

# Inland Fisheries Ireland

## Appropriate Assessment Screening and Natura Impact Statement for works on Lough Gill, Co. Sligo



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## Executive Summary

Inland Fisheries Ireland proposes to conduct works on the Lough Gill in Co. Sligo. Lough Gill is a Special Area of Conservation (SAC) and is protected under Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC. As per the Inland Fisheries Ireland document 'Guidance Notes for Natura Impact Statements (NIS) in the Vicinity of Watercourses', issued in 2021 - "Plans or projects in, connected to, or within 15 kilometres of, an SAC/SPA requires initial screening for Appropriate Assessment (AA). If the assessment cannot be screened out explicitly then the proponent of the plan or project will be required to submit a Natura Impact Statement (NIS)."

Such works must be screened and assessed to determine if works have the potential to detrimentally impact on the species and habitats within the protected area in order to comply with Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC. If this is the case, a Natura Impact Statement for the works must be prepared and mitigation measures to prevent detrimental effects on the protected area must be incorporated into works. The works proposed by Inland Fisheries Ireland on Lough Gill were subject to an Appropriate Assessment Screening in order to determine whether the works alone, in-combination with other plans or projects, in the view of best scientific knowledge and in the view of conservation objectives, will adversely affect the integrity of Natura 2000 sites. This Appropriate Assessment screening concluded that works required the implementation of mitigation measures to ensure works will not impact on the conservation objectives of Lough Gill SAC or on protected species that may be present at the works locations. A Natura Impact Statement (NIS) was required to identify the potential environmental and ecological impacts posed by the works, to determine how the works may impact on the integrity of Natura 2000 protected sites and if this is the case, the measures need to address these impacts. The primary impacts posed by the works is a loss in water quality due to disturbance of the lake bed during works and the potential for direct disturbance to protected aquatic fauna. Mitigation measures are needed to control these threats and prevent negative outcomes.

Impacts on the integrity of Natura 2000 will be prevented following the effective implementation of the mitigation measures detailed in this Natura Impact Statement. Direct impacts on fauna must also be prevented by careful timing of when works will be conducted.

### **Background to the author:**

A site visit and other supporting work for the completion of this AA Screening and NIS report was conducted by David Kelly BSc. MSc. of KD Environmental Ltd. This report was also prepared by David.

David holds a BSc (Hons) in Environmental Science and an MSc (Hons) in Environmental Protection. He has been working in the field of environmental protection for over twenty years and is a Director with KD Environmental Ltd.

David is a recognised Environmental Specialist with Inland Fisheries Ireland and has performed Appropriate Assessments for many IFI projects throughout Ireland in recent years.

## 1.0 Introduction

Inland Fisheries Ireland commissioned KD Environmental Ltd. to complete an Appropriate Assessment Screening Report for the proposed works at Lough Gill in Co. Sligo. Inland Fisheries Ireland proposes to carry out the reinstatement of a stone breakwater and the removal of silt built up on a boat slipway on the shore of Lough Gill to facilitate access to the lough for anglers. The remains of a stone breakwater exist and the proposed works will return this structure to its original condition. The breakwater is a dry-stone structure and was constructed in 2005. Overtime, it has deteriorated and diminished as an effective measure for the prevention of silt build up on the boat slipway. This has made access to Lough Gill difficult for visiting angler's boats. The removal of the silt built up on the boat slipway and the reinstatement of the stone breakwater will allow for easier angling access to Lough Gill.

The proposed works are within the boundary of a Lough Gill Special Area of Conservation, a Natura 2000 site and therefore, in order to comply with Article 6(3) and Article 6(4) of the EU Habitats Directive, these works are subject to Appropriate Assessment screening. Following Appropriate Assessment Screening, if it is concluded that effective control measures must be incorporated into work practices to ensure that the works do not result in detrimental effects on Natura 2000 protected sites, a Natura Impact Statement (Stage 2 Appropriate Assessment) will be required for this project in order to comply with comply with the Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC).

A visit to the site was conducted by David Kelly BSc. MSc. on 29<sup>th</sup> August 2019. David met with Declan Feeney, Fisheries Officer with the IFI.

The purpose of this site visit was;

- to review the proposed works,
- to identify and classify the habitats present at the site
- to survey the proposed work site for evidence of annex species such as otter
- to identify other environmental impacts that may be caused by proposed works.

The weather on the day was good – it was dry and calm with wind speeds less than 5m/sec. There was a slight south west breeze and the temperature was approx. 18°C. Cloud cover was approx. 25%.

The limitations of conducting a single site visit to determine the absence or presence of a species is acknowledged here. Species such as otter may be transient visitors to a location and signs of their presence can be missed when conducting a single site visit. However, the suitability of a works location for a breeding species can be evaluated based on known breeding location features preferred by a species. For example, otter generally require a high bank with means to form a shelter, such a rock shore or large tree roots, in a location unfrequented by people to construct holts and whelp young (NPWS, 2009) The works location on Lough Gill does not have such features and it is at a location frequented by people.

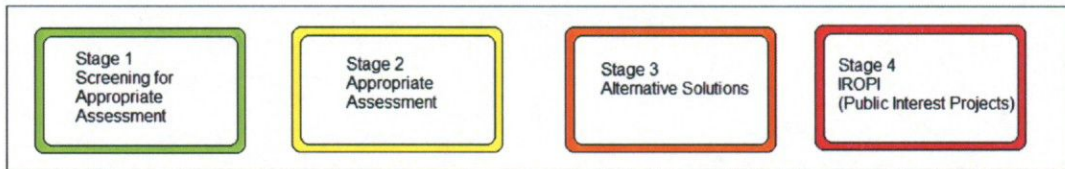
This Appropriate Assessment Screening has been prepared in accordance with Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC (Assessment of Plans and projects significantly affecting Natura 2000 Sites) and in accordance with the following guidance documents;

- Inland Fisheries Ireland Guidance Notes for AA screenings in the vicinity of watercourses in accordance with the requirements of Article 6(3) and Article 6(4) of the EU Habitats Directive
- Department of the Environment, Heritage and Local Government, (2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.
- European Commission (2002) Management 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. Office for Official Publications for the European Communities, Luxembourg.
- Managing Natura 2000 sites; the provisions of Article 6 of the habitats Directive 92/43/EEC (EC Environment Directorate General 2000; hereafter referred to as MN2000).

## 2.0 Background to Appropriate Assessments and Approach Taken

An Appropriate Assessment (AA) is required under the Habitats Directive 92/43/EEC, Article 6(3) and Article 6(4) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Such assessments are required where it is identified that a proposed plan or project could have significant impact on a Natura 2000 site.

The Department of the Environment Heritage and Local Government guidelines (DOELHG, 2009 & 2010) provides guidance in accordance with the Assessment of plans and projects significantly affecting Natura 2000 sites Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. These guidelines promote a four-stage process to complete the Appropriate Assessments and outline the issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required. The four stages are summarised diagrammatically in Figure 2 below.



**Figure 1: Appropriate Assessment stages**

If following Appropriate Assessment Screening, it is concluded that works have the potential to result in adverse impacts on Natura 2000 sites and to cause environmental effects which are deemed to be significant, potentially significant or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 AA.

### 3.0 Description and Location of Proposed Works

#### Works Location and Hydrological Links

Works are planned for the existing boat slip and breakwater on the western shore of Lough Gill, approx. 3Km form Sligo town centre. Lough Gill is 8Km by 2-3Km and has an area of 1,400 ha. It is a deep lake, with maximum depth at 31m. (NPWS, Natura 2000 Standard Data form, IE0001976). The boat slip and breakwater are located in a woodland setting within Hazelwood Demesne on the outskirts of Sligo Town. Access to and through this area is via a series of local roads. Lough Gill and the surrounding woodland are used as an amenity for walkers and anglers.

The main inlet river to the east of Lough Gill is the River Bonet. The outlet river from Lough Gill is the Garavogue River which flows west through Sligo Town and meets the Atlantic Ocean at Cummeen Strand/Drumcliff Bay. The Garavogue River is the hydrological link between the proposed works location and downstream Natura 2000 sites.

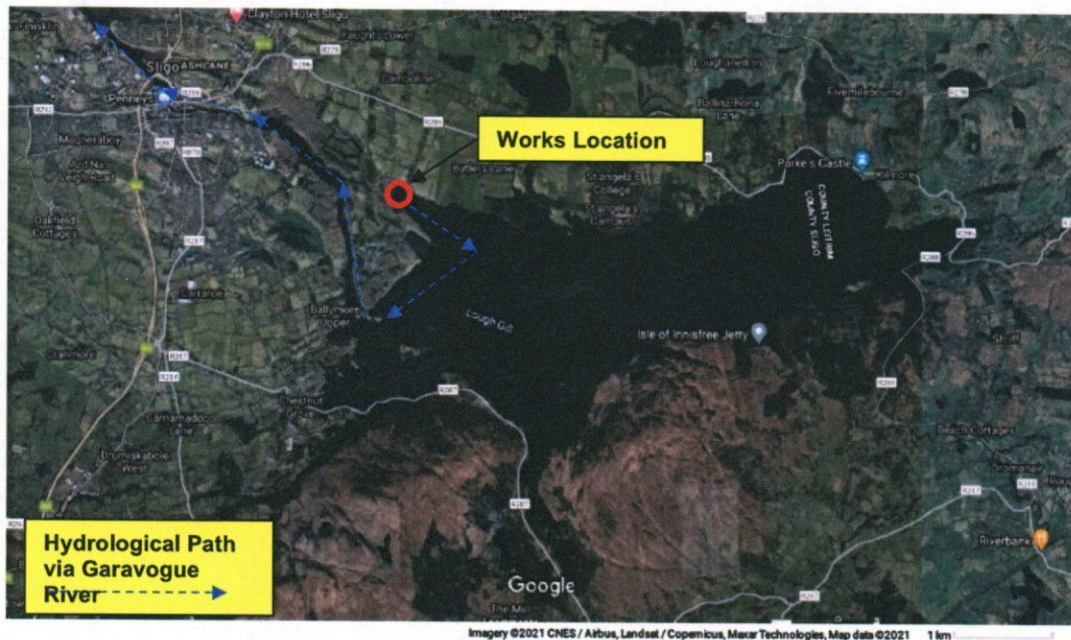


Figure 2: Hydrological pathway from works on Lough Gill

#### Site Access

Access to the site is via a local public access road that runs from the R286 to the carpark that adjoins the boat slipway.

#### Works Duration

It is estimated that the works will be completed over a working week, however a duration of two weeks has been allowed to complete the works.

#### Works Supervision

All works will be supervised by Declan Feeney of Inland Fisheries Ireland with daily site inspections during the completion of the works by IFI staff.

### Works Description

The main purpose of this project is to allow for easier, safer access to Lough Gill for angler's boats. Inland Fisheries Ireland proposes to carry out the following works:

1. Removal of silt build up from a boat slip at the shore of Lough Gill to facilitate angling access. It is estimated that approximately 20 tonne of silt will be removed from the boat slip along approx. over an area of approx. 15m<sup>2</sup>.
- 2 Reinstatement the existing stone breakwater to prevent the build up of silt in the boat slip. The remains of a stone breakwater exist and the proposed works will return this structure to its original condition. The breakwater is a dry-stone structure and some stones have fallen off the breakwater over time. These existing stones that are in situ will be put back in place on the breakwater. IFI have communicated that no external stone will be brought on site for repair of the breakwater.

The removal of silt from the works will be conducted by Barlow Contractors from Riverstown, Co. Sligo and this contractor has performed similar works in the past. IFI staff will reinstate the existing stone breakwater by hand.

A method statement for the works is included as Appendix 2 of this report.

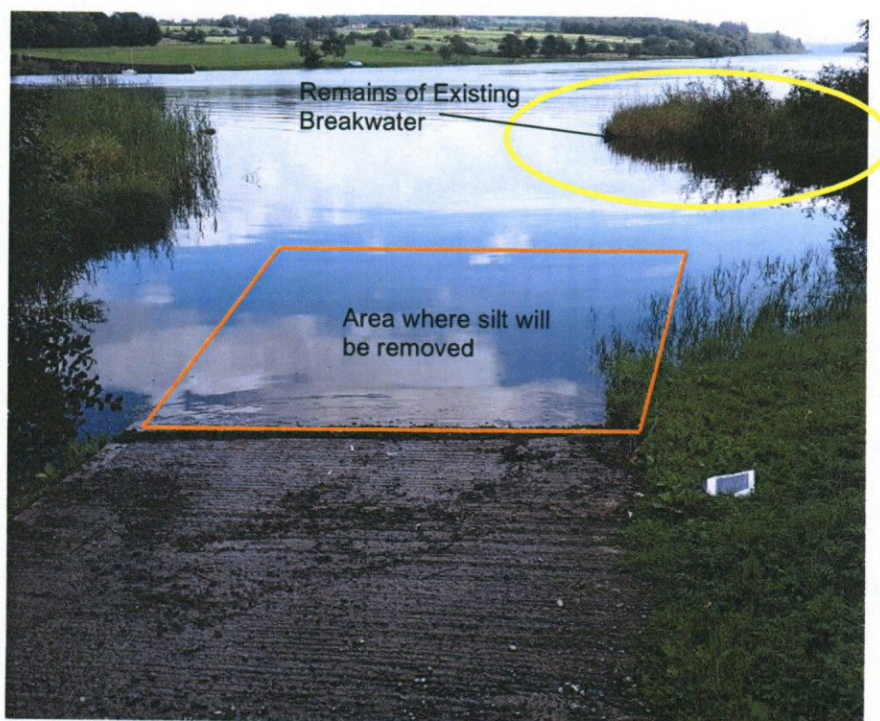


Photo 1: Slipway and remains of existing breakwater on Lough Gill



## 4.0 Appropriate Assessment Screening

### 4.1 AA Screening Approach – Zone of Influence and Natura 2000 sites

As per Appropriate Assessment guidance, Natura 2000 sites within 15 kilometres of the proposed works locations must be considered when performing the Appropriate Assessment Screening for this project. This 15Km zone is often referred to as the 'Zone of Influence' (ZOI). However, when considering potential impacts such as noise and direct disturbance, we would expect that the potential ZOI will be much less than 15Km. Likewise for hydrological impacts the ZOI can be greater than 15Km. If a hydrological pathway exists between works and a Natura 2000 site, the conservation objectives of protected sites beyond 15km should therefore be considered.

