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Supporting Information for Screening for Appropriate Assessment for Seaweed Harvesting Maritime Usage Licence (Trawbreaga Bay) with Addendum

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DISCLAIMER

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REVISION SUMMARY

Rev	Date	Section(s)	Detail of Change

ADDENDUM

Gavin and Doherty Geosolutions (GDG) have been commissioned by Oilean Glas Teoranta (OGT) to submit a Maritime Usage Licence (MUL) for the hand harvesting of seaweed from the intertidal shoreline of three bays in Co. Donegal. Aquafact have produced a Screening Statement for Appropriate Assessment (Screening Statement for AA) in 2022. Please note that while in 2022 the report was produced to support a Foreshore Licence Application (FLA), this application is for a Maritime Usage Licence (MUL) to the Maritime Area Regulatory Authority (MARA). The addendum and associated amendments to report have been prepared by GDG.

GDG have made the following updates to the Screening Statement for Appropriate Assessment (Screening Statement for AA) produced by Aquafact in 2022.

Section	Amendment
1.1	Changed "5,000 wet tonnes of *Ascophyllum nodosum*" to "4,000 wet tonnes per annum of *Ascophyllum nodosum*".
1.1	Changed "The seaweed would be cut down, leaving about a hand's length behind" to "The seaweed would be cut down, leaving about a hand's length (15-20cm of seaweed holdfast to the substrate) behind"
1.1	Changed "approximately one tonne in weight" to "approximately 1 to 1.5 wet tonnes in weight"
1.1	Text added "Approximately each harvester will collect 3 to 4 callaí in a day. No callaí are left on the foreshore overnight. A fallow system will be employed where areas are harvested one year and not returned to until the seaweed has recovered. The way in which the harvesting will be conducted will be dependent on the site and the harvester. Where the coastline allows the seaweed will be harvested in a linear fashion along the coast. However, some areas that are proposed for harvesting have islands and small pockets of beach that only support a day's harvesting. In these circumstances, the harvesters will move to another section within the intertidal zone when all the seaweed is harvested."
2.1	Changed "5,000 wet tonnes of *Ascophyllum nodosum*" to "4,000 wet tonnes per annum of *Ascophyllum nodosum*".
2.3.1	Changed "development" to "activity"
2.3.3	Changed "development" to "activity"

2.3.4	Plans or Projects that Might Act In-Combination, text added *In combination effects assessment as described in the accompanying AIMU report follows the approach described in the European Commission Notice Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive (EC, 2021). The assessment is informed by defining* • *Cumulative Effects Spatial Scope (CESS)* *Cumulative Effects Temporal Scope (CETS)*
2.3.4	Changed “development” to “activity”

Proposed Hand-Harvesting of *Ascophyllum nodosum* in Trawbreaga Bay, Co. Donegal.

Screening Statement for Appropriate Assessment

Produced by

AQUAFACT International Services Ltd

On behalf of

Oilean Glas Teo

June 2022

AQUAFACT International Services Ltd.,

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AQUAFACT
APEM Group

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1. Introduction

This Screening Statement for Appropriate Assessment (Screening Statement for AA) has been prepared by AQUAFACT International Services Limited (AQUAFACT) to provide competent authorities the relevant information for a Foreshore Licence application made by Oilean Glas Teo (OGT) to the Department of Housing, Local Government and Heritage (DHLGH), for the hand-harvesting of the seaweed *Ascophyllum nodosum* from the intertidal shoreline in Trawbreaga Bay, Co. Donegal (the 'Proposed Project'). This report will focus on the impacts that the proposed project will have on the qualifying interests of the Natura 2000 sites in and around the harvesting area.

1.1. Overview of the Proposed Project

OGT is planning to harvest up to 4,000 wet tonnes per annum of *Ascophyllum nodosum* off Trawbreaga Bay for processing in its plant at Kilcar, Co. Donegal which produces fertilisers and feeds for multiple animals. This will be collected from the harvestable area within Trawbreaga Bay. The harvesting of seaweed continues to play an important cultural role in Co. Donegal, and it has expanded into commercial exploitation of the abundant seaweed resources of the area.

Traditionally, the seaweed is harvested by hand using traditional sickles or knives, forks, ropes, and nets at low tide. The seaweed would be cut down, leaving about a hand's (15-20cm of seaweed holdfast to the substrate) length behind to ensure re-growth, then bound with nets and ropes and left at low shore. High tide would float the bundle which could be approximately 1 to 1.5 wet tonnes in weight, thus promoting easier transportation to a suitable pier for collection by lorry, with a crane. They are then lifted directly from the seashore by the crane onto the lorry. Approximately each harvester will collect 3 to 4 callaí in a day. No callaí are left on the foreshore overnight.

A fallow system will be employed where areas are harvested one year and not returned to until the seaweed has recovered. The way in which the harvesting will be conducted will be dependent on the site and the harvester. Where the coastline allows the seaweed will be harvested in a linear fashion along the coast. However, some areas that are proposed for harvesting have islands and small pockets of beach that only support a day's harvesting. In these circumstances, the harvesters will move to another section within the intertidal zone when all the seaweed is harvested.

1.2. Requirement for Appropriate Assessment

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (commonly known as the Habitats Directive) is the European Community legislation based on nature

conservation established to ensure biodiversity is conserved through the conservation of natural habitats and wild fauna and flora in Europe.

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 revoked and replaced by the *European Communities (Birds and Natural Habitats) Regulations 2011*, as amended (herein referred to as the 2011 Birds and Natural Habitats Regulations).

Under Regulation 42 of the 2011 Birds and Natural Habitats Regulations all competent authorities are required to conduct a screening for Appropriate Assessment (AA) and, if necessary, an AA on any plan or project on the foreshore for which it receives an application for consent, or which the authority itself wishes to undertake or adopt. This obligation derives from Article 6(3) and 6(4) of the Habitats Directive.

The AA provision of the Habitats Directive is also transposed in Ireland by the Planning and Development Act 2000 (as amended) in respect of land use plans and proposed developments requiring development consent.

A network of sites of conservation importance hosting habitats and species as needing to be either maintained at or, where appropriate, restored to favourable conservation status have been identified by each Member State. Sites, species, and habitats protected under Directive 92/43/EEC (Habitats Directive) and Directive 2009/147/EC (Birds Directive) are referred to as Natura 2000 sites. Natura 2000 sites are referred to as European sites in the Planning and Development Act 2000 (as amended). These terms are synonymous. European sites in Ireland that form part of the Natura 2000 network of protected sites comprise Special Area of Conservation (SAC) sites designated due to their significant ecological importance for habitats and species protected under Annex I and Annex II respectively of the Habitats Directive, and Special Protection Area (SPA) sites designated for the protection of populations and habitats of bird species protected under the EU Birds Directive (Council Directive 2009/147/EC). The specific named habitat and/or (non-bird) species for which a SAC or SPA is selected are called 'Qualifying Interests' (QI) of the site while specific named bird species for which a SPA is selected are called 'Special Conservation Interest' (SCIs) of the site (OPR, 2021[1]). In this report, QIs and SCIs are collectively referred to as ‘conservation features’. European sites are formally designated

[1] OPR 2021. Office of the Public Regulator Practice Note PN01. Appropriate Assessment Screening for Development Management https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-PlanningRegulator-Appropriate-Assessment-Screening-booklet-15.pdf

under a statutory instrument. Candidate SAC sites (cSAC) or candidate SPA sites (cSPA) have the same level of protection as fully designated sites under Irish Law[2].

1.2.1. Stages of the Appropriate Assessment Process

Articles 6(3) and Article 6(4) of the Habitats Directive outline the decision-making tests for considering plans and projects that may have a significant effect on a Natura 2000 site.

The Department of the Environment Heritage and Local Government guidelines (DEHLG, 2009, rev 2010) promotes a four-stage process to complete the AA and outlines 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 1-1**, and an outline of the steps and procedures involved in completing each stage follows below. Stage 1 and Stage 2 deal with the main requirements for assessment under Article 6(3) of the Habitats Directive. Stage 3 may be part of the Article 6(3) Assessment or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

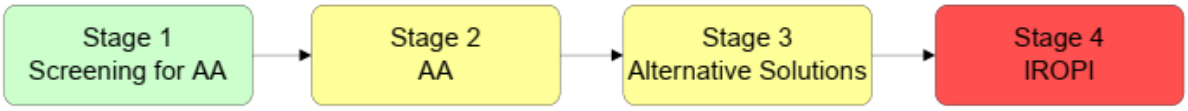

Figure 1-1: Four stages of the Appropriate Assessment Process.

In complying with the obligations under Article 6(3) this report has been structured as a stage by stage approach.

1.2.2. Stage 1: Screening for Appropriate Assessment

Stage I AA Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

i. whether a plan or project is directly connected to or necessary for the management of European site, and

[2] Candidate sites are those that have been submitted to the European Commission, but not yet formally adopted under Ministerial Statutory Instrument (S.I.) (OPR, 2021). Legal protection, and therefore, the requirement for AA, arises from the date that the Minister gives notice of his/her intention to designate the site.

ii. whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.

If the effects 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). Screening should be undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no impact.

1.2.3. Stage 2: Appropriate Assessment

This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a European site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. The proponent of the plan or project will be required to submit a Natura Impact Statement (NIS), that examines the plan or project and the relevant European sites, to identify and characterise any possible implications for the site in view of the site's conservation objectives, taking account of in-combination effects. This should provide information to enable the competent authority to carry out the appropriate assessment. If the assessment is negative, *i.e.* adverse effects on the integrity of a site cannot be excluded, then the process must proceed to Stage 3, or the plan or project should be abandoned.

The AA is carried out by the Competent Authority and is supported by the NIS with input from the National Parks and Wildlife Service (NPWS) who are a statutory consultee.

1.2.4. Stage 3: Alternative Solutions

This stage examines any alternative solutions or options that could enable the plan or project to proceed without adverse effects on the integrity of a European site. The process must return to Stage 2, as any alternative proposal must be subject to a Stage 2 AA before it can be subject to the Article 6(4) test. If it can be demonstrated that all reasonable alternatives have been considered and assessed, the AA progresses to Stage 4.

1.2.5. Stage 4: Imperative Reasons of Overriding Public Interest/Derogation

Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project that will have adverse effects on the integrity of a European site. The extra protection measures for Annex I priority habitats come into effect when making the IROPI case. Compensatory measures must be proposed and assessed.

The European Commission must be informed of the compensatory measures. Compensatory measures must be practical, implementable, likely to succeed, proportionate and enforceable.

1.3. Purpose of this Report

This *Screening Statement for AA* has been prepared to provide information to enable the competent authority to carry out a *Stage 1: Screening for AA* of the Proposed Project as required under Article 6(3) obligations under the Habitats Directive. This report considers the potential effects of the Proposed Project to European sites.

1.4. Guidance

This report has been prepared in accordance with the following guidance:

- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. Commission Notice (2018),
- EC (2021) Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Commission notice (2021),
- OPR (2021) Appropriate Assessment Screening for Development Management. Practice Note PN01. Office of the Planning Regulator. March 2021,
- DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities (Revised 2010), and
- DAHG - NPWS (2012) Marine Natura Impact Statements in Ireland Special Areas of Conservation, A Working Document.

This assessment includes a review of available records of protected species and habitats including the following sources:

- Baseline desk studies and field surveys carried out for the Proposed Project area,
- Conservation Status Assessment Reports, Backing Documents and Maps prepared to inform national reporting required under Article 17[3] of the Habitats Directive and Article 12[4] of the Bird Directive,
- Site Synopsis, Conservation Objective Reports and Natura 2000 Forms available from NPWS,

[3] Most recent Article 17 report is available at https://www.npws.ie/publications/article-17-reports/article-17-reports-2019
[4] Most recent Article 12 report is available at https://www.npws.ie/news/birds-directive-article-12-reporting

- Published and unpublished NPWS reports on protected habitats and species including Irish Wildlife Manual reports, Species Action Plans, and Conservation Management Plans and
- Existing relevant mapping and databases *e.g.* waterbody status, species and habitat distribution *etc*. (sourced from the Environmental Protection Agency - http://gis.epa.ie/, the National Biodiversity Data Centre - http://maps.biodiversityireland.ie and the NPWS - http://www.npws.ie/mapsanddata/.

1.5. Statement of Authority

This report has been prepared by [redacted] *nodosum* in Trawbreaga Bay, Co. Donegal – Screening Statement for Appropriate Assessment. He is expert in ecological matters and the full spectrum of environmental assessment techniques, methodologies and statutes. Professionally, he is a member of relevant institutes requiring the highest standards of professional competence and integrity. He is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

[redacted] has 40 years of experience in the field of marine science and has published *c.* 75 scientific papers and numerous reports specialising in the biology and ecology of sea-floor communities. [redacted] is an internationally recognised polychaete taxonomist and has led numerous international workshops in polychaete taxonomy including workshops as part of the UK BEQUALM/NMBAQC. He has 33 publications on marine invertebrate taxa including descriptions of new species, revisions of families and additions to the European and Irish fauna.

As Managing Director of AQUAFACT [redacted] has been responsible for all aspects of management including the design, execution and reporting of numerous desk studies, surveys, assessments and environmental outputs including NIS, AA screening and EIARs.

[redacted] Degree (MSc) in Conservation Behaviour from ATU (previous GMIT), where she focused on predicting the spatial distribution of delphinid species in a critical conservation region in Portugal. She is specialised in spatial modelling using RStudio and Geographic Information System software with focus on the marine environment. She is also a licensed Marine Mammal Observer (MMO) certified by the Joint Nature Conservation Committee (JNCC) and has experience in both land and boat-based surveys around the Irish coast. She is currently a marine ecologist working on AA, NIS and Risk Assessments for Annex IV species on a variety of projects in the marine sector.

1.6. Structure of this Report

This *Screening Statement for AA* has been prepared to provide information to enable the competent authority to carry out a *Stage 1: Screening for AA*, and if deemed necessary, a *Stage 2: AA* of the Proposed Project as required under Article 6(3) obligations under the Habitats Directive. Specifically, this report focuses on the potential effects of the Proposed Project on the conservation features of European sites. The content of this report is as follows:

- **Section 1:** Stage 1 Screening for Appropriate Assessment
    - **Section 2.1:** Description of the Proposed Project
    - **Section 2.2:** Description of the Proposed Project area
    - **Section 2.3:** Screening Exercise
    - **Section 2.4:** Screening Outcome

2. Stage 1 Screening for Appropriate Assessment

2.1. Description of the Proposed Project

OGT is planning to harvest up to 4,000 wet tonnes per annum of *Ascophyllum nodosum* off Trawbreaga Bay for processing in its plant at Kilcar, Co. Donegal, which produces fertilisers and feeds for multiple animals. This will be collected from the harvestable area within Trawbreaga Bay (**Figure 2-1**). Guiry & Morrison (2013) note that between 8,000 – 28,000 wet tonnes of *A. nodosum* were harvested annually in Ireland between 1964 and 2013. Estimates for the national biomass of this algae vary from 159,000 (± 45,000) by Cullinane (1984) down to 75,000 wet tonnes by Hession *et al.* (1998). It is also stated that the large difference in estimates relates to different assessment methods employed however "there are sufficient unharvested areas to satisfy any requirement for conservation".

Ascophyllum nodosum (also known as Knotted Wrack or Asco) is a perennial brown intertidal seaweed, which occurs on mid to low intertidal rocky shores at a variety of exposures, except those most exposed to wave action. It is considered the dominant seaweed species on most of the Irish intertidal coastline, in which an *Ascophyllum* bed is dominated by *Ascophyllum* clumps, or the zone on the shore that is recognised by the biomass of *Ascophyllum* (Kelly *et al.,* 2001). Typically, 8-15cm of growth is produced annually and the sections of shoots between successive vesicles or internodes generally record annual growth increments (Kelly *et al.,* 2001). *Ascophyllum* regenerates both sexually and asexually. To regenerate sexually, gametes are released in spring into the water column from the conceptacles on the surface of club shaped lateral swellings called receptacles. However, the constant production of shoots from the base of the plant (by asexual regeneration) is clearly more important in maintaining the population of *Ascophyllum* than the re-growth from fertilised eggs (Stengel & Dring, 1997). Guiry (1997) has reported that if lengths of 10-20cm of *A. nodosum* are left uncut the plants can recover and re-harvests possible in 3-6 years.

One of the biggest and longest running companies was Arramara Teó which opened a factory in Meenmore, near Dungloe in Co. Donegal in 1947. This factory processed *Ascophyllum nodosum*, extracting alginates and manufacturing growth stimulants and feed supplements for use in agriculture and horticulture. The seaweed will be harvested by hand in the tradition manner. This involves using local cutters each working within a specific area. The seaweed will be cut at low tide using a knife, leaving approximately 15-20cm attached to the substrate to ensure re-growth of the plant. The seaweed will then be gathered using a fork into bundles (local term cailleach/caillaí) of approximately 1t, that are bound by nets and ropes and left on the intertidal shoreline (**Figure 2-2**). These caillaí float

at high water and are towed usually by a small boat to a suitable pier for collection by a lorry with a crane. They are lifted directly from the seashore by the crane onto the lorry and driven away.

A harvesting plan has been developed to manage the resource in a sustainable way. The bay has been divided into 4 main areas and each of these larger areas is further divided into smaller subsections. Each of these small areas has been allocated a tonnage of *Ascophyllum* which represents just under *ca* 12% of the total biomass of that area. The cutters will follow this harvesting plan by only collecting the allocated annual tonnages from each harvested area.

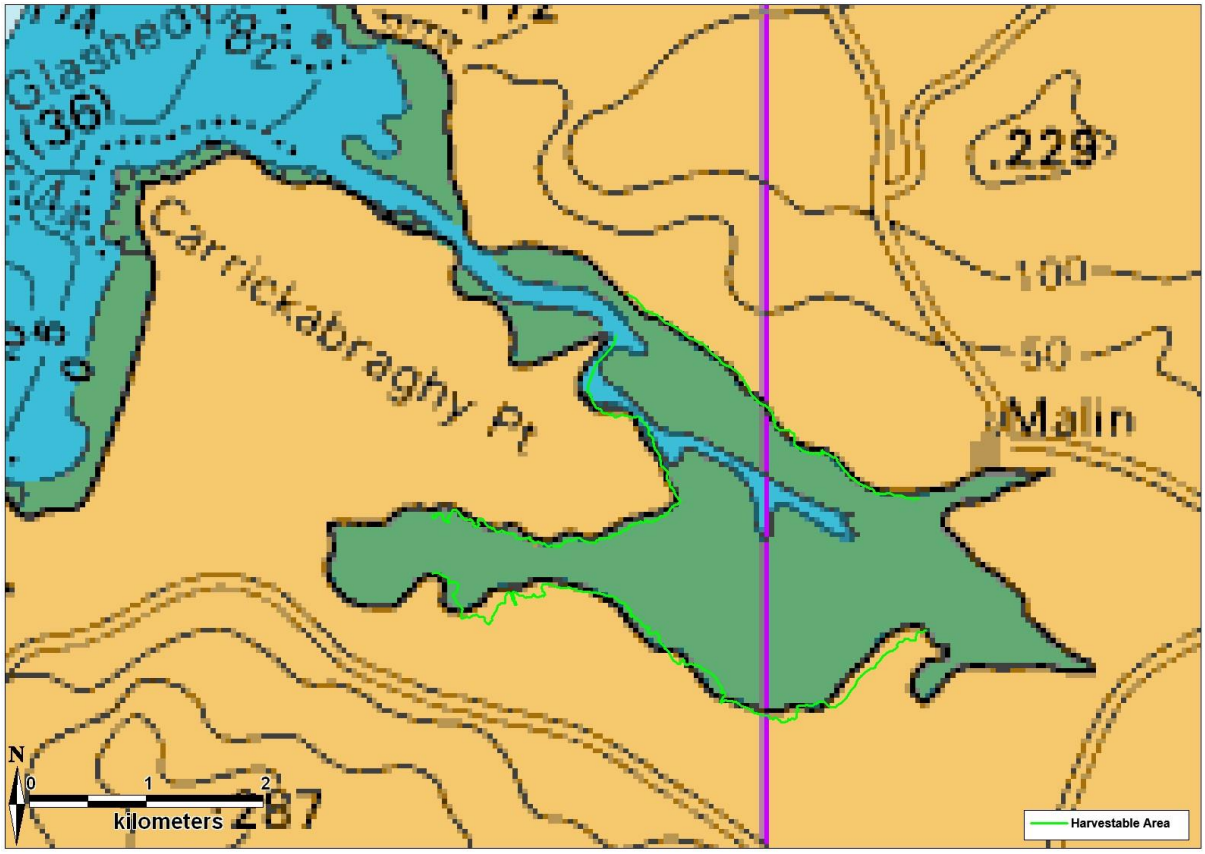

Figure 2-1: Location of the Ascophyllum nodosum harvestable area located within Trawbreaga Bay, Co. Donegal.

Figure 2-2: *Ascophyllum nodosum* located in the rocky intertidal zone (above) and bundled in nets (below).

2.2. Description of the Proposed Project area

The Proposed Project area is within Trawbreaga Bay, which is well-sheltered bay located in the north-western coast of the Inishowen Peninsula, Co. Donegal. The European sites designated as SACs and SPAs present in the Proposed Project area are described in **Section 2.2.1** and **Section 2.2.2**, respectively.

2.2.1. Special Areas of Conservation (SACs)

There is one Special Areas of Conservation site within the Proposed Project area, the North Inishowen Coast SAC (Site code: 002012) which includes the whole harvesting area.

North Inishowen Coast SAC (002012)

The North Inishowen Coast SAC ranges from Crummies Bay in the west up to Malin Head and back down to Inishowen Head to the east. It includes an excellent variety of coastal habitats including high rocky cliffs, offshore islands, sand dunes, saltmarsh, a large intertidal bay, and rocky, shingle and sand beaches. This site also contains the oldest and best preserved late-glacial fossil coast in Ireland (between Ineuran Bay and Esky Bay). Also of geomorphological interest is the small area of stone polygons near Malin Tower (NPWS, 2014a). This site is designated for the following QIs (*= priority):

- Tidal Mudflats and Sandflats [1140]
- Perennial Vegetation of Stony Banks [1220]
- Vegetated Sea Cliffs [1230]
- Fixed Dunes (Grey Dunes)* [2130]
- Machairs* [21A0]
- Dry Heath [4030]
- Narrow-mouthed Whorl Snail (*Vertigo angustior*) [1014]
- Otter (*Lutra lutra*) [1355]

Sea cliffs are a feature of the site, with the best examples found in the west of the site, Dunree to Leenan Head and Dunaff Head, and in the area to the north-west of Glengad Head. Cliffs are often less than 50 m in height, though they reach over 200 m at Dunaff and to the north-west of Glengad Head. The dominant rock type is quartzite which is particularly hard and unyielding. The vegetation cover of the cliffs is variable, depending on factors such as underlying geology, aspect and the degree of exposure to winds and sea spray (NPWS, 2014a). The cliffs contain several rare plant species, notably Scots Lovage (*Ligusticum scoticum*), Oysterplant (*Mertensia maritima*) and Ivy Broomrape (*Orobanche hederae*).

Oysterplant is listed in the Flora (Protection) Order, 1999, and has been recorded growing on shingle substrate, while Ivy Broomrape, parasitic on Ivy (*Hedera helix*), has been recorded from sea cliffs to the north of Leenan Bay. Two other scarce species recorded at the site, Moss Campion (*Silene acaulis*) and Purple Saxifrage (*Saxifraga oppositifolia*), are listed in the Red Data Book.

The Proposed Project is situated in a bay area of the site (Trawbreaga Bay), which is a very sheltered sea bay with a narrow strait to the open sea at the north end. This bay is also fed by a number of small rivers or streams. An estimated 80% of the bay area is exposed at each low tide to expose a mixture of mudflats, sandbanks and stony/rocky substrates. In the inner part of the bay, the substrate consists of muddy sand and coarse sediments with an infauna community of polychaetes, oligochaetes and crustaceans. Within the narrow strait, the community is comprised of bivalves and polychaetes within a sandy substrate. The polychaete *Arenicola marina* is a conspicuous species within the intertidal soft sediments of the bay. Beds of Dwarf Eelgrass (*Zostera noltii*) display temporal variation in occurrence within the bay, which has been recorded on the shore at Doaghmore and currently present southwest of Glassagh Point. Mats of green algae occur on the open flats and, some areas of saltmarsh fringe the area (NPWS, 2014a).

Sandy beaches also occur in coves bordered by bedrock and in the outer reaches of Trawbreaga Bay. A community with crustaceans and polychaetes in known to occur in these areas. Where the intertidal reef is present on exposed shores the community consists of the bivalve *Mytilus edulis* and barnacles. In such areas where reef extends into the subtidal the kelp *Laminaria hyperborea* occurs. In the less exposed areas and within Trawbreaga Bay the brown algae *Pelvetia canaliculata, Fucus vesiculosus, F. spiralis* and *Ascophyllum nodosum* are found (NPWS, 2014a).

Two Annex II species of the Habitats Directive, the tiny whorl snail (*Vertigo angustior*) and the otter (*Lutra lutra*) have been recorded on this site.

An internationally important population of Barnacle Goose, listed on Annex I of the Birds Directives, occurs in Trawbreaga Bay, which is considered their most important haunt. A range of other waterfowl species winter at Trawbreaga Bay, with an internationally important population of Brent Goose. Other species which occur in regionally or locally important numbers include Wigeon, Mallard, Oystercatcher, Ringed Plover, Dunlin, Curlew and Redshank (NPWS, 2014a).

Other two Annex I species of the Birds Directive breed within the site, the Peregrine and Chough which are associated with the rocky sea cliffs. Choughs usually use the heath and sandy habitats for feeding. Several species of seabird breed on the cliffs and islets including, Fulmar, Cormorant, Shag, Kittiwake, Guillemots, Razorbills and Black Guillemots. The machair and dunes at Doagh Isle and elsewhere

support breeding waders including the Oystercatcher, Ringed Plover, Lapwing and Snipe (NPWS, 2014a).

This site is of high conservation value because of the extensive area of relatively unspoilt coastal and heath habitats and the range of plant and animal species that these habitats support. Of particular note is the presence of good examples of two Habitats Directive Annex I priority habitats, fixed dunes and machair. Very good examples of several other Annex I habitats are found, notably sea cliffs, vegetated shingle banks, dry heath and intertidal sand and mudflats. There are two legally protected plant species and a range of scarce species. The diversity of bird species is of conservation interest, with wintering waterfowl, breeding seabirds and breeding waders. Important populations of three Birds Directive Annex I species occur - Barnacle Goose, Peregrine and Chough (NPWS, 2014a).

The location of the SAC is shown in **Figure 2-3**.

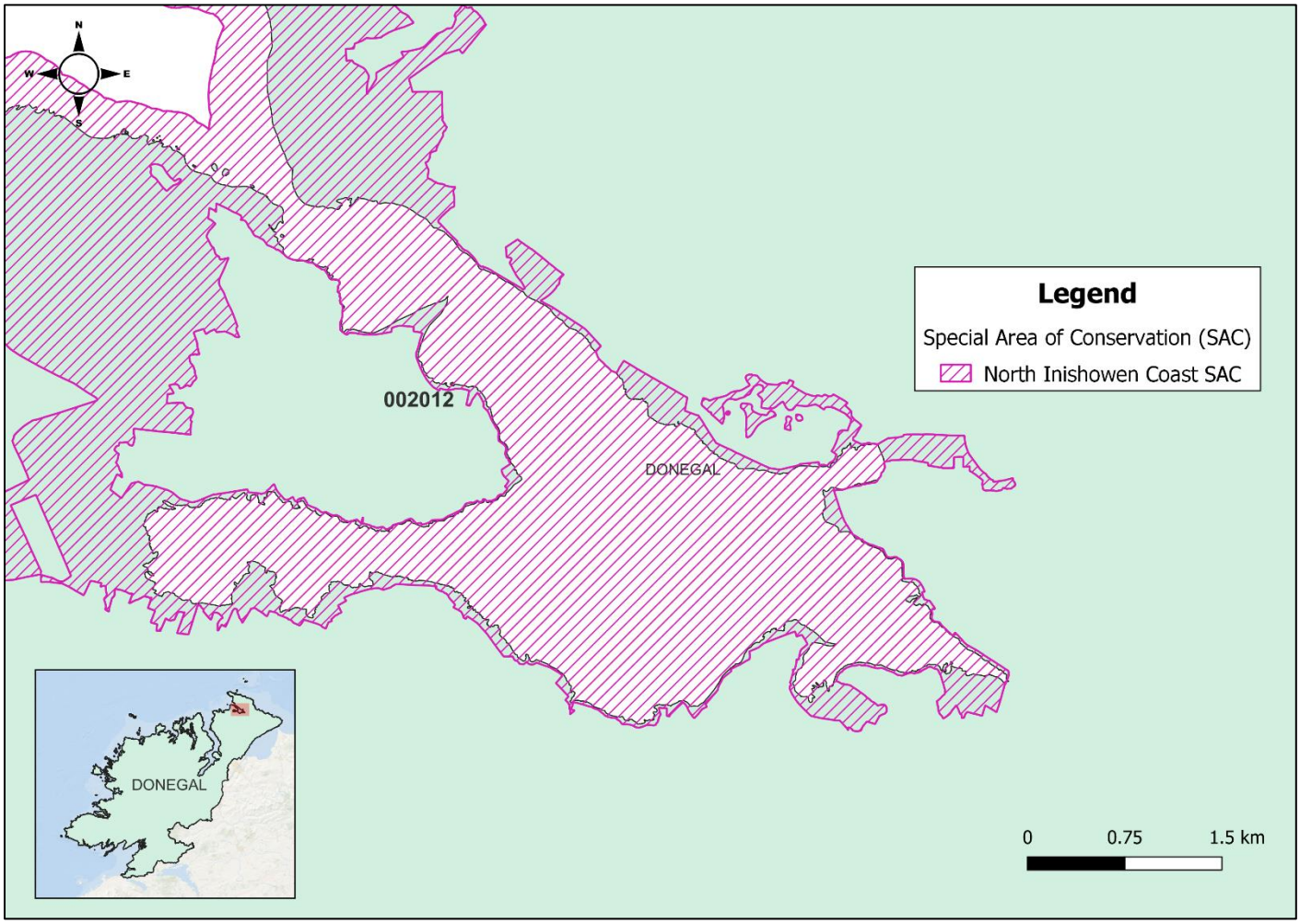

Figure 2-3: SAC located in the Proposed Project area, Co. Donegal.

2.2.2. Special Protection Areas (SPAs)

There is one Special Protection Area site located within the harvesting area, and another in close proximity to the Proposed Project area:

- Trawbreaga Bay SPA (Site code: 004034) (within the Proposed Project area)
- Malin Head SPA (Site code: 004146) (approximately 5km north of the Proposed Project area)

Trawbreaga Bay SPA (004034)

Trawbreaga Bay SPA is a well-sheltered bay situated on the north-western coast of the Inishowen Peninsula, Co. Donegal. Doagh Isle, a low-lying, sandy promontory, stretches across the mouth of the bay, leaving only a narrow strait to the open sea. The bay is fed mainly by the Ballyboe, Donagh and Glennagannon rivers, and includes the Glashedy Island which lies approximately 1 km offshore (NPWS, 2015). This site is designated for the following SCIs:

- Barnacle Goose (*Branta leucopsis*) [A045]
- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Chough (*Pyrrhocorax pyrrhocorax*) [A346]
- Wetland and Waterbirds [A999]

An estimated 80% of the bay area empties at low tide to expose a mixture of mudflats, sandbanks and stony/rocky substrates. Mats of green algae occur on the open flats and brown algae (*Fucus* spp.) on the stones. Some areas of saltmarsh also fringe the bay (NPWS, 2015).

Trawbreaga Bay supports a good diversity of wintering waterfowl though numbers of most species are relatively low. These intertidal flats provide the main feeding area for the majority of the wintering waterfowl. The main importance of the site is the Barnacle Goose and Light-bellied Brent Goose populations, which is of international importance. The site is also an important feeding and roosting area for Chough. In 2005 a total of 55 birds were recorded at the coastal roost at Five Fingers, and flocks of up 100 birds have also been recorded foraging within the site. Other species which occur include Whooper Swan, Wigeon, Mallard, Oystercatcher, Ringed Plover, Lapwing, Dunlin, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull and Herring Gull (NPWS, 2015).

This site is of international importance for its Light-bellied Brent Goose population and also supports a nationally important population of Barnacle Goose. The regular occurrence of Barnacle Goose, Chough, Whooper Swan and Bar-tailed Godwit, which are listed on Annex I of the Birds Directive, is also of conservation importance. This site is also a Ramsar Convention site and part of the Trawbreaga Bay SPA is a Wildfowl Sanctuary (NPWS, 2015).

Malin Head SPA (004146)

The Malin Head SPA encompasses areas of agricultural grassland around the village of Ballygorman near Malin Head at the northern end of the Inishowen Peninsula, Co. Donegal. The northern section of the site is very exposed and comprises gently undulating land used mostly for grazing, while the southern section situated along the Coolort River, is low-lying and consists of mixed agricultural land, with meadow and grazing pasture (NPWS, 2014b). This site is designated for the following SCIs:

- Corncrake (*Crex crex*) [A122]

This site is one of a suite of sites along the western seaboard that is regularly utilised by nationally important numbers of breeding Corncrake. This species winter in southern and eastern Africa, migrating northwards to arrive on their breeding grounds from early April onwards, departing again in August and September. They require the cover of tall vegetation throughout their breeding cycle and are strongly associated with meadows which are harvested annually, where they nest and feed. Annual cutting of these meadows creates a sward which is easy for the birds to move through. Other habitats, which can provide cover for Corncrake in the early and late stages of the breeding season, are also important for this species (NPWS, 2014b).

This site is of high ornithological importance as it supports a nationally important population of Corncrake. This species is listed on Annex I of the Birds Directive, and on the IUCN Red List of Threatened Species due to declines of more than 50% in the last 25 years across significant parts of its range (NPWS, 2014b).

The location of the SPAs is shown in **Figure 2-4**.

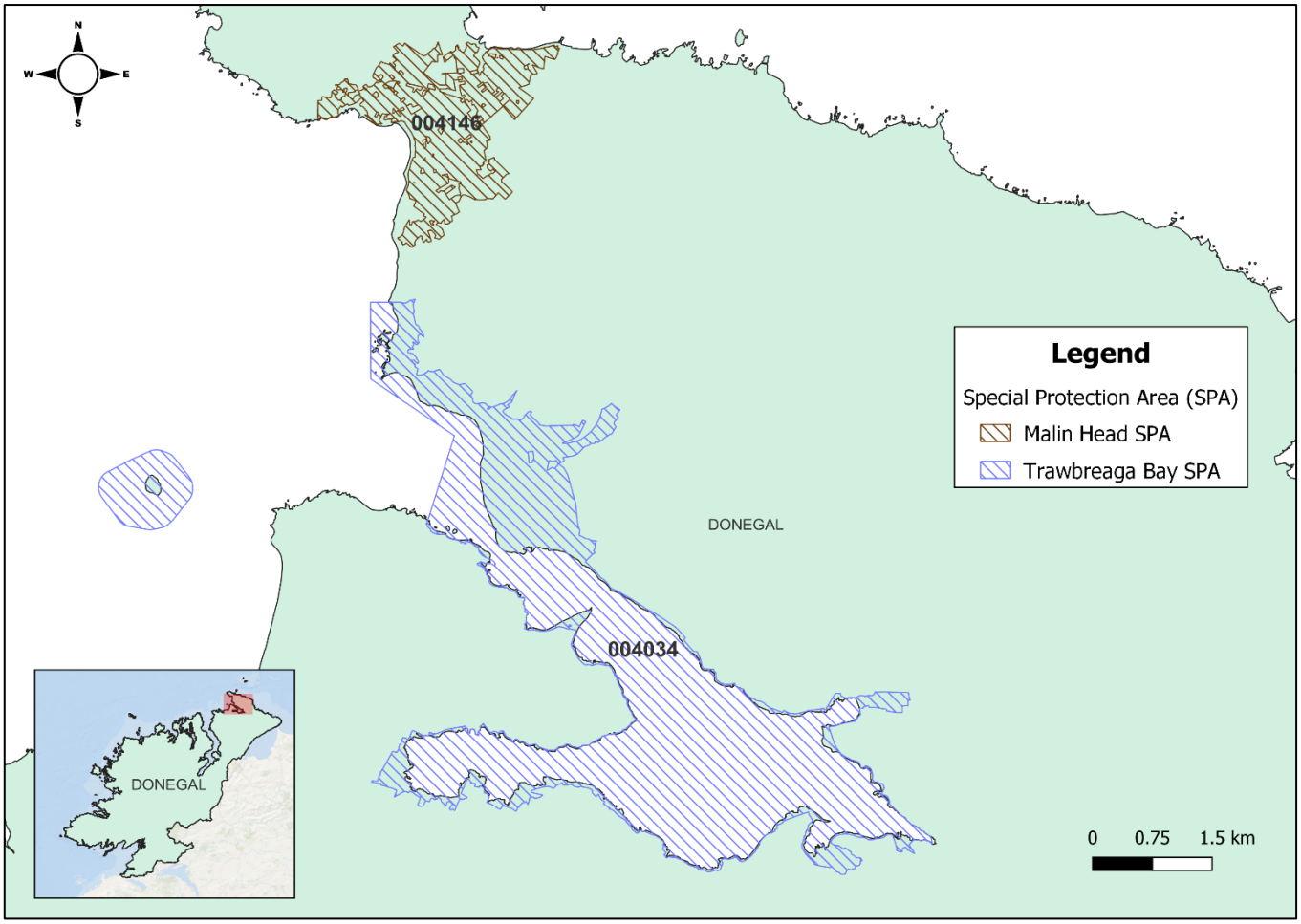

Figure 2-4: SPAs located in the Proposed Project area, Co. Donegal.

2.3. Screening Exercise

A key factor in the consideration as to whether or not a QI of a SAC or a SCI of a SPA is likely to be affected by a proposed project is the existence of connectivity (or interaction/ or impact pathway) between the designated feature and the impact mechanisms associated with the project. National guidance (DEHLG 2009) states that screening for AA should be carried out for any European site within the likely 'Zone of Impact' (Zol) of a plan or project.

Guidance outlines that the Zone of Impact must be evaluated on a case-by-case basis. The evaluation of the Zone of Impact considered the potential for effects to conservation features within (in-situ) and outside (ex-situ) the Proposed Project area and European sites, with reference to the nature, size and location of the project, its location in relation to individual European sites and the conservation objectives defined for their conservation features, and with reference to the sensitivities of the receptors, and the potential for in-combination effects.

The assessment of potential effect considered potential connectivity to European sites within the harvesting area (**Section 2.3.3.1**), along with potential effects to highly mobile protected conservation features species of more distant European sites that may occur in the harvesting area and thereby affected (**Section 2.3.3.2**).

2.3.1. Methodology Source-Pathway-Receptor (S-P-R) and Impact Assessment

The screening exercise considers potential *in situ* and *ex situ* effects to conservation features (*i.e.* potential effects to conservation features within or away from European sites respectively). In order to establish the Zone of Impact of the proposed activity, the assessment of connectivity between impact mechanisms (or source) and a conservation feature (*i.e.* QIs of SACs and SCIs of SPAs) considers the location of the proposed activity relative to habitats and non-mobile species, species foraging distances and migration routes, and the proximity of the proposed activity to foraging and breeding areas, and potential changes in species behaviour, potential hydrological connectivity between the proposed activity and conservation features, effects on prey species resulting in alteration in interactions and associated impacts.

To inform the screening exercise, available data on protected habitats and species was mapped using a Geographic Information System (GIS) and interrogated to identify for source-pathway-receptor connectivity. The source (potential impact mechanisms), pathways (hydrological, physical or ecological connectivity) and receptors (conservation features) were identified based on a review of ecological surveys undertaken in the area, using QGIS software. The assessment of project impact sources (or mechanisms) considers all relevant aspects of the Proposed Project that have potential direct or indirect *in situ* and *ex situ* effects on conservation features.

2.3.2. Identification of Potential Impact Mechanisms based on the Nature, Size and Location of the Proposed Project

The impact mechanisms of concern in relation to the effects to conservation features of European sites associated with the Proposed Project are:

Potential Impact Mechanism 1 - Seabed habitat loss by uncovering of sediment and subsequent desiccation by sunlight thereby impacting certain species occurring in that area.

Potential Impact Mechanism 2 - Vessel collision risk and noise disturbance by the increase in the number of vessels in the area which may cause noise disturbance and increase collision risk to marine mammal species occurring in the area.

Potential Impact Mechanism 3 - Loss of prey biomass due to the removal of biomass that would have previously been taken up naturally by ecosystem, as well as uncovering previously hidden fauna *e.g.* winkles, crabs and fish thereby, making them vulnerable to predators.

Impact Mechanism 4 Physical Disturbance due to trampling flora and fauna by cutters during harvesting process and reduction in "dampening effect" of seaweed presence in the area, therefore increasing sediment erosion.

2.3.3. Potential for Significant Effects

This section presents a screening exercise of the potential effects (direct or indirect) of impact mechanisms associated with the proposed activity (**Section 2.3.2**) to conservation features of European sites.

The screening exercise considers the potential for the proposed activity to have significant *in situ* and *ex situ* effects on European sites (*i.e.* potential effects to conservation features within or away from European sites respectively). Where it cannot be excluded on the basis of objective information that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site then it is necessary to carry out a Stage 2 (*i.e.* NIS).

The next section (**Section 2.3.3.1**) presents a screening exercise of the interaction and potential impact to Qualifying Features of European site located within the harvesting area while **Section 2.3.3.2** considers interaction and potential impact to wider ranging qualifying features of SACs and SPAs located outside the harvesting area, that may be found in the vicinity of the Proposed Project area.

2.3.3.1. Conservation Features of European sites within the harvesting area

There are three European sites within the Proposed Project area, the Mulroy Bay SAC, Sheephaven SAC and Greers Isle SPA which include the whole harvesting area in the Proposed Project. QIs and SCIs are listed in **Table 2.1**, with respective conservation objectives, and screening assessments of potential significant effect of impact mechanism 1, 2, 3 and 4 to the conservation features of the European Site.

Table 2.1: Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of SACs and SPAs within the harvesting area. Potential significant effects to the QIs are highlighted in bold.

<table>
<tr><th colspan="5">North Inishowen Coast SAC (002012)</th></tr>
<tr><th>QIs (*=Priority)</th><th>Ecological Group</th><th>Conservation Objective</th><th>Impact Mechanism</th><th>Source-Pathway-Receptor Assessment</th></tr>
<tr><td>Tidal Mudflats and Sandflats [1140]</td><td rowspan="5">Annex I marine/coastal/terrestrial habitat</td><td rowspan="2">Maintain the favourable conservation condition</td><td rowspan="6">1. Seabed habitat loss
2. Vessel collision risk and noise disturbance
3. Loss of prey biomass
4. Physical disturbance</td><td>Tidal mudflats and sandflats contain some quantities of suitable hard substrate (stones/rocks) which is particularly important for Ascophyllum nodosum to attach. Although this can pose some disturbance to this QI, the number of cutters (1 or 2) and the harvesting approach used in the Proposed Project, the impact is considered to have an insignificant effect on this QI. The QIs and impact mechanism combinations are screened out of further assessment.</td></tr>
<tr><td>Perennial Vegetation of Stony Banks [1220]</td><td rowspan="4">The QIs are located outside of the harvesting area; consequently, it is possible to exclude the potential for significant effects at the Screening for AA stage. The QIs and impact mechanism combinations are screened out of further assessment.</td></tr>
<tr><td>Vegetated Sea Cliffs [1230]</td></tr>
<tr><td>Fixed Dunes (Grey Dunes)* [2130]</td><td rowspan="2">Restore the favourable conservation condition</td></tr>
<tr><td>Machairs* [21A0]</td></tr>
<tr><td>Dry Heath [4030]</td><td rowspan="3">Maintain the favourable conservation condition</td></tr>
<tr><td>Narrow-mouthed Whorl Snail (Vertigo angustior) [1014]</td><td>Annex II terrestrial species</td></tr>
<tr><td>Otter (Lutra lutra) [1355]</td><td>Annex II marine species</td><td>This QI is known to be a highly mobile species, which has the potential to forage outside this area, consequently occurring in the harvesting area. Although this species is likely to occur in the harvesting area, the presence of one cutter is unlikely to have a significant effect of this QI. Additionally, the increase of a slow vessel in this area will likely trigger avoidance behaviour by this species, therefore effects of vessel collision and noise disturbance are assessed to not have any significant impact on this species.</td></tr>
</table>

				The QIs and impact mechanism combinations are screened out of further assessment.
Trawbreaga Bay SPA (004034)				
Barnacle Goose (*Branta leucopsis*) [A045]	Annex I bird species	Maintain the favourable conservation condition	1. Seabed habitat loss 3. Loss of prey biomass 4. Physical disturbance	This SCI is known to feed on grass in this site, which may be disturbed by the presence of the cutter in the intertidal zone. However, this species feeding areas include offshore island areas, therefore there is no potential likelihood for significant effects from the Proposed Project on this SCI. The SCI and impact mechanism combinations are screened out of further assessment.
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]				This SCIs is known to mostly feed on eel grass, which grows on muddy estuaries and on grasslands, usually when coastal supplies have been depleted at estuarine sites; therefore, there is no potential likelihood for significant effects from the Proposed Project on this SCI. The SCI and impact mechanism combinations are screened out of further assessment.
Chough (*Pyrrhocorax pyrrhocorax*) [A346]				These species are not known to feed on exposed intertidal zone, consequently it is possible to exclude the potential for significant effects at the Screening for AA stage. The SCIs and impact mechanism combinations are screened out of further assessment.
Wetland and Waterbirds [A999]				This area can be situated within the intertidal zone where the presence of cutters may disturb some waterbirds and cause physical disturbance to some wetland areas. However, with the number of cutters (1 or 2) used and the harvesting approach used in the Proposed Project, the impact is considered to have an insignificant effect on this QI. The QI and impact mechanism combinations are screened out of further assessment.

2.3.3.2. Conservation Features of Distant European Sites

A range of protected habitats and mobile species designated for distant SPAs and SACs have been included at this stage due to the potential of significant effects on these qualifying features by the Proposed Project (*i.e.* potential *ex situ* effects). QIs and SCIs are listed in **Table 2.2**, with respective conservation objectives, and screening assessments of potential significant effect of impact mechanism 1, 2, 3 and 4 to the conservation features of the European Site.

Table 2.2: Special Conservation Interest (SCIs) of SPAs outside the harvesting area. Potential significant effects to the QIs are highlighted in bold.

Malin Head SPA (004146)				
QIs (*=Priority)	**Ecological Group**	**Conservation Objective**	**Impact Mechanism**	**Source-Pathway-Receptor Assessment**
Corncrake (*Crex crex*) [A122]	Annex I bird species	Maintain or restore the favourable conservation condition	1. Seabed habitat loss 3. Loss of prey biomass 4. Physical disturbance	These species are not known to feed on exposed intertidal zone, consequently it is possible to exclude the potential for significant effects at the Screening for AA stage. The SCIs and impact mechanism combinations are screened out of further assessment.

2.3.4. Plans or Projects that Might Act In-Combination

As outlined in above, the obligation to undertake AA under the 2011 Birds and Natural Habitats Regulations derives from the Habitats Directive. Regulation 42 (1) of the 2011 Regulations requires that:

> *A screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or* ***in combination with other plans or projects*** *is likely to have a significant effect on the European site*.

It is therefore required that the potential impacts of the Proposed Project are considered in-combination with other relevant plans or projects. The assessment of potential in combination effects considers the potential impact mechanisms associated with the proposed activity that in combination with other plans and project may result in significant effects to QIs and SCIs.

To inform the assessment of potential in combination effects a review was undertaken of consent applications for projects in the vicinity of the Proposed Project included on the following web-sites:

- Donegal County Council - (Donegal County Council (donegalcoco.ie))
- Aquaculture Information Management System (AQUAMIS) - (Licensed Aquaculture Sites (22/06/2022) (marine.ie)

The assessment of potential in-combination effects also considered relevant negative impacting activities (threats and pressures) and, positive impacting activities/ management affecting the sites as identified in the Natura 2000 forms published for the sites.

In combination effects assessment as described in the accompanying AIMU report follows the approach described in the European Commission Notice Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive (EC, 2021). The assessment is informed by defining

- *Cumulative Effects Spatial Scope (CESS)*
- *Cumulative Effects Temporal Scope (CETS)*

Mulroy Bay supports many aquaculture activities which include salmon farming, long line mussel farming, lantern nets for scallop, and intertidal trestles for oyster production. Some seaweed species are also cultured. The current aquaculture activities that may pose a risk of acting in-combination with the Proposed Project are listed in **Table 2.3**.

Trawbreaga Bay includes multiple sites of aquaculture for oyster production, which can be found in **Figure 2-5**.

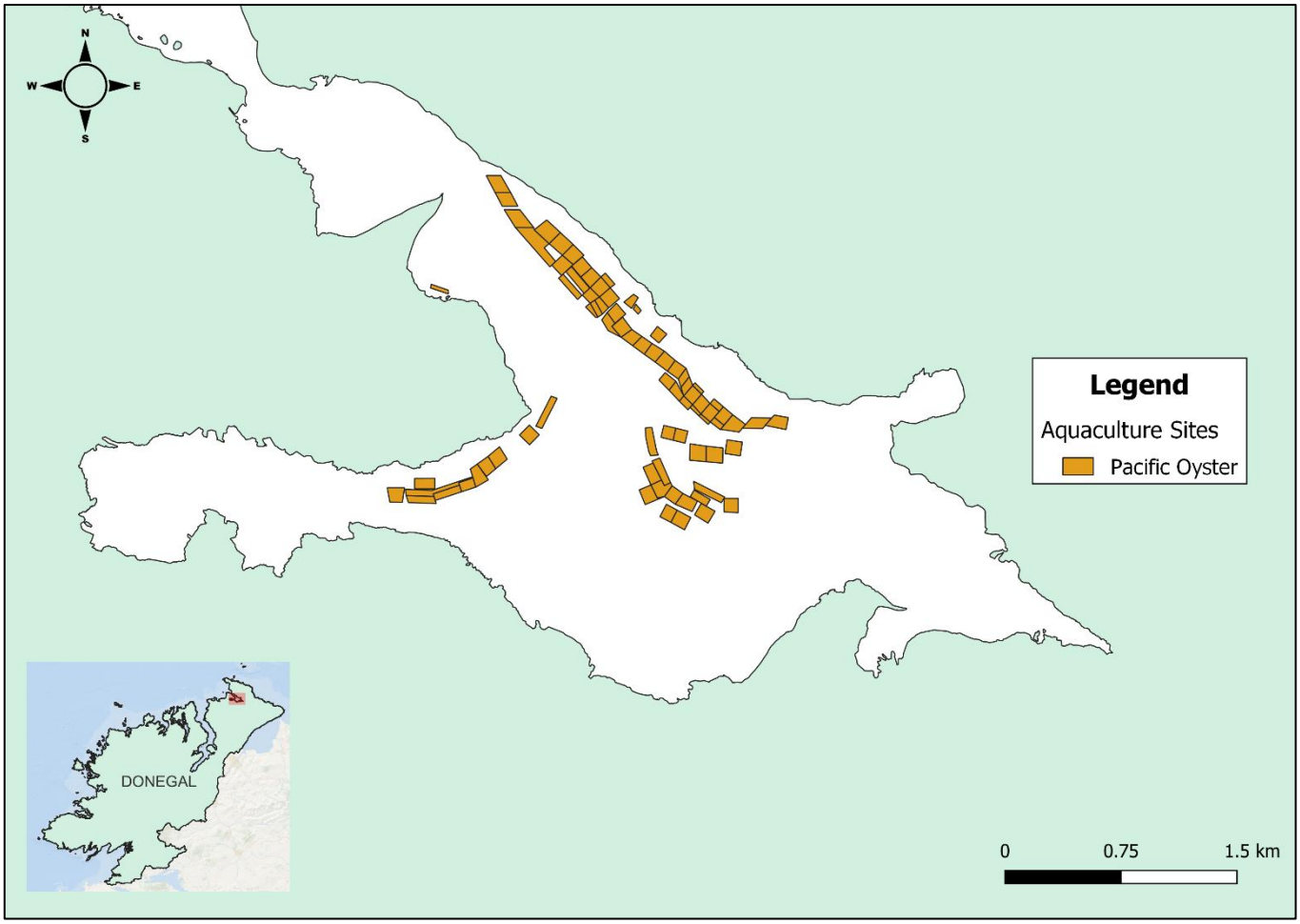

Figure 2-5: Location of aquaculture activities in the harvesting area of the Proposed Project.

Table 2.3: Aquaculture activities with respective status and species, in the harvesting area of the Proposed Project.

Project Site ID	Location	Status	Aquaculture type	Species
T12/177	Trawbreaga Bay	Licensed	Shellfish	Pacific Oyster
T12/190A				
T12/355A				
T12/352A				
T12/215				
T12/353A				
T12/227				
T12/229				
T12/230A				
T12/231				
T12/244A				
T12/301				
T12/385A				
T12/504A				

T12/360A				
T12/359A				
T12/363A				
T12/475A				
T12/418A				
T12/332A				
T12/333A				
T12/322A				
T12/434A				
T12/444A				
T12/336A				
T12/351A				
T12/345A				
T12/358A				
T12/368A				
T12/369A				
T12/367A				
T12/345A/1				
T12/345B/1				
T12/427A				
T12/427B				
T12/375A				
T12/384A				
T12/383A				
T12/386A				
T12/459A				
T12/450A				
T12/450B				
T12/429A				
T12/406A				
T12/415A				
T12/420A				
T12/426A				
T12/436A				
T12/436B				
T12/437A				
T12/437B				
T12/439A				
T12/447A				
T12/436C				
T12/436D				
T12/453A				
T12/454A				
T12/466A				

T12/468A				
T12/470A				
T12/471A				
T12/473A				
T12/457A				
T12/492A				
T12/520A				
T12/522A				
T12/523A				
T12/528A				
T12/530A				
T12/540A				
T12/542A				
T12/543A				
T12/544A				
T12/547A				
T12/549A				
T12/550A				
T12/553A				

Locations of oyster production sites are composed of clean sand or close to low water. Due to this, it is very unlikely for *Ascophyllum* to occur in this area therefore, there are no potential interactions between *Ascophyllum* harvesting and oyster production in any of the areas. Additionally, harvesting levels are also restricted to *ca* 10% of the standing stock, therefore no reduction in detritus levels is foreseen.

There is no likelihood for significant effects from the Proposed Project in combination with the plans or projects mentioned above.

2.4. Screening Outcome

The screening exercise investigates the potential for the proposed project to have significant effects on European Sites within the Natura 2000 network. The exercise has determined, in light of best available scientific data, that there is no potential for significant effects on the conservation features of the North Inishowen Coast SAC, the Trawbreaga Bay SPA and the Malin Head SPA from the Proposed Project. The findings of the screening exercise are summarised in **Table 2.4**.

Table 2.4: Screening matrix of the Proposed Project.

Screening Matrix	
Brief description of the project or plan	OGT is planning to harvest up to 2,000 wet tonnes of *Ascophyllum nodosum* from the harvestable area in Trawbreaga Bay, for processing in its plant at Kilcar, Co. Donegal which produces fertilisers and feeds for animals. The seaweed will be harvested by hand in the tradition manner. This involves using local cutters each working within a specific area. The seaweed will be cut at low tide using a knife, leaving approximately 15-20cm attached to the substrate to ensure re-growth of the plant. The seaweed will then be gathered using a fork into bundles (local term cailleach/caillaí) of approximately 1t, that are bound by nets (**Figure 2-2**) and ropes and left on the intertidal shoreline. These caillaí float at high water and are towed usually by a small boat to a suitable pier for collection by a lorry with a crane. They are lifted directly from the seashore by the crane onto the lorry.
European Site(s)	
Brief description of the relevant European site(s)	The European site within the harvesting area of the Proposed Project site is: • North Inishowen Coast SAC (002012) • Trawbreaga Bay SPA (004034) Other distant SPAs and SACs have been included at this stage due to the potential of significant effects on these qualifying features by the Proposed Project (*i.e.* potential *ex situ* effects): • Malin Head SPA (004146) The QIs and SCIs of the above SACs and SPAs are listed in **Table 2.1** and **Table 2.2** alongside conservation objectives set for the conservation features.
Assessment Criteria	
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European site.	Given the nature of the proposed activities and the biological receptors, the potential project impact mechanisms (or sources of potential impact to the environment) are: 1. **Seabed Habitat loss** by uncovering of sediment and subsequent desiccation by sunlight thereby impacting certain species occurring in that area. 2. **Vessel collision risk and noise disturbance** by the increase in the number of vessels in the area which may cause noise disturbance and increase collision risk to marine mammal species occurring in the area. 3. **Loss of prey biomass** due to the removal of biomass that would have previously been taken up naturally by ecosystem, as well as uncovering previously hidden fauna *e.g.* winkles, crabs, fish thereby making them vulnerable to predators. 4. **Physical Disturbance** due to trampling flora and fauna by cutters during harvesting process and reduction in “dampening effect” of seaweed presence in the area thereby increasing sediment erosion.

Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of Size and scale, Land take	The assessment of potential in-combination effects considers other plans and projects, which may result in cumulative significant effects QIs and SCIs of SACs and SPAs. These plans/projects encompass a range of aquaculture sites in Trawbreaga Bay (see **Section 2.3.4)** and it is concluded that there is no potential likelihood for significant effects caused by cumulative or in-combination effects.
Distance from the Natura 2000 site or key interests of the site;	The Proposed Project area of harvesting falls within the North Inishowen Coast SAC and the Trawbreaga Bay SPA, while the other SPA included is at the respective distance of the Proposed Project area: • Malin Head SPA (approximately 5km north)
Resource requirements (water abstraction etc.);	No resources will be required for the Proposed Project.
Emissions (disposal to land, water or air);	Emissions from the Proposed Project will result from engine exhaust gases from engines associated with the vessel.
Excavation requirements; Transportation requirements;	No excavation will be required. After the bundles of seaweed are brought to shore, they will be towed usually by a small boat to a suitable pier for collection by a lorry with a crane. They are then lifted directly from the seashore by the crane onto the lorry.
Duration of construction, operation, other.	Harvesting of one callaí takes approximately 3 hours, and 1 to 2 callaí will be collected per day, weather and tide permitting. A fallow system will be employed where areas are harvested one year and not returned to until the seaweed has recovered.
Describe any likely changes to the site arising as a result of: Reduction in habitat area; Disturbance to key species; Habitat or species fragmentation; Reduction in species in density; Changes in key indicators of conservation value (water quality etc.); Climate change	It is concluded that there is no potential likelihood for significant effects caused by the Proposed Project in isolation or in combination with other plans and projects regarding the following aspects of SACs and SPAs: • Reduction in habitat area • Disturbance to key species • Habitat or species fragmentation • Reduction in species density • Water quality • Climate change
Describe any likely impacts on the Natura 2000 site in terms of: Interference with the key relationships that define the structure of the site; Interference with key relationships that define the function of the site.	It is concluded that there is no potential likelihood for significant effects caused by the Proposed Project in isolation or in combination with other plans and projects.

Provide indicators of significance as a result of the identification of effects set out above in terms of: Loss; Fragmentation; Disruption; Disturbance; Change to key elements of the site.	Indicators of significance are loss of SCI and QI species and habitats. Indicators of significance are behavioural changes in SCI and QI species. It is concluded that there is no potential likelihood for significant effects caused by the Proposed Project in isolation or in combination with other plans and projects.
Describe from the above those elements of the Project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	It is concluded that there is no potential likelihood for significant effects caused by the Proposed Project in isolation or in combination with other plans and projects.

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