



An Roinn Comhshaoil,
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Geological Survey
Suirbhéireacht Gheolaíochta
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Screening for Appropriate Assessment

Installation of groundwater monitoring
equipment in Lough Carra, County Mayo

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Screening for Appropriate Assessment: Installation of groundwater monitoring equipment in Lough Carra, County Mayo

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Prepared By	Date	Comment
Caoimhe Hickey	02/3/2022	

Reviewed By	Date	Comment
Sarah Blake	7/04/22	

Approved By	Date	Comment
Sarah Blake	7/04/22	

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1 Executive Summary

Geological Survey Ireland proposes to establish a groundwater monitoring programme to monitor the temperature and hydrochemistry of a subaqueous spring in Lough Carra, and to monitor for the presence and concentration of a dye, used in water tracing, as part of delineation of the groundwater catchment to the lake. In pursuance of this, Geological Survey Ireland is required to undertake a screening for Appropriate Assessment to examine the likely effects of the proposed works and associated on-going monitoring, either alone or in combination with other projects, on the Natura 2000 network to fulfil the requirements of Article 6(3) of the EU Habitats Directive (92/43/EEC).

Geological Survey Ireland has prepared a screening for Appropriate Assessment in support of the installation of groundwater monitoring equipment in Lough Carra, County Mayo. This report describes the proposed works within the Lough Carra Special Area of Conservation (SAC) [Site Code: 004051] and aims to determine whether any possible impacts on this or any other Natura 2000 sites can be characterised as significant. The works consist of the following key elements:

- Installation of water level and temperature monitoring equipment in the subaqueous spring near Moorehall. This consists of a small logging device that will be installed in the spring, and a fibre optic cable that will be laid on the lake bottom and draped across the spring.
- Installation of a field fluorometer at the subaqueous spring near Moorehall. This consists of a fluorometer which will be installed in the subaqueous depression at the spring and a data logger, which will be mounted sub-aerially on a nearby rock in the lake. The logger will be secured by a small metal bolt which will be drilled into the rock.

This Appropriate Assessment Screening is considered to incorporate all of the relevant requirements of the European Commission Environment DG guidance document, 'Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (92/43/EEC). Through the screening process, it was determined that the proposed work would not significantly impact the hydrology, nutrient status or land management of the site. Therefore, it was objectively concluded that there are not likely to be significant effects on the Lough Carra Natura 2000 site as a result of the proposed works.

Furthermore, according to Article 6(3) of the Habitats Directive (HD), any plan or project that may have a significant effect on a Natura 2000 site, and that is not connected with or

necessary to the management of the site, should only proceed if it will not have a significant negative impact. In this case, the proposed works will enable the collection of baseline hydrological data and help our understanding and delineation of the groundwater catchment to Lough Carra. This type of data collection is implicitly required under the Habitats Directive and as such, it is considered that the proposed monitoring works are screened out of Appropriate Assessment because they are connected to the conservation management of the SAC. This work will delineate the land area that contributes to Lough Carra and identify the pathways that any potential pollutants may take to enter the lake. The results of this study will be used in the EU-funded Lough Carra LIFE project to create tailored nutrient management plans for specific areas within the catchment.

2 Introduction

2.1 Background

The proposed work will be carried out as part of an EU-financed LIFE Project, Lough Carra LIFE. The aim of this project is to improve water quality in Lough Carra to favourable condition, improving the national status and trends of this habitat, and to improve the conservation status of the Orchid-Rich Grasslands, Limestone Pavement, Common Gulls, Otters and Lesser Horseshoe Bats in the Special Area of Conservation and Special Protection Areas.

Lough Carra, a marl lake, is celebrated for the exceptional rarity of its ecological communities. It forms part of the Lough Carra/Mask Complex SAC & Lough Carra SPA. The lake is 15.6 km² in area, and mostly shallow, with three distinct but connected basins. It is fed by small rivers and groundwater, is a source of drinking water and a wild trout fishing lake. Despite its decline, Lough Carra is still one of the most important and extensive examples of habitat 3140 in Ireland and in Europe.