The potential impacts of the works on these protected sites have been assessed using the recognised source – pathway- receptor approach. If a pollution pathway (chiefly hydrological) exists between the source (works site) and receptor (protected area Qualifying Interests and Special Conservation Interests), there is a potential pollution risk. A hydrological pathway allows for potential pollutants and contaminants to travel to downstream receptors using water as a transport medium. In this case the works on Lough Gill is the potential source, Lough Gill and its main outflow, the Garavogue River, is the pathway and downstream waterbodies, including Lough Gill itself and the Atlantic Ocean and the Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of downstream Natura 2000 sites are also receptors for the works proposed by IFI on Lough Gill.

The works on Lough Gill have the potential to cause negative impacts on the water quality of Lough Gill at the works locations and as a hydrological link exists between the works and Natura 2000 sites, this project will necessitate a Natura Impact Statement. Mitigation measures must be introduced to control the environmental risks posed by works.

Lough Gill is the principle protected area that must be considered as the works are directly on its shore. Therefore, there is a direct pollution pathway between works on the Lough Gill and Lough Gill SAC.

Cummeen Strand SPA, Drumcliff Bay SPA and Cummeen Strand/Drumcliff Bay SAC are hydrologically downstream of Lough Gill and must the conservation objectives of these Natura 2000 sites must also be considered.

A map illustrating the proximity of the proposed works to NATURA 2000 sites follows as figure 2. This map is provided to illustrate the proximity of the works on Lough Gill to Natura 2000 sites within a 15Km radius of the works.

Other Natura 2000 sites in the locality are also considered (see Table 1) but it has been determined that these Natura 2000 sites are outside the 'Zone of Influence' of the proposed works using the source-pathway-receptor approach – these Natura 2000 site have no pathway or hydrological link to the proposed works on Lough Gill.

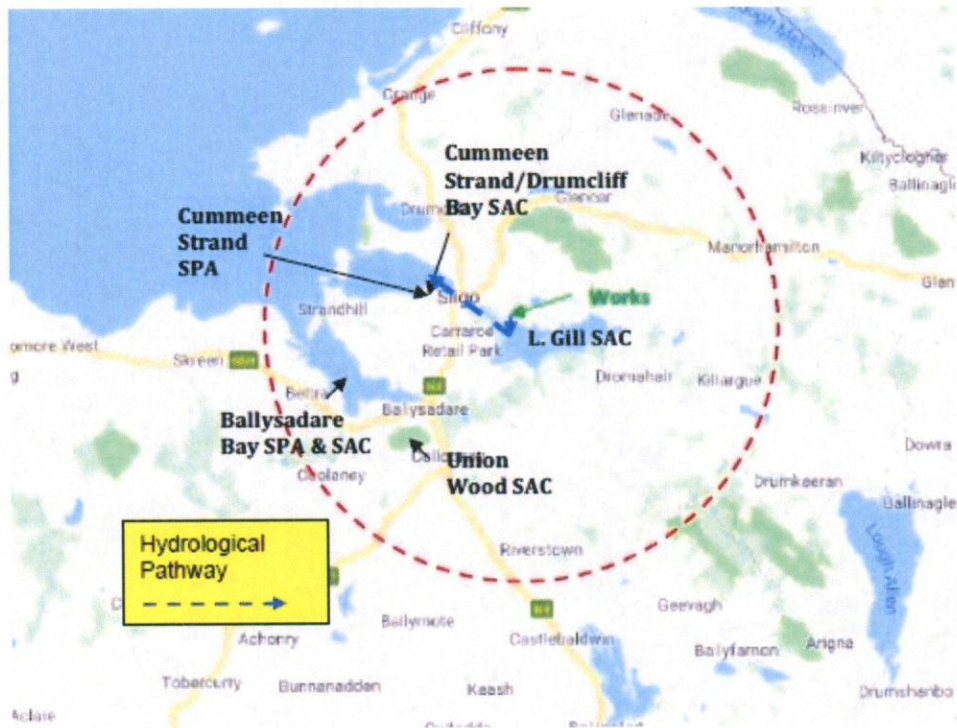


Figure 3: Zone of Influence for IFI works on Lough Gill

Table 1 below details Natura 2000 locations versus the Zone of Influence for the proposed works on Lough Gill. The following information has been taken from Natura 2000 data forms, conservation objectives reports and site synopsis reports available from the National Parks and Wildlife Services website [www.npws.ie](http://www.npws.ie)

Natura 2000 Site	Site Codes	Qualifying Interest (QIs) / Special Conservation Interests (SCIs)	Distance from works	Zone of Influence
Lough Gill SAC	001976	<p>(3150) Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</p> <p>(6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)</p> <p>(91A0) Old sessile oak woods with Ilex and Blechnum in the British Isles</p> <p>(91E0) Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)*</p> <p>* denotes a priority habitat</p> <p>(1092) White-clawed Crayfish, <i>Austropotamobius pallipes</i></p> <p>(1095) Sea Lamprey, <i>Petromyzon marinus</i></p> <p>(1096) Brook Lamprey, <i>Lampetra planeri</i></p> <p>(1099) River Lamprey <i>Lampetra fluviatilis</i></p> <p>(1106) Atlantic Salmon, <i>Salmo salar</i></p> <p>(1355) Otter, <i>Lutra lutra</i></p>	<p>0Km</p> <p>Works within SAC</p>	<p>Yes. As works are within Lough Gill SAC there is a potential for direct impacts on Natura 2000 sites. The hydrological link is obvious as the works are on the shoreline of Lough Gill</p>

Natura 2000 Site	Site Codes	Qualifying Interest (QIs) /Special Conservation Interests (SCIs)	Distance from works	Zone of Influence
Cummeen Strand/Drumcliff Bay SAC	000627	(1130) Estuaries (1140) Mudflats and sandflats not covered by seawater at low tide (2110) Embryonic shifting dunes (2120) Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes) (5130) <i>Juniperus communis</i> formations on heaths or calcareous grasslands (6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates ( <i>Festuco Brometalia</i> ) (* important orchid sites) (7220) Petrifying springs with tufa formation ( <i>Cratoneurion</i> ) (1014) <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) (1095) <i>Petromyzon marinus</i> (Sea Lamprey) (1099) <i>Lampetra fluviatilis</i> (River Lamprey) (1365) <i>Phoca vitulina</i> (Harbour Seal)	6 Km	Yes. There is a direct hydrological link between Lough Gill and Cummeen Strand SAC via the Garavogue River.
Cummeen Strand SPA	004035	(A046) Brent Goose, <i>Branta bernicla hrota</i> (A130) Oystercatcher, <i>Haematopus ostralegus</i> (A162) Redshank, <i>Tringa totanus</i> (A999) Wetlands	6 Km	Yes. There is a direct hydrological link between Lough Gill and Cummeen Strand SPA via the Garavogue River.
Ballysadare Bay SPA	004129	(A046) Brent Goose, <i>Branta bernicla hrota</i> (A141) Grey Plover <i>Pluvialis squatarola</i> (A149) Dunlin, <i>Calidris alpina alpina</i> (A157) Bar-tailed Godwit, <i>Limosa lapponica</i> (A162) Redshank, <i>Tringa tetanus</i>	11 Km	No. There is no hydrological link or habitat connectivity between Lough Gill and Ballysadare Bay SPA.

Natura 2000 Site	Site Codes	Qualifying Interest (QIs) / Special Conservation Interests (SCIs)	Distance from works	Zone of Influence
Ballysadare Bay SAC	000622	(1130) Estuaries (1140) Mudflats and sandflats not covered by seawater at low tide (2110) Embryonic shifting dunes (2120) Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes) (2190) Humid dune slacks (1014) <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) (1365) <i>Phoca vitulina</i> (Harbour Seal) (91A0) Old sessile oak woods with Ilex and Blechnum in the British Isles	11 Km	No. There is no hydrological link or habitat connectivity between Lough Gill and Ballysadare Bay SAC.
Union Wood SAC	000638	(3260) Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation (6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (* important orchid sites) (6410) Molinia meadows on calcareous, peaty or clayey-silt-laden soils ( <i>Molinia caerulea</i> ) (91E0) Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) (1106) <i>Salmo salar</i> (Salmon) (1355) <i>Lutra lutra</i> (Otter)	8 Km	No. There is no hydrological link or habitat connectivity between Lough Gill and Union Wood SAC
Unshin River SAC	001898		8Km	No. There is no hydrological link or habitat connectivity between Lough Gill and Unshin River SAC

Natura 2000 Site	Site Codes	Qualifying Interest (QIs) / Special Conservation Interests (SCIs)	Distance from works	Zone of Influence
Benbulbin, Gleniff and Glenties Complex SAC	000623	<p>(3260) Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation</p> <p>(4010) Northern Atlantic wet heaths with <i>Erica tetralix</i></p> <p>(4030) European dry heaths</p> <p>(4060) Alpine and Boreal heaths</p> <p>(6210) <i>Juniperus communis</i> formations on heaths or calcareous grasslands</p> <p>(5130) Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>) (* important orchid sites)</p> <p>(6230) Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)</p> <p>(6430) <i>Hydrophilous</i> tall herb fringe communities of plains and of the montane to alpine levels</p> <p>(7140) Transition mires and quaking bogs</p> <p>(7220) Petrifying springs with tufa formation (<i>Cratoneurion</i>)</p> <p>(7230) Alkaline fens</p> <p>(8110) Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)</p> <p>(8120) Calcareous and calcshist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>)</p> <p>(8210) Calcareous rocky slopes with chasmophytic vegetation</p> <p>(1013) <i>Vertigo geyeri</i> (Geyer's Whorl snail)</p> <p>(1355) <i>Lutra lutra</i> (Otter)</p>	7Km	No. There is no hydrological link or habitat connectivity between Lough Gill and Benbulbin, Gleniff and Glenties Complex SAC

Natura 2000 Site	Site Codes	Qualifying Interest (QIs) / Special Conservation Interests (SCIs)	Distance from works	Zone of Influence
Sligo Leitrim Uplands SPA	004187	(A103) Peregrine falcon, <i>Falco peregrinus</i> (A346) Chough, <i>Pyrhacorax pyrrhacorax</i>	4.5Km	No. There is no hydrological link or habitat connectivity between Lough Gill and Sligo Leitrim Uplands SPA
Drumcliff Bay SPA	004013	(A144) Sanderling, <i>Calidris alba</i> (A157) Bar-tailed Godwit, <i>Limosa lapponica</i> (A999) Wetland and Waterbirds	6Km	Yes. There is a hydrological link between Lough Gill and Drumcliff Bay SPA via the Garavogue River.
Ballintemple and Ballygilgan SPA	004234	(A045) Barnacle Goose, <i>Branta leucopsis</i>	14Km	No. There is no hydrological link or habitat connectivity between Lough Gill and Ballintemple and Ballygilgan SPA

Table 1: Natura 2000 sites in the Zone of Influence for proposed works on Lough Gill

## 4.2 Details of Natura 2000 Sites with the Zone of Influence

### 4.2.1 Lough Gill SAC

**Location:** N 54.28972965, W -8.545749826

**Site Codes:** 001976

**Main Conservation Objective:**

To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.

Favourable conservation status of a habitat is achieved when:

- a) Its natural range, and area it covers within that range, are stable or increasing, and;
- b) The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and,
- c) The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- a) Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and;
- b) The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and,
- c) There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

**Qualifying Interests:**

- (3150) Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation, Current Conservation Status: Favourable
- (6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (\* important orchid sites), Current Conservation Status: Favourable
- (91A0) Old sessile oak woods with Ilex and Blechnum in the British Isles, Current Conservation Status: Favourable
- (91E0) Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)\* denotes a priority habitat Current Conservation Status: Un-Favourable/Bad
- (1092) White-clawed Crayfish *Austropotamobius pallipes*, protected under the Wildlife Act 1976 (SI No. 112 of 1990)
- (1095) Sea Lamprey *Petromyzon marinus*, IUCN Status (NT) Near Threatened
- (1096) Brook Lamprey, *Lampetra planeri*, IUCN Status (LC) Least Concern
- (1099) River Lamprey, *Lampetra fluviatilis*, IUCN Status (LC) Least Concern
- (1065) Atlantic Salmon, *Salmo salar*, IUCN Status (VU) Vulnerable
- (1355) Otter, *Lutra lutra*, IUCN Status (LC) Least Concern

**Site Characteristics:** Lough Gill is a moderate to large sized lake lying immediately east of Sligo town. It is fed by the River Bonet and drains into the sea via the Garvogue River, a short, wide and slow flowing river which passes through Sligo town. The lake lies along the junction between old metamorphic rocks to the south and limestone to the north. The water of the lake is thus influenced by both acidic and alkaline inputs, although nearly all the basin lies over limestone. The lake is 8 km by 2-3 km and has an area of 1,400 ha. It is a deep lake, with maximum depth at 31 m. Islands are a feature of the lake. Much of



the shoreline is wooded and there is also some swamp vegetation, wet grassland and scrub along the shoreline. The lake is an important salmonid and coarse fishery and is used for a range of recreational activities. The site also includes the Shanvans and Owenmore rivers. (NPWS Site Synopsis, Lough Gill SAC, NF001976)

**Site Quality and Importance:** An important example of a lake which appears to be naturally eutrophic. Quality generally good though blooms of blue-green algae in recent years indicate some artificial enrichment. Significant areas of alluvial forest occur along the Garvogue River (*Osmunda - Salicetum atrocinerea* type) and at the mouth of the River Bonet (*Carici remotae - Fraxientum* type). Old oak woodland of varying quality is well scattered along the shoreline and on some of the islands and is an important example of this habitat for western Ireland. At least six Red Data Book plant species have been recorded from site. Site has three species of lamprey and *Austropotamobius pallipes*. The lake and its associated rivers support an important population of *Salmo salar*. *Lutra lutra* has a good population within the site. This SAC is of minor importance for birds though the site has a small breeding colony of *Sterna hirundo*. A wide range of rare or scarce invertebrates are known from the site, as well as several Red Data Book mammal species, including *Martes martes*. (NPWS, Natura 2000 Standard Data Form, Lough Gill SAC, NF001976)

#### 4.2.2 Cummeen Strand/Drumcliff Bay SAC

**Location:** N 54.28972965, W -8.545749826

**Site Codes:** 000627

**Main Conservation Objective:**

- a) To maintain the permanent habitats and conserve the community types within the Estuaries.
- b) To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide.
- c) To restore the favourable conservation condition of Sea Lamprey.
- d) To maintain the favourable conservation condition of River Lamprey.

