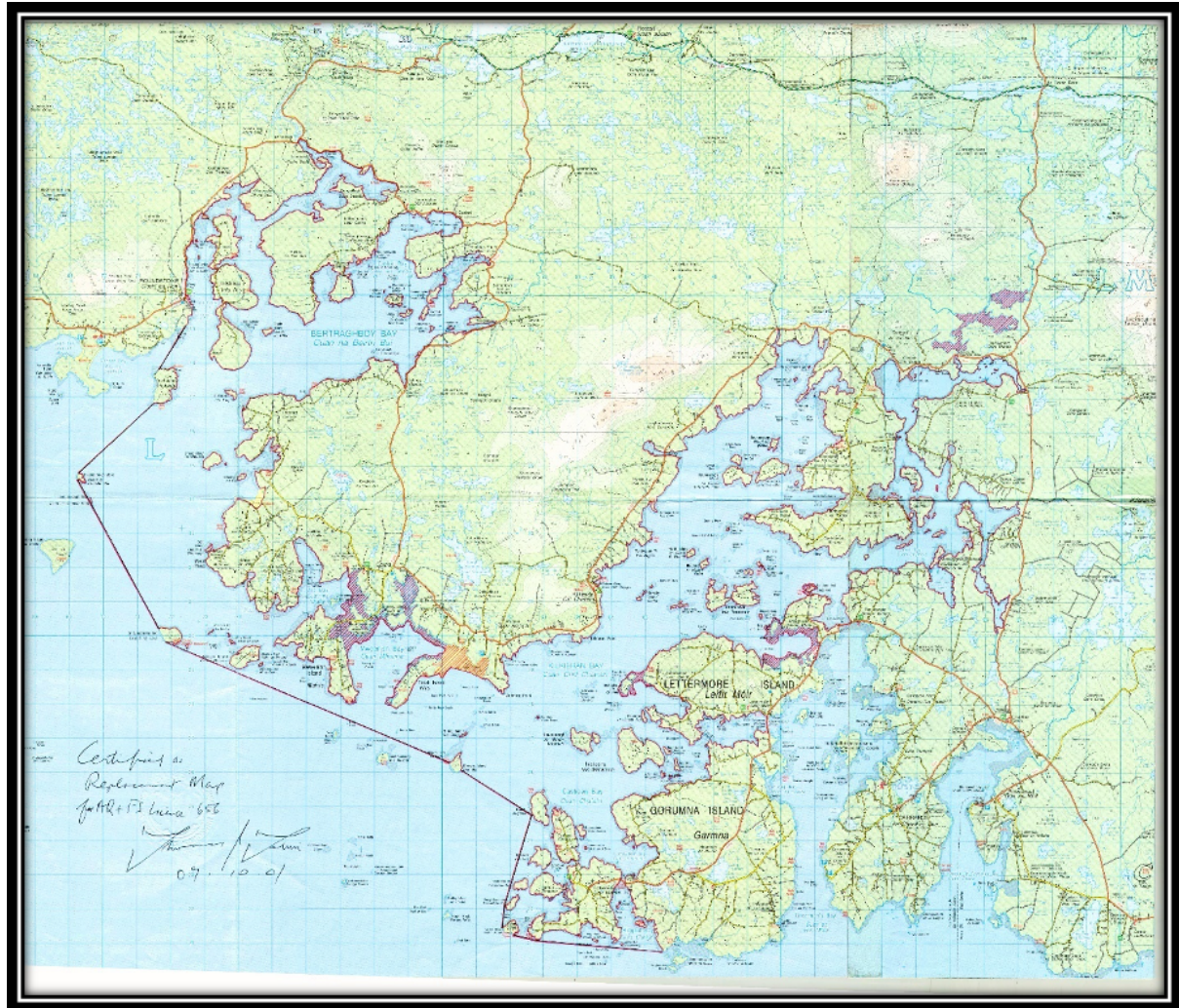


Screening Statement for Appropriate Assessment For hand harvesting of *Ascophyllum nodosum* in Cill Ciaran Bay, Co. Galway.



Report compiled on behalf of Mr Noel Mannion by
CuanMara Consultancy Ltd.
October 2025

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Report Control	
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1. Introduction

This Screening Statement for Appropriate Assessment (AA) has been prepared by CuanMara Consultancy Ltd. on behalf of Mr Noel Mannion and his family, [REDACTED], Co. Galway. This report has been prepared to accompany an Marine Usage License (MUL) application **PA/MUL/021** to traditionally hand harvest two species of seaweed in the intertidal zone. The proposed target species are *Ascophyllum nodosum* and *Fucus vesiculosus*. It is proposed that the seaweed species will be sustainably harvested by hand at low tide at ten locations, both Mr Mannion and his family have full harvesting rights to the resource on all listed maps in Annex-1.