During Lough Carra LIFE, measures will be taken across the catchment to reduce losses of nutrients, by working with farmers and other stakeholders to change practices that are sources of pollution and biodiversity-loss. Communication and dissemination of results are a part of all the following project objectives:

1. Establish and promote a model of farming to transform nutrient management on farms in a target of 10% of the catchment during the project, for AfterLIFE catchment-wide rollout, to protect and conserve habitats 3140, 6210, 8240 & 7210.

2. Define groundwater-surface water connectivity in the catchment through a groundwater study, to confirm the catchment boundary more exactly and help target nutrient-reduction actions.
3. Demonstrate and adopt an integrated approach to restoring the lake's habitats by collaboration of local authorities, other public bodies, farmers, anglers, other local stakeholders and the public - including long-term decision making, land management, community awareness and involvement. This includes management of forestry in the catchment for biodiversity by Coillte, and actions by OPW to sensitively manage public drainage channels.
4. Reduce nutrient pollution from septic tanks/domestic wastewater by education and public awareness; establish demonstration areas of constructed wetland and associated workshops and information, to complement increased inspections being undertaken outside of LIFE funding.
5. Implement a strategy to tackle invasive species, including preventing introduction of zebra mussels and controlling numbers of mink and feral geese.
6. Maximise the project's impact on enhancing the coherence of the Natura 2000 network, with actions complementary to conservation targets in other SACs. Lough Corrib SAC, which is downstream from Lough Carra, is also designated for habitats 3140, 6210 & 8240; nutrient-reduction measures in Lough Carra will reduce nutrient-flow to the Corrib SAC. The Galway Bay Complex SAC is also hydrologically connected. The adjoining Moore Hall SAC and nearby Tower Hill SAC are designated for Lesser Horseshoe Bats (1303), so actions for this species are designed to promote the conservation interests of this species in the broader region.

2.2 Groundwater aspect of the project

Geological Survey Ireland, a division of the Department of the Environment, Climate and Communications, will carry out a hydrogeological investigation of the Lough Carra catchment to better understand the connection between groundwater and surface water. They will work closely with the project groundwater officer.

Groundwater Catchment Study description and methods employed

What is the action?

Geological Survey Ireland will carry out a groundwater catchment study, focusing on groundwater-surface water connectivity in the catchment, including karst feature mapping, hydrological investigations & tracer testing. This will result in the identification and accurate

delineation of the full catchment area and will inform the target nutrient management measures in other project actions to ensure that all measures are applied where they will be effective and worthwhile.

How will it be carried out?

Geological Survey Ireland will use existing and new data to improve understanding of the hydrogeological system in the Lough Carra catchment. Groundwater can be an important pathway for the movement of nutrients from diffuse and small point sources to water ecosystems, particularly in catchments with thin soils or where bedrock outcrops at the surface. The karstic nature of the bedrock in the Lough Carra catchment adds further complexity and necessitates detailed mapping of karst features in order to identify contaminant pathways. The planned work stream for Geological Survey Ireland has been divided into the following sub-actions:

Sub-action A2.1: Desk Study and Survey Design

Geological Survey Ireland will undertake a comprehensive desk study to collate all existing relevant hydrogeological, hydrological, and topographic/bathymetric data to develop an initial conceptual model of the groundwater system in the catchment. This data will include information collected in the catchment in 2019 under Geological Survey Ireland's Groundwater 3D project. The conceptual model is a starting point for a detailed investigative programme, and will be improved iteratively throughout the project as more knowledge of the hydrogeological system is obtained. The development of the conceptual model will identify data gaps and allow the programme of field investigations to be optimised.