**Qualifying Interests and Status:**

- (1014) Marsh Snail, *Vertigo angustior*, IUCN Status (VU) Vulnerable
- (1099) River Lamprey, *Lampetra fluviatilis*, IUCN Status (NT) Near Threatened
- (1095) Sea Lamprey, *Petromyzon marinus*, IUCN Status (NT) Near Threatened
- (1130) Estuaries, Current Conservation Status: Inadequate/Deteriorating
- (1140) Mudflats and sandflats not covered by seawater at low tide, Current Conservation Status: Inadequate/Deteriorating
- (1365) Harbour seal, *Phoca vitulina*, IUCN Status (LC) Least Concern
- (2110) Embryonic shifting dunes, Current Conservation Status: Stable
- (2120) Shifting dunes along the shoreline (white dunes) Current Conservation Status: Unfavourable/Inadequate
- (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes) Current Conservation Status: Unfavourable/Bad
- (5130) Juniperis communis formations on heaths or calcareous grasslands Current Conservation Status: Favourable/Good
- (7220) Petrifying springs with tufa formation (Cratoneurion) Current Conservation Status: Inadequate

**Site Characteristics:** This large coastal site is made up largely of two estuarine bays, Sligo Harbour and Drumcliff Bay. These are the estuaries of the Garavogue and Drumcliff rivers respectively. The estuaries are well sheltered and have extensive intertidal sand and mud flats. Coney Island provides the main shelter for Sligo Harbour, while a sandy/grassy spit protrudes from the Rosses peninsula and provides shelter for inner Drumcliff Bay. The site continues to the north-west of Drumcliff Bay to include the shallow marine waters of Brown's Bay. A series of small islands, notably Ardbolin, occur here. Other coastal habitats are represented, including sand dunes, salt marshes, sandy and boulder beaches, and bedrock shoreline. In addition, there is a scattering of dry grassland, wet grassland, swamp vegetation and broad-leaved woodland. Improved grassland is included for the benefit of wintering geese. The site is largely underlain by Carboniferous limestone, but acidic rocks are also found at Rosses Point. An excellent series of fossilised corals occur at Serpent Rock in the north west of the site. The town of Sligo, a substantial urban centre with a regional port, is located along the eastern boundary of the Sligo Harbour section of the site. Agriculture is the dominant land use in the surrounding catchments. (NPWS Site Synopsis, Cummeen Strand/Drumcliff Bay SAC, NF000627)

**Site Quality and Importance:** The estuarine and intertidal sand and mud flat habitats at this site are extensive in area, generally of good quality and show a good diversity of species and biotopes. *Zostera* spp. occur. These habitats are considered typical for the north-west region. The fixed dunes and shifting *Ammophila* dunes are small in area and only of moderate quality, though embryonic dunes are well represented. The site has a good example of petrifying springs with tufa formations, with several species of bryophyte typical of the Cratoneurion. The springs occur along seepage zones in clay sea cliffs. The site supports an area of Juniper scrub. The site has a nationally important colony of *Phoca vitulina*. Site is important for occurrence of the Annex II mollusc *Vertigo angustior* and the lamprey species *Petromyzon marinus* and *Lampetra fluviatilis*. A good diversity of waterfowl winter at site, notably internationally important populations of *Branta leucopsis* and *Branta bernicla hrota*. Site has regular populations of *Pluvialis apricaria* and *Limosa lapponica*, both Annex I Bird Directive species, and eight other species winter in nationally important numbers. *Phalacrocorax carbo* has a nationally important breeding colony and small numbers of other breeding seabirds occur. (NPWS, Natura 2000 Standard Data Form, Cummeen Strand/Drumcliff Bay SAC, NF000627)

#### 4.2.3 Cummeen Strand SPA

**Location:** N 54.28972965, W -8.545749826

**Site Codes:** 0004035

##### Main Conservation Objectives:

- a) To maintain the long-term population trend and distribution conservation condition of the Light-bellied Brent Goose.
- b) To maintain the long-term population trend and distribution conservation condition of the Oystercatcher.
- c) To maintain the long-term population trend and distribution conservation condition of the Redshank.
- d) To maintain the favourable conservation condition of the permanent Wetland habitats.

##### Special Conservation Interests

- (A046) Brent Goose *Branta bernicla hrota*
- (A130) Oystercatcher *Haematopus ostralegus*
- (A162) Redshank *Tringa totanus*
- (A999) Wetlands

##### Article 12. Status:

N/A Breeding Increase Wintering  
Unknown Breeding, Stable Wintering  
Decreasing Breeding, Stable Wintering

##### Site Characteristics:

Cummeen Strand SPA comprises the greater part of Sligo Harbour, the middle one of the three 'arms' forming Sligo Bay. The site extends for up to 7 km from east to west and has an average width of c.2.5 km. The site is the estuary of the Garavogue River, a short slow-flowing river which flows from Lough Gill. The harbour is very enclosed, with the mouth of the harbour being sheltered by two islands (Coney Island and Oyster Island). A large proportion of the estuary is intertidal (> 80%). Sediments are predominantly sands or coarser materials, though muddy sands or muds also occur. *Zostera* beds are present. The intertidal sand and mud flats are fringed by salt marshes in places but mostly stony

shoreline. Sligo Harbour is a regional port for the town of Sligo. (NPWS Site Synopsis, Cummeen Strand SPA, NF004035)

**Site Quality and Importance:** Cummeen Strand is of importance for the diversity of wintering waterfowl and is an integral part of the larger unit of Sligo Bay. The site has an internationally important population of *Branta bernicla hrota* and supports nationally important numbers of *Haematopus ostralegus* and *Tringa totanus*. Both *Pluvialis apricaria* and *Limosa lapponica* utilise the site though in relatively low numbers. The intertidal flats, which have well-developed macro-invertebrate communities and *Zostera* beds, provide good feeding grounds for the wintering birds. Birds roost on the salt marshes and upper shoreline though on high tides some may leave the site to roost elsewhere. (NPWS, Natura 2000 Standard Data Form, Cummeen Strand SPA, NF004035)

#### 4.2.4 Drumcliff Bay SPA

**Location:** 54.32845357, W -8.576032218

**Site Codes:** 0004013

##### Main Conservation Objectives:

- a) To maintain the long-term population trend and distribution conservation condition of the Light-bellied Brent Goose.
- b) To maintain the long-term population trend and distribution conservation condition of the Oystercatcher.
- c) To maintain the long-term population trend and distribution conservation condition of the Redshank.
- d) To maintain the favourable conservation condition of the permanent Wetland habitats.

##### Special Conservation Interests

- (A144) Sanderling, *Calidris alba*
- (A157) Bar-tailed Godwit, *Limosa lapponica*
- (A999) Wetland and Waterbirds

##### Article 12. Status:

Increase Breeding, N/A  
Wintering  
N/A Breeding, Increase  
Wintering

##### Site Characteristics:

Drumcliff Bay is the most northerly sector of Sligo Bay's three estuarine inlets. It extends from the village of Drumcliff as far west as Raghly Point, a distance of over 9 km. The innermost part of the site is well sheltered and at low tide extensive intertidal flats are exposed. The flats support *Zostera noltii*. The outer part of the site is shallow marine water. Sandy beaches are well represented, along with some salt marsh and stony shoreline. The site includes goose-feeding fields of improved grassland at Ballygilgan and Ballintemple. Some mixed woodland is also included. (NPWS Site Synopsis, Drumcliff Bay SPA, NF004013)

**Site Quality and Importance:**

Drumcliff Bay SPA is of importance for the diversity of wintering waterfowl and is an integral part of the larger unit of Sligo Bay. Its principal importance, however, is that it supports an internationally important population of *Branta leucopsis*, which is one of the two most important flocks in the country (ca. 21% of the national total). It also supports nationally important populations of *Calidris alba* (4.0% of the national total) and populations of *Clangula hyemalis* and *Limosa lapponica* that are close to national importance, as well as a population of *Cygnus cygnus* of local/regional importance. More intensive survey may show that higher numbers of some species occur. Drumcliff Bay has a population of *Phoca vitulina*. (NPWS, Natura 2000 Standard Data Form, Drumcliff Bay SPA, NF004013)

**4.3 Potential Impacts on Natura 2000 sites**

Table 2a – 2d which follow detail the potential threats and impacts on the Qualifying Interests (QIs) and Special Conservation Interests (SCIs) within the zone of influence of the proposed works by IFI on Lough Gill.

Natura 2000 Site and Linkage	Qualifying Interest (QIs)	Potential Impact	Significant (Yes/No)
<p>Lough Gill SAC, 001976</p> <p>As works are within Lough Gill, there is a potential for direct impacts on this SAC</p>	<p>(3150) Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</p>	<p>Limited impact. The works have the potential to elevate suspended solids in Lough Gill as works remove silt from existing boat slip and disturb lake bed when reinstating breakwater. Fuel loss form machinery operating during works is also a threat to this QI.</p>	<p>Yes. The migration of suspended solids to the greater body of Lough Gill will need to be prevented. Preventative and control measures are required to protect against fuel loss from machinery.</p>
<p>(6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)</p>	<p>(91A0) Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</p>	<p>No impact expected as the works will be confined to the existing boat slip and the lake bed immediately at the existing stone breakwater</p>	<p>No.</p>
<p>(91E0) Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)* * denotes a priority habitat</p>	<p>(1092) White-clawed Crayfish, <i>Austropotamobius pallipes</i></p>	<p>No impact expected. No felling or cutting of trees required for works.</p>	<p>No.</p>
<p>(1092) White-clawed Crayfish, <i>Austropotamobius pallipes</i></p>	<p>(1092) White-clawed Crayfish, <i>Austropotamobius pallipes</i></p>	<p>There is a potential for direct disturbance on White Clawed Crayfish in the immediate vicinity of the works and an alteration to habitat if elevated suspended solids from the works are not controlled. Fuel loss form machinery operating during works is also a threat to this QI. Biosecurity Risk from the spread of Crayfish plague</p>	<p>No.</p> <p>Yes. The migration of suspended solids to the greater body of Lough Gill will need to be prevented. Measures are needed to prevent direct disturbance and/or injury to white clawed crayfish immediately in the works zone. Biosecurity measures need to be taken to adequately disinfect machinery, tools and clothing.</p>

Natura 2000 Site and Linkage	Qualifying Interest (QIs)	Potential Impact	Significant (Yes/No)
<p>Lough Gill SAC, No. 001976</p> <p>As works are within Lough Gill, there is a potential for direct impacts on this SAC</p>	<p>(1096) Brook Lamprey, <i>Lampetra planeri</i>                      (1099) River Lamprey, <i>Lampetra fluviatilis</i></p>	<p>There is a potential for direct disturbance of Lamprey species in the immediate vicinity of the works and an alteration to habitat if elevated suspended solids from the works are not controlled.</p>	<p>Yes. The migration of suspended solids to the greater body of Lough Gill will need to be prevented. Measures are needed to prevent direct disturbance and/or injury to Lamprey species immediately in the works zone if Lamprey are present.</p>
	<p>(1106) Atlantic Salmon, <i>Salmo salar</i></p>	<p>Limited impact. The works have the potential to elevate suspended solids in Lough Gill as works remove silt from existing boat slip and disturb lake bed when reinstating breakwater. Direct disturbance of migrating salmon</p>	<p>Yes. The migration of suspended solids to the greater body of Lough Gill will need to be prevented. Although Lough Gill is not a listed salmonoid water under the 1988 Quality of Salmonoid Waters Regulations, a limit of 25mg/L as provided for under this legislation, is relevant here.</p>
	<p>(1355) Otter, <i>Lutra lutra</i></p>	<p>Limited impact. Direct disturbance during works and potential impact on fish species that are prey to Otter</p>	<p>Yes. The migration of suspended solids to the greater body of Lough Gill will need to be prevented. Timing of works to prevent disturbance breeding otter may be necessary.</p>

Table 2a: Assessment of Potential Impacts on Lough Gill SAC

Natura 2000 Site and Linkage	Qualifying Interest (QIs)	Potential Impact	Significant (Yes/No)
<p>Cummeen Strand/Drumcliff Bay SAC, No. 000627</p> <p>There is a direct hydrological pathway between Lough Gill and the Cummeen Strand via the Garavogue River</p>	<p>(1014) Marsh Snail, <i>Vertigo angustior</i></p> <p>(1095) Sea Lamprey, <i>Petromyzon marinus</i></p> <p>(1099) River Lamprey, <i>Lampetra fluviatilis</i></p> <p>(1130) Estuaries</p> <p>(1140) Mudflats and sandflats not covered by seawater at low tide</p> <p>(1365) Harbour seal, <i>Phoca vitulina</i></p> <p>(2110) Embryonic shifting dunes</p> <p>(2120) Shifting dunes along the shoreline (white dunes)</p> <p>(2130) Fixed coastal dunes with herbaceous vegetation (grey dunes)</p> <p>(5130) <i>Juniperus communis</i> formations on heaths or calcareous grasslands 7220 Petrifying springs with tufa formation (Cratoneurion)</p>	<p>Very limited potential of impacts from works on this SAC as works due to the hydrological distance from the works on Lough Gill to Cummeen Strand Drumcliff Bay SAC. The proposed works on Lough Gill are of small scale and short duration. The Location is within a sheltered cove on Lough Gill. The prevention of impacts on Lough Gill SAC will in turn prevent any impacts from works on Cummeen Strand/Drumcliff Bay SAC.</p>	<p>Yes, however very limited potential for impact on fish species.</p>

Table 2b: Assessment of Potential Impacts on Cummeen Strand/Drumcliff Bay SAC



Natura 2000 Site and Linkage	Special Conservation Interests (SCIs)	Potential Impact	Significant (Yes/No)
Cummeen Strand SPA, No. 004035  There is a direct hydrological pathway between Lough Gill and the Cummeen Strand via the Garavogue River	(A046) Brent Goose, <i>Branta bernicla hrota</i>  (A130) Oystercatcher, <i>Haematopus ostralegus</i>  (A162) Redshank, <i>Tringa tetanus</i>  (A999) Wetlands	Very limited potential of impacts from works on this SAC as works due to the hydrological distance from the works on Lough Gill to Cummeen Strand/Drumcliff Bay SAC. The proposed works on Lough Gill are of small scale and short duration. The Location is within a sheltered cove on Lough Gill. The prevention of impacts on Lough Gill SAC will in turn prevent any impacts from works on Cummeen Strand/Drumcliff Bay SAC.	Yes, however very limited potential for impact.

