



**Report supporting the
Natura Impact Statement of
Foreshore License (FC/15/30) in
Rathmullan, Co. Donegal**

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Executive Summary

The Marine Institute has been requested to review an application for foreshore activities (FC/15/30) for the repair and refurbishment of the viaduct and pierhead in Rathmullan Pier, Rathmullan, Co. Donegal. An Appropriate Assessment screening process, and a Natura Impact statement, have been compiled to consider whether the proposed activities are likely to significantly affect the QIs of the Natura 2000 sites in the zone of influence of the project, in view of their Conservation Objectives.

The proposed site overlaps with Lough Swilly SAC and Lough Swilly SPA and is adjacent to an additional 6 SACs (within 15km) and 12 SPAs (within 50km).

Following a Stage 1 AA Screening process, the following were screened in as QIs that the planned project has potential to overlap with or and have the potential to significantly affect, and so are carried forward for full assessment:

SAC QIs

- Lough Swilly SAC (002287)
 - Estuaries [1130]
 - *Lutra lutra* (Otter) [1355]

SPA QIs

- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Grey Heron (*Ardea cinerea*) [A028]
- Whooper Swan (*Cygnus cygnus*) [A038]
- Greylag Goose (*Anser anser*) [A043]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Mallard (*Anas platyrhynchos*) [A053]
- Shoveler (*Anas clypeata*) [A056]
- Scaup (*Aythya marila*) [A062]
- Goldeneye (*Bucephala clangula*) [A067]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Coot (*Fulica atra*) [A125]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Knot (*Calidris canutus*) [A143]
- Dunlin (*Calidris alpina*) [A149]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Greenshank (*Tringa nebularia*) [A164]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Common Gull (*Larus canus*) [A182]
- Sandwich Tern (*Sterna sandvicensis*) [A191]
- Common Tern (*Sterna hirundo*) [A193]
- Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]
- Wetland and Waterbirds [A999]

The potential impacts from the proposed project could arise during the construction and operational phase of the project. The designated QI could be impacted in relation to loss of habitat; sediment contamination; noise and disturbance; water quality; and hydrodynamics.

The potential impacts are assessed in the Natura Impact Statement and it has been objectively concluded following best available information, objective criteria, best scientific knowledge and expert judgement, that the proposed project will not pose a risk of adversely affecting (either directly or indirectly) the integrity of Natura sites, either alone or in combination with other plans and projects.

1 Introduction

1.1 Overview of this document

This is a report supporting the Appropriate Assessment of foreshore activities (FC/15/30) at Natura 2000 site Lough Swilly SAC (site code 002287) and Lough Swilly SPA (site code 004075).

This report is to consider if the proposed activities are likely to adversely affect the Qualifying Interests (QIs) of Natura 2000 sites in view of their Conservation Objectives (COs), and any adjacent sites, individually or in combination with existing or planned activities. This is achieved following assessment process outlined in this document. If there is potential for the activities considered to likely, significantly affect QIs and their conservation features, they are carried forward for a Stage 2 Appropriate Assessment, which considers the impacts on the integrity of the Natura site with respect to the sites conservation objectives, and is considered on a cumulative basis with other activities and other potentially disturbing activities.

1.2 Legislative Context

Articles 3 - 11 of the European Community (EC) Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the **Habitats Directive**¹) provide the legislative means to protect habitats and species of Community interest through the conservation of an EU-wide network of protected sites, known as **Natura 2000** sites². The Habitats Directive was originally transposed into Irish law by the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94 of 1997). The 1997 Regulations were subsequently replaced by the *European Communities (Birds and Natural Habitats) Regulations 2011*³, as amended (referred to as the *2011 Birds and Natural Habitats Regulations*). Natura 2000 sites are referred to as European sites in these Regulations.

The terms Natura 2000 sites and European sites are synonymous - the term Natura 2000 sites is used in this report. Natura 2000 sites in Ireland form part of the Natura 2000 European network of protected sites. SACs are designated due to their significant ecological importance for habitats and for species protected under Annex I and Annex II respectively of the Habitats Directive. SPAs are designated for the protection of populations and habitats of bird species protected under the Birds Directive, EC 79/409/EEC⁴. The National Parks and Wildlife Service (NPWS) are the competent authority for the management of Natura 2000 sites in Ireland.

The specific named habitats and/or (non-bird) species for which an SAC or SPA are selected are called the Qualifying Interests (QI), of the site. The specific named bird species for which a SPA is selected is called the 'Special Conservation Interests' (SCI). However, in practice, the common terminology of QI applies also to SCI. The term QI is used throughout this report.

Under Article 6(3) of the Habitats Directive any plan or project likely to significantly affect the integrity of a Natura 2000 site must be subject to an Appropriate assessment (AA). The AA focuses on the likely significant effects of a plan or project on a Natura 2000 site and considers the implications for the site

¹ https://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

² https://ec.europa.eu/environment/nature/natura2000/index_en.htm

³ <https://www.irishstatutebook.ie/eli/2011/si/477/made/en/print>

⁴ https://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm

in view of its Conservation Objectives (COs). Every Natura 2000 site has COs which are set out by the NPWS.

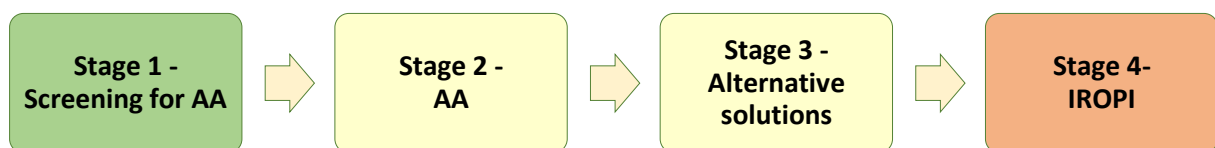
The licensing authority determines applications for foreshore licences and are also the competent authority responsible for undertaking AA of applications. As part of the process, they must determine if the proposed activities are likely to significantly impact the Conservation Status of QIs and the integrity of the Natura 2000 site. They must base their determination on an AA and they are also responsible for ensuring that an AA is carried out.

1.3 Appropriate Assessment (AA) Process

The requirement for an AA derives directly from Article 6(3), which outlines the decision-making tests for considering plans and projects that may have a significant effect on a Natura 2000 site. No definition of the content or scope of AA is given in the Habitats Directive, but the concept and approach are set out in EC guidance ⁵.

The *Guidance on Appropriate Assessment of Plans and Projects in Ireland* document⁶ published by the Department of Environment, Heritage and Local Government in 2009, sets out how an AA of plans or proposals in Natura 2000 sites in Ireland should be carried out in alignment with EC guidance. In 2021, the Office of the Planning Regulator (OPR) published a practice note on AA Screening⁷, which provides guidance on how a planning authority should screen an application for planning permission for AA.

The *Guidance on Appropriate Assessment of Plans and Projects in Ireland* document promotes a four-stage process to complete the AA. The four stages are:



The key procedures involved in completing the first two stages of the AA process are described below. Stage 3 and Stage 4 (Imperative reasoning of overriding public interest) are not applicable here.

1.3.1 Stage 1: Appropriate Assessment Screening

Stage 1 AA Screening is the process that addresses and records the reasoning and conclusions in relation to whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of the site's COs. If the effects, on the basis of objective information, 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 Appropriate Assessment*. Screening should be undertaken without the inclusion of mitigation. The triggers for appropriate assessment screening are based on a 'likelihood' (read as 'possibility') of a potential significant effect occurring and not on certainty. This test is based on the precautionary principle⁸. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no effect.

⁵ EC 2018. Guidance on Aquaculture and Natura 2000 Sustainable aquaculture activities in the context of the Natura 2000 Network [Link](#)

⁶ DEHLG, 2009. Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. [Link](#)

⁷ OPR - Office of Planning Regulator (2021). Appropriate Assessment Screening for Development Management. March 2021. 43pp [Link](#)

⁸ OPR - Office of Planning Regulator (2021). Appropriate Assessment Screening for Development Management. March 2021. 43pp [Link](#)

1.3.2 Stage 2: Appropriate Assessment

This stage considers whether the plan or project, alone or in combination with other projects or plans, will adversely affect the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. This stage requires a targeted scientific examination of the plan or project and the relevant Natura 2000 sites, to identify and characterise any possible implications for the site in view of the site's QIs and COs, taking account of in combination effects.

The sensitivity of identified QIs in relation to the proposed activities is assessed and the significance of any identified adverse effects is then determined. If adverse effects are determined to be likely, then their scale, magnitude, intensity, and duration are considered in light of the COs and relevant guidance documents. If the assessment is negative, then recommendations on mitigation measures or on licensing decisions will be made.

1.4 Structure of Report

This report provides:

1. **Introduction** - an outline of the legislative context and the processes.
2. **Proposed project Background** - providing details of the activity proposed.
3. **Stage II Appropriate Assessment (Natura Impact Statement)** - details the assessment of impacts on relevant Natura sites.
4. **Conclusions** – summary of the findings of the screening and assessment process.

1.5 Data sources

This process and report rely on data and information from a broad and diverse range of sources. Some of the key sources of information that are generally viewed, consulted and/or utilised to inform the screening and AA processes are listed below. Others are consulted as required, and significant sources are cited in the reports.