Sub-action A2.2: Monitoring of Groundwater Levels and Updating Groundwater Databases

Geological Survey Ireland will install instrumentation in the catchment to monitor the hydrogeological system in order to understand the natural seasonal variations of the water table, to establish baseline conditions and to understand how the system responds to recharge inputs.

Sub-action A2.3: Mapping

This sub-action will identify and map conduits/karst features in the catchment and on the lakebed. As the catchment underlying Lough Carra is karstic in nature, the detailed mapping of karst features in the catchment will be critical to identifying the most important underground flow paths and therefore the most likely sources of groundwater pollutants of the lake. Geological Survey Ireland will carry out extensive field mapping, drilling and logging of karst features, bedrock and soils to supplement our existing subsurface databases and to

inform the iteratively developing conceptual model. Bathymetric surveys of the lake and LiDAR surveys of the wider area will be ground truthed by our team in the field, and this will enable us to plan for further hydraulic investigations of these features.

Sub-action A2.4: Hydrogeological investigations

Based upon the detailed karst and geological maps developed in Sub-action A2.3, a series of hydrogeological investigations will be carried out to test the underground connectivity of discrete karst features. The survey is likely to include hydrogeological tests such as: piezometer drilling, downhole testing of hydraulic and chemical parameters, tracer testing, thermal mapping of the land/lake surface and boat surveys.

Where will the action be carried out?

The catchment study will be carried out throughout the Lough Carra catchment, Co. Mayo.

When will the action be carried out?

This action will continue for three years, and is expected to run from January 2022 - December 2024. As the outcomes of this action are highly relevant to the nutrient-reduction measures of the project, there will be regular updates and knowledge-transfer between Geological Survey Ireland and the Lough Carra LIFE Project Team throughout the three years of this action. This means that the information which stems from this action will feed into other aspects of the project and have worthwhile effects in as timely a manner as possible.

Why is the action necessary to the project?

The action is necessary to ensure that nutrient-management measures during the project are optimally targeted, and to inform the future catchment-scale land management in the area (the AfterLIFE). At present, the precise boundaries of the catchment are not fully determined. This means that water and dissolved nutrients can flow quickly through the system, so that there is high groundwater vulnerability in much of the catchment. It also means that groundwater can take unexpected routes underground. The mapping of karst features and underground water channels will mean that the nutrient-management and nutrient-reduction measures of the project can be targeted appropriately, in order to be useful and effective.

2.3 Conservation Benefits of Monitoring

The groundwater investigation, including the monitoring of features such as the Moore Hall subaqueous spring, is critical to the success of the Lough Carra LIFE project, which has

the aim of improving water quality in Lough Carra to favourable condition, improving the national status and trends of this habitat, and to improve the conservation status of the Orchid-Rich Grasslands, Limestone Pavement, Common Gulls, Otters and Lesser Horseshoe Bats in the Special Area of Conservation and Special Protection Areas.

3 Legislative Context for Appropriate Assessment

3.1 General

The first major international agreement on the conservation of wetlands was the Ramsar Convention (1971). This prompted the EU to adopt first the EU Birds Directive (79/409/EEC) in 1979, followed by The EU Habitats Directive (92/43/EEC) in 1992. These Directives provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000.

Special Areas of Conservation (SACs) designated under the Habitats Directive were transcribed into Irish law by the European Communities (Natural Habitats) Regulations (2011) while Special Protection Areas (SPAs) were designated under the Birds Directive. SACs and SPAs are sites that are important at an international level.

Article 6 of the Habitats Directive set out a series of procedural steps to test if a plan or project is likely to affect a Natura 2000 site. Article 6(3) of the Habitats Directive states *'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives'*. This assessment process is known as an Appropriate Assessment.

3.2 Appropriate Assessment Process

As described in the European Commission DG Environment guidance document, 'Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (92/43/EEC)', the Appropriate Assessment process comprises four sequential stages. The stages are:

Stage 1: Screening for Appropriate Assessment

The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant given the site's conservation objectives.

Stage 2: Appropriate Assessment

The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.

