrument for funding Environment and Climate related projects throughout the EU. The LIFE programme aims to preserve, protect, and improve the quality of the environment, protect human health, and pursue the prudent and rational utilisation of natural resources. To date, LIFE has co-financed approximately 4,000 projects across the EU, contributing more than €3 billion to the protection of the environment.

The Natura 2000 Network

Natura 2000 is a European network of important ecological sites covering over 18% of the EU's land area and more than 6% of its marine territory. It comprises lands designated by Member States as Special Areas of Conservation (SAC) under the EU Habitats Directive and Special Protection Areas (SPA) under the EU Birds Directive. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, to protect them for future generations. Lough Carra forms part of the Lough Carra/Mask Complex SAC, and the Lough Carra SPA.





Lough Carra

Lough Carra is an exceptionally rare and important habitat. It forms part of the Lough Carra/Mask Complex SAC, and the Lough Carra SPA, and is one of the finest examples of a Marl Lake habitat in Europe. It is a shallow, predominantly spring fed lake, well known for its turquoise clear waters and the calcareous encrustations on its rocky lake floor and shores. Its shores are fringed with a complex of limestone and wetland habitats, including Limestone Pavements, Orchid rich Grasslands, and Fens, providing homes for a diverse range of key species including the Lesser horseshoe bat, Eurasian Otter, and Common Gull.

Ecosystem Services provided by Lough Carra

Ecosystem services are the processes and outputs that nature provides us with. These include;

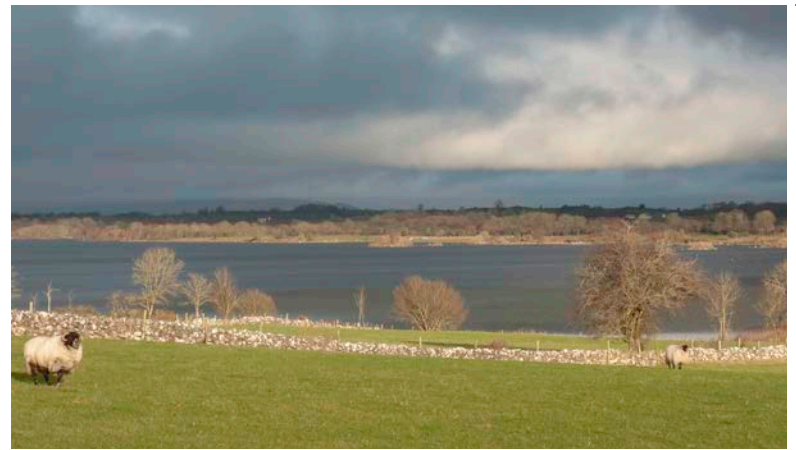
- provisioning services, such as food and water,
- regulating services, such as assimilation (and breakdown) of pollutants, and flood control,
- supporting services, such as water and nutrient cycling, and
- cultural services, such as recreation and tourism.

Lough Carra provides a range of Ecosystem Services to the catchment area and beyond.

Examples include:

- the direct provision of drinking water,
- water for other domestic and agricultural use,
- the regulation of drainage and flood management for the whole catchment,
- carbon sequestration, in healthy wetland habitats,
- recreational activities including swimming, snorkelling, kayaking, and lake shore walks,
- angling for wild trout, and
- tourism, with significant potential for further development.

The Lake also holds great cultural, historic, and religious significance to the area.



The Decline Of **Lough Carra**

Due to its rarity and ecological significance Lough Carra has been studied intensively by a host of ecologists, universities, state bodies, and other interested groups. Many signs of deterioration of Lough Carra's habitats have emerged.

- The status of charophytes¹ has declined significantly.
- Microbialite crusts unique to hard water lakes have become covered by green algae, causing a decline of the microbialite community and disintegration of the crusts.
- Levels of 'Chlorophyll a' in the water have increased.
- Total Phosphorus and Nitrogen levels have increased, and the Marl is now saturated with Phosphorus.
- Water colour has changed and has become increasingly cloudy.
- Nutrient-sensitive aquatic invertebrates have declined, especially the once abundant mayfly which has almost disappeared.
- Trout populations have decreased.
- Invasive species populations have increased, e.g. mink, feral greylag geese, and coarse fish, such as roach.

It is generally accepted that the decline of the lake is primarily due to increased levels of nutrient run-off from agricultural land throughout the catchment, and the ongoing conversion of semi-natural habitats into improved grasslands. These are issues impacting on waterways nationwide.

¹*Charophytes - aquatic plants which are typical of Marl lakebed habitat and indicate clean, oligotrophic, or low nutrient, waters.*

Lough Carra **LIFE Project**

In October 2021 the Lough Carra LIFE Project was established, aiming to;

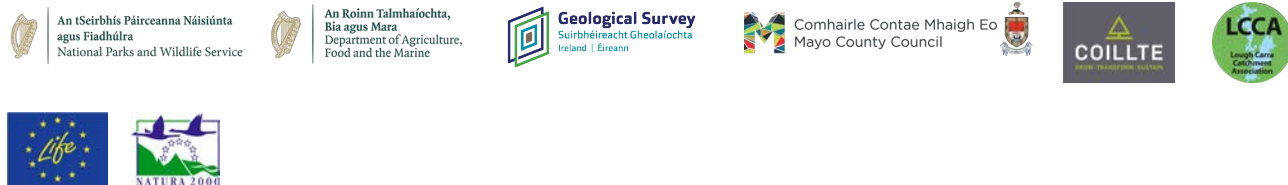
- improve the water quality of the lake,
- restore the Marl Lake habitat, and
- raise the conservation status of other habitats and species within the catchment area.