Reference documents and Sources of information used to inform this process include:

- The Application
- National Parks & Wildlife (NPWS) protected site information [Link](#)
- NPWS conservation objectives [Link](#) and nature reserves [Link](#)
- NPWS Guidance documents [Link](#)
- Targeted scientific studies
- Primary research literature
- Grey literature, reviews and report documents
- Expert opinion
- Direct queries to applicants through licensing authority
- Foreshore Act, 1933 [Link](#)
- Ireland's Marine Atlas [Link](#)
- DHPLG Foreshore licencing database [Link](#)
- DAFM website [Link](#)
- EPA GeoHive [Link](#)
- EPA maps tool [Link](#)
- Status of EU Protected Habitats and Species in Ireland – Article 17 (Habitats & species) [Link](#)

- Birdwatch Ireland [Link](#)
- Bird status and trends Article 12 web tool - [Link](#)
- Marine Life Information Network [Link](#)
- EPA Catchments.ie dashboard [Link](#)
- Ordnance Survey of Ireland (OSI) [Link](#)
- National Biodiversity Data Centre [Link](#)
- European Environmental agency [Link](#)
- Appropriate Assessment Screening for Development Management. March 2021; Office of Planning Regulator (OPR, 2021). [Link](#)
- Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive [Link](#)
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. NPWS, 2009 – updated in 2010 with reference to Natura Impact Statement. (DEHLG, 2009) [Link](#)
- NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Edited by: Deirdre Lynn and Fionnuala O’Neill [Link](#)
- NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Edited by: Deirdre Lynn and Fionnuala O’Neill [Link](#)
- NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Edited by: Deirdre Lynn and Fionnuala O’Neill [Link](#)
- The European ecological network “Natura 2000” and the appropriate assessment for projects and plans under Article 6 (3) of the Habitats Directive. Nature Conservation, 23. Möckel, S., 2017. [Link](#).
- EC Article 6 - Managing and protecting Natura 2000 sites [Link](#)
- EC Management of Natura 2000 sites: Best Practice [Link](#)
- EC 2000. Managing Natura 2000 sites: The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg. [Link](#)
- EC 2002. Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg. [Link](#)
- EC 2006. Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg. [Link](#)
- Federal Agency for Nature Conservation for the FFH impact assessment [Link](#)
- Marlin.ac.uk [Link](#)
- AMBI Sensitivity Scale [Link](#)
- MarESA [Link](#)
- Open Street Maps [Link](#)
- Google Earth and Bing aerial photography

2 Proposed Project Background

The Marine Institute has been requested to review an application for foreshore activities to refurbish and repair the Rathmullan Pier (viaduct and pierhead) in Rathmullan, Co. Donegal (Figure 1).

This section identifies the proposed activities related to the development to be considered as part of the assessment exercise in this report, and then considers whether these activities are likely to adversely affect the QIs of the Natura 2000 sites, in view of their Conservation Objectives (COs). These activities are then considered in-combination with other likely disturbing activities.

2.1 Details of Proposed Foreshore Activities

The following methodology text has been synthesised from the applicant's supplied documentation. The proposed project is for the refurbishment and repair of the access viaduct in Rathmullan Pier in Co. Donegal. Rathmullan port is the only facility along the northern coast of Ireland that can provide sheltered berth for vessels up to 5,000 T and up to 100m in length with draught up to 8m. The pier is used year round by various users, including: the Irish Naval Service vessels; the ILV Granuaile; Vivier crab vessels; pelagic vessels, and it has been designated to permit landings and transshipment operations of fishery products for third country vessels. There is a seasonal ferry between Rathmullan and Buncrana, and the viaduct provides access to seasonal marina facilities for summer angling charters. The port is used for tourist and leisure industries. The site is located in a bivalve mollusc production area. The Swilly ferry will not be affected except for construction traffic on approach road. Fish landings will require alternative arrangements which is suggested to move to Buncrana.

The pierhead is accessed by a 120m viaduct. The current dimensions of the project site are as follows: the pierhead is 43m long; the viaduct deck slab is 152mm thick; and spans 1.35m between beams. A recent condition report (2021) confirmed the pier and the 'approach viaduct' section are in need of repair. The recommendation from the condition report highlighted that due to increasing deterioration of the pier structure (namely to the beams and decking on the viaduct) protection measures are needed to protect from possible falling concrete under the bridge along the beach section. The report noted that the previous recommendations from 2008 found that the viaduct was in a poor state of repair and a 3 T restriction was imposed until repair. The foreshore application proposes the refurbishment of the access viaduct and removal of the current 3 T weight limit.

The process will begin from the pierhead working back towards the shore - the decking will be removed and new bridge beams and concrete surface installed. This will be done in section by section to reduce the extent of protection platform and minimise possible damage to the new structure. The bridge will be power washed with clean water prior to concrete repairs. Rapid setting concrete and mortar products will be used for specific repair areas like supporting columns; these will be applied by hand. Water management provision will be in line with environmental requirements. Exposed steel reinforcement will be cleaned by wet blasting and Nitoprime Zincrich Plus (anti-corrosion primer will be applied). The bridge surface will be rendered with Rosroc Renderoc ST05 (anti-carbonation coating), applied by hand.

Main deck beams will be sawn using diamond wire sawing and replaced with precast concrete beams with a crane. Concrete screed and upstand beams will be poured on top of the precast tee beams. Joints between tee beams will be sealed to prevent seepage of concrete.

The piles of the pier are shown to be driven to rock (from schematics). The existing kiosk, defective ladders and concrete handrails will be removed and replaced with new stainless steel kiosk, ladders and handrails. Structural repairs of defective concrete and steel will be done for both viaduct and pierhead. New ducts and services will be provided from embankment to the pierhead.

The viaduct portion of the project will involve the isolation of the water mains, street lighting and internet from the embankment. The services, existing handrails and store will be removed and reinstalled. The existing deck and primary beams will be removed and disposed. New pre-stressed beams and new concrete decking will be installed.

The pierhead will also be refurbished. Existing crash barriers and rails will be removed and replaced by new safety barriers. Existing concrete lamp posts at Pierhead will be removed and replaced with new galvanised steel lamp posts.

Scaffolding will fully encapsulate the viaduct to contain any debris from the demolition process. The working platform will be double boarded using plastic boards. Plastic sheeting (polythene 1000 gauge) will be installed to ensure all runoff from the hydro-demolition process will enter the mortar tubs (located at the center of each span of scaffold). Water captured in the mortar tubs will be pumped through a silt buster (to remove silt particles) and then discharged onto a tanker located at the entrance of the pier for removal to a licensed facility. The scaffold will be sheeted with monoplex to prevent any other debris from entering the lough. After each shift the scaffold will be cleaned and debris from cleaning will be disposed of in the onsite skip. The skip will be disposed of by a licensed skip company.

Normal working hours are expected. To comply with environmental requirements, all refueling of plant and equipment will be carried out in the site compound near the entrance to the viaduct. Two spill kits will be available on site and to hand during all refuelling. Plant machinery will not be permitted to enter the water of Lough Swilly at any time during the works. Appropriate biosecurity measures will be employed for any scaffolding poles protruding into the sea below the works area. An emergency boat will also be available and accessible from the scaffold at all times for the duration of the works.

A comprehensive list of potentially hazardous materials will be developed by the awarded contractor and any subcontractors. In the Safety & Health documentation the following potentially hazardous materials and processes, likely to be included in the work, were identified:

- Concrete, concrete additives and curing agents
- Removal of concrete
- Mortar repairs of concrete
- Saw-cutting of concrete
- Surface protection of concrete
- Hydro-chloric acid
- Site welding
- Fuel
- Lubricating oils (only environmentally friendly oils to be used on this site).
- Petrochemicals
- Construction chemicals, sealants, jointing materials, etc.

3 Stage 1 Screening Conclusions

The Stage 1 AA Screening has been undertaken by the Marine Institute and is detailed in the *Report supporting the Appropriate Assessment Screening of Foreshore License (FC/15/30) in Rathmullan, Co. Donegal*, dated May 2023. This report documented the Stage 1 screening process of the Appropriate Assessment of this proposed activity as specified under the Habitat Directive (European Community (EC) Directive 92/43/EEC).

The proposed site overlaps with Lough Swilly SAC and is adjacent to an additional 6 SACs (within 15km) and 13 SPAs (within 50km).

Based on the location, nature and zone of impact of potential effects, and the best scientific information available, this screening assessment has identified QIs or associated conservation features in the Natura sites that the proposed activities will spatially overlap with or has the possibility to significantly affect.

On the basis that likely significant effects of the proposed activity on the European sites cannot be ruled out, the following QIs are brought forward for Stage 2 Appropriate Assessment

SAC QIs

- Estuaries [1130]
- *Lutra lutra* (Otter) [1355]

SPA QIs

- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Grey Heron (*Ardea cinerea*) [A028]
- Whooper Swan (*Cygnus cygnus*) [A038]
- Greylag Goose (*Anser anser*) [A043]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Mallard (*Anas platyrhynchos*) [A053]
- Shoveler (*Anas clypeata*) [A056]
- Scaup (*Aythya marila*) [A062]
- Goldeneye (*Bucephala clangula*) [A067]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Coot (*Fulica atra*) [A125]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Knot (*Calidris canutus*) [A143]
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- Redshank (*Tringa totanus*) [A162]
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- Common Gull (*Larus canus*) [A182]
- Sandwich Tern (*Sterna sandvicensis*) [A191]
- Common Tern (*Sterna hirundo*) [A193]
- Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]
- Wetland and Waterbirds [A999]

4 Appropriate Assessment (Natura Impact Statement)

This NIS has been prepared as it was not possible at the Screening for AA stage to rule out, as a matter of scientific certainty, that the proposed project will not have a likely significant effect on Natura sites. It will examine and analyse, in light of the best scientific knowledge, how the proposed operations could impact on the Qualifying Features of Natura sites and whether the predicted impacts would adversely affect the integrity of protected sites.