Stage 3: Assessment of Alternative Solutions

The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.

Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain

An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

If at any stage in the process it is determined that there will be no significant effect on any Natura 2000 site, the process is effectively completed. Furthermore, plans or projects that are directly connected with or necessary to the nature conservation management of a Natura 2000 site are essentially exempt from further consideration.

4 Appropriate Assessment Screening

This Appropriate Assessment Screening has been carried out in consultation with the National Parks and Wildlife Service (NPWS) and following relevant guidance documents, namely:

- EC (2002) 'Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (92/43/EEC)';
- NPWS (2010) Circular Letter NPWS 1/10: 'Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities';

NPWS (2008) Circular Letter SEA 1/08 and NPWS 1/08: 'Appropriate Assessment of Land Use Plans'.

4.1 Site Description

SITE NAME: LOUGH CARRA SPA

SITE CODE: 004051

Lough Carra, which extends for over 9 km along its long axis, lies to the north-east of Lough Mask, in the Corrib catchment in Co. Mayo. It is one of the best examples in Ireland of a hard

water marl lake. It is a shallow (mean depth 1.5 m, maximum depth 18 m), predominantly spring-fed lake with only a few inflowing streams. It is connected to Lough Mask via the Keel River. The water has an alkaline pH and negligible amounts of iron and manganese. Sodium and chloride are present in relatively high concentrations. Lough Carra is classified as a mesotrophic system.

Lough Carra has well-developed stonewort communities in the submerged zones, and includes such species as *Chara curta*, *C. desmacantha*, *C. rudis* and *C. contraria*. The lake has a highly indented shoreline (over 69 km in length) and includes many small islands. It is fringed by a diverse complex of limestone and wetland habitats. The wetland habitats include both Great Fen-sedge (*Cladium mariscus*) fen and alkaline fen. In addition to the fen habitats, there are widespread reed swamps, wet grassland and some freshwater marsh communities around the lakeshores.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Common Gull. The islands in Lough Carra have traditionally supported nesting gulls. A survey in 1993 recorded Common Gull (72 individuals) and Black-headed Gull (252 individuals). The site was surveyed in 1999 as part of the Seabird 2000 Survey and 65 pairs of Common Gull and 100 pairs of Black-headed Gull were recorded.

The site also supports wintering populations of a number of species including Wigeon (67), Gadwall (26), Teal (63), Mallard (140), Shoveler (38), Pochard (33), Tufted Duck (133), Goldeneye (64), Little Grebe (14) Great Crested Grebe (12) and Lapwing (243) - all figures are mean peaks for 4 of the 5 winters in the period 1995/96- 1999/2000. In the past, Lough Carra supported a population of Mallard of national importance. Lough Carra SPA is of considerable ornithological importance for breeding gulls including a nationally important population of Common Gull. Part of Lough Carra SPA is a Wildfowl Sanctuary