The proposed harvest sites or areas along the shore at and islands within the Rosmuc area and the associated islands within Cill Ciaran Bay. The ten proposed harvest areas are shown as an overview in Figure 1 and fully detailed in the maps included in Annex-1. It is proposed that the sustainably harvested seaweed will be hand harvested and sold to buyers and processors locally. This Screening Statement for AA is, in part, informed by a visual inspection of the areas, published literature by Professor M.D. Guiry (Emeritus Professor of Botany of the National University of Ireland) and provisions made by Mr Mannion that the resource has not been harvested in a number of years. Prior to any harvesting a biomass survey will be carried out.

Statement of Authority

Dr Colin Hannon is the director of CuanMara Consultancy LTD and he has over twenty years' experience in aquaculture, environmental assessment and bio-resource utilisation. Dr Hannon holds a PhD in Marine Science, B.Sc. Hons in Applied Freshwater and Marine Biology, B.Sc. Ord. in Applied Aquatic Sciences and a higher certificate in Aquaculture from Galway Mayo Institute of Technology. Dr Hannon and his company have provided onsite and underwater services for Environmental Assessment tasks for other companies and state agencies as a contractor since 2010.

Dr Hannon is an contract expert for the EU Commission for European Food Safety Authority, STECF (JRC) Economic Report on Aquaculture (2020 – 2024 Macroalgae Section), Circular Bioeconomy Europe Joint Undertaking (CBE-JU) for macroalgae resource utilisation.

Dr Hannon is supporting Mr Noel Mannion and his family in formalising the usage of seaweed resources that he and family, including previous generations have been utilising for over 100 years.