The potential ecological effects of activities on the CO for the site relate to the physical and biological effects of structures and human activities on designated species, intertidal and sub-tidal habitats and invertebrate communities, and biotopes within those broad habitat types. The overall effect on the conservation status will depend on the spatial and temporal extent of activities during the lifetime of the proposed plan and the nature of each of these activities in conjunction with the sensitivity of the receiving environment.

On the basis that likely significant effects of the proposed activity on the European sites cannot be ruled out, the following QIs are brought forward for Stage 2 Appropriate Assessment.

SAC QIs

- Estuaries [1130]
- *Lutra lutra* (Otter) [1355]

SPA QIs

- Great Crested Grebe (*Podiceps cristatus*) [A005]
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- Wetland and Waterbirds [A999]

4.1 Assessment Methodology

The NPWS has provided in their guidance notes, specifically that relating to marine habitats, detail informing the process and methodology.

4.1.1 Annex I Habitats

For the Annex I habitats and their constituent community types, potential effects are identified in relation to, first and foremost, spatial overlap. Subsequent disturbance and the persistence of disturbance are considered.

4.1.1.1 Sensitivity

The sensitivity of a species to a given pressure is the product of the intolerance of the species to a particular pressure, and the time taken for its subsequent recovery. Intolerance is the susceptibility of the species to damage, or death, from an external factor, and recoverability is the ability to return to a state close to that which existed before the activity or event caused change. Life history and biological traits are important determinants of sensitivity of species to pressures.

The following guiding principles broadly underpin the analysis and conclusions of the species and habitat sensitivity assessment:

- Sensitivity of certain taxonomic groups to physical pressures is expected to be generally high or moderate because of their form and structure⁹.
- Sensitivity is expected to be high for species with large bodies and with fragile shells or structures, but low for those with smaller body size. Body size¹⁰ and fragility are regarded as indicative of a high intolerance to physical abrasion. However, even species with a high intolerance may not be sensitive to the disturbance if their recovery is rapid once the pressure has ceased.

The sensitivities of the community types (or surrogates) described within a SAC to pressures are identified with ongoing reference to MarLIN ([link](#)) and MarESA programmes ([link](#)).

4.1.1.2 Structure and Function

Structure relates to the characterising species of a community, or the collection of animals that make up that community. Function is considered the process whereby the animals living on and in the seafloor, by virtue of their activities, influence benthic dynamics which is reflective of system health^{11,12}). Such activities or traits are considered in relation to, among others, the organisms feeding type (e.g., scavenger, filter, deposit feeders), mobility, body size, and ability to bioturbate (i.e. introduce oxygen into the sediment). All such traits can result in the removal or conversion of organic matter to biomass (i.e. secondary production). The structure of a community can be dynamic, while still retaining the function.

⁹ Roberts, C., et al., (2010) Review of existing approaches to evaluate marine habitat vulnerability to commercial fishing activities. Report to the Environment Agency from the Marine Life Information Network and ABP Marine Environmental Research Ltd. Environment Agency Evidence Report: SC080016/R3. Environment Agency, Peterborough. Available from <https://www.marlin.ac.uk/publications>

¹⁰ Bergman, M.J., & Santbrink, J.W. (2000). Mortality in megafaunal benthic populations caused by trawl fisheries on the Dutch continental shelf in the North Sea in 1994. *Journal of Materials Science*, 57, 1321-1331. 10.1006/JMSC.2000.0917

¹¹ Bolam, S.G., et al., (2002). Diversity, Biomass, and Ecosystem Processed in the Marine Benthos. *Ecological Monographs*, 72: 599-615. [https://doi.org/10.1890/0012-9615\(2002\)072\[0599:DBAEP\]2.0.CO;2](https://doi.org/10.1890/0012-9615(2002)072[0599:DBAEP]2.0.CO;2)

¹² Solan, M., et al., (2004). Extinction and Ecosystem Function in the Marine Benthos. *Science*. 306: 1177-1180. <https://doi.org/10.1126/science.1103960>

There may be persistent disturbance as a result of an activity which may result in a response or change to the structure of the community type, it is expected that (some level of) function will be retained. However, by virtue of the fact that the composite species (i.e. structure) may change, the result is considered a disturbance. The confidence around the measure of spatial overlap is considered high because published literature and monitoring outputs identifies that effects are, for the most part, confined to the footprint of the activity in question.

4.1.1.3 *Disturbance*

Disturbance, in this instance, is meant as that which leads to a change in the characterising species (structure), as listed in the Conservation Objective guidance of the constituent habitat or marine community types. The likelihood of change depends on the sensitivity of the characterising species to the activities in question.

Such disturbance may be temporary or permanent, in the sense that change in characterising species may recover to a pre-disturbed state or may persist. The degree of change is likely a function of the sensitivity of the receiving environment to organic loading, which in turn may be influenced by hydrodynamic conditions in addition to the density of the organisms in culture at the site.

4.1.1.4 *Persistence*

A persistent activity is considered one that occurs with high frequency and/or high intensity, or an activity that occur frequently and throughout the year. If the activities are persistent and the receiving community has a high intolerance to the activity (i.e., the characterising species of the communities are sensitive and consequently impacted) then such communities could be said to be persistently disturbed.

4.1.1.5 *Recoverability*

Recoverability of species depends on biological traits¹³ such as reproductive capacity, recruitment rates and generation times. Species with high reproductive capacity, short generation times, and high mobility or dispersal capacity may maintain their populations even when faced with persistent pressures; but such environments may become dominated by these (r-selected) species.

Slow recovery is correlated with slow growth rates, low fecundity, low and/or irregular recruitment, limited dispersal capacity and long generation times. Recoverability, as listed by MarLIN, assumes that the impacting factor has been removed or stopped and the habitat returned to a state capable of supporting the species or community in question. The recovery process is complex and therefore the recovery of one species does not signify that the associated biomass and functioning of the full ecosystem has recovered^{14,15}.

For persistent pressures, recovery capacity may be of little relevance except for species or habitats that may have extremely rapid (days or weeks) recovery capacity or whose populations can reproduce and recruit in balance with population damage caused. In all but these cases, and if sensitivity is moderate or high, then the species or habitats may be negatively affected and will exist

¹³ Tillin, H.M., et al. (2006) Chronic bottom trawling alters the functional composition of benthic invertebrate communities on a sea-basin scale. *Marine Ecology Progress Series*, 318: 31-45. <https://doi.org/10.3354/meps318031>

¹⁴ Anand, G. and Ward, P.T. (2004), Fit, Flexibility and Performance in Manufacturing: Coping with Dynamic Environments. *Production and Operations Management*, 13: 369-385. <https://doi.org/10.1111/j.1937-5956.2004.tb00224.x>

¹⁵ Hall, K., Paramor, O.A.L., Robinson L.A., Winrow-Giffin, A., Frid C.L.J., Eno, N.C., Dernie, K.M., Sharp, R.A.M., Wyn, G.C. & Ramsay, K. 2008. Mapping the sensitivity of benthic habitats to fishing in Welsh waters- development of a protocol. CCW [Policy Research] Report No: [8/12], 85pp.

in a modified state. Such interactions between activities and species, or habitat, or community represent persistent disturbance. They become significantly disturbing if more than 15% of the community is thus exposed.

In the case of episodic pressures (i.e. activities that are seasonal or discrete in time) both the intolerance and recovery components of sensitivity are relevant. If sensitivity is high but recoverability is also high relative to the frequency of application of the pressure, then the species, habitat, or community will be in favourable conservation status (FCS) for at least a proportion of time.

4.1.1.6 *Significance*

The significance of adverse effects is determined, on the basis of scientific studies, on likely impacts of proposed activities on conservation features allied with CO guidance for constituent community types. The guidance is scaled relative to the anticipated sensitivity of habitats and species to disturbance by activities. Some activities are deemed to be wholly inconsistent with long term maintenance of certain sensitive habitats while other habitats can tolerate a range of activities.

For the practical purpose of management of seabed habitats, other than sensitive habitats such as Maërl-dominated communities, a 15% threshold of overlap between a disturbing activity and the community type is established in the NPWS guidance¹⁶. Below this threshold, disturbance is deemed to be non-significant. Where disturbance (continuous or ongoing) is greater than 15% of the defined area of Habitat QI or Marine Community Type, it is deemed to be significant.

For the assessment, the 15% threshold:

- applies to the habitats or constituent community types that are overlapped by disturbing activities,
- and is considered in-combination with all other activities,
- and is considered cumulatively with all other likely disturbing activities.

To this end, it would be important to identify, as much as practicable, other such activities in the relevant SAC. Figure 3 shows a schematic outlining the determination of significant effects on marine habitats and marine community types.