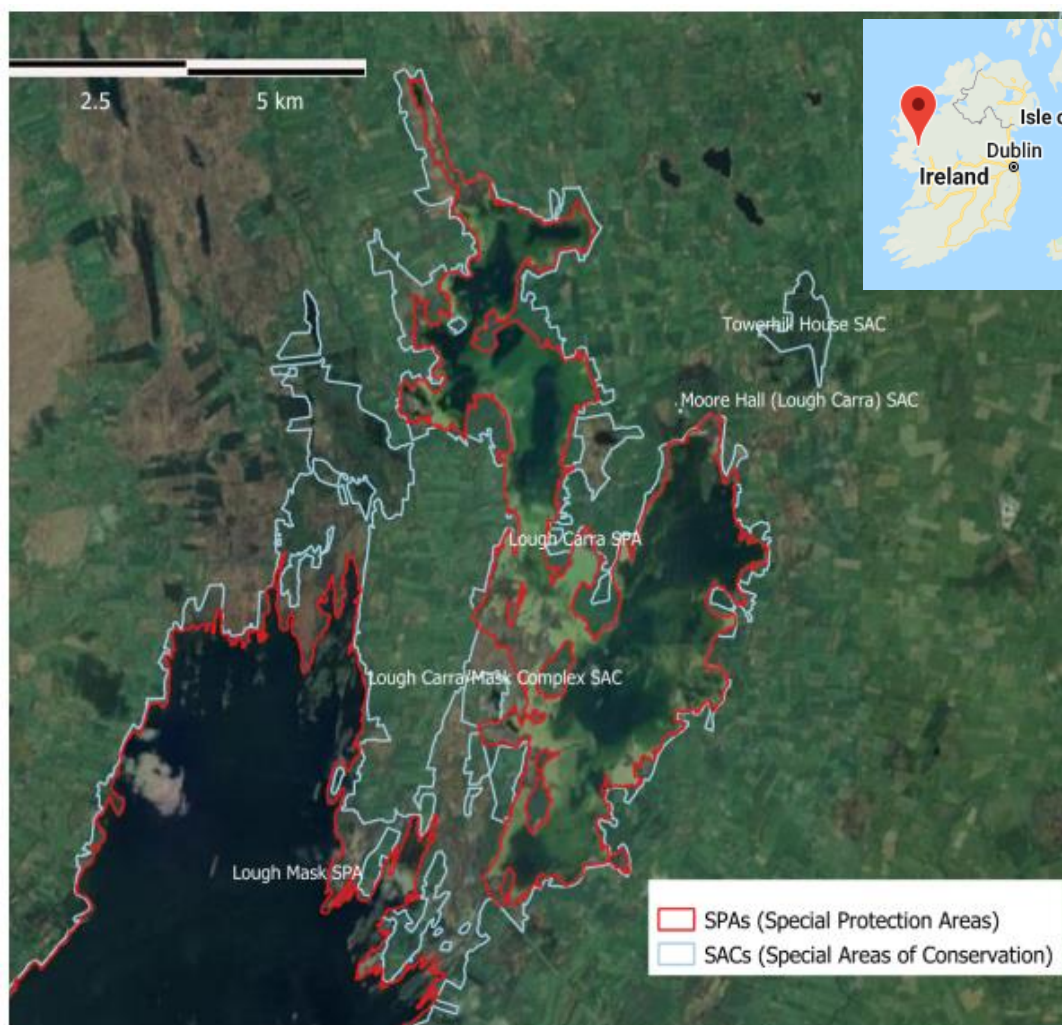


Figure 1: Site location map for Lough Carra and the northern portion of Lough Carra / Lough Mask SAC ([Site Code: 004051])

4.2 Sites outside the Zone of Impact Influence

The Lough Carra SAC lies within a region containing extensive areas of high ecological diversity and conservation value.

Table 1 details the sites of ecological importance which lie within a 15 km radius of the SAC boundary.

Whilst one of these sites is linked hydrologically to Lough Carra, (Lough Mask), the rest are distant and are not connected. The proposed works, described in Section 4.3 below, are minor and therefore potential impacts to any of the sites above are considered to be very unlikely. These sites have therefore been “screened out” from this assessment.

Table 1: Ecological conservation areas within 15 km of Lough Carra / Moorehall Spring