Table 2c: Assessment of Potential Impacts on Cummeen Strand SPA

Natura 2000 Site and Linkage	Special Conservation Interests (SCIs)	Potential Impact	Significant (Yes/No)
Drumcliff Bay SPA, No. 004013  There is a direct hydrological pathway between Lough Gill and Drumcliff Bay via the Garavogue River	(A144) Sanderling, <i>Calidris alba</i>  (A157) Bar-tailed Godwit, <i>Limosa lapponica</i>  (A999) Wetland and Waterbirds	Very limited potential of impacts from works on this SAC as works due to the hydrological distance from the works on Lough Gill to Drumcliff Bay SPA. The proposed works on Lough Gill are of small scale and short duration. The Location is within a sheltered cove on Lough Gill. The prevention of impacts on Lough Gill SAC will in turn prevent any impacts from works on Drumcliff Bay SPA.	Yes, however very limited potential for impact.

Table 2d: Assessment of Potential Impacts on Drumcliff Bay SPA

## 5.0 Existing Habitats at Proposed Works Location

A Phase 1 Habitats Assessment Survey was performed by David Kelly of KD Environmental Ltd. on 29<sup>th</sup> August 2019. The proposed works site and the immediate surrounding area was walked noting habitats and ecological features of interest in line with 'Best Practice for Habitat Survey and Mapping' (Smith et al., 2011). The dominant habitats were then classified using the classification system specified in 'A Guide to Habitats in Ireland' (Fossitt, 2000).

Interpretation Manual of European Union Habitats - EUR28, was referred to as a tool for corresponding the habitats classified using the Fossitt classification system with those habitats specified in the EU habitats directive as annexed habitats.

The habitats noted at the proposed works location are detailed as follows:

**BL3 Buildings and artificial surfaces** – the adjacent carpark and the access roadway to this carpark are tarmac and artificial surfaces.



**Photo 2: Access Road and Carpark at the boat slip on Lough Gill**

The Boat Slipway is concrete and joins to the carpark. The Breakwater on Lough Gill is a dry-stone structure. Both the slipway and the breakwater are classed as BL3 Buildings and Artificial Structures.

**FL3 Limestone Marl Lake** – Lough Gill is a Limestone Marl Lake. Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation (3150) is a Qualifying Interest for Lough Gill SAC and the habitat description FL3 aligns with this priority EU Annex I Habitat. The works are on the shore and in the waters of Lough Gill and will potentially have a direct impact on this Qualifying Interest.



**Photo 3: Existing concrete boat slip on Lough Gill**

**WN6 Wet Willow-Alder- Ash Woodland:** The woodland in sections near the shoreline of Lough Gill is classed as WN6. The alluvial woodland of Lough Gill consists of Willow, Alder and Ash trees. This habitat aligns with priority EU Annex I Habitat (91E0) Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)\* This habitat is a target habitat under EU Directive 92/43 - Conservation of natural habitats and of wild fauna and flora - Habitats Directive (21.05.1992).



**Photo 4: Woodland adjacent to the boat slip on Lough Gill**

**GS2 Dry Meadows and Grassy Verges:** The grassy verges that run adjacent to the tarmac carpark, concrete boat slipway and tarmac road are grassy verges consisting of chiefly perennial rye grass and other grass species such as smooth meadow grass. Ground level plants such as daisy, dandelion and clover may also colonise here. This habitat does not align with a priority EU Annex I Habitat.

**WS1 Scrub:** The understory of the woodland within the Hazelwood Demesne than borders Lough Gill can be classified as scrub and here species such as bramble and ivy can be found. This habitat does not align with a priority EU Annex I Habitat.

**FS1 Reed and Large Sedge Swamp** – the vegetation is common within riparian zone of the Lough Gill. This habitat does not align with a priority EU Annex I Habitat.

**WD2 Mixed Broadleaf/Conifer Woodland:** The main woodland within the Hazelwood Demesne can be classed as Mixed Broadleaf/Conifer Woodland. This habitat aligns with Priority EU Annex I Habitat (91A0) Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles



**Photo 5: Mixed Broadleaf/Conifer woodland adjacent to the carpark on Lough Gill**

**GA1 Improved Agricultural grassland** – the dominant land use adjacent to Lough Gill is agricultural land and can be classed as improved grassland used for grazing livestock. This habitat does not align with a priority EU Annex I Habitat.

Access to the site is via a local public access road that runs from the R286 to the carpark that adjoins the boat slipway. Therefore, access to and from the works location for work machinery will pose a threat to the Qualifying Interests (QIs) or Special Conservation Interests (SCIs) or Lough Gill SAC or other Natura 2000 sites

## 6.0 Relevant Qualifying Interests - Species

### 6.1 Otter

Otter holts are easily identifiable through dropping (spraints), tracks, anal spraying, anal jelly or fish scales. Fisheries Ireland staff are aware and experienced in the identification of holts and the presence of otters. No otter holts were identified during the site visit on 29<sup>th</sup> August 2019. Otter is a Qualifying Interest of Lough Gill Special Area of Conservation (SAC) and we can however the limitations of a single site visit to determine the presence of Otter is acknowledged. We can expect Otter to be present along the lakeshore, including at the works location as transient visitors. The Otter distribution map and information below is taken from the NPWS (2019): The Status of EU Protected Habitats and Species in Ireland.

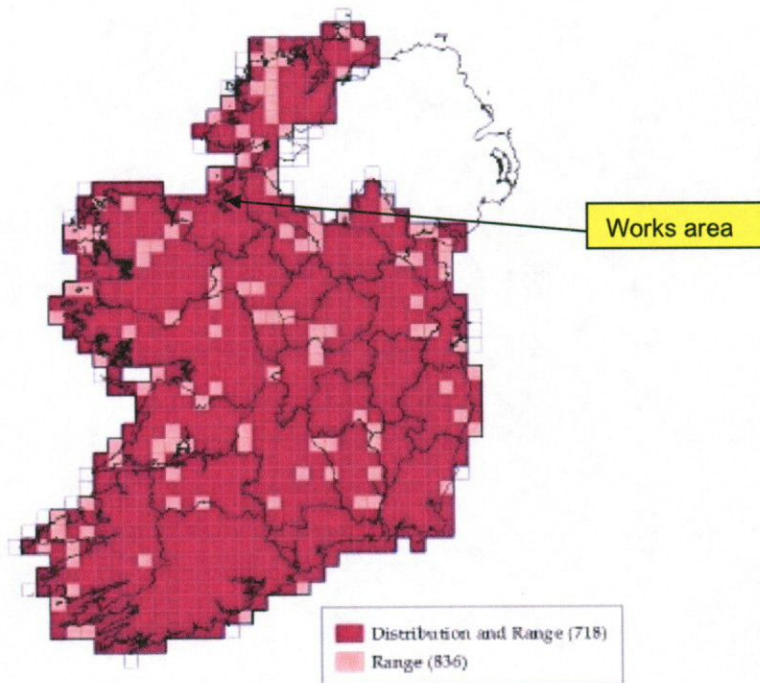


Figure 4: Otter Status 2019

The NPWS document National Otter Survey of Ireland 2011/12 – NPWS Report Ref. ISSN 1393 – 6670, Irish Wildlife Manual No. 76. was also referred to determine Otter distribution in Ireland.

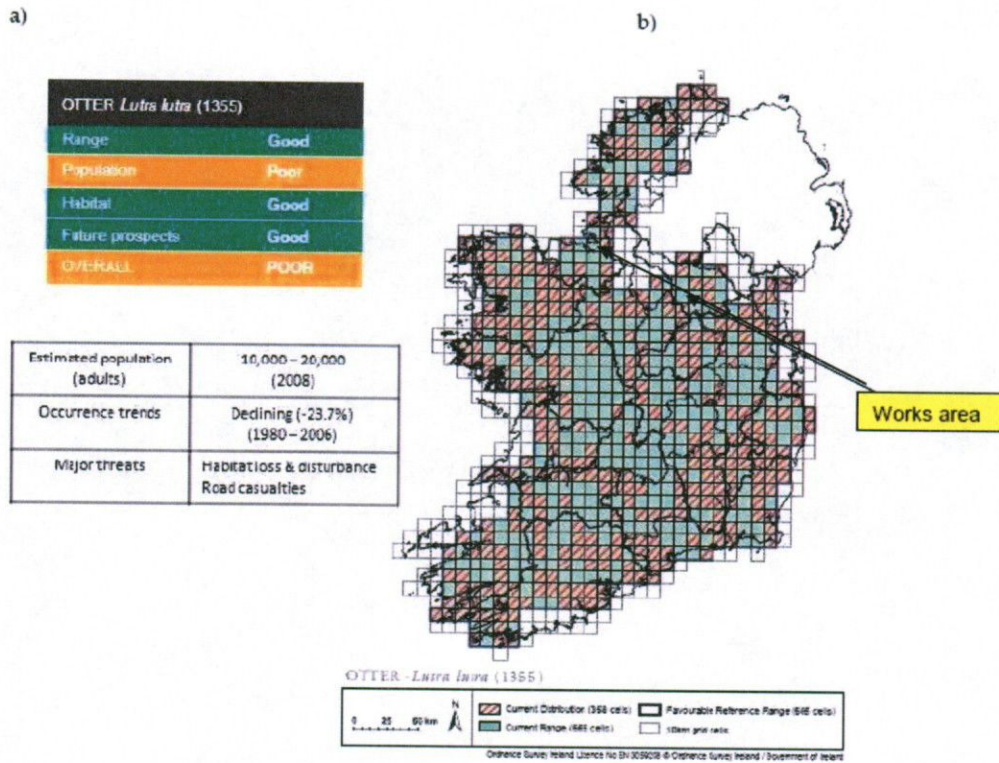


Figure 5: Otter distribution map 2012

## 6.2 White-clawed Crayfish

(*Austropotamobius pallipes*) The distribution map and information below is taken from the NPWS (2019): The Status of EU Protected Habitats and Species in Ireland. As can be seen this species has been recorded in Lough Gill and its catchment. Works have the potential to impact on this protected species as a result of a localised deterioration in water quality, through a biosecurity threat (the spread of crayfish plague) and direct disturbance of their habitat from the reinstatement of the existing stone breakwater. White clawed crayfish are a Qualifying Interest for Lough Gill SAC. These crayfish mate in October/ November and the females hide in crevices to incubate their eggs for 8 to 10 months after mating.

The existing stone breakwater may provide a suitable habitat for white clawed crayfish. Works need to consider the presence of White-clawed Crayfish and controlled measures introduced to limit impacts on this crayfish species if they are present.

A survey of the stone breakwater to determine if white clawed crayfish are present in the stone breakwater was conducted on behalf of Inland Fisheries Ireland by Woodrow Sustainable Solutions Ltd. In March 2022. This survey did not record the presence of crayfish in the stone breakwater. However, according to this report "There are areas of large boulders within the base of the breakwater where survey was not possible due to the size of these boulders. Optimal refuges for crayfish are present where these large boulders exist. Also, the survey period being in April means that crayfish would be less active and may be in deeper areas of the lake as they tend to be more active and enter the shallows in the summer months." Therefore, a precautionary approach is required in order to prevent negative impacts on White-Clawed Crayfish and to this effect, mitigation measures to prevent impacts on crayfish are required.

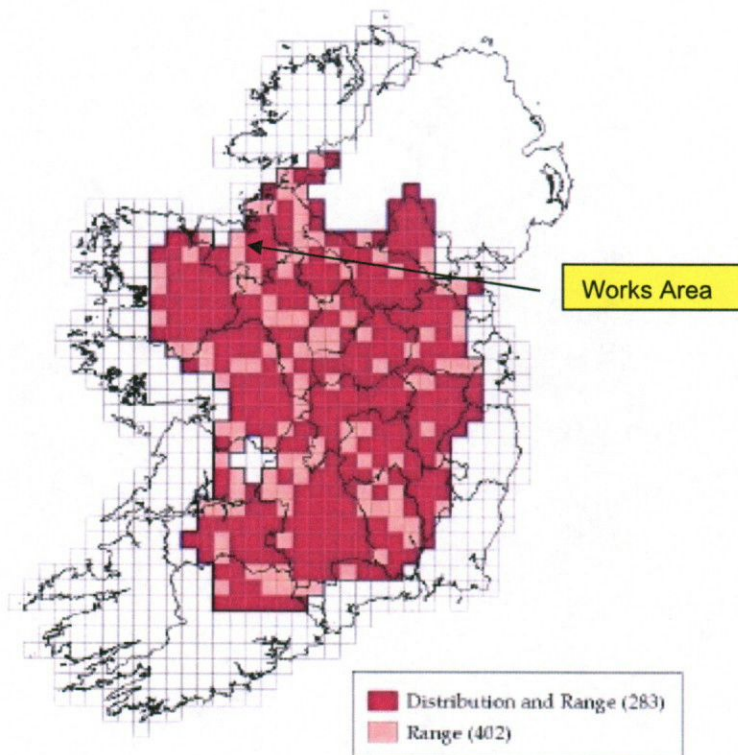


Figure 6: White Clawed Crayfish Distribution

### 6.3 Lamprey

The maps below are a National Distribution Maps for Brook Lamprey (*Lampetra planeri*) and River Lamprey (*Lampetra fluviatilis*). These lamprey species are listed as a conservation Qualifying Interest for Lough Gill SAC.

Lamprey spawn in the Spring or early Summer. Trained and qualified IFI staff will survey the works location for the presence of spawning lamprey prior to the commencement of works if conducted during this time of year. Therefore, the works on Lough Gill are not expected to have a significant effect on lamprey species.