¹⁶ NPWS (2013) Rutland Island and Sound SAC (site code: 002283) Conservation objectives supporting document- Marine Habitats and Species. Department of Environment, Heritage and Local Government (Link)

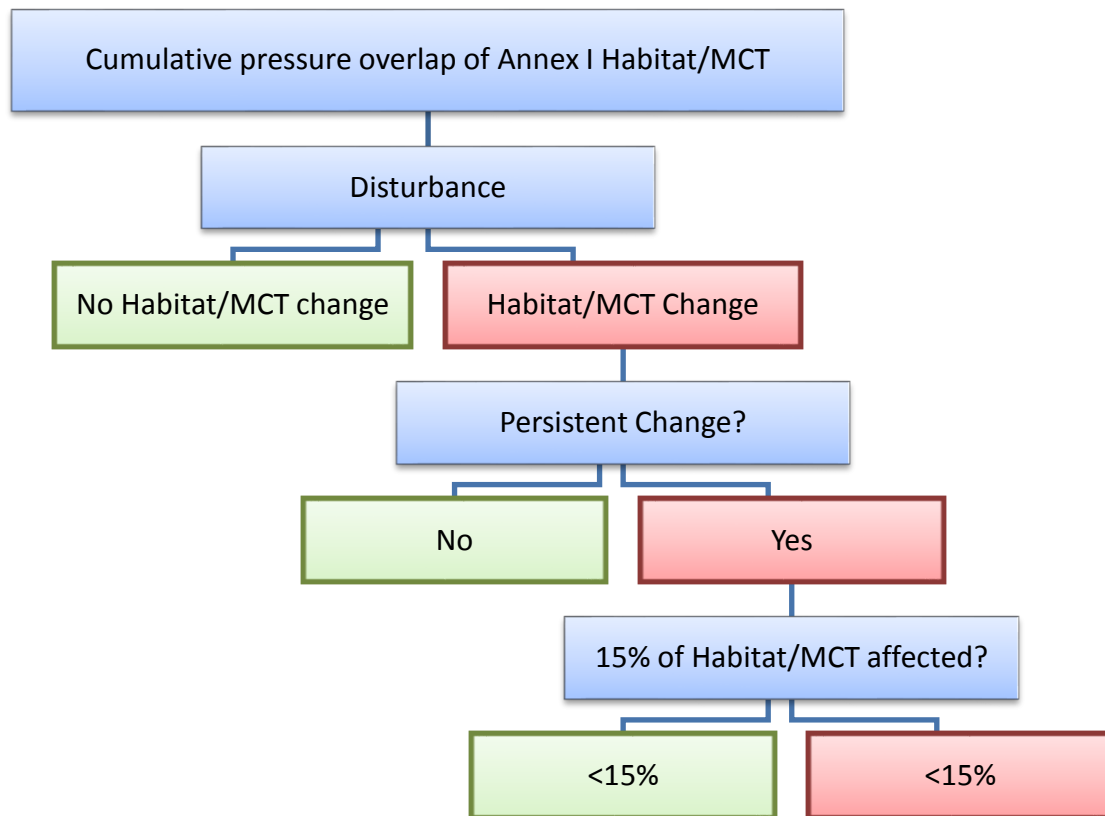


Figure 3 Schematic outlining the determination of likely significant effects on habitats and marine community types (MCT) (following NPWS guidelines).

4.1.1.7 The Process

Where available, the sensitivities to pressures are identified for the:

- community types (or surrogates) - described within a SAC.
- species which are characteristic of benthic communities - as listed in the Conservation Objective supporting document.

For the Annex I habitats and their constituent community types, potential effects are identified in relation to, first and foremost, spatial overlap. Subsequent disturbance and the persistence of disturbance are considered as follows:

- The sensitivity of a community to a given pressure.
- The conservation of functionality of the community.
 - It is expected, in spite of the potential change in characterising species, that certain functions are retained by the benthic communities, such that effects deriving from the activities are alleviated
- The degree to which the activity will disturb the habitat.
 - While there may be persistent disturbance as a result of an activity which may result in a response or change to the structure of the marine community type, it is expected that (some level of) function will be retained.
- The persistence of the disturbance in relation to the intolerance of the community.
 - If the activities are persistent and the receiving community has a high intolerance to the activity, then such communities could be said to be persistently disturbed.

- The ability of a community to recover from disturbance.
- The significance of the disturbance on the community.
 - In the event that disturbance is greater than 15% of the defined area of Habitat QI or Marine Community Type, it is deemed to be significant.

No activity is likely to be allowed or to result in the total exclusion or extirpation of marine community type within the SAC. In addition, overlap on those, mostly biogenic habitats defined as sensitive marine community types (e.g., maërl, seagrasses) is not considered acceptable, given the sensitivity of these communities to bioturbations.

4.1.1.8 Community Complexes

It must be noted that the NPWS, in their guidance notes, have acknowledged that given the wide range of community types that can be found in marine environments, the application of conservation targets to these would be difficult. On this basis, they have proposed broad community complexes as management units. These complexes (for the most part) are very broad in their description and do not have clear surrogates which might have been considered in targeted studies and thus reported in the scientific literature. On this basis, the confidence assigned to likely interactions of the community types with anthropogenic activities are by necessity relatively low, with the exception of community types dominated by sensitive taxa, such as Maërl and Zostera.

4.1.1.9 Sources

This assessment report refers to a number of sources of information in assessing the sensitivity of the characterising species of the community types recorded within the habitat QIs. A series of reviews commissioned by the Marine Institute which identify habitat and species sensitivity to a range of pressures that are likely to result from aquaculture and fishery activities are utilised¹⁷. These reviews draw from the broader literature, including the MarLIN Sensitivity Assessment¹⁸, the AMBI Sensitivity Scale¹⁹, FEAST²⁰ and other primary literature. Subsequent literature and reports also provide more recent sources of information on likely interactions^{21,22,23}.

4.1.2 Annex II Species and Birds

For the Annex II species and birds potential effects are identified in relation to potential impacts for the proposed activity and if there is a potential for an adverse effect on any of the QIs/SCI of the Natura sites in view of their conservation objectives. With the general aim being to maintain or restore the favourable conservation status of species of community interest, the following impacts are considered.

¹⁷ABPMer. Reports 2013. Tools for appropriate assessment of fisheries and aquaculture activities in Marine and Coastal Natura 2000 sites. Reports I to VII. Marine Institute, Ireland [Link](#)

¹⁸ <https://marlin.ac.uk/>

¹⁹ Borja, A., Franco, J. & Pérez, V. 2000. A marine biotic index of establish the ecological quality of soft-bottom benthos within European estuarine and coastal environments. *Marine Pollution Bulletin*. 40: 1100 – 1114.

²⁰ <http://www.marine.scotland.gov.uk/FEAST/Index.aspx>

²¹ Tyler-Walters, H. and Arnold, C., 2008. Sensitivity of Intertidal Benthic Habitats to Impacts Caused by Access to Fishing Grounds. Report to Cyngor Cefn Gwlad Cymru / Countryside Council for Wales from the Marine Life Information Network (MarLIN). Marine Biological Association of the UK, Plymouth.

²² Tyler-Walters, H., Tillin, H.M., d'Avack, E.A.S., Perry, F., Stamp, T., 2018. Marine Evidence-based Sensitivity Assessment (MarESA) – A Guide. Marine Life Information Network (MarLIN). Marine Biological Association of the UK, Plymouth, pp. 91. [Link](#)

²³ Tyler-Walters, H., Williams, E., Mardle, M.J. & Lloyd, K.A., 2022. Sensitivity Assessment of Contaminant Pressures - Approach Development, Application, and Evidence Reviews. MarLIN, Marine Biological Association of the UK, Plymouth, pp. 192. [Link](#)

- Impact to the habitat extent so that there is sufficiently large habitat to maintain its populations on a long-term basis.
- Impact to the ability for the species to maintain its population dynamics on a long-term basis as a viable component of its natural habitats.
- Impact to the structure and functions which are necessary for long-term maintenance of the species.
- Impact to the natural range of the species.
- Impact to the favourable conservation status of species.

To assess the effects on the integrity of the site, it is considered²⁴ if the plan or project has the potential to:

- Hamper or cause delays in progress towards achieving the site's conservation objectives.
- Reduce the area, or quality, of protected habitats of protected species present on the site.
- Reduce the population of the protected species significantly present on the site.
- Result in disturbance that could affect the population size or density or the balance between species.
- Cause the displacement of protected species significantly present on the site and thus reduce the distribution area of those species in the site.
- Result in a fragmentation of habitats of species.
- Result in a loss or reduction of key features, natural processes or resources that are essential for the maintenance or restoration of species in the site.
- Disrupt the factors that help maintain the favourable conditions of the site or that are needed to restore these to a favourable condition within the site.
- Interfere with the balance, distribution and density of species that are the indicators of the favourable conditions of the site.

Spatial overlap, and subsequent disturbance and the persistence of disturbance are considered.

4.1.2.1 *The Process*

For the Annex II species and birds the CO, along with their attributes and targets are identified. Information on the populations present within the Natura site, their distribution and activities within the site are identified, where available, or information on their likely interactions with the Natura site are detailed.

Potential effects are considered in relation to the QI and the conservation objectives, considering if the pathway of connectivity between the QI and the sources of potential impacts associated with the activity is significant to cause adverse effects. Multiple factors are considered depending on the species and their behaviours, but elements that are generally considered include: spatial overlap; distance to proposed activities, potential of the project to effect suitable habitat; the likelihood of interactions between the species and the activity; persistence of disturbance; the degree to which the activity will disturb the habitat; the significance of the disturbance on the community.

²⁴ European Commission, DGEV, Guidance document on assessment of plans and projects in relation to Natura 2000 sites : a summary, Publications Office of the EU, 2022 [Link](#)

4.2 Potential Impacts of the Proposed Development

As described in Assessment of Activities in this report, this project involves the repair of the viaduct and pierhead at Rathmullan Pier, Co. Donegal. The section considers the potential significant impactors from the project.

4.2.1 Loss of Habitat

The footprint of the proposed development is located at the edge of the Lough Swilly Coast SAC (002012). The proposed development site has a physical footprint of approximately confined to the current pier area. As this project is the repair of the viaduct and pierhead there will be no additional structures to increase the current physical footprint and therefore there will not be a direct loss of marine habitat within the SAC.