Site CODE	Site Name	Designation*
000475	Carrowkeel Turlough	pNHA, SAC
001486	Cloonboorhy Lough	pNHA
001559	Slisheen Turlough	pNHA
000463	Balla Turlough	pNHA, SAC
000504	Kilglassan/Caheravoostia Turlough Complex	pNHA, SAC
000541	Skealoghan Turlough	pNHA, SAC
001528	Lough Beg, Carrowmore	pNHA
000550	Towerhill Lake	pNHA, SAC
001932	Mweelrea/Sheeffry/Erriff Complex	pNHA, SAC
000527	Moore Hall (Lough Carra)	pNHA, SAC
001492	Carrowmore Lough Shore	pNHA
000461	Ardkill Turlough	pNHA, SAC
000503	Greaghans Turlough	pNHA, SAC
001774	Lough Carra/Mask Complex	pNHA, SAC, SPA
000480	Clyard Kettle-Holes	pNHA, SAC
001533	Lough Manan	pNHA
001472	Mountpleasant School Turlough	pNHA
002081	Ballinafad	pNHA, SAC
002298	River Moy SAC	SAC
*Designation Acronyms NHA: Natural Heritage Area pNHA: Proposed Natural Heritage Area SAC: Special Area of Conservation SPA: Special Protection Area		

4.3 Project Description

One of the key objectives of the Lough Carra LIFE project is to determine the groundwater-surface water connectivity in the catchment through a groundwater study. This will define the

catchment boundary to the lake and help target nutrient-reduction actions. In karst environments such as Lough Carra a special method of investigation is used; water tracing.

Water tracing is the only way to ascertain groundwater flow rates, direction, and groundwater catchment definitions in karst areas. It has been standard procedure for well over a hundred years. Water tracing at its simplest involves 'tagging' water as it enters the karst system and monitoring possible exits to see where it re-emerges. The time the tracers take to get from one point to the other is also usually recorded (Ford and Williams, 1979).

Several water tracing experiments are planned as part of the Lough Carra LIFE project. These experiments involve adding inert fluorescent dyes to surface water, usually as it sinks underground at swallow holes, and then monitoring all potential output sites, which are usually springs. As previously mentioned there is a significant sub-aqueous spring in Lough Carra, near Moorehall, henceforth known as Moorehall Spring. A number of springs in the surrounding area, including Moorehall Spring will need to be monitored for the presence of dyes throughout the tracing experiments.

This will involve installation of fluorometric monitoring equipment called fluorometers. These fluorometers have a submersible part and a logger which needs to be kept dry. It is also proposed to install a small data logger in the Moorehall spring depression to record basic hydrochemical fluctuations of the spring.

The proposed installation of monitoring equipment in Moorehall Spring consists of the following three main elements:

- a) Installation of fluorometer in the subaqueous spring and depression at Moorehall Spring;
- b) Installation of a data logger on a rock in the lake to the side of Moorehall Spring; and
- c) Installation of temperature, level and Electrical Conductivity meter at Moorehall Spring depression.

A description of elements a) to c) is given below, and their locations are shown in **Error! Reference source not found.** and Figure 3.



Figure 2 Location of Moorehall Spring in Lough Carra Lough Mask SAC and surrounding conservation areas