The project is jointly funded by the European Commission LIFE Programme and the Project Partners, and will work with farmers, other landowners, and local community groups in the catchment area to achieve the project aims.

Coordinating Body - Mayo County Council.

Project Partners – Department of Agriculture, Food, and the Marine (DAFM), National Parks and Wildlife Service (NPWS), Geological Survey Ireland (GSI), Coillte, and the Lough Carra Catchment Association (LCCA).

A number of other organisations are providing assistance and guidance to the Project, including; Teagasc, Local Authority Waters Programme (LAWPro), Inland Fisheries Ireland (IFI), Environmental Protection Agency (EPA), Office of Public Works (OPW), Vincent Wildlife Trust, Joyce Country and Great Western Lakes Geopark, and National Federation of Group Water Schemes.





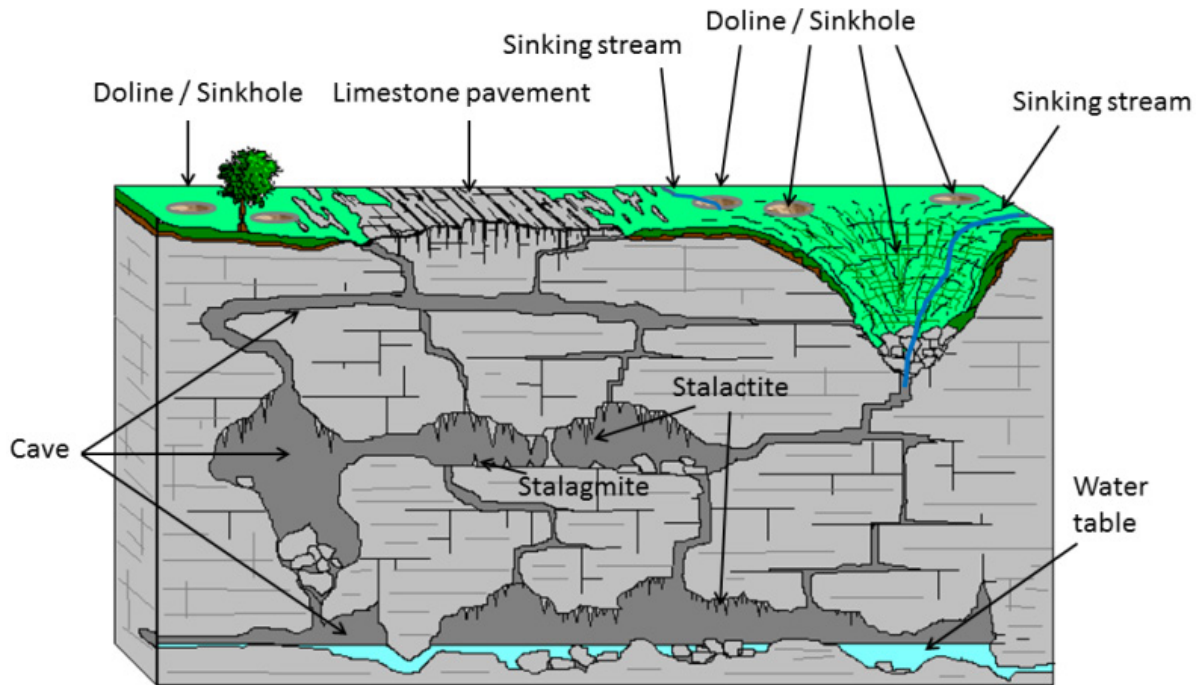
Project **Actions**

Groundwater Study

The project will carry out a groundwater study of the Lough Carra catchment, focusing on groundwater and surface water connectivity.

The work will include karst¹ feature mapping, hydrological investigations, and dye tracing. This will help to understand the relationship between groundwater and surface water, and to target project actions where they can be most effective.

¹Karst is a landscape with distinctive hydrology and landforms that arise when the underlying rock is soluble. Typical karst landforms include swallow holes, depressions, sinkholes, springs, caves and turloughs.