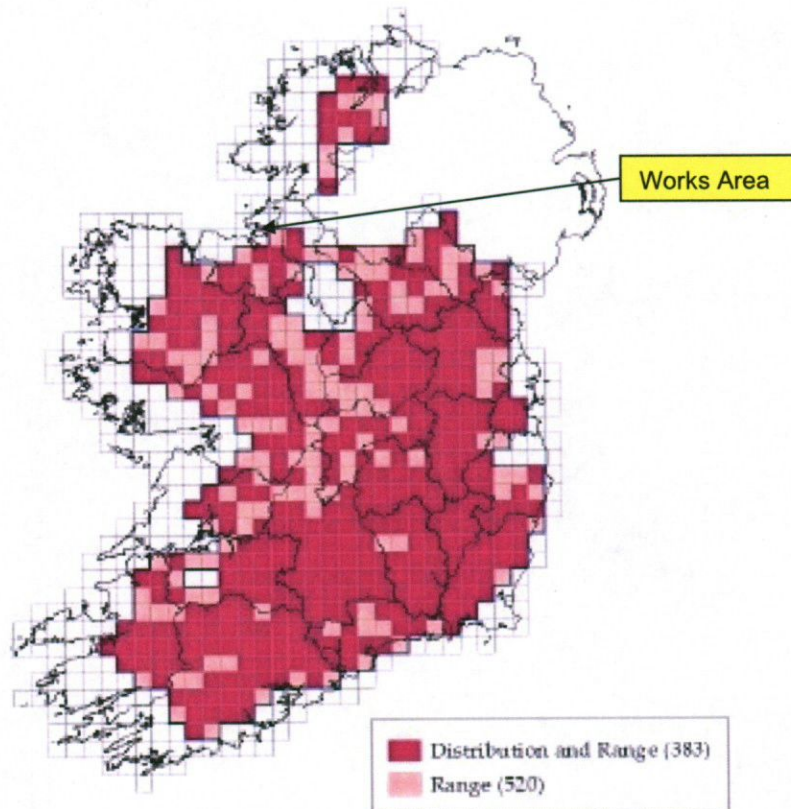


Figure 7: Distribution Map for Brook Lamprey



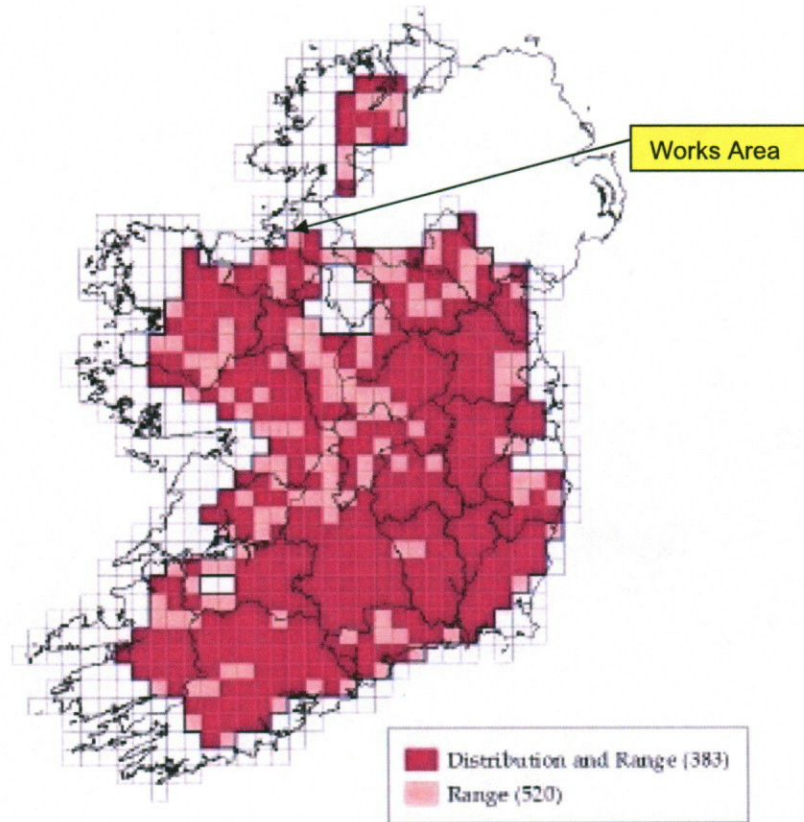


Figure 8: River Lamprey Distribution

### 6.4 Salmon

The maps below are a National Distribution Map for Atlantic Salmon (*Salmo salar*). Salmon are listed as a conservation Qualifying Interest for Lough Gill SAC.

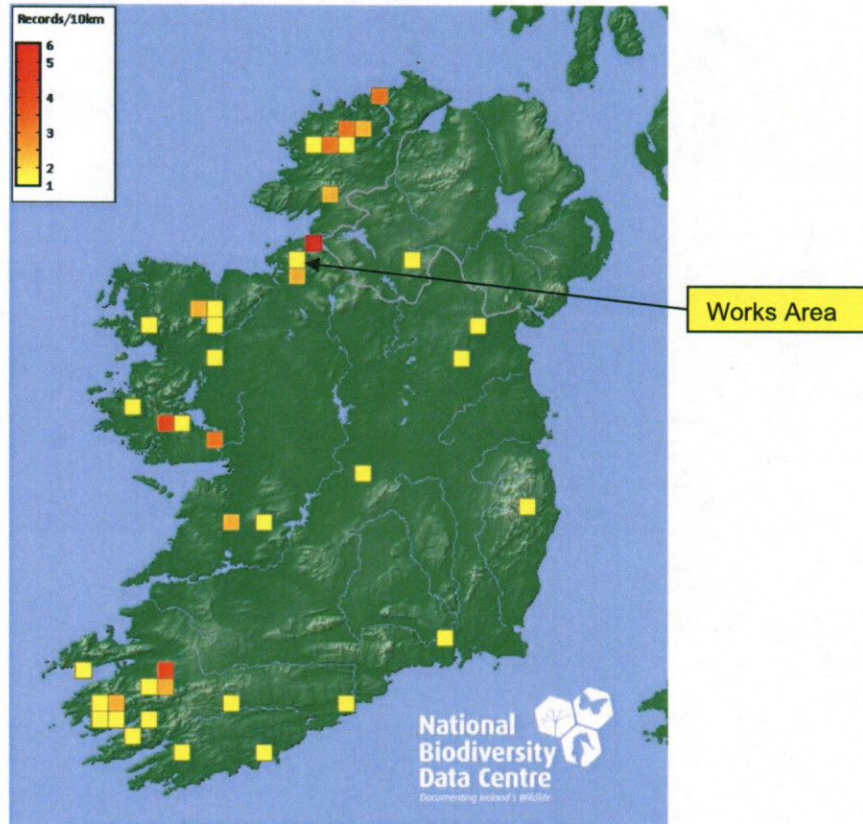
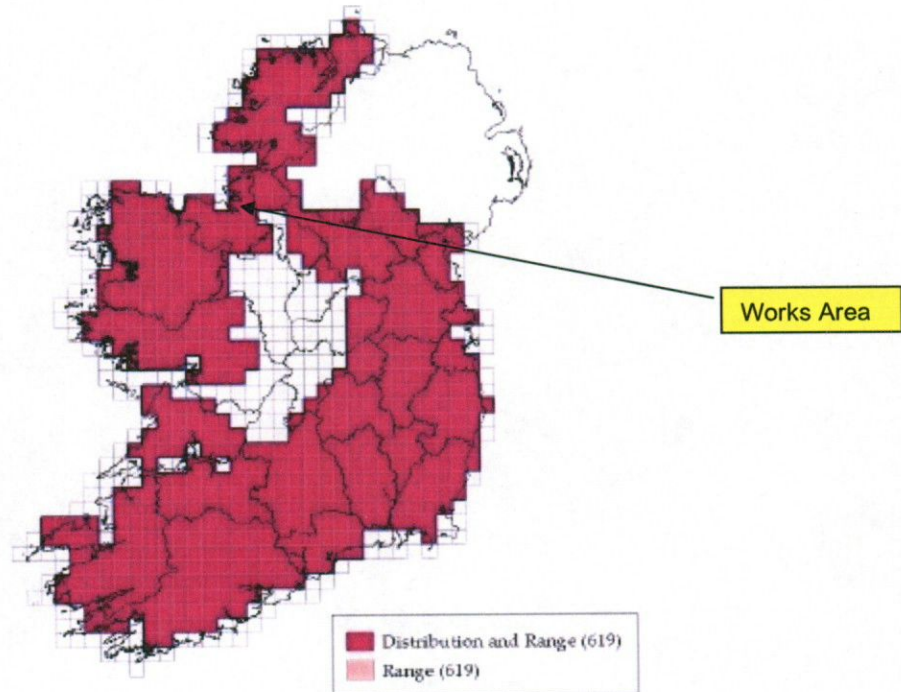


Figure 9: Distribution Map for Atlantic Salmon

The Atlantic Salmon distribution map and information below is taken from the NPWS (2019): The Status of EU Protected Habitats and Species in Ireland. It should be noted that Lough Gill and the Garavogue River are not Salmonoid waters under the S.I. No. 293/1988 - European Communities (Quality of Salmonid Waters) Regulations, 1988, however Atlantic Salmon are known to run on the Garavogue and move upstream through Lough Gill.

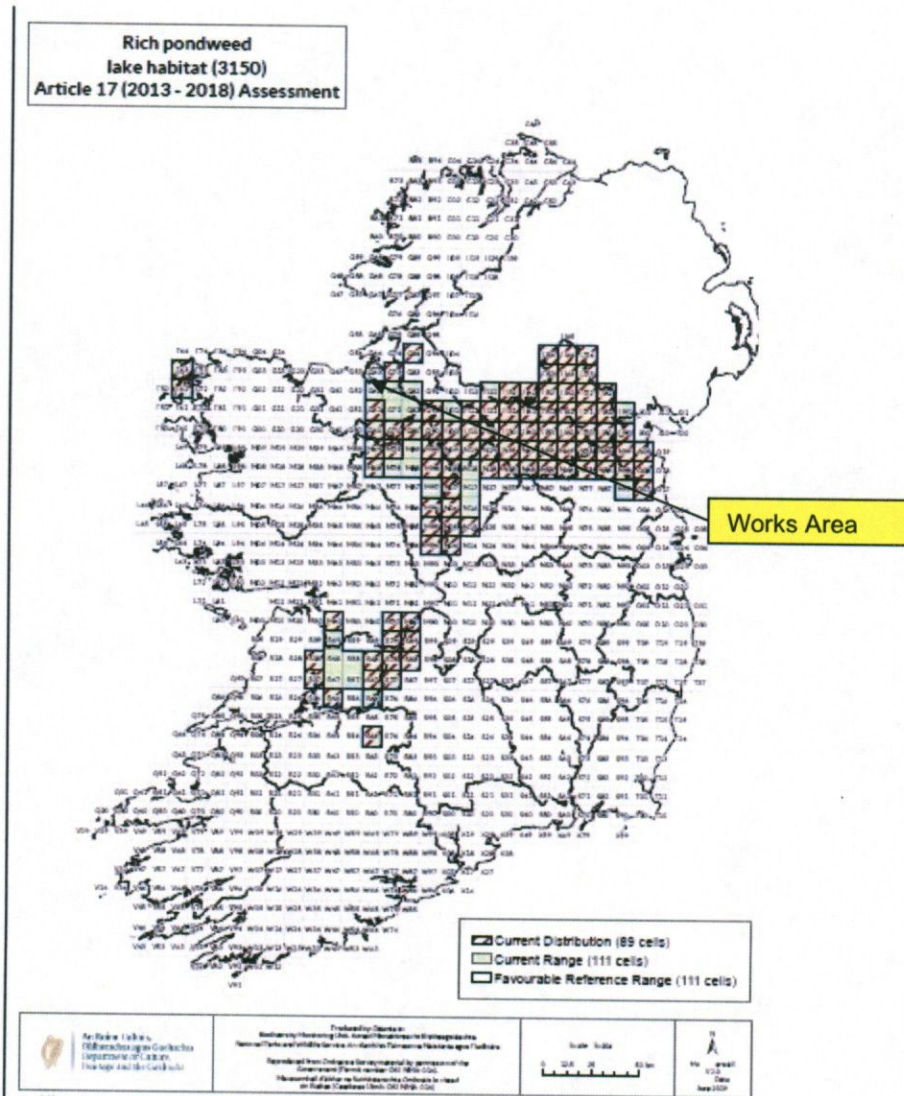


**Figure 10: Atlantic Salmon Distribution Range 2019**

## 7.0 Relevant Qualifying Interests - Habitats

### 7.1 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation

The map below is taken from NPWS (2019) report 'The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments'. Within this report the status of this habitat is stable with no decline in range since the Habitats Directive was introduced and the long-term viability of this habitat is 'Favourable'. The NPWS report concluded that "while there may be a deterioration in the structure and functions of this habitat, it is unlikely that any 3150 lakes will be lost; hence, the range is unlikely to change".



## 8.0 AA Screening Conclusion

Under Article 6(3) and (4) of the Habitats Directive, a precautionary approach to the Appropriate Assessment screening of projects and works should be taken. To keep in line with this approach, all identified impacts posed by works are viewed as having the potential to be significant unless appropriate control measures to reduce the potential impacts are implemented.

Following the completion of the appropriate assessment screening for the proposed works on Lough Gill and applying a precautionary principle, there is potential for significant effects on the Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of Lough Gill SAC. The proposed works may also have, to a lesser extent, the potential to negatively impact on Cummeen Strand / Drumcliff Bay (Sligo Bay) SAC, Cummeen Strand SPA and Drumcliff Bay SPA.

The primary risk for consideration is a negative impact on the water quality of Lough Gill of water quality, resulting in possible adverse impacts on water dependent species and habitats. There is also the potential for the direct disturbance of some protected species while completing the works. Such impacts must be more closely considered and where required mitigation measures to control and reduce potential impacts must be implemented. The potential for impacts as a result of the proposed works must be considered either alone and / or in combination with other plans or projects.

Such additional works may be as part of other IFI plans or projects on waterways in the region. Other public bodies other than IFI such as the OPW may also conduct works on or near waterbodies within the Lough Gill catchment .

Works conducted by private enterprises and landowners can pose similar contributing or in-combination effects on Natura 2000 sites.