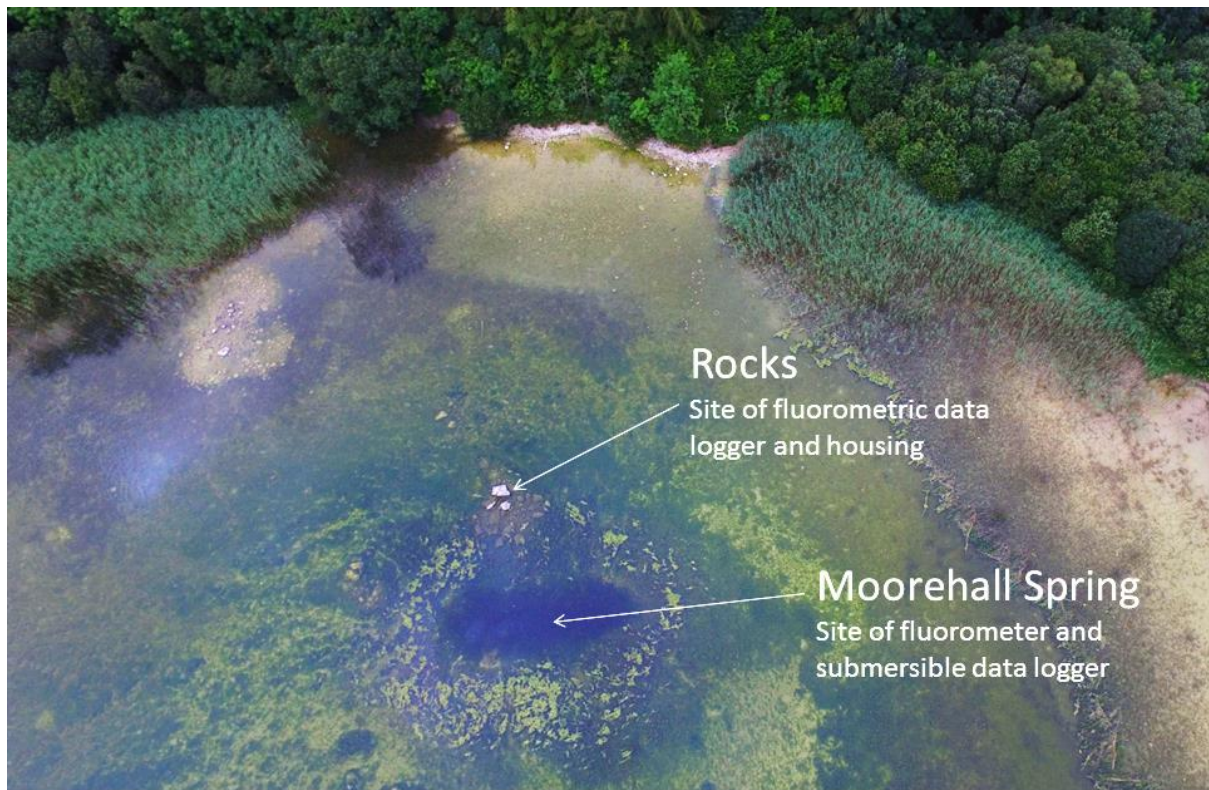


Figure 3 Moorehall spring, spring depression and nearby rocks

4.3.1 Monitoring Equipment and Housing

Water levels will be monitored using pressure transducer data loggers which will record water level, temperature and conductivity at hourly intervals within the spring basin. The data loggers are small and cylindrical with a length of 190 mm and width of 20 mm. The loggers will be placed in the spring depressions and will not be visible.

The fluorometer is a GGUN-FL30 Field fluorometer (silver cylinder in Figure 4). It is an automatic field through-flow scanning spectro-fluorophotometer. The attached data logger enables continuous monitoring at extremely high resolution and is housed in double water proof housing but cannot be submerged (black box in Figure 4).



Figure 4 Field fluorometer and data logger in double waterproof housing

4.4 Potential Impacts

4.4.1 Assessment Criteria

An assessment of potential impacts and likely significant effects was carried out using assessment questions below sourced from the best practice guidance EC (2002) 'Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (92/43/EEC)'.

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site:

- a) The plan proposes the installation of the field fluorometer within the Natura 2000 site
- b) The plan proposes to mount the fluorometric logging equipment on the nearby rock. This will involve the drilling of two 4 mm wide, 2 cm deep holes in the rock and insert two small rawl bolts to tie the box to. When the job is finished the bolts will be removed and filled in with a little cement and will not be visible.

Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site:

- a) Installation of the fluorometric logging will require drilling of two 4 mm wide, 2 cm deep holes in the rock and insert two small rawl bolts to tie the box to. When the job is finished the bolts will be removed and filled in with a little cement and will not be visible.

Describe any likely significant changes to the site:

- a) The installation of loggers within the spring depression will not cause any changes to the site.
- b) The installation of the logger box on the rock in the lake will result in a 2 small holes in the rock. These will be filled in after and will not cause any changes to the site.