4.2.2 Sediment Contamination and Impacts on Water Quality

Concrete or sediment may discharge into the water column during the construction phase of the project. Escape of sediment has the potential to release contaminants, such as silt, hydrocarbons or other chemicals, or spillage from machinery. This can pose a risk to water quality and habitats, through increased turbidity in water reducing light penetration and interfere with feeding of aquatic organisms (particularly suspension or filter feeders), as well as containing potentially harmful pollutants. It can also smother or bury habitats or communities. Benthic communities in the vicinity of the proposed works have potential to be significantly impacted by any release.

In this instance, scaffolding encapsulating the work area will be deployed to catch debris from the demolition and construction process. Water will be captured in mortar tubs which will then be pumped through a silt buster and discharge into an appropriate tanker, practically eliminating contamination from particulate generated by the repair project. Considering the relatively small construction project and the mitigation measures outlined in the project methodologies, impacts on water quality is not considered to be likely to cause significant adverse effects to the Natura site.

4.2.3 Impacts from Noise and Disturbance

Potentially increased noise and disturbance associated with the site works could cause disturbance or displacement of fauna over the course of the three months it is anticipated the removal and repair process will require. Precast construction techniques are suggested to be used. The proposed development is located within a pre-existing and functional pier so there is already an element of anthropogenic disturbance, which is likely to be at a similar level following the construction phase, with which the fauna present are already subject to and tolerant of.

The noise and disturbance from the construction will have a relatively small zone of influence, and are likely to have a negligible effect on the QIs capacity to forage, thus disturbance or displacement of fauna will be minimal.

4.2.4 Impacts on Local Hydrodynamic Conditions

During the operational phase there could be localised changes in hydrodynamic regime due to the installed structures altering local sediment depositional or erosional processes and thereby affecting nearby benthic community types.

The proposed development site, which has a physical footprint confined to the current pier area, is located in a relatively confined shallow low energy environment. Given the combination of shallow confined water and small physical footprint, it is not likely that the proposed works will significantly alter tide dynamics and/ or alter coastal or depositional or erosional processes and the structure of nearby sedimentary habitats. Therefore, no impact from changes in hydrodynamic conditions is predicted to occur.

4.3 Impact of proposed activities on Annex I Habitats

The Annex I Habitats QIs Estuaries [1130] is identified as in the zone of influence of the project. Figure 4 shows the detailed locations of the all habitats within the SAC and the vicinity of the project.

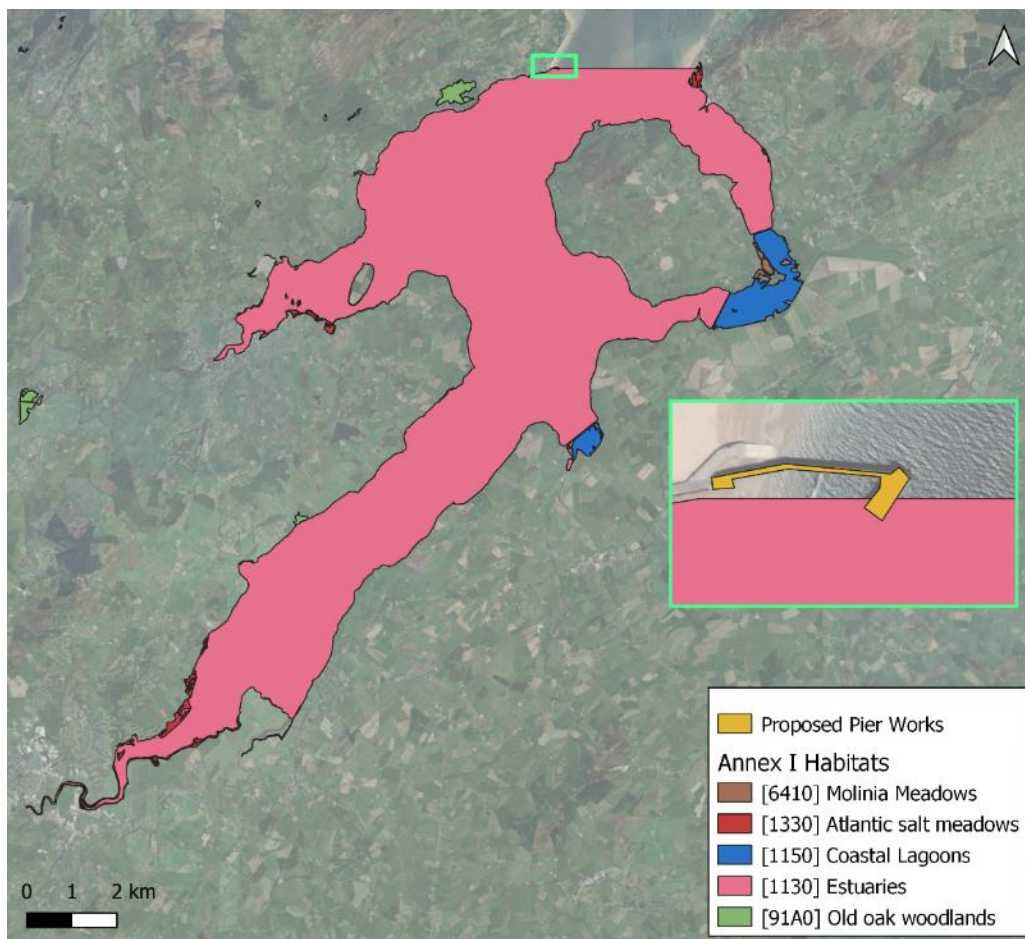


Figure 4 QI habitat map of Lough Swilly SAC. Coastal Lagoons [1150] and Atlantic salt meadows [1330] are over 2km from the project site and the terrestrial habitats: Molinia meadows [6410] and Old oak woodlands [91A0] are also not included in the Stage 2- Appropriate Assessment due to lack of interaction pathways. Basemap: Google Satellite 2023.

4.3.1 Estuaries [1130]

The Conservation Objective is to maintain the favourable conservation condition of Estuaries in Lough Swilly SAC. Table 1 details the attributes and targets this QI within the Lough Swilly SAC.

Table 1 Attributes and targets of Estuaries [1130] in Lough Swilly SAC

Attribute	Target
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes.
Community distribution	The following community types should be conserved in a natural condition(Error! Reference source not found.): <ul style="list-style-type: none"> • Fine sand community complex. • Intertidal mixed sediment with polychaetes. • Subtidal mixed sediment with polychaetes and bivalves. • Muddy fine sand with <i>Thyasira flexuosa</i>. • Mud community complex and <i>Ostrea edulis</i> dominated community.

4.3.1.1 Fine sand community complex.

The proposed project overlaps with this QI. The Fine sand community complex surrounds the viaduct and pierhead. The community complex can be found intertidally from the upper to lower shore and subtidally from 1.5m to 18m. The distinguishing species within this group are the polychaete *Spiophanes bombyx*, the oligochaete *Tubificoides benedii*, the bivalve *Angulus tenuis* and the amphipod *Bathyporeia pilosa*.

Three biological variants of this community complex occur at this site. An upper to mid shore intertidal element distinguished by the amphipod *Bathyporeia pilosa* and the oligochaete *Tubificoides benedii*, a mid to lower intertidal element distinguished by the bivalve *Angulus tenuis* and the oligochaete *Tubificoides benedii*. The third variant occurs subtidally, it is present from the seaward boundary of the SAC down the lough to the west of Inch Island. It is dominated by the polychaete, *Spiophanes bombyx*. Other species frequently present include the bivalves *Thracia papyracea* and *Phaxas pellucidus* and the polychaetes *Nephtys hombergii* and *Lumbrineris latreilli*.