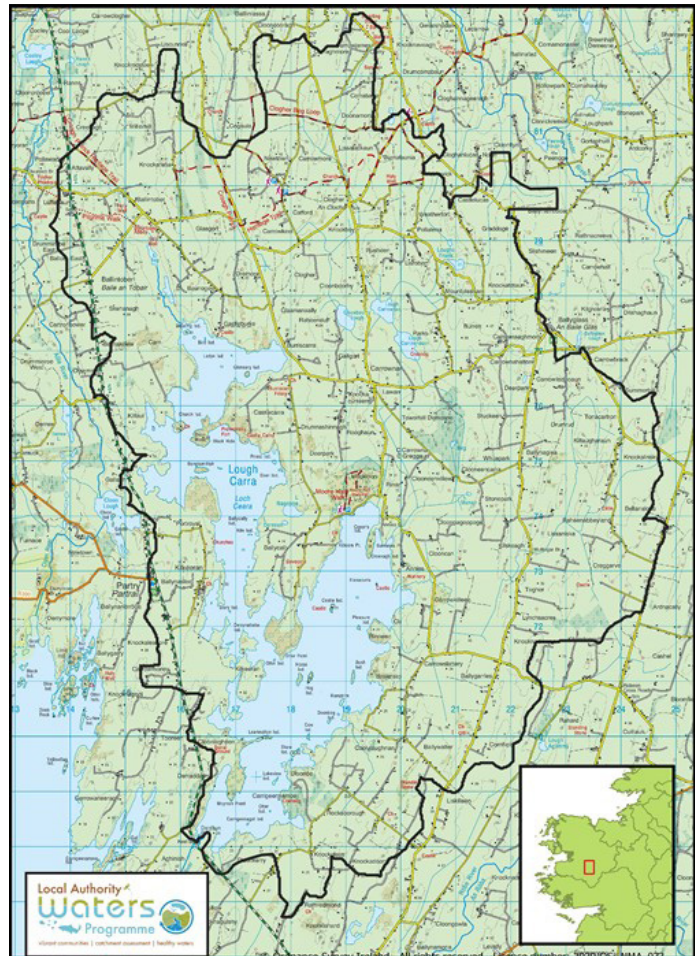


Project Actions

Results Based Agri-Environment Scheme

To address the issues of nutrient run-off from agricultural land and the ongoing conversion of land to improved grassland, a pilot Results Based Agri-environment Payments Scheme will be developed, working with local farmers to produce tailored farm plans for all participating farms.

The project Farm Advisor and Surface Water Scientist will work closely with local farmers, DAFM, Teagasc, LAWPro, and other agencies, in the design, implementation, and administration of this pilot scheme.





Project Actions

Habitat And Key Species Conservation

Coillte will work with the Project Team on developing a Biodiversity plan for ex-commercial plantations in the area.

The NPWS will introduce habitat enhancements for key species such as Lesser Horseshoe Bat and Otter, and will implement controls on invasive species.

The OPW will assist the Project Team in redesigning Drain Management Plans for the area and trialling new environmental management measures.

The Project will purchase or lease a small area of land on or near the lake shore, for the purposes of demonstration and conservation activities including wetland construction, habitat restoration, and associated training courses.



Lake Monitoring Programme

A programme of lake monitoring will be carried out during the project to assess the impacts of the project on the lake and the surrounding area. This will include the monitoring of;

- water chemistry,
- vegetation,
- Marl crusts,
- key species populations,
- the impacts of short-term weather events,
- and aquatic invertebrates.

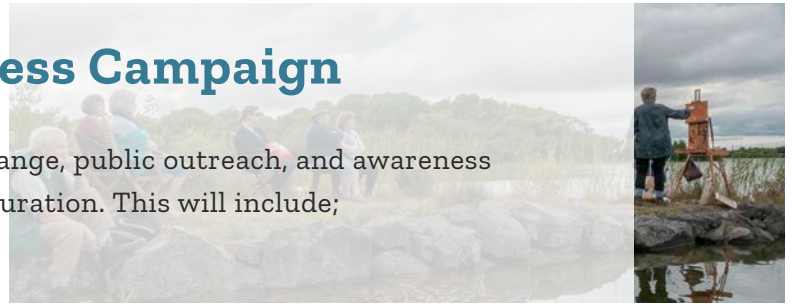


Project Actions

Public Awareness Campaign

The Project will run a knowledge exchange, public outreach, and awareness campaign throughout its duration. This will include;

- Public meetings
- Workshops and training events
- The distribution of project newsletters, leaflets, and brochures
- Local radio and newspaper interviews
- A Project website, and social media accounts.
- Information Boards will be installed at key locations around the lake
- A short film about the project
- A Project final Report for public distribution



Project **AfterLIFE Plan**

The Project will produce an 'AfterLIFE Plan' which will outline how the actions initiated by the Project can be continued, and how the outcomes can be made permanent after the Project. The plan will detail the long-term measures to be taken for land-management, policy, and water protection in the project area, and will include procedures for fostering replication and expansion of the Project's methods and positive impacts. The plan will detail the long-term communication of all project outcomes and will give details on who is responsible for this, a schedule for implementation, how it will be carried out, and the sources of funding.





Project Team and Office

The Project team consists of a Project Manager, Surface Water Scientist, Farm Advisor, Hydrogeologist, Community Officer, and Project Administrator.

The Project Office is based on the first floor of Belcarra Community Centre, Belcarra, Co Mayo, F23 HY58. The doors are open to anyone interested in meeting with the project team and discussing the project.



Lough
Carra LIFE



Website: www.loughcarralife.ie

Twitter: [loughcarralife](https://twitter.com/loughcarralife)