Therefore, a Stage 2 Appropriate Assessment (Natura Impact Statement) is required in order to determine whether and how the works alone, in-combination with other plans or projects, in the view of best scientific knowledge and in the view of conservation objectives, will adversely affect the integrity of Natura 2000 sites.

## **9.0 Natura Impact Statement**

The primary environmental effects that must be considered from the proposed works on the Lough Gill are negative impacts as a result of a loss in water quality in Lough Gill and downstream receptors. There are also potential risks to the Qualifying Interests and Special Conservation Interests of Lough Gill through direct disturbance of White-clawed Crayfish during completion of the works. Other potential threats from, for example increase in noise levels due to the operation of machinery and biosecurity risks, must also be considered.

It is good practice when detailing potential ecological impacts from works to make clear both the potential significant effects without mitigation and the residual significant effects following mitigation.

Tables 3a – 3d below detail the potential environmental impacts on the conservation objectives on Natura 2000 sites within the Zone of Influence which may be impacted upon by the proposed works. The mitigation measures required to protect against these potential impacts are detailed in section 10.

It should be noted that all of the mitigation measures detailed should be effectively implemented in full to ensure the works do not have a detrimental environmental and ecological impact on the conservation interests of Natura 2000 sites.

## 9.1 Potential Impacts on Lough Gill SAC (SAC No. 001976)

Qualifying Interest (QI)	Potential Threats
(3150) Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	The proposed works site is within Lough Gill Special Area of Conservation and works have the potential to negatively impact water quality in immediate vicinity of the works site the elevation of suspended solids in the vicinity of the works site from the disturbance of silt built up on the boat slip and entering the water to reinstate the stone breakwater. Migration of elevated suspended solids to downstream receptors. Loss in fuel from excavator removing silt from the boat slip also poses a threat to this QI
(6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	No land take, clearing of scrub or tree felling is required and therefore no impact on this qualifying interest will occur as a result of the works.
(91A0) Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	No land take, clearing of scrub or tree felling is required and therefore no impact on this qualifying interest will occur as a result of the works.
(91E0) Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)* * denotes a priority habitat	No land take, clearing of scrub or tree felling is required and therefore no impact on this qualifying interest will occur as a result of the works.
(1092) White-clawed Crayfish <i>Austropotamobius pallipes</i>	There is potential for the works to cause direct disturbance of White-Clawed Crayfish as a result of clearing silt build up on the boat slip and from reinstating the stone breakwater as crayfish may populate the holes and crevices in the breakwater. Crayfish also breed in the last quarter of the year and works on the breakwater have significant potential to disturb white-clawed crayfish. An impact on water quality through loss of hydrocarbons from the excavator at the boat slip can also impact on crayfish. There is a biosecurity threat as a result of the introduction of invasive species and spread of disease such as Crayfish Plague must be prevented.
(1106) Atlantic Salmon ( <i>Salmo salar</i> )	Direct disturbance of migrating salmon. Biosecurity threat as a result of the introduction of invasive species and spread of disease. Migration of elevated suspended solids to downstream receptors. Loss in fuel from excavator removing silt from the boat slip.
(1355) Otter <i>Lutra lutra</i>	Direct disturbance of otter. Loss of prey through impacts on fish species as a result of negative impacts on water quality.
1096) Brook Lamprey <i>Lampetra planeri</i> (1099) River Lamprey <i>Lampetra fluviatilis</i>	Direct disturbance of lamprey. Biosecurity threat as a result of the introduction of invasive species and spread of disease. Migration of elevated suspended solids to downstream receptors. Loss in fuel from excavator removing silt from the boat slip.

Table 3a: Potential Impacts on Lough Gill SAC

### 9.2 Potential Impacts on Cummeen Strand/Drumcliff Bay SAC (SAC No. 000627)

Qualifying Interests	Potential Impact
(1130) Estuaries (1140) Mudflats and sandflats not covered by seawater at low tide (2110) Embryonic shifting dunes (2120) Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes) (5130) <i>Juniperus communis</i> formations on heaths or calcareous grasslands (6210) Semi-natural dry grasslands and scrubland facies on calcareous substrates ( <i>FestucoBrometalia</i> ) (* important orchid sites)	The works on Lough Gill are approx. 6Km from this SAC and will not impact on the physical state of the qualifying interests 1130, 1140, 2110, 2120, 2130, 5130 and 6210.
(1014) <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail)	The proposed works on Lough Gill do not include Land take, clearing of scrub or tree felling is required and therefore no impact on this qualifying interest will occur. Works are approx. 6km from Cummeen Strand/Drumcliff Bay SAC and no impact on (1014) <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) will result from the works.
(1095) <i>Petromyzon marinus</i> (Sea Lamprey) (1099) <i>Lampetra fluviatilis</i> (River Lamprey)	Biosecurity threat as a result of the introduction of invasive species and spread of disease. Migration of elevated suspended solids to downstream receptors. Loss in fuel from excavator removing silt from the boat slip.
(7220) Petrifying springs with tufa formation ( <i>Cratoneurion</i> )	No impact as water quality upstream on Lough Gill will be protected
(1365) <i>Phoca vitulina</i> (Harbour Seal)	Works are approx. 6km from Cummeen Strand/Drumcliff Bay SAC and no impact on <i>Phoca vitulina</i> (Harbour Seal) will result from the works.

**Table 3b: Potential Impacts on Cummeen Strand/Drumcliff Bay SAC**

### 9.3 Potential Impacts on Cummeen Strand SPA (SPA No. 004035)

Qualifying Interests	Potential Impact
(A046) Brent Goose <i>Branta bernicla hrota</i> (A130) Oystercatcher <i>Haematopus ostralegus</i> (A162) Redshank <i>Tringa totanus</i> (A999) Wetlands	The proposed works site is approx. 6Km from Cummeen Strand Special Area of Conservation. Works will therefore not cause a direct disturbance through noise and machinery operating. Loss in fuel from excavator removing silt from the boat slip has the potential to migrate downstream to receptors such as Cummeen Strand SPA.

**Table 3c: Potential Impacts on Cummeen Strand SPA**



#### 9.4 Potential Impacts on Drumcliff Bay SPA (SPA No. 004013)

Qualifying Interests	Potential Impact
(A144) Sanderling, <i>Calidris alba</i> (A157) Bar-tailed Godwit, <i>Limosa lapponica</i> (A999) Wetland and Waterbirds	The proposed works site is approx. 6Km from Cummeen Strand Special Area of Conservation. Works will therefore not cause a direct disturbance through noise and machinery operating. Loss in fuel from excavator removing silt from the boat slip has the potential to migrate downstream to receptors such as Drumcliff Bay SPA.

Table 3d: Potential Impacts on Drumcliff Bay SPA

### 10.0 Other Conservation Considerations

#### 10.1 Kingfisher (*Alcedo atthis*)

Annex I protected species under the EU Birds Directive 2009/147/EC. Annex I of the Birds Directive lists 193 species and sub-species which are:

- in danger of extinction;
- vulnerable to specific changes in their habitat;
- considered rare because of small populations or restricted local distribution;
- requiring particular attention for reasons of the specific nature of habitat.

The works will not require the removal of plants or result in the loss of suitable habitat for protected flora colonisation. The banks along the breakwater and the slipway where works will take place are unsuitable habitat for kingfisher nesting as kingfisher make burrows in raised clay banks as nest sites.

#### 10.2 Protection of Nesting Birds and Protected Flora

Works will be conducted without cutting or alteration to trees, bushes and hedges. As a precautionary measures to prevent the disturbance of waterfowl works will not be performed between 1<sup>st</sup> March and 31<sup>st</sup> August to comply with the Wildlife Act, 2000. The works will not require the removal of plants or result in the loss of suitable habitat for protected flora colonisation.

#### 10.3 Pine Martin (*Martes martes*)

Works will be conducted without cutting or removal of trees, bushes and hedges and no impact on pine martin is expected.

## 11.0 Mitigation Measures

The mitigation measures detailed in this report must be incorporated into work practices on site. The method statement provided by the contractor, Barlow Contractors, and included as Appendix 2, must be updated with these mitigation measures to ensure risks posed by the works are effectively mitigated therefore protecting the Qualifying Interests and Special Conservation Interests of Natura 2000 sites. Tables 5a – 5c below detail the mitigation measures required to protect the conservation objectives on Natura 2000 sites within the Zone of Influence which may be impacted upon by the proposed works.

Qualifying Interests	Potential Threats	Mitigation Measures	Residual Impact
<p>(3150) Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation (1092) White-clawed Crayfish, <i>Austropotamobius pallipes</i> (1106) Atlantic Salmon, <i>Salmo salar</i> (1096) Brook Lamprey, <i>Lampetra planeri</i> (1099) River Lamprey, <i>Lampetra fluviatilis</i> (1355) Otter, <i>Lutra lutra</i></p>	<p><b>Loss in water quality</b> due to the elevation of suspended solids in the vicinity of the works site from the disturbance of silt built up on the boat slip and entering the water to reinstate the stone breakwater. Migration of elevated suspended solids to downstream receptors. This could potentially impact on QI 3150, Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation, as the main body of lough gill aligns with this qualifying interest. <b>A localised Loss in Habitat</b> for species such as White Clawed Crayfish and Lamprey is a potential threat if siltation levels on the lake bed increase.</p>	<p>The works proposed by IFI on Lough Gill are small scale and of short duration. A silt curtain is required at the works site using a terram and post system to prevent elevated suspended solids migrating to the greater body of Lough Gill and to downstream receptors. The terram sit curtain will effectively break the hydrological link that allows suspended solids to migrate to downstream receptors and is a widely used measure to control elevated suspended solids from works on or near waterways. No machinery will enter the water during works will also reduce this threat. Existing stone on site will be used to reinstate the breakwater. The breakwater will be reinstated by hand which also reduces the elevation of suspended solids. It is a drywall construction with no cement used.</p>	<p>None.</p>
	<p><b>Loss in water quality</b> if fuel from excavator removing silt from the boat slip and migration of hydrocarbons to downstream habitats and receptors (including qualifying interest species)</p>	<p>A spill kit will be available for the excavator on site. All machinery must be inspected daily to ensure there are no leaks or drips. Refuelling must take place at a distance of at least 50m from the lake shore on a bunded area created by the contractor (impermeable sheet that the digger drives onto for refuelling). An oil sock can be suspended at water level along the terram silt curtain to trap any minor loss of hydrocarbons from machinery and prevent migration to the greater Lough Gill and downstream receptors.</p>	<p>None.</p>

Qualifying Interests	Potential Threats	Mitigation Measures	Residual Impact
<p>(1092) White-clawed Crayfish, <i>Austropotamobius pallipes</i></p>	<p><b>Direct disturbance:</b> The habitat at the boat slip and stone breakwater is viewed to be unsuitable for White-Clawed Crayfish as according to the from the NPWS (2019) report 'The Status of Protected Habitats and Species in Ireland, Volume 1: Summary Overview' - "Habitat heterogeneity is important; juveniles live among submerged tree roots, gravel or macrophytes, while larger crayfish must have stones to hide under, or an earthen bank in which to burrow'. There is a good likelihood that the stones and crevices of the stone breakwater may have been colonised by crayfish. White Clawed crayfish are known to breed between October and December.</p>	<p>A survey for the presence of White Clawed Crayfish was by Woodrow Sustainable Solutions on behalf of Inland Fisheries Ireland in March 2022. This survey did not detect the presence of White-Clawed Crayfish in the stone breakwater. This survey report also provided for mitigation measures to prevent impacts on crayfish from the works and recommended that the stone breakwater be re-surveyed for White Clawed Crayfish immediately prior to works starting.</p> <p>This crayfish species is known to breed between October and December. In order to avoid direct disturbance of breeding crayfish, works should be conducted outside of this time of year.</p> <p>An 'Ecological Clerk of Works' (ECoW) will be employed to implement mitigation measures to prevent impacts on White-Clawed Crayfish as detailed below:</p> <ol style="list-style-type: none"> <li>1) The licensed ECoW will translocate crayfish in the event of animals being required to be moved out of the working area. (A license to translocate must be applied for on a site-specific basis and this will be required to be applied for by the appointed ECoW prior to works commencing).</li> <li>2) The ECoW will give a comprehensive Toolbox talk to contractors and sub-contractors before the proposed project begins on the potential for crayfish to be within the working area and the impacts that could occur.</li> <li>3) The ECoW will inspect areas immediately prior to the works taking place on the breakwater and continue to monitor for crayfish as works are progressing.</li> <li>4) The ECoW will have the power to STOP works if required to ensure there are no potential for direct impacts on Crayfish.</li> </ol>	<p>There is a risk of impact on this Qi through direct disturbance if present at the existing stone breakwater. No residual impact is expected once mitigation measures are adhered to.</p>

<p>(1106) Atlantic Salmon, <i>Salmo salar</i> (1096) Brook Lamprey, <i>Lampetra planeri</i> (1099) River Lamprey <i>Lampetra fluviatilis</i></p>	<p><b>Direct disturbance</b> of migrating salmon. Direct disturbance of Lamprey.</p>	<p>The works are located at the western shoreline of Lough Gill and according to Declan Feeney if the IFI, this location is not within salmon migration routes. Atlantic salmon generally run and pass through Lough Gill between mid March and the end of August and works are not planned for this time of year. Lamprey are known to spawn in Spring and early Summer, the works will not be conducted at this time of year. IFI staff can survey the works area for the presence of lamprey and temporarily relocate lamprey to a suitable location during works.</p>	<p>None</p>
<p>(1355) Otter <i>Lutra lutra</i></p>	<p><b>Direct disturbance</b> of otter. <b>Loss of prey</b> through impacts on fish species as a result of negative impacts on water quality.</p>	<p>Works are planned for Q4 of 2021. Otter typically breed in early Spring and whelp their pups in the summer months. No evidence of otter presence was noted from the site visit in August 2019. No disturbance of otter is expected. The habitat features at the works location are viewed to be unsuitable for otter holts.</p>	<p>None</p>