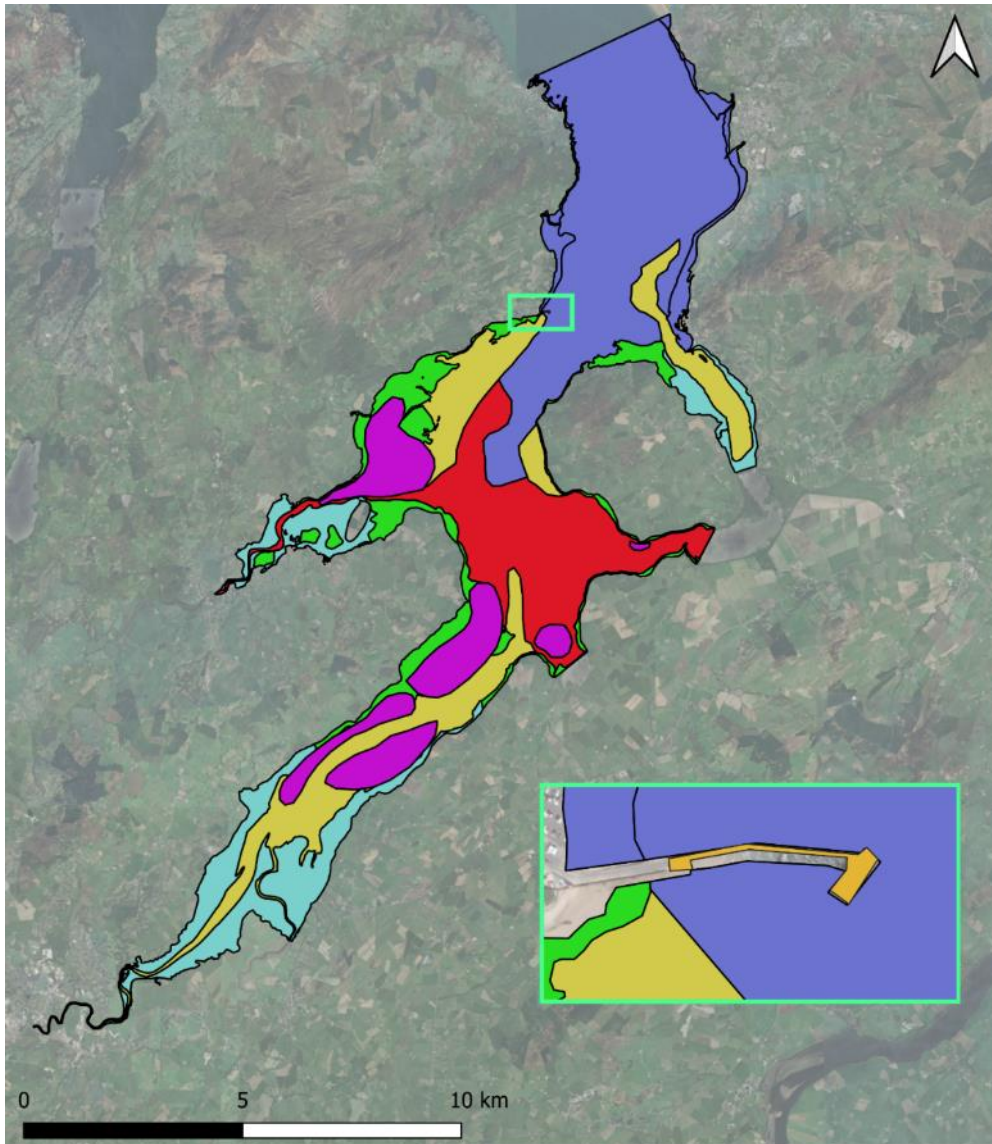
The size of the project site is 0.1228 ha and overlaps with less than 0.005% of the Fine sand community complex.

The proposed project overlaps with this community complex. In the Upper – midshore intertidal species *Bathyporeia pilosa* and *Tubificoides benedii* are tolerant to disturbed environments and can recover quickly^{25,26}. This environment is classified as not sensitive to changes in suspended solids (water clarity) nor to light smothering and siltation rate changes – with a high resistance and resilience. Therefore any effects from this activity will not have an adverse effects on this marine community type²⁷.

²⁵ <https://www.marlin.ac.uk/habitats/detail/353>

²⁶ *Tubificoides benedii* and other oligochaetes in littoral mud - MarLIN - The Marine Life Information Network

²⁷ https://www.marlin.ac.uk/habitats/detail/1125/polychaetes_in_littoral_fine_sand



- Proposed Pier Works
- Marine Community Types
- Fine sand community complex
- Intertidal Mixed sediment with polychaetes
- Mud community complex
- Muddy fine sand with *Thyasira flexuosa*
- Ostrea edulis* dominated community
- Subtidal Mixed sediment with polychaetes and bivalves

Figure 5 Marine Community Types in Lough Swilly SAC. Basemap: Google Maps (2023)

4.3.1.2 Intertidal mixed sediment with polychaetes.

This community type is <30 m south of the proposed project. Intertidal mixed sediment with polychaetes occurs along the western shore of Lough Swilly from Rathmullan to Ardrumman (except for the inner region of Ramelton Channel). It occurs on the eastern shore from north of Ballybegly Point to Farland Creek. It also occurs across the bay on the north, west and south of Inch Island. This community is distinguished by the polychaetes *Pygospio elegans* and *Eteone* sp., the former frequently present in moderate numbers. Other species regularly present include the polychaetes *Scoloplos*

armiger, *Glycera tridactyla*, *Euclymene oerstedii*, the oligochaete *Tubificoides benedii* and the cockle *Cerastoderma edule*.

This environment is classified as not sensitive to changes in suspended solids (water clarity) nor to light smothering and siltation rate changes – with a high resistance and resilience. Therefore, any effects from this activity will not have an adverse effects on this marine community type.

4.3.1.3 *Mud community complex and Ostrea edulis dominated community.*

Ostrea edulis dominated communities occur intertidally and subtidally in Lough Swilly (closest recorded habitat approximately 3.7 km from the proposed project). They co-occur within the areas ‘Intertidal mixed sediment with polychaetes’ and ‘Subtidal mixed sediment with polychaetes and bivalves’. Due to the lack of proximity to any potential impacts from the project activities there should be no adverse effects on this marine community type.

The muddy community complex (closest recorded occurrence approximately 2.7 km from the proposed project) has biological communities are distinguished by the presence of the oligochaete *Tubificoides benedii*, often in high abundance, together with the bivalves *Macoma balthica* and *Scrobicularia plana*, the amphipod *Corophium volutator* and the polychaetes *Pygospio elegans*, *Eteone* sp., *Nephtys hombergii* and *Hediste diversicolor*. These, along with those species that occur in moderate numbers throughout some or all of the community types of this complex, are deemed to be distinguishing. The presence and/or abundance of the distinguishing species vary considerably within this sediment type at this site. This gives rise to three variants, dominated by *Corophium volutator*, *Pygospio elegans* and *Macoma balthica* respectively, and appears to reflect varying degrees of estuarine influence. Due to the lack of proximity to any potential impacts from the project activities there should be no adverse effects on this marine community type.

4.3.1.4 *Muddy fine sand with Thyasira flexuosa.*

Muddy fine sand with *Thyasira flexuosa* is a subtidal community types which extends from Ramelton to the south-wester margin of Inch Island. The bivalve *Thyasira flexuosa* is the distinguishing species for this community type. The polychaetes *Scoloplos armiger*, *Nephtys hombergii* and *Euclymene oerstedii*, the amphipod *Ampelisca brevicornis* and the bivalve *Phaxas pellucidus* are also commonly present. The closest boundary of this marine community type is approximately 1.9 km from the project site. Due to the lack of proximity to any potential impacts from the project activities there should be no adverse effects on this marine community type.

4.3.1.5 *Subtidal mixed sediment with polychaetes and bivalves.*

This community type is <30 m south of the proposed project. Subtidal mixed sediment with polychaetes and bivalves is recorded in the central and southern parts of the SAC. Substrate variability (from gravel to fine sand) results in a high number of distinguishing species being recorded for this community. Many of these species, including the polychaetes *Spirobranchus triqueter* (formerly *Pomatoceros triqueter*), *Lumbrineris latreilli*, *Capitella minima* (formerly *Capitomastus minima*) and *Scoloplos armiger* and the bivalves *Abra alba* and *Timoclea ovata*, are present in medium to high levels of abundance. *Spirobranchus triqueter* is a sedentary polychaete which lives in its tube on rocky substrate, the bivalve *Abra alba* and have high resilience to disturbance from substrate loss^{28,29}, and *Lumbrineris latreilli* is considered an AMBI Group II species – “species indifferent to enrichment, always

²⁸ *Alcyonium digitatum*, *Spirobranchus triqueter*, algal and bryozoan crusts on wave-exposed circalittoral rock - MarLIN

²⁹ White furrow shell (*Abra alba*) - MarLIN - The Marine Life Information Network

present in low densities with non-significant variations with time (from initial state, to slight unbalance)³⁰. As the project is repairing and replacing an existing structure, there should be no additional significant substrate loss to this community. The size of the estuarine habitat has been estimated to be 6,118ha for the Lough Swilly SAC. The proposed project will be 0.0028 ha. As the works will be carried out with mitigation for capturing of debris with scaffolding there should be minimal inputs to the environment for this one-off event, **the activities are unlikely to have any significant adverse effects on the extent, structure, distribution or permanency of the habitat area.**

4.4 Impact of the proposed activities on Annex II Species

4.4.1 Otter (*Lutra Lutra*) [1355]

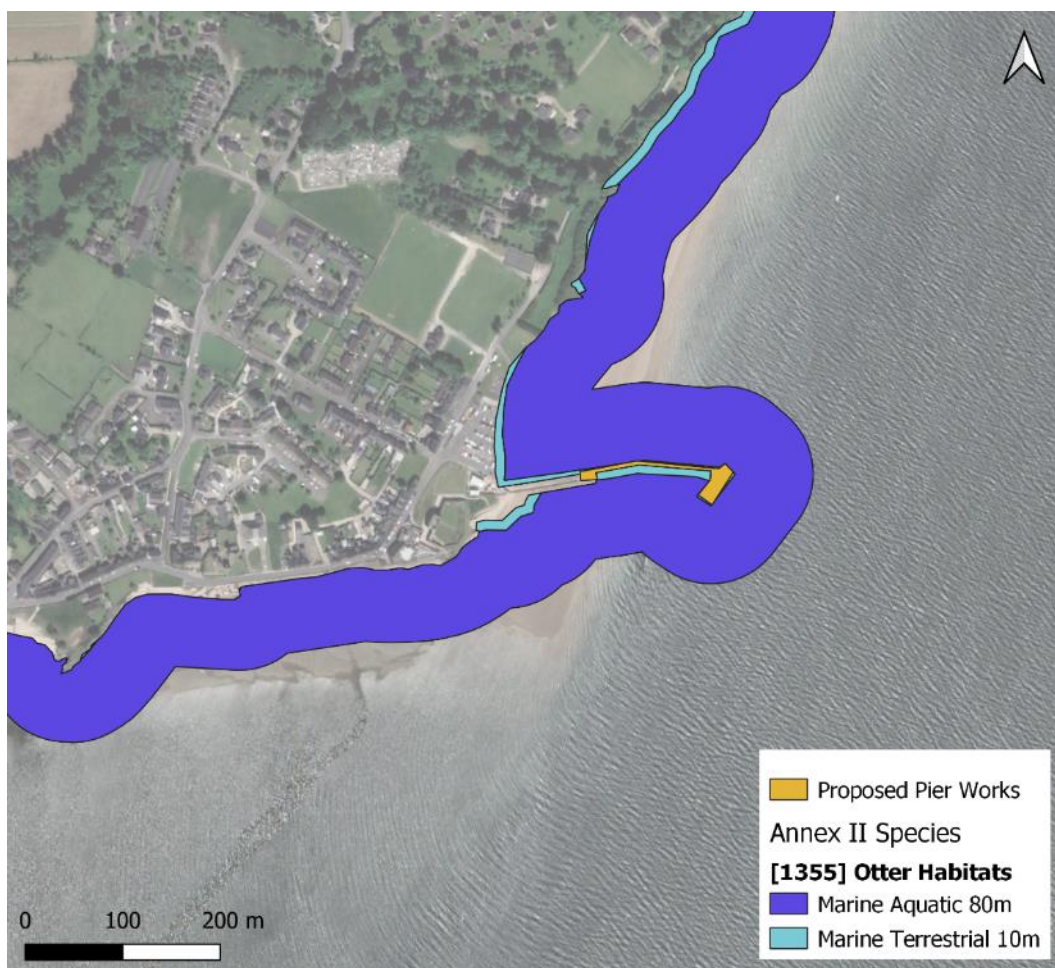


Figure 6 The distribution of otter habitat and commuting areas within the Lough Swilly SAC

Table 2 details the attributes and targets for Otter [1355] in the Lough Swilly SAC; the COs are to restore the favourable conservation condition of otter.

Table 2 List of attributes and targets for Otter [1355] at Lough Swilly SAC

Attribute	Target
Distribution	No significant decline

³⁰ A Marine Biotic Index to Establish the Ecological Quality of Soft-Bottom Benthos Within European Estuarine and Coastal Environments - ScienceDirect

Extent of terrestrial habitat	No significant decline. Area mapped and calculated as 95.7ha above high water mark (HWM); 44ha along riverbanks/ around ponds.
Extent of marine habitat	No significant decline. Area mapped and calculated as 839.5ha.
Extent of freshwater (lake/lagoon) habitat	No significant decline. Area mapped and calculated as 83.7ha
Extent of freshwater (river) habitat	No significant decline. Length mapped and calculated as 15.5km.
Couching sites and holts	No significant decline.
Fish biomass available	No significant decline.
Barriers to connectivity	No significant increase.

Figure 6 shows the distribution of otter habitat and commuting areas near the project site, within the Lough Swilly SAC and surrounds. The risk of negative interactions between the project and aquatic mammal species is a function of:

- The location of the project.
- The infrastructure built.
- The process of construction.
- Noise of disturbance from operations.

It is noted that the current conservation status of otter nationally is favourable. It is unlikely that this project poses a risk to otter populations or distribution or extent in the Lough Swilly SAC. In the supplied Appropriate Assessment Screening there were no signs of otter in the vicinity of the pier or within a 250m radius of the site.

Significant adverse effects on the QI Otter can be discounted on the basis the proposed project will not lead to any modification of the extent of habitat (neither terrestrial, marine nor freshwater); the activity will have no negative impact on the essential food base (fish biomass) available; the project will not affect the number of couching sites and holts; and the structures and activities at the site allow free movement through and within the site.

4.5 Impact of the proposed activities on Annex II Species SCIs

The objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests (SCI) for this SPA. The favourable conservation status of a species is achieved when:

- 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
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Where the “I-WeB survey” is referenced, data were supplied by the Irish Wetland Bird Survey (I-WeBS), a scheme coordinated by BirdWatch Ireland under contract to the National Parks and Wildlife Service of the Department of Housing, Local Government and Heritage.

4.5.1 Great Crested Grebe (*Podiceps cristatus*) [A005]

A resident species along all Irish coasts, that feeds mainly fish, sometimes supplemented with aquatic invertebrates. Great Crested Grebe breed on large shallow eutrophic loughs, along canals and slow-flowing rivers, nesting in reeds. They winter mainly in the north midlands and northeast with less than 1% of the Irish population recorded in the last 5 years of the I-WeB survey. As the project activities are scheduled to take place in the spring/summer, there is no overlap in wintering habitat. The footprint of this project is confined to the pier area and the effects from construction and operation of the project are very local, there is negligible likelihood of interaction between this QI and the project. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.2 Grey Heron (*Ardea cinerea*) [A028]

A common resident at wetlands, estuaries and along rivers throughout Ireland. They feed along the edge of a wide range of wetland habitats from coastal waters and estuaries to loughs, streams and marshy ground, on fish, amphibians, small mammals, insects and reptiles primarily in sheltered and shallow subtidal areas and coastal lagoons. They breed in trees. They are found in the same wetland habitats during the winter as in the breeding season. Less than 1% of the Grey Heron population for Ireland were recorded in the last five years during the I-WeB survey for Rathmullan. The footprint of this project is confined to the pier area and the effects from construction and operation of the project are very local. This is an active pier with current anthropogenic activity. There is a negligible likelihood of interaction between this QI and the project. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.3 Whooper Swan (*Cygnus cygnus*) [A038]

Whooper Swan are winter visitors from October to April. The Lough Swilly/ Lough Foyle/ River Foyle complex is host to historically important wintering and staging areas (in late October/early November) for Whooper Swan where the birds move throughout these areas. They feed primarily on aquatic plants, grasses and agricultural plants like grains and vegetables. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the size of this project is 0.1228 ha, and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.4 Greylag Goose (*Anser anser*) [A043]

Greylag Geese are resident and migratory wintering populations that visit Ireland between November and April. They feed mostly in estuaries, feeding on the roots of rushes and sedges. Greylag Geese feed on cereal stubble and grassland in their wintering areas. They breed by lakes and reservoirs, with their nests hidden in waterside vegetation. During the 2009/2010 waterbird survey, this species was only recorded in the south eastern section of the Lough Swilly SAC (Inch Lough & Levels and Blanket Nook). As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the size of this project is 0.1228 ha, and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.5 Shelduck (*Tadorna tadorna*) [A048]

Shelduck prey on mudsnails (mostly *Hydrobia ulvae*) which are present in estuaries. They have been recorded mostly in the estuarine and muddy tidal flats of the Lough Swilly SPA. Shelduck had not been recorded in the last 5 years of I-WeB surveys for Rathmullan. As the project activities are scheduled to take place in the spring/summer there is no overlap with the roosting or primary foraging habitat. The size of this project is 0.1228 ha, and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.6 Wigeon (*Anas penelope*) [A050]

Wigeon are a winter visitor from September and April. They breed on shallow freshwater marshes, under tussocks adjacent to lakes and lagoons or on lake islands. Wigeon forage on mostly coastal seagrass and algae in shallow waters, though they have been recorded feeding on grasslands and agricultural crops for seeds, stems and rhizomes. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the size of this project is 0.1228 ha (compared to 8,560 ha of Lough Swilly SPA), and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.7 Teal (*Anas crecca*) [A052]

Teal are a resident species in Ireland that feed by day on seeds, algae, molluscs and aquatic insects. They usually nest near small freshwater lakes or pools and small upland streams away from the coast, and also in thick cover. Teal in the Lough Swilly SPA were recorded predominantly in the estuarine and coastal lagoon habitats not associated with the Rathmullan area of the SPA. As the size of this project is 0.1228 ha and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.8 Mallard (*Anas platyrhynchos*) [A053]

Mallards feed on a variety of plant material, molluscs, crustaceans and food items presented by humans. They breed with next sites hidden in vegetation. Mallards have been recorded throughout the SPA but their presence is denser in Inch Lough & Levels, Swilly Estuary, Leannan Estuary and Blanket Nook among others, not including Rathmullan. Considering the footprint of the project and the time scale, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.9 Shoveler (*Anas clypeata*) [A056]

Shoveler are a resident and winter migrant in Ireland with wintering visitors occurring between October and March. They feed predominantly on zooplankton in wetlands, and feed on other invertebrates, insects and plant material around the edges of waterpools. Shoveler were not recorded in the last five years of the I-WeB survey. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the project activities do not spatially overlap with the preferred feeding or roosting habitats of the Shoveler, and the effects from construction and

operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.10 Scaup (*Aythya marila*) [A062]

Scaup are a wintering visitor occurring mostly between November and April. They feed largely on crustaceans and molluscs. They do not breed in Ireland. They winter in coastal estuaries and bays, on brackish lagoons and in shallow marine waters. None were recorded in Rathmullan in the I-WeB survey in the last five years. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.11 Goldeneye (*Bucephala clangula*) [A067]

Goldeneye are a wintering visitor mostly occurring from November to April. They nest in trees, and occasionally rabbit burrows, near water. They haven't been recorded in the last three years of the I-WeB survey in Rathmullan. They are shallow-water divers which feed on invertebrates. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the size of this project is 0.1228 ha, and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.12 Red-breasted Merganser (*Mergus serrator*) [A069]