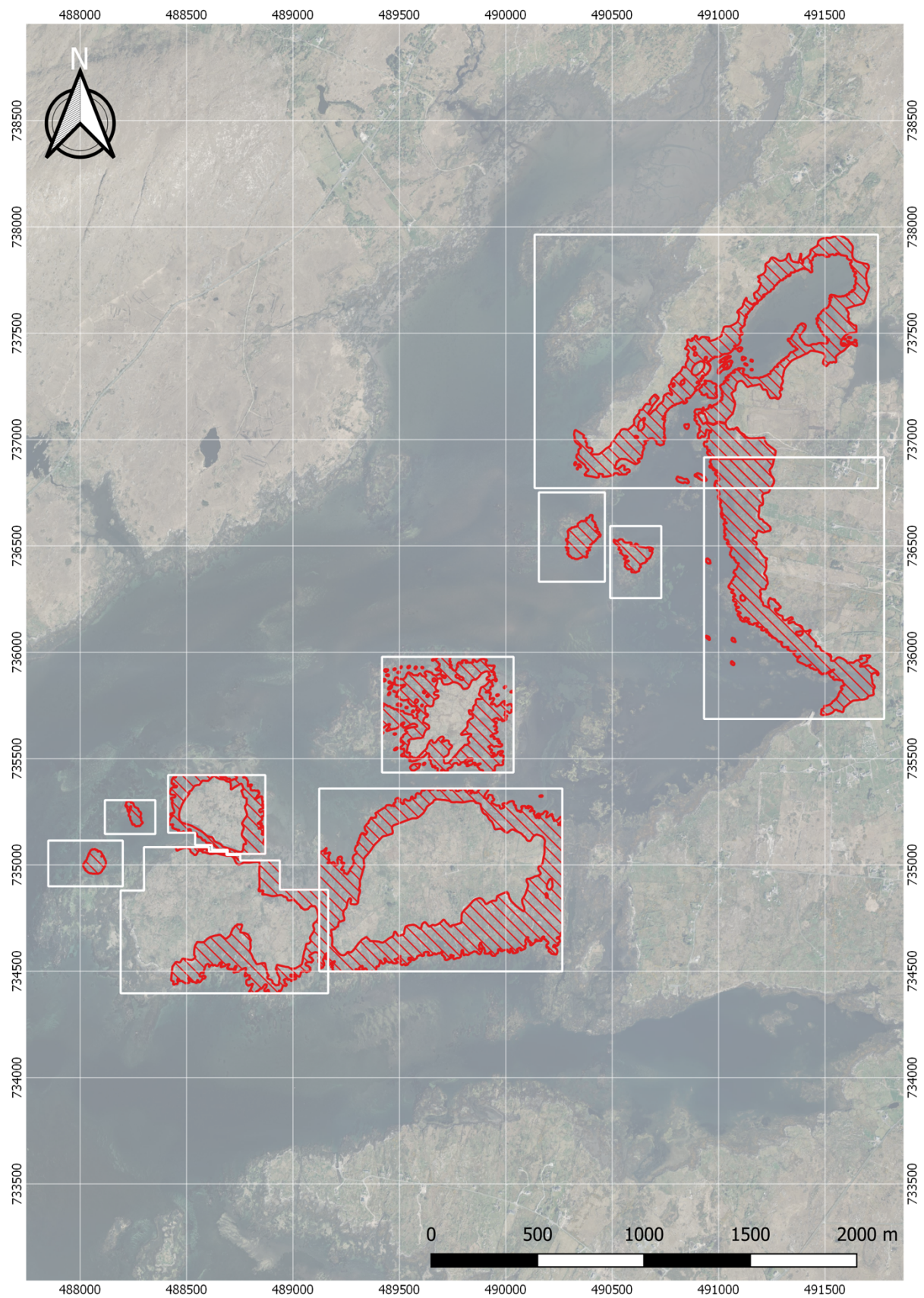


Figure 1. Overview of all proposed harvesting areas within Cill Ciaran bay and islands around Rosmuc, Co. Galway. Detailed versions of each proposed area are included in Annex-1.

1.1 Harvesting Overview & Case Studies

Ascophyllum nodosum, also known as Feamainn bhuí, Knotted Wrack, or "Asco," is a perennial wrack that grows on protected coasts in the west of Ireland. It is "remarkably luxuriant" (Baardseth 1950) in the intertidal zone of the cooler North Atlantic seas. Although Baardseth said that the seaweed was collected on 4-year cycles at Grattan Road in Galway for many years prior to then, it has been sustainably chopped by hand in Ireland since at least the early 1950s. In Ireland, annual output was reduced from 8,000 to 42,000 wet tonnes between 1964 and 2013. Cuan Cill Chiaráin provides a significant amount of this each harvest.

According to Cullinane (1984), assuming a dry:wet ratio of 1:5, the total quantity of *Ascophyllum* accessible in Ireland ranges from 150,000 wet tonnes (Michanek 1975) to 42,000 $\pm$ 11,000 dry tonnes (about 200,000-335,000 wet t). The 1996 harvest in Ireland, however, was 35,850 wet tonnes, according to Hession et al. (1998), who also provided precise maps and estimations for a possible sustainable harvest of 75,000 wet tonnes along 1220km of the west and south-west coast.

Although the acknowledged number provided by Foras na Mara (Marine Institute) is 7,500km, estimations of the length of the Irish coastline vary greatly since it depicts a complicated fractal. Estimates of biomass based on simple linear extrapolations, as those in Cullinane (1984), are consequently undermined and suspicious since sampling is rendered very complicated by these fractal dimensions and the complexity of biological populations. In fact, processing businesses' projections of sustainable harvests are the most accurate.

In 1980, processing businesses provided Guiry & Blunden (1981) with yearly data of 39,000 wet tonnes in 1973 and 62,000 wet tonnes in 1979. Peaks of 42,000 and 32,000 wet tonnes (converted from dry) were recorded in 1974 and 2008, respectively, according to Guiry & Morrison (2013). Production roughly follows a 10-year boom-bust pattern.

Given labour and other limitations, it is plausible to assume that the present accessible and sustainable harvest from Co. Kerry, Clare, Galway, Mayo, and Donegal is about 25,000 tonnes. Cuan Cill Chiaráin is the source of 6-8,000 wet tonnes of this. Information presented by Professor Michael D. Guiry estimate that over the course of four years, Cill Chiaráin bay can sustainably collect at least 40,000 wet tonnes of *Ascophyllum*, allowing for a 25% increase over the present harvest of 10,000 wet tonnes. However this is possibly a modest estimate.

The biology of the perennial wrack *Ascophyllum nodosum* is complicated. Notwithstanding this the fronds, sometimes called "shoots," emerge from an enlarged holdfast, and there are often many dominating fronds. One or more subdominant fronds quickly sprout to seal the canopy after these dominant fronds are gone. They may be harvested after four years if there are enough frond pieces (about 10cm) left behind after harvesting.