Qualifying Interests	Potential Threats	Mitigation Measures	Residual Impact
<p>(1092) White-clawed Crayfish <i>Austropotamobius pallipes</i>                      (1106) Atlantic Salmon (<i>Salmo salar</i>)                      (1096) Brook Lamprey <i>Lampetra planeri</i>                      (1099) River Lamprey <i>Lampetra fluviatilis</i>                      (1355) Otter <i>Lutra lutra</i></p>	<p><b>Biosecurity threat</b> as a result of the introduction of invasive species and spread of disease such as Crayfish Plague</p>	<p>Follow the Fisheries Ireland guidance on disinfection of plant, tools, clothing and equipment before commencing works. Use Virkon Aquatic to disinfect plant, equipment, footwear etc... This is a disinfectant in the peroxygen (hydrogen peroxide) family. It is available in tablet form. It is 99.9% biodegradable and breaks down to water and oxygen and is not corrosive at the working dilution. The works contractor should be trained by IFI in effective disinfection procedures. The use of existing in-situ stone to repair the breakwater also reduces the biosecurity threat as no stone will have to be brought from off-site. An 'Ecological Clerk of Works' should supervise the works and ensure biosecurity measures are being correctly followed.</p>	<p>None</p>
<p>(1095) Sea Lamprey <i>Petromyzon marinus</i>                      (1099) River Lamprey <i>Lampetra fluviatilis</i></p>	<p>Loss in water quality due to the elevation of suspended solids in the vicinity of the works site from the disturbance of silt built up on the boat slip and entering the water to reinstate the stone breakwater. Migration of elevated suspended solids to downstream receptors.</p>	<p>The use of a terram silt curtain across the works site using a terram and post system is recommended to prevent elevated suspended solids migrating the greater body of Lough Gill and to downstream receptors. No machinery will enter the water during works will also reduce this threat. Existing stone on site will be used to reinstate the breakwater and if more stone is required, pre-washed stone must be used. The breakwater will be reinstated by hand which also reduces the elevation of suspended solids. It is a drywall construction with no cement used.</p>	<p>None.</p>
	<p>Loss in water quality if fuel from excavator removing silt from the boat slip and migration of hydrocarbons to downstream habitats and receptors (including qualifying interest species)</p>	<p>A spill kit will be available for the excavator on site. All machinery must be inspected daily to ensure there are no leaks or drips. Refuelling must take place at a distance of at least 50m from the lake shore on a bunded area created by the contractor (impermeable sheet that the digger drives onto for refuelling). An oil sock can be suspended at water level along the terram silt curtain to trap any minor loss of hydrocarbons from machinery.</p>	<p>None.</p>

Qualifying Interests	Potential Threats	Mitigation Measures	Residual Impact
<p>A046) Brent Goose <i>Branta bernicla hrota</i>                      (A130) Oystercatcher <i>Haematopus ostralegus</i>                      (A162) Redshank <i>Tringa totanus</i>                      (A999) Wetlands</p>	<p>Loss in water quality if fuel from excavator removing silt from the boat slip and migration of hydrocarbons to downstream habitats and receptors (including qualifying interest species)</p>	<p>A spill kit will be available for the excavator on site. All machinery must be inspected daily to ensure there are no leaks or drips. Refuelling must take place at a distance of at least 50m from the lake shore on a bunded area created by the contractor (impermeable sheet that the digger drives onto for refuelling). An oil sock can be suspended at water level along the terram silt curtain to trap any minor loss of hydrocarbons from machinery.</p>	<p>None.</p>

**Table 4: Proposed Mitigation Measures for IFI works on Lough Gill**

## 12.0 Predicted and Cumulative Impacts – Post Mitigation

Having identified the qualifying interests of Lough Gill SAC and reviewed the contractor's method statement and work plan for the project, an assessment for possible impacts can be generated. See "Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission, 2001".

Guidelines for Ecological Evaluation and Assessment from the Institute of Ecological and Environmental Management (IEEM) have been referred to in assessing the significance of the ecological and environmental impacts. The table below summarises the criteria for classifying ecological impacts.

Impact Magnitude	Definition
No change	No discernible change in the ecology of the affected feature.
Imperceptible Impact	A change in the ecology of the affected site, the consequences of which are strictly limited to within the development boundaries.
Minor Impact	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary, but these consequences are not considered to significantly affect the distribution or abundance of species or habitats of conservation importance.
Moderate Impact	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to significantly affect the distribution and/or abundance of species or habitats of conservation importance.
Substantial Impact	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to significantly affect species or habitats of high conservation importance and to potentially affect the overall viability of those species or habitats in the wider area.
Major Impact	A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to be such that the overall viability of species or habitats of high conservation importance in the wider area is under a very high degree of threat (negative impact) or is likely to increase markedly (positive impact).

**Table 5: Categorising Ecological Impacts**

## 12.1 Ecological and Environmental Impacts

The ecological impacts of the proposed works on Lough Gill have been categorised using the criteria in Table 6. It should be noted that the categorisation of ecological impacts presented below has been performed depending on the effective implementation of mitigation measures outlined in Table 5. The works will be conducted with the boundary of Lough Gill SAC. The aesthetic appearance of the Lough Gill will not be changed significantly as there is already a boat slip and remains of the stone breakwater in place.

**Land-Take:** There will be No land take from protected sites as a result of the proposed works. A minor alteration to the area where the proposed works will take place will occur as the silt build up from the boat slip will be removed and the stone breakwater will be reinstated. However, the works will return the boat slip and the breakwater to its original condition.

**Imperceptible Impact to Natura 2000 sites (Lough Gill SAC).**

**Distance from Natura 2000 site or key features of the site:** The proposed works lie within the Lough Gill SAC, however, the works area is a very small area and no significant adverse effect on the SAC is expected following the implementation of controlled mitigation measures outlined in this report. **No Change to Natura 2000 sites.**

**Water:** The proposed works have the potential to impact on water quality through the elevation of the suspended solids and a loss in hydrocarbons from machinery. However, no impact on water quality will occur following the effective implementation of controlled mitigation measures to control elevated suspended solids levels and protect against fuel spills which have been outlined in this report. **No Change to Natura 2000 sites.**

### Air Emissions

No significant emissions are expected. Diesel exhaust from excavator and tractor will have a minor localised impact on air quality. **No Change to Natura 2000 sites.**

**Noise:** The noise levels in the immediately vicinity will increase during works due to the operation of machinery and completion of works. However, this will not have a significant effect on Lough Gill SAC qualifying interest species. Works will be conducted in daytime hours.

**No Change to Natura 2000 sites.**

### Reduction of Habitat

No significant loss of habitat is expected. The removal of silt from the slipway will be undertaken from the boat slipway and the effective implementation of mitigation measures will prevent the migration of elevated suspended solids to the greater body of Lough Gill and the reduction of key habitat available for QI species. **No Change to Natura 2000 sites.**

### Disturbance to Key Species

There is a risk of disturbance to White Clawed Crayfish that may have colonised the stone breakwater on which works are planned at Lough Gill SAC. A survey of the existing stone breakwater and the surrounding area within the work zone was performed by Woodrow Sustainable Solutions Ltd. in March 2022 to determine if White Clawed Crayfish are present was conducted on behalf of Inland Fisheries Ireland. This survey did not record the presence of crayfish in the stone breakwater. However, according to this report "There are areas of large boulders within the base of the breakwater where survey was not possible due to the size of these boulders. Optimal refuges for crayfish are present where these large boulders



exist. Also, the survey period being in April means that crayfish would be less active and may be in deeper areas of the lake as they tend to be more active and enter the shallows in the summer months." Therefore, a precautionary approach is required with the implementation of mitigation measures outlined in Section 11 of this report in order to prevent negative impacts on White-Clawed Crayfish.

**Potential for Minor Impact negated by mitigation measures**

**Habitat or Species Fragmentation**

There will be no significant change to protected habitats from the proposed works following the implementation of mitigation measures in section 11 of this report.

**Potential for Minor Impact negated by mitigation measures**

**Reduction in Species Density**

There will be no significant reduction in species density from the proposed works following the implementation of mitigation measures in section 11 of this report.

**Potential for Minor Impact negated by mitigation measures**

**Changes in key indicators of conservation value**

There will be no significant change in this respect from the proposed works following the implementation of mitigation measures in section 11 of this report.

**Potential for Minor Impact negated by mitigation measures**

## **12.2 Consideration of In-Combination Effects**

The potential in-combination effects of the proposed work on Lough Gill must be considered with potential impacts posed by other such plans and projects in the vicinity within the Lough Gill catchment. A cumulative impact may result from incremental changes caused by another past, present or foreseeable future actions combined together with the proposed IFI works.

The principle environmental risk posed by the works is a loss in water quality in the Lough Gill and downstream receptors.

Other works that may take place within the catchment of Lough Gill may also impact on water quality. Agriculture is the main land use within the catchment of the Lough Gill. Agricultural impacts on water quality from direct livestock access to Lough Gill and the landspeading of slurry and organic wastes as a fertiliser. Organic wastes and nutrients may directly enter Lough Gill and will also enter the lake through its main inflow river, The River Bonet.

Private enterprise such as commercial pig farming, forestry, house construction and local authority works such as roadworks within the catchment of the Lough Gill will also impact on the water quality of Lough Gill.

We can also expect commercial facilities in the area which discharge trade effluents and stormwater under licence into Lough Gill and its catchment. The mitigation measures detailed in section 10 of this NIS will prevent the Inland Fisheries Ireland works causing a detrimental impact on the water quality of Lough Gill and receptors further downstream. Effective implementation of these measures will ensure the works will not contribute to or cause on their own or in-combination with other works, detrimental effects on Natura 2000 sites.

The EC (2001) guidelines on the provision of Article 6 of the Habitats' Directive state that the phrase 'in combination with other plans or projects' in Article 3(3) of the Habitats Directive refers to the cumulative impacts due to plans or projects 'that are currently under consideration together with the effects of any existing or proposed projects or plans.'

Arterial Drainage Works may be carried out on watercourses within the Lough Gill catchment by the Office of Public Works to mitigate flood risk. These works may include the removal of silt from watercourses, the removal of in-stream vegetation and the enhancement of river banks. Such works have the potential to impact on downstream water quality. The works proposed by Inland Fisheries Ireland on Lough Gill also have the potential to impact upon water quality, however implementing the mitigation measures detailed within this Appropriate Assessment report will prevent the Inland Fisheries Ireland works causing a detrimental impact on the water quality of Lough Gill and receptors further downstream. Therefore, the works proposed by Inland Fisheries Ireland on Lough Gill will not contribute to or have an in-combination effect with arterial drainage works on water quality.

IFI may also plan to undertake similar works within the Lough Gill catchment and these works may have the potential to have in-combination or cumulative impacts on water quality with the works described within this Appropriate Assessment report. However, when mitigation measures to protect against the effects on water quality, as outlined in this report, are implemented, no significant cumulative or in-combination impacts are predicted from the works on Lough Gill in-combination with other planned IFI works.

A review of the Appropriate Assessment report for the Sligo County Development draft Plan 2017-2023 was performed. This Appropriate Assessment concludes that "The draft plan does not direct development within or near any Natura 2000 site without regard to compliance with the provisions of the Habitats Directive. There are no increased demands on existing water or wastewater infrastructure proposed within the draft Plan. On the basis of this assessment, it is concluded therefore, that no potential for impacts has been identified for any Natura 2000 site arising from the implementation of the draft plan"

The Strategic Environmental Assessment (SEA) of the Sligo County Development draft Plan 2017-2023 was also reviewed. Within this SEA a number of water quality policies are detailed and Water Quality Policy P-WQ-2 refers to the control of new developments in water catchment areas:

"P-WQ-2: Strictly limit and control new development in or near the catchment areas of water bodies, particularly salmonid rivers and those that are the source of the following drinking water supplies: Lough Gill"

Therefore, residential and commercial developments within County Sligo are not expected to have in-combination effects with the IFI works on Lough Gill at Hazelwood Demesne.

**No In-Combination Impact on Natura 2000 sites.**

### 13.0 Conclusion

Under Article 6(3) and (4) of the Habitats Directive, a precautionary approach to the Appropriate Assessment screening of projects and works should be taken. To keep in line with this approach, all identified impacts posed by works are viewed as having the potential to be significant unless appropriate control measures to reduce the potential impacts are implemented. Therefore, although the proposed works detailed in the report are not expected to have a negligible effect on the conservation interests of Lough Gill SAC, adherence to the mitigation measures outlined in section 11 of this report is required to ensure that this is the case.

Only the works detailed in section 3 of this report have been considered by this NIS and no additional works outside the scope of those described in section 3 of this report should be undertaken without further assessment of the conservation objectives of Lough Gill SAC.

The potential environmental and ecological impacts associated with the proposed works on Lough Gill are a localised loss in water quality due to an increase in the suspended solids concentration of waters immediate surrounding works and the direct disturbance of White-clawed crayfish due to re-instatement of the existing stone breakwater. It is expected that any potential threats will be negated following implementation of the mitigation measures outlined in section 11 of this report.



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29<sup>th</sup> April 2022

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**Appendix 1**

**Works vs NATURA 2000 location map**



**Cummeen Strand/Drumcliff Bay SAC**

**Cummeen Strand SPA**

**L. Gill SAC**

**Ballysadare Bay SPA & SAC**

**Wood SAC**

**Hydrological Pathway**



**Appendix 2**

**Barlow Contractors – Method Statement**

Hazelwood Amenity L Gill Co Sligo

# Method Statement

















Hazelwood Amenity 2019/2020  
L Gill  
Co Sligo

# Method Statement

2

<b>Contractor</b> Barlow Contractors Riverstown	Name: Ian Barlow	Address: Riverstown	Tel: 0872605818
			E-mail:.ie
<b>Project Name</b>	Hazelwood Amenity Maintenance Project		
<b>Description of the Task/Activity</b>	Repair breakwater and deepen sheltered launching area		
<b>Site Address/Location:</b>	Hazelwood Demense, Sligo	<b>Start Date/Time:</b>	24 <sup>th</sup> Sep 2019
		<b>Finish Date/Time</b>	12 <sup>th</sup> Oct 2019
<b>Personnel Involved</b>	<b>Name</b>	<b>Role/Trade</b>	
	Ian Barlow	Contractor	
	Declan Feeney	Project supervisor	
	Jimmy Frazer	IFI staff	
	Ciaran Jennings	IFI staff	
<b>Site Supervisor:</b>	Declan Feeney	<b>Tel:</b>	0872518215
<b>Safety Officer</b>	M Cusack	<b>Tel:</b>	
<b>Key Plant &amp; Tools (Attach Certification)</b>	12 T Track machine 01 No Tractor and trailer Signage (All plant will be serviced and maintained according to the instructor's handbook. Any equipment found to be defective is to be taken out of circulation immediately and returned for inspection and repair). (Under no circumstances is defective equipment to be used.)		
<b>Key Materials</b>	Rock Armour. This stone/rock for construction of breakwater will be lime stone and sourced locally. It will be washed prior to arrival on site..		
<b>Other Essential Equipment:</b>	(i.e. access platforms/winches/ladders, etc)  PPE for all staff		

# Method Statement

<b>PPE Required:</b>	REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE)								
	 SAFETY BOOTS	 HARD HATS	 SAFETY GLOVES	 HEARING PROTECTION	 EYE PROTECTION	 RESPIRATORY PROTECTION	 HI-VIZ		
	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>		
<b>Welfare and Emergency Procedures</b>	LIST HAZARDOUS SUBSTANCES & IDENTIFY RISKS BELOW								
	 EXPLOSIVES	 FLAMMABLE LIQUIDS	 OXIDISING LIQUIDS	 COMPRESSED GASES	 CORROSIVE	 ACUTE TOXICITY	 SKIN IRRITATION	 ASPIRATION HAZARD	 HAZARDOUS TO THE ENVIRONMENT
	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>
	STORAGE ARRANGEMENTS								
	<b>PART G – EMERGENCY PROCEDURES &amp; WELFARE REQUIREMENTS</b>								
FIRST-AID FACILITIES									
On Site/ IFI office									
NAME OF FIRST AIDER						PHONE			
D Feeny or J Frazer						0872518215 or 0872676708			
FIRST-AID BOX LOCATION									
On site/ IFI office									
LOCATION OF NEAREST HOSPITAL									
SLIGO GENERAL HOSPITAL									
WELFARE REQUIREMENTS									
Toilets available locally.									
<b>Specific Identified Residual Hazards:</b> (or refer to the task specific risk assessment(s)) (See attachment)	<ol style="list-style-type: none"> <li>1. Transporting rock to site</li> <li>2. Working in lake</li> <li>3. Slips and falls</li> <li>4. Bad Housekeeping</li> <li>5. Manual lifting and handling</li> </ol>								
<b>Specific Staff Training</b>	Safe passes Swift water rescue (IFI staff)								

## Method Statement

4

Sequence of Operations:  
(include sketches if required)

1. Inspect area to ensure that residents general public are not exposed to site risks
2. Cordon off work area
3. Erect signage at site.
4. All machinery will be disinfected prior to arrival on site and undergo following procedures
  - A. All plant will be in good working order prior to transport to sites (e.g. ensure no leaks are present).
  - B. All chemicals (e.g. diesel, oil, etc.) will be stored off sit.
  - C. Re-fuelling of plant and equipment will take place off site in lock up facility.
  - D. Visually inspect all equipment that has come into contact with the water for evidence of attached plant or animal material, or adherent mud or debris. This should be done before leaving the site each day.
  - E. Remove any attached or adherent material (fish, fish scales, vegetation and debris) before leaving the site eachday.
  - F. Ensure that all water is drained from plant or equipment, before transportation elsewhere.
  - G. High-pressure power hose will be used to clean all plant and equipment before bringing to site and before transporting elsewhere.
  - H. It is recommended to apply disinfectant, using the spray bottle from the 'disinfection box', to the undercarriage and wheels of the vehicle and trailer after steam cleaning or power hosing.
  - I. Motors should be flushed with a 1% solution of Virkon Aquatic or another proprietary disinfection product, or with water > 40 degrees C. Alternatively, a 5% solution (100 ml / 20 litre solution) of chlorine bleach should be used. Facilities will be provided at IFI stores countrywide to accommodate this operation.
  - J. Footwear should be dipped in or scrubbed with a disinfectant solution (e.g. 1% solution of Virkon Aquatic or another proprietary disinfection product) and thoroughly dried afterwards.
5. Unload track machine and move onto site
6. Bring Tractor and Trailer unit onto site
7. Inspect the site properties to assess their suitability to use machinery
  - a. Condition of the ground
  - b. Access to the site for the equipment
  - c. Traffic management
8. Inspect work area to ensure that operatives are not exposed to falls
9. First phase will be to reinstate breakwater
10. Material and rock will have to be brought to work site as and when required. No rock will be left unused at end of working day.
11. Breakwater will be constructed using dry stone/rock which will be washed prior to arrival onsite
12. Rock will be on suitable area adjacent existing breakwater for ease of use
13. Phase 2 will be the deepening of the sheltered area.
14. Area will be cordoned off to the general public.
15. Suitable/agreed measures will be put in place to reduce possibility of silt escaping from targeted area.ie sealing off the area to be excavated using sandbags, Terraum or similar stretched across opening of area. ...
16. Work will be done when water levels are low
17. Wind direction will be taken into account as Easterly breeze will help keep silted water within the general work area.
18. Track machine will excavate area and spoil removed by Tractor and Trailer unit to pre authorised site.
19. All materials will be removed and area cleaned when project completed

## Method Statement

5

<b>Temporary Supports and Props needed to facilitate the works:</b>	(if none, state none)  None
<b>Method of Access and Egress to the work area:</b>	(i.e. Ladders/MEWPS/Scaffold/Trestles/Step Ladder, etc)  Site is accessible from public road which runs along the site
<b>Fall Protection Measures:</b>	(i.e. Guard Rails/Toe Boards/Brick Guard/Safety Harnesses/Exclusion Zones, etc.)  First aid kit available on site  Throw rope as part of PPE and Life buoy to be available on site  Access and egress to be kept clear,  Appropriate signage  Limit access to the site while works are being undertaking  150N lifejackets to be worn during works  Helmets and High visibility jackets to be work by all on site  All unloading of Rock Armour to be supervised by competent person  Designate area for Rock Armour to be off loaded
<b>Spill Procedures</b>	All heavy equipment will carry spill kits at all times and operatives will be trained in their use
<b>Safety Awareness</b>	All IFI staff involved in this project and all contracted staff will be made familiar with all H&S requirements. The IFI safety statement, Contractors safety statement will be on site and relevant sections discussed and signed off on, prior to start of works. A tool box talk will be carried out on site with daily briefings on the days planned work. These talks will be signed off on a daily basis

# Method Statement

6

Prepared By: Ian Barlow	Date: 10 Sep 18	Signature:
Reviewed By: Inland Fisheries Ireland	Date: 15 <sup>th</sup> July 19	Signature:
Approved By (Agent or above):		
Contractor: Ian Barlow	Date:	Signature:
Reviewed by Project Supervisor Paul Condon	Date:	Signature:
Contractor:	Date:	Signature:

Risk Assessment for L Gill Project at Hazelwood Co Sligo		<p style="color: blue; font-weight: bold;">Please identify all specific hazards in the work area and match the appropriate measure to control the risk. Confirm control measure with a Risk factor Calculation.</p> <p style="color: blue; font-weight: bold;">Probability x Severity = Risk Factor</p>	
<b>PROBABILITY</b> Probable = 3 Possible = 2 Unlikely = 1	<b>SEVERITY</b> Critical = 3 Serious = 2 Minor = 1	<b>RISK FACTOR</b> 1-3 Low Risk 4 Medium Risk 6-9 High Risk	
<b>HAZARDS</b>	<b>RISK</b>	<b>CONTROL</b>	
• Manual Handling	• Back strain	<ul style="list-style-type: none"> <li>• Use track machine for lifting</li> <li>• Provide manual handling training to all staff 2 x 2 = 4</li> </ul>	
• Untidy Site	• Slips, trips and falls	<p>Good housekeeping to be employed. No Rock Armour to be left overnight. Tidy up of site to be performed at each evening. Any trip hazards to be either eliminated or removed.</p> <p>2 x 2 = 4</p>	
• Working at Lake Shoreline	<ul style="list-style-type: none"> <li>• Operative falling into the water</li> <li>• Public access and a member of the public falling into the River</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable barriers erected for operatives</li> <li>• Public access strictly prohibited</li> <li>• Suitably designed temporary works</li> <li>• Access to site limited to contractor and operatives</li> </ul> <p>1 x 3 = 3</p>	
• Environmental issues in relation to works	• Pollution	<p>.Dam off opening to lake</p> <p>1 x 2 = 2</p>	

## Method Statement

<ul style="list-style-type: none"> <li>• Heavy Machinery</li> </ul>	<ul style="list-style-type: none"> <li>• Track Machine, Tractor and Trailer Unit Rigid Lorry delivering Rock Armour</li> </ul>	<ul style="list-style-type: none"> <li>• High visibility vests to be worn at all times. Hard Hat and Goggles to be worn at all times. Follow protocol when approaching heavy machine operators</li> </ul> <p>1 x 3 = 3</p>
<ul style="list-style-type: none"> <li>• Noise</li> </ul>	<ul style="list-style-type: none"> <li>• Hearing loss</li> </ul>	<ul style="list-style-type: none"> <li>• Ear protection to be worn when close to loud machinery</li> </ul> <p>1 x 3 = 3</p>
<ul style="list-style-type: none"> <li>• Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>• Weils disease</li> </ul>	<ul style="list-style-type: none"> <li>• Gloves to be used when working. Suitable barrier wash to be provided for employees. Clean hands prior to eating or smoking.</li> </ul> <p>1 x 3 = 3</p>
<ul style="list-style-type: none"> <li>• Lifting Operations</li> </ul>	<ul style="list-style-type: none"> <li>• Fall or collapse of load</li> <li>• Untrained operatives</li> <li>• Operative been struck whilst loads are been moved.</li> </ul>	<ul style="list-style-type: none"> <li>- Trained and competent banks man to be assigned when lifting all loads.</li> <li>- Lifting equipment to be checked prior to use.</li> <li>- All plant to be used on site to be properly maintained and inspected and certified on a 12 monthly basis. Operators of plant and machinery to inspect plant on a weekly basis</li> <li>- Lifting attachments to be securely attached to the load when lifting. Never exceed SWL of Lifting equipment. Ensure all weights, lifting points and safe slinging procedures are known and adhered</li> </ul> <p>2 x 3 = 6</p>



# Method Statement

8



## TOOLBOX TALK



### No 1

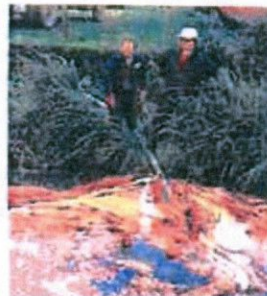
### SPILL CONTROL

#### WHAT?

Accidental releases of oils and chemicals from construction sites make up a large number of pollution incidents that occur each year.

Many spillages can be prevented. It is important that everyone on site knows how to control a spill to minimise its impact.

Would you know what to do?



#### WHY?

- ❑ **Minimise potential harm:** Spills spread very quickly and lead to environmental harm.
- ❑ **Avoid prosecution:** Fines and clean up costs can be expensive
- ❑ **Public relations:** Avoid negative publicity for the company and our clients and maintain our workload.

#### DO

- ✓ STOP WORK immediately
- ✓ If spillage is flammable, extinguish all possible ignitions.
- ✓ Identify the source of pollution and rectify the problem
- ✓ Contain the spillage – on land use earth/sand to construct a bund around the spill to stop it spreading. Use booms to contain oil spills that have already entered a watercourse
- ✓ Contact your Line Manager
- ✓ Put on appropriate PPE – typically rubber gloves
- ✓ Protect sensitive areas (e.g. watercourses or surface water drains – use drain covers or use earth/sand to construct a bund)
- ✓ Clean up the spill. Use absorbent granules/pads to mop up spills. Large pools of oil or spills which cannot be absorbed should be removed by gulper
- ✓ Dispose of all contaminated materials (soil/absorbent materials) correctly – those containing substances such as oil, diesel or paint will be hazardous waste. Ensure any contaminated water is taken to an appropriately licensed disposal site.
- ✓ Notify your line manager of actions taken

#### DON'T

- ✗ DON'T ignore it! STOP WORK and ACT immediately.
- ✗ DON'T hide the incident – ensure you report it and implement controls.
- ✗ DON'T ever hose a spill into the drainage system. Always use absorbent materials.



# Method Statement

## TOOLBOX TALK

9

CONSTRUCTION CONFEDERATION

Sharing Knowledge  
Building Better Practices

### No 2 WATER POLLUTION PREVENTION (FUEL & OIL)

#### WHAT?

A large number of oil related water pollution incidents occur each year.

Discharging fuel or oil or water containing fuel or oil into drains or watercourses is illegal

Many pollution incidents are from unbunded tanks and can easily be avoided by following simple guidelines.

#### WHY?

- ❑ **Avoid prosecution:** Your employer or you as an individual can be prosecuted for causing water pollution
- ❑ **Cost:** The costs of clean up far exceed those to put control measures in place
- ❑ **Damage to wildlife:** Long-term damage to watercourses including fish kills. Oil spreads rapidly - one gallon of oil can completely cover a lake the size of two football pitches

#### DO

##### General

- ✓ Store oils away from drains or watercourses
- ✓ Return oil and fuels to storage areas after use
- ✓ Locate oil stores away from areas of high vehicular movement to prevent accidental damage
- ✓ Bund individual 205 litre drums to 25%
- ✓ Supervise all fuel deliveries
- ✓ Lock oil stores when not in use
- ✓ Use drip trays under all static plant and during refuelling from mobile plant.

##### Bulk Storage

- ✓ Bund tanks and bowsers to 110%
- ✓ Ensure bunds are free from cracks and leaks
- ✓ Regularly empty bunds and drip trays of rainwater, which should be treated as contaminated
- ✓ Keep all hoses and pipe work within bunded area after use
- ✓ Keep a spill kit near to fuel and oil storage areas and refuelling areas
- ✓ Report any irregularities or incidents.

#### DON'T

- ✗ DON'T refuel or store oil within 10m of watercourses or surface water drains
- ✗ DON'T leave bunds and drip trays to overflow
- ✗ DON'T leave refuelling hoses outside of bunds after use
- ✗ DON'T use high pressure delivery systems when filling small containers
- ✗ DON'T hose down spills
- ✗ DON'T ignore spillages.



See also: Toolbox Talk No 1 – Spill control