There are resident and wintering populations of Red-breasted Merganser in Ireland. Their diets are mostly composed of fish (small cod, hake and plaice). During the breeding season, where they are in freshwater, they feed on roach, trout, salmon, eels and pike. They nest on sheltered lakes and large rivers. They winter in brackish and marine waters (i.e. shallow protected estuaries, bays and lagoons). As the habitat where the construction is taking place does not overlap significantly with the foraging habitats utilised by this species at low-tide (when construction will occur) and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.13 Coot (*Fulica atra*) [A125]

Coot are a resident species in Ireland and are also wintering visitors occurring from September to April. They typically forage in large, still or slow moving waterbodies with shallow water though have been recorded on land. Coots are omnivorous birds feeding primarily on plants. During the I-WeB surveys of the past five years, Coot were only recorded in the Inch Lough & Levels subsite (approximately 5.6 km from the project site). As the size of this project is confined to the footprint of the pier, the preference of Coot to forage in a different waterbody type than the project location, and that any effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.14 Oystercatcher (*Haematopus ostralegus*) [A130]

Ireland sees the largest numbers of Oystercatcher between September and March. They build nests primarily on beaches, dunes, salt marshes and rocky shores. The more constant disturbances to Oystercatcher foraging areas in the Rathmullan are from people walking or horse riding in the intertidal areas. The proposed project's pier is currently active and due to the short time frame and small size of the project compared to the SPA, and that the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are minimal. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.15 Knot (*Calidris canutus*) [A143]

Knot are a winter visitor in Ireland occurring mostly between October and February. They feed mostly on mussels and crustaceans by foraging in the sand. They prefer to winter in mostly estuarine sites with extensive areas of muddy sand. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the size of this project is 0.1228 ha, and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.16 Dunlin (*Calidris alpina*) [A149]

Dunlin feed predominantly on small invertebrates of estuarine mudflats (polychaete worms & gastropods). They commonly winter along all coastal areas - especially on tidal mudflats and estuaries. They feed in flocks, in the muddier sections of the estuaries and close to the tide edge. They nest on the ground in sparse, low vegetation - favouring machair habitat. As the project activities are scheduled to take place in the spring/summer, there is no overlap in wintering habitats; due to the fact that Dunlin generally prefer muddy estuaries for foraging and the small project footprint and localised effects, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.17 Curlew (*Numenius arquata*) [A160]

Curlew feed mostly on invertebrates and usually feed in estuaries, in the intertidal areas. They roost along salt marshes and sand banks and have been recorded nesting on the ground in rough pastures, meadows and heathers. Curlew have been recorded as breeding in floodplains and boglands. As the size of this project is confined to the footprint of the pier, Curlew distribution is widespread across the Lough Swilly SPA, and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.18 Redshank (*Tringa totanus*) [A162]

Redshank are a resident and winter visitor, which breeds on the ground in predominantly marshy areas. They favour estuaries (Swilly Estuary, Leannan Estuary) and inlets (Lough Swilly) for their wintering activities. Redshank forage within intertidal mudflats on invertebrate species. The footprint of this project is confined to the pier area and the effects from construction and operation of the project are very local. This is an active pier with current anthropogenic activity. There is a minimal

likelihood of interaction between this QI and the project. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.19 Greenshank (*Tringa nebularia*) [A164]

Greenshank are winter visitors to Ireland from September to April. They feed mostly in deep water sites and lakes on invertebrates and small fish. During low tides Greenshank were only recorded foraging. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the size of this project is confined to the footprint of the pier (compared to 8560 ha of Lough Swilly SPA), and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.20 Black-headed Gull (*Chroicocephalus ridibundus*) [A179]

Black-headed Gull are a resident species in Ireland. They feed on insects but have been recorded feeding on domestic and fisheries waste. They nest in colonies on the ground in wetland areas like bogs and marshes. The Black Headed Gull are known to breed on the eastern side of Inch Island and in Blanket Nook³¹ some 5 km and 8 km away respectively. As the size of this project is 0.1228 ha (compared to 8560 ha of Lough Swilly SPA), there is no spatial overlap between the breeding grounds and the project site, and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are minimal. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.21 Common Gull (*Larus canus*) [A182]

Common Gull feeds on terrestrial and aquatic insects and invertebrates, fish, and scavenging, with a foraging range of 50 km. They breed in nests on the ground. The small project footprint and localised effects of the project mean the likelihood of interaction between this QI and the project are minimal and due to the temporary nature of the project gulls that would normally forage here could continue to use the area during periods of no activity. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.22 Sandwich Tern (*Sterna sandvicensis*) [A191]

The Sandwich Tern is a summer visitor to Ireland from March to September. There are a few wintering Sandwich Tern that have been recorded in Galway. The average foraging range of the Sandwich Tern has been reported as 80 km max and mean max of 34.3±23.2 km, with a mean of 9±9.2 km, their specialised diet is comprised of marine fish and forage from shallow to deeper offshore waters. They nest colonially on the ground, mainly on the coast but with some colonies inland. Sandwich Tern breed on the eastern side of Inch Island and in Blanket Nook³² (~5km and 8km away respectively) and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

³¹Johnston, E (2011) Chapter 2. Coastal and Seabed Environments: Living Habitats. In: Cooper JAG. ed 2011. Lough Swilly a Living Landscape, Four Courts Press. Funded by Interreg IVB NWE, IMCORE project. Pg.40-41.

³²Johnston, E (2011) Chapter 2. Coastal and Seabed Environments: Living Habitats. In: Cooper JAG. ed 2011. Lough Swilly a Living Landscape, Four Courts Press. Funded by Interreg IVB NWE, IMCORE project. Pg.40-41.

4.5.23 Common Tern (*Sterna hirundo*) [A193]

Common Tern are a summer visitor from March to October on Irish coasts. They feed offshore on fish. They nest colonially on the ground from April to October. Common Tern breeds on the coast, and also inland on islets in freshwater lakes. They have a breeding season foraging range of 30 Km, with a mean of 6.4 km. As there is no likely significant overlap with potential feeding or breeding habitats and any effects from construction and operation of the project are very local, therefore the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.24 Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]

Greenland White-fronted Goose graze on a range of plant materials. Foraging occurs over peat bogs, dune grasslands and occasionally salt marshes. They do not breed in Ireland. The Greenland White-fronted Goose in Lough Swilly SAC are concentrated at a few sites during winter, many of which are non-wetland habitats. As the project activities are scheduled to take place in the spring/summer there is no overlap in wintering habitat, the size of this project is 0.1228 ha and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are negligible. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.5.25 Wetland and Waterbirds [A999]

Wetland and waterbirds are associated with freshwater and estuarine habitats. As the size of this project is 0.1228 ha (compared to 8560 ha of Lough Swilly SPA), and the effects from construction and operation of the project are very local, the likelihood of interaction between this QI and the project are minimal. The temporary and localised nature of this activity means it will not affect the conservation condition of the wetland habitat. Therefore, there will be no adverse effects on the conservation objectives of this SCI.

4.6 Impacts from Spread of Invasive Species

There is potential during the construction phase and operational phase of the proposed works for invasive species to be spread outside the site boundary. Disturbance of invasive species within the proposed development site during the construction of the proposed development could lead to the dispersal of scheduled invasive species either via machinery, materials, clothing or wild animals. This is upgrading work to an already existing structure so there is little likelihood of the introduction of invasive species. No impact from the spread of invasive species is expected to occur.

4.7 Cumulative Impacts

Cumulative impacts refer to a series of individual impacts that may, in combination, produce a significant impact. The underlying intention of this in combination provision is to take account of cumulative impacts from existing or proposed plans and projects and these will often only occur over time. There are currently no proposed projects that would have a cumulative effect with this project. It is unlikely that impacts following this project will significantly differ from the current situation.

5 Conclusions

This is a Natura Impact Statement (NIS) review document supporting the Appropriate Assessment of foreshore activities at Natura 2000 site Lough Swilly SAC (site code 002287). The Marine Institute has been requested to review an application for foreshore activities for construction of a slipway at Rathmullan Pier, Co. Donegal.

The proposed site is within the Lough Swilly SAC and adjacent (within 15km) to 6 other SACs and 13 SPAs (within 50km).

Following a Stage 1 AA Screening process, the following were screened in as QIs that the planned project has potential to overlap with or and have the potential to significantly affect, and so were carried forward for full assessment:

SAC QIs

- Estuaries [1130]
- *Lutra lutra* (Otter) [1355]

SPA QIs

- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Grey Heron (*Ardea cinerea*) [A028]
- Whooper Swan (*Cygnus cygnus*) [A038]
- Greylag Goose (*Anser anser*) [A043]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Mallard (*Anas platyrhynchos*) [A053]
- Shoveler (*Anas clypeata*) [A056]
- Scaup (*Aythya marila*) [A062]
- Goldeneye (*Bucephala clangula*) [A067]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Coot (*Fulica atra*) [A125]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Knot (*Calidris canutus*) [A143]
- Dunlin (*Calidris alpina*) [A149]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Greenshank (*Tringa nebularia*) [A164]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Common Gull (*Larus canus*) [A182]
- Sandwich Tern (*Sterna sandvicensis*) [A191]
- Common Tern (*Sterna hirundo*) [A193]
- Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]
- Wetland and Waterbirds [A999]

The potential impacts from the proposed project could arise during the construction and operational phase of the project. The designated QI could be impacted in relation to loss of habitat sediment contamination and water quality; noise and disturbance; and hydrodynamics.

The potential impacts have been assessed and it has been objectively concluded following best available information, objective criteria, best scientific knowledge and expert judgement, that the proposed project will not pose a risk of adversely affecting (either directly or indirectly) the integrity of Natura sites, either alone or in combination with other plans and projects.