In Ireland, *Ascophyllum* creates a community on wave-sheltered beaches where the wrack's fronds create a canopy resembling a terrestrial forest, suffocating rival species. Although certain species, such as terrestrial forest plants, are suited to shade, biodiversity is often limited beneath such canopies. It may take up to six years to recover an *Ascophyllum* canopy that has been destroyed by storms (or excessive cutting). Fucoids like *Fucus guiryi* or *Fucus vesiculosus* first colonise the exposed rock that results. When at least 10cm of chopped fronds are still present, this recovery period is significantly shortened.

Like many fucoid species, *Ascophyllum* loses its cell surface layer while it is young and healthy. As it matures, this shedding becomes less effective, and the older fronds get coated with zoophytes and epiphytes, which makes them considerably less effective. Wave exposure, storm occurrence and fetch, and coast inclination (which influences wave movement) all influence frond length.

At two study sites, one in Clew Bay Co. Mayo and the other in South Connemara, Kelly et al. (2001) demonstrated that traditional hand harvesting was more efficient and economical than mechanical harvesting (with machinery) and that harvesting encourages vigour in these populations. Although species richness fluctuated throughout time, there was no discernible impact of harvesting on the stock or environment. After harvesting, *Ascophyllum* cover naturally declined somewhat, but after 17-months in Connemara and 11-months in Clew Bay, it had almost fully recovered. Harvesting had no discernible impacts or alterations on either brown or red algae. However, the removal of the *Ascophyllum* canopy after harvesting promoted increases in ephemeral algae cover at the mid-shore. Following harvest, there was a notable increase in fucus cover at both locations. Analysis was hampered by the small quantity and cover of both sessile and mobile animals. In contrast to controls, the cover of sessile fauna varied dramatically over time in hand-harvested portions at both locations.

In summary, therefore, *Ascophyllum* is a perennial seaweed that lends itself to sustainable and successful harvesting in Ireland, Nova Scotia, Iceland, and Norway. In Ireland it has been sustainably harvested since the 1950s contributing significantly to the well-being and prosperity of the people of South Connemara, and thereby to the survival of the Irish culture and language. There is no reliable scientific evidence that harvesting does anything more than increasing the vigour of populations by removing older fronds and allowing regrowth of vigorous young fronds. There is no reliable scientific evidence that harvesting damages biodiversity in any way. Current harvesting levels in Cill Ciaran are sustainable, as they have been for over 70-years, and my professional, carefully considered opinion is that harvesting from the area can be increased by at least 25%.

The objective of this Screening is to determine whether the proposed activity is likely to have significant effects on the integrity of Natura 2000 sites, either alone or in combination with other plans or projects. The precautionary principle is applied throughout this assessment, this Screening Report represents Stage-one of the AA process. If significant effects cannot be excluded, the project must proceed to Stage-two Appropriate Assessment.



Figure 2. Example of a typical harvesting site in Cill Ciaran Bay, the main species in the figure is *Ascophyllum nodosum*.

2. Project Description

The project involves the sustainable, non-mechanical harvesting of seaweed species across ten areas (Maps 1–4; Annex 1) along the Connemara coast in Cill Ciaran Bay. The primary species targeted is *Ascophyllum nodosum* (knotted wrack), with additional harvesting of fucoid algae *Fucus vesiculosus* where accessible in shallow intertidal zones within the areas the harvesters have rights to the resource.

Harvesting will be carried out manually using knives and sickles, a minimum of 10–15 cm of fronds will be retained above the holdfast to ensure regrowth and regeneration. The holdfast and basal tissue will not be removed, maintaining the capacity for regrowth. Harvest intensity will not exceed 25% of standing biomass in any one cut. Scientific studies in Ireland (Kelly et al., 2001; O'Connor et al., 2007) demonstrate that such harvesting levels allow recovery of *Ascophyllum* within 3–4 years.

Harvesting will be conducted on a rotational basis, with a minimum of three years between cuts in the same location. Access will be by foot during low tides and by small vessel for transportation of harvest stock to two local offloading sites. Anchoring in sensitive marine habitats (Maërl beds, seagrass meadows, lagoons) will be prohibited.