Describe any likely impacts on the Natura 2000 site as a whole:

No element of the project is likely to result in interference with the key relationships that define the structure and function of the Lough Carra Natura 2000 site, either alone or in combination with any other projects. No element of the proposed project will have to increase the threats to conservation status described in Table 4.1, or negatively impact the site in terms of habitat loss, fragmentation, disruption, disturbance or changes to key hydrological, ecological or hydrochemical characteristics of conservation value. The localised scale of the proposed works means that there will not be a material impact on the structure or function of other Natura 2000 sites within the Lough Carra area or elsewhere.

As previously stated this work is being carried out as part of the EU Lough Carra LIFE Project. The aim of this project is to improve water quality in Lough Carra to favourable condition, improving the national status and trends of this habitat, and to improve the conservation status of the Natura 200 site. So not only will the proposed work not negatively impact the Natura 2000 site but it will help to improve water quality and reverse the negative impacts of the nutrient enrichment to the lake and ecosystems.

Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known:

It can be objectively concluded that there are not likely to be any significant effects on the Lough Carra Natura 2000 site as a result of the proposed works. No element of the proposed project is likely to result in a significant change to any Annex I habitat, cause a reduction in the area of any listed habitat within any Natura 2000 site or cause any direct or indirect damage to the physical quality of the environment within the site.

4.4.2 Consideration of potential cumulative impacts

As well as singular effects, the potential for in-combination or cumulative effects must be considered. Whilst the proposed works themselves may not cause significant effects when assessed and considered on their own when considered in combination with other plans or projects significant effects to a site may occur.

A cumulative impact arises from incremental changes caused by other plans or projects (completed, in-progress or future plans) together with the proposed works. Having considered that the proposed works alone will not cause likely significant effects, a cumulative assessment must also be carried out.

There are no known plans or projects proposed at, or adjacent to, Lough Carra, apart from Lough Carra LIFE and therefore the cumulative impact assessment outcome is the same as that for the project when assessed alone – no significant effects to any site are anticipated.

5 Summary and Conclusions

5.1 Summary

Geological Survey Ireland proposes to establish a groundwater monitoring site to provide data for groundwater catchment delineation and understanding of the overall catchment to Lough Carra. This definition of the catchment to Lough Carra will help target nutrient management plans and risk management. In pursuance of this, Geological Survey Ireland has opted to undertake an Appropriate Assessment Screening to examine the likely effects of the proposed monitoring, both alone and in combination with other projects, on the Natura 2000 network to fulfil the requirements of Article 6(3) of the EU Habitats Directive (92/43/EEC).

Geological Survey Ireland has examined the likely impacts to the integrity of the Natura 2000 network that could arise from the proposed installation of water monitoring at the Lough Carra Turlough SAC [Site Code: 004051], Co. Mayo. This report describes the proposed works within the Lough Carra and aims to determine whether any possible impacts on this or any other Natura 2000 sites can be characterised as significant. The works consist of the following key elements:

- a) installation of a data logger and field fluorometer within the Natura 2000 site; and
- b) mount the fluorometric logging equipment on the nearby rock. This will involve the drilling of two 4 mm wide, 2 cm deep holes in the rock and insert two small rawl bolts to tie the box to. When the job is finished the bolts will be removed and filled in with a little cement and will not be visible.

5.2 Conclusions and Statement

According to Article 6(3) of the Habitats Directive, Appropriate Assessment Screening is required for any plan or project 'which is not directly connected with or necessary to the management of the site as a European Site'. In the case of this project, the proposed works will provide, for the first time, the baseline hydrological data implicitly required under the EU Habitat Directive. As such, the works are necessary to the conservation management of the site and it is thus considered that they can be screened out. Nevertheless, an Appropriate Assessment Screening has been carried out.

This screening report is considered to incorporate all of the relevant requirements of the EC DG Environment guidance document, 'Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive (92/43/EEC). It is considered that the proposed works do not include any element that has the potential to significantly alter the favourable conservation objectives associated with the species and habitats, or, interfere with the key relationships that define the structure or function of any site identified within the 15 km buffer zone.