Table 1: Summary of Operational Parameters

Parameter	Rule	Justification
Method	Manual cutting; no mechanisation	Sustainable traditional practice; avoids abrasion/dredging of resource
Cut height	Retain ≥ 10 –15 cm above holdfast	Facilitates regrowth (Kelly et al., 2001)
Biomass removal	$\leq 25\%$ per cut	Supports 3–4 year recovery (O'Connor et al., 2007)
Rotation	≥ 3 years	Allows canopy/community recovery
Access	On foot; small craft transport	Minimises footprint
Anchoring	Prohibited on maërl and seagrass	Sensitivity of [1160]/[1170] habitats (NPWS, 2019)
Seasonality	Avoid seal pupping/bird breeding/overwintering	Disturbance avoidance (NPWS, 2019; Crowe et al., 2013)

Harvesting Rotation

The harvesting areas are designated on a detailed maps in Annex-1, harvesting will only commence when the site has sufficient biomass or regrowth to be harvested sustainably. A minimum length and age assessment is conducted for each designated harvest area on a yearly basis. Once an area is harvested a base line survey is carried out and this area will be left fallow (no harvesting will take place) for two and half years too three years depending on the results from the minimum length and age assessment. The Aim of these processes is to monitor regrowth of existing biomass prior to recurring harvesting in each area.

Prior to the opening of the designated area for harvesting again, experts will carry out a biomass and regrowth assessment no less than six months prior to the opening of an area. This aid the continuity of supply and the loss of harvest days through controlled management of harvest areas.

Harvesting areas will be divided into sectors and allocated detailed map reference co-ordinates for each area within the sector. Biomass monitoring of the harvesting area by way of on the water and drone footage assessments. This is information supports monitoring and identification of any potential violations to the Harvester Framework. The framework is put in place so that the seaweed resource can be managed by Mr Mannion and his family.

Detailed records relating to harvest location based on map reference coordinates, harvest volume and rotation procedures are post-harvest.

Sustainable annual yield

In each harvest year biomass assessments with harvesters will define the areas that have completed their following regrowth period and the six month prior to harvesting inspection has been carried out. Each allocated area harvesters will aim to leave 30% of the area untouched to maintain a sustainable yield. Going forward detailed data collection of the minimum sustainable yield will be calculated based on the estimation and harvest models from biometric data collection. The harvesters utilise the guiding principal of Do No Significant Harm (DNSH), and each actor along the value chain aims to reduce environmental Impact and implement measures to minimise negative impacts on surrounding aquatic and terrestrial environments by the implementation and extensive environmental monitoring through base line data collection.

3. Methodology

The approach and methodology for this desk based assessment for screening follows the process in the below figure



Sources (harvesting, trampling, vessel use, human presence) are evaluated against potential pathways (canopy removal, physical abrasion, disturbance) and receptors (Annex I habitats, Annex II species, Annex I birds and migratory species).

Zone of Influence (ZOI):

- direct habitat effects within harvesting areas +100m;
- visual disturbance to birds/seals to 150m;
- Buffer zone of 200m for sensitive habitats (maërl and seagrass)
- precautionary acoustic disturbance radius for harbour porpoise to 500m.

Data sources include NPWS Site-Specific Conservation Objectives (2023), NPWS spatial datasets, Marine Institute INFOMAR benthic maps (2017), Bird Watch Ireland counts, and BIM/Marine Institute sector reports.

4. Requirement Overview

The European Community's nature conservation law, known as Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (also referred to as the Habitats Directive), was created to guarantee that biodiversity is preserved in Europe by conserving natural habitats as well as wild fauna and flora.

Through the preservation of an EU-wide network of protected areas known as Natura 2000 sites, Articles 3–11 of the Directive provide the legal tools to safeguard species and habitats of Community interest. Any project or proposal that has the potential to materially compromise the integrity of a Natura 2000 site must undergo an AA in accordance with Article 6(3) of the Habitats Directive. A plan or project's expected major impacts on a Natura 2000 site are the main focus of AA, which also takes the site's conservation goals into account. The National Parks and Wildlife Service (NPWS), the responsible

body for overseeing Natura 2000 areas in Ireland, establishes the Conservation Objectives for each site. Any plan or proposal that might have a substantial impact on the integrity of the Natura 2000 site must also be taken into account throughout the AA process in conjunction with other activities.

Competent authorities must perform an Appropriate Assessment (AA) and, if required, an AA on any plan or project for which they receive a consent application or that they themselves wish to undertake or adopt, in accordance with Articles 6(3) and 6(4) of the Habitats Directive.

Originally, the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94 of 1997) incorporated the Habitats Directive into Irish legislation. The European Communities (Birds and Natural Habitats) Regulations 2011, as modified (henceforth referred to as the 2011 Birds and Natural Habitats Regulations), subsequently superseded the 1997 Regulations.

According to Regulation 42 of the 2011 Birds and Natural Habitats Regulations, any plan or project on the foreshore that the authority receives an application for consent for, or that the authority itself wishes to undertake or adopt, must undergo an Appropriate Assessment (AA) screening and, if necessary, an AA. Articles 6(3) and 6(4) of the Habitats Directive provide the basis for this duty.

The Planning and Development Act 2000 (as modified) in Ireland also implements the Habitats Directive's AA requirement with regard to land use plans and planned projects that need development approval.

Each Member State has designated a network of sites of conservation significance that house species and ecosystems that must be either preserved at or, where appropriate, restored to favourable conservation status. Natura 2000 sites are locations, species, and habitats that are protected under the Habitats Directive (Directive 92/43/EEC) and the Birds Directive (Directive 2009/147/EC). The 2011 Birds and Natural Habitats Regulations refer to Natura 2000 sites as European sites. European sites and Natura 2000 sites are interchangeable terminology. In this study, the phrase "Natura 2000 sites" is used. Special Areas of Conservation (SACs), which are established under the Habitats Directive, and Special Protected Areas (SPAs), which are designated under the Birds Directive (EC Directive EC 79/409/EEC), are two examples of Natura 2000 sites in Ireland that are a component of the Natura 2000 network.

While SPAs are established to safeguard the populations and habitats of bird species protected under the Birds Directive, SACs are declared because of their substantial ecological significance for habitats and species protected under Annex I and Annex II of the Habitats Directive, respectively. 'Qualifying Interests' (QI) are the site's designated habitats and/or (non-bird) species for which a SAC or SPA is chosen (OPR, 2021). 'Special Conservation Interests' (SCIs) are the designated bird species for which an SPA is chosen. In actuality, however, SCIs are also covered by the general nomenclature of qualifying interests. The phrase "qualifying interest" appears often in this report.

4.1 Appropriate Assessment Screening Assessment Criteria

The presence of connection (or interaction/impact route) between the designated feature and the project's impact mechanisms is a crucial component in determining whether or not a proposed project is likely to have an influence on a QI of a SAC or a SCI of an SPA. According to national advice (DEHLG 2009), each European site that is anticipated to be within the Zone of Impact of a plan or project should have an AA screening conducted. According to the guidelines, each project's Zone of Impact has to be assessed separately.

Considering the nature, size, and location of the project, its location in relation to individual Natura 2000 sites, the Conservation Objectives defined for their Qualifying Interests, the receptors' sensitivities, and the possibility of in-combination effects, the evaluation of the Zone of Impact here took into account the potential effects of the proposed development to Qualifying Interests both inside (in-situ effects) and outside (ex-situ effects) Natura 2000 sites.

The possibility of the project having a major impact on Natura 2000 sites, both alone and in conjunction with other projects, is taken into account by the AA screening matrix (shown in Table 2 & 3). Below is a summary of the assessment's conclusions. It is possible to infer that there would be no in-situ consequences of the planned harvesting operations on designated Natura 2000 sites due to their size and character, as well as the distance between the harvest regions and these sites.

The project region may include highly mobile protected Qualifying Interest species from far-off Natura 2000 areas; as a result, the ex-situ impact has to be taken into account. There is little chance that protected species from far-off Natura 2000 sites will exist inside the project's effect zone due to the project's size. There wouldn't be many individuals of protected species from far-off Natura 2000 areas inside the project zone of influence, therefore it can be said that there won't be any notable ex-situ impacts on qualifying interests. Effects and routes are removed.

4.2 Receiving Environment & Natura 2000 Sites

4.2.1 Kilkieran Bay & Islands SAC (IE002111)

This extensive coastal SAC is designated for Large Shallow Inlets and Bays [1160], Reefs [1170], and Coastal Lagoons [1150], and for species Otter (*Lutra lutra*) [1355], Harbour Seal (*Phoca vitulina*) [1365], and Harbour Porpoise [1351]. The site supports intertidal fucoid canopies, sublittoral kelp forests, live maërl beds, and seagrass meadows. NPWS conservation objectives require maintenance of habitat area, distribution, structure and function, and favourable conservation condition of species populations. Just north of Galway Bay, Cill Ciaran Bay and Islands SAC stretches from Keeraun Point, south of Carraroe, west to Mace Head, west of Carna, all in County Galway. There are several islands and rocky islets, a sizable expanse of open sea water, and a heavily indented coastline with numerous bays, channels, and inlets—most notably the interconnected Cill Ciaran Bay and Greatman's Bay. As the water funnels between islands and along channels, the bay entrances are exposed to powerful tidal streams and the predominant south-westerly winds. Numerous lakes, lagoons, and streams empty into the bays.

Cill Ciaran Bay and Greatman's Bay have marine ecosystems that are very valuable for conservation. Cill Ciaran Bay has a great diversity of marine creatures, while both bays provide a broad range of ecosystems. The vast and diverse beds of free-living red calcareous algae, or maërl (locally referred to as "coral"), are communities of special significance. The maërl species *Lithothamnion corallioides*, *Lithophyllum dentatum*, and *Lithothamnion fasciculatum* co-occur at Cill Ciaran Bay, one of only three locations known to exist in Ireland. At the borders of some of the living maërl beds is a thin bed of pristine dead maërl where the very rare anemone *Halcampoides elongatus*, which is only found in Cill Ciaran Bay and Ards Bay in Ireland, may be found.

The site is very significant due to the quantity of lagoons it contains; it is regarded as one of the greatest locations in the nation for this habitat and offers a great illustration of a very uncommon kind of peat-based saline lake lagoon.

Saltmarsh patches are common throughout the site; most pieces of shoreline have a narrow saltmarsh edge. The areas west of the location where Machair is most prevalent include Mweenish Island, Finish Island, and Mason Island. A number of the freshwater lakes along the coast are home to the submerged aquatic plant known as Slender Naiad (*Najas flexilis*). Commonly found throughout the site is the otter, a species that is also included under Annex II of the EU Habitats Directive. Common Seals utilise the location (the 2003 all-Ireland survey recorded a highest figure of 116). Regular visitors, grey seals have the potential to reproduce.

4.2.2 Connemara Bog Complex SAC (IE002034)

Most of the south Connemara lowlands in County Galway are included in the Connemara Bog Complex SAC, which is a sizable site. Areas of deep peat surrounded by jagged granite outcrops clothed with heath flora are what define the Connemara Bog Complex. However, lowland Atlantic blanket bog is the site's primary ecosystem. The Owenmore (Ballynahinch) river, the Glashanasmearany and Derrygauna rivers (south of Lough Bofin), the Cashla river (flowing from Glenicmurrin Lough), the Glengawbeg river (connecting Lough Agraftard and Lettercraffoe Lough), and the Owenboliska river and its tributaries (north of Spiddal) are the site's principal river systems. Many of the rivers on the property are home to Atlantic salmon. This location has four major lagoons: Salt Lake, Doire Bhanbh, Lough Ahalia, and Lough Aconeera. Each of the four, which vary in size from 1 to 90 hectares, is considered a saline lake lagoon. The Connemara Bog Complex is known to be home to otters. For Greenland White-fronted Goose wintering numbers, the location is significant nationally. Lough Scannive is home to a globally significant cormorant breeding region. There are up to four nesting sites for golden plover. Primarily a terrestrial SAC for blanket bog and heath, this site also includes numerous coastal lagoons [1150] of high sensitivity. Conservation objectives require stable area, salinity regimes, and characteristic lagoon communities.

4.2.3 Connemara Bog Complex SPA (IE004181)

The SPA supports important bird populations including Merlin (*Falco columbarius*) [A098], European Golden Plover (*Pluvialis apricaria*) [A140], Sandwich tern (*Sterna sandvicensis*) [A191] and Common Gull (*Larus canus*) [A182], with objectives to maintain population size and distribution and minimise anthropogenic disturbance. The Connemara Bog Complex SPA is a sizable area that includes a substantial portion of County Galway's south Connemara lowlands. The site is divided into three distinct sections: north-west of Spiddal, south of Recess, and north of Roundstone. Particularly because of its nationally significant breeding populations of Common Gull, Cormorant, Merlin, and Golden Plover, Connemara Bog Complex SPA is of great ornithological significance. A wintering population of Greenland White-fronted Goose also uses the site; small groups of up to 30 birds have been seen at different points.

4.2.4 Shellfisheries (wild and aquaculture)

Cill Ciaran Bay supports native oyster (*Ostrea edulis*) beds, mussels (*Mytilus edulis*), scallops (*Pecten maximus*), and crustacean pot fisheries for lobster (*Homarus gammarus*), brown crab (*Cancer pagurus*), and velvet crab (*Necora puber*). Shrimp (*Crangon* spp.) and prawns (*Nephrops norvegicus*) occur in deeper sandy/muddy areas. The bay forms part of Ireland's Shellfish Waters Protected Areas subject to regular classification and monitoring.

4.2.5 Local habitat distribution within Kilkieran Bay (NPWS site documents)

Seagrass (*Zostera marina*) meadows are mapped due west of Greeve Island, between the Kinnelly Islands, North-West of Lettermore Island, and between Ardmore Point and the Birmore Islands. Smaller *Zostera* areas occur at the mouth of Ard Bay, in Mweenish Bay, and in Greatman's Bay. In places seagrass co-occurs with live maërl beds, indicating particularly high sensitivity to physical disturbance. The site synopsis records the large burrowing anemone *Pachycerianthus multiplicatus* at two muddy sites within Cill Ciaran Bay, a species known from very few Irish localities, highlighting the conservation importance of local soft-sediment communities.

4.2.6 Neighbouring SPAs and key islands (context for birds)

Adjacent to Cill Ciaran Bay, the Slyne Head to Ardmore Point Islands SPA (004159) comprises numerous small islands, rocks and skerries used by breeding and foraging seabirds. Larger islands include Inishlackan, Croagh na keela Island, St Macdara's Island, Masson (Mason) Island, Birmore Island, Freaghillaun, Illaunamid and Illaunurra. The SPA includes surrounding seas to 200m from shore, functioning as foraging corridors for terns and other seabirds.

4.2.7 Shellfish Waters Protected Area and classified production areas

The Sea-Fisheries Protection Authority's national list of classified bivalve mollusc production areas includes entries for Cill Ciaran Bay (e.g. 'Cill Ciaran Bay North'). These areas are subject to routine water quality monitoring and classification, reflecting the bay's socio-economic importance for shellfisheries.

4.2.8 Local marine mammal context

NPWS aerial and population surveys confirm regular use of Connemara bays by harbour seal, with haul-out groups recorded along the Galway coast. Harbour porpoise are present year-round in shallow bays of the region. Precautionary stand-offs (≥ 150 m for seals) and low-noise routing/speed management (500m precautionary acoustic radius for porpoise) are applied.

4.3 Consistency with UNCLOS and the Maritime Jurisdiction Act

The proposed seaweed harvesting occurs in intertidal and very nearshore subtidal waters along the Connemara coast, i.e., within Ireland's internal waters and territorial sea. Under the 1982 United Nations Convention on the Law of the Sea (UNCLOS), Ireland exercises sovereignty over the water column, seabed and subsoil in the territorial sea, subject only to the right of innocent passage. In addition, UNCLOS recognises the coastal State's sovereign rights to explore, exploit, conserve and manage living resources in its maritime zones, and obliges States to protect and preserve the marine environment. Ireland has implemented these international obligations domestically through the Maritime Jurisdiction Act 2021, which defines and gives effect to Ireland's maritime zones (internal waters, territorial sea, exclusive economic zone and continental shelf) and provides the statutory framework within which activities such as the present proposal are regulated.

In terms of rights to regulate living resources, UNCLOS confirms that the coastal State may determine conservation and management measures for living resources, including the setting of allowable harvest levels and technical measures that ensure long-term sustainability. The project's design parameters—hand-harvesting only, retention of holdfasts, a maximum of 25% biomass removal per cut, and a minimum three-year rotational return period—mirror the conservation logic envisaged by UNCLOS. These measures are evidence-based and are capable of being conditioned, monitored and enforced under Ireland's domestic licensing and consenting regimes. As such, the activity aligns with the Convention's requirement to manage living resources on the basis of the best available science and precaution.

Regarding the duty to protect and preserve the marine environment, UNCLOS (Part XII) makes clear that a State's sovereign rights over natural resources are exercised subject to environmental protection obligations. The proposed operation has been deliberately configured to minimise risk pathways: it involves no mechanised cutting, no dredging, and no seabed extraction; it prohibits anchoring in sensitive habitats such as seagrass meadows and maërl beds; it applies spatial stand-offs to lagoons and seal haul-outs; it restricts vessel speeds and loitering; and it includes monitoring (GPS plot logging, fixed-point photography and biomass checks) to verify compliance and recovery. These embedded controls are targeted at the very pressures Part XII is designed to avoid physical damage to habitats, unnecessary disturbance to fauna and pollution of the marine environment thereby giving practical effect to Ireland's UNCLOS obligations in day-to-day operations.

With respect to navigation and innocent passage, the activity uses small craft on existing, customary routes to and from intertidal harvest areas. No exclusion zones or obstructions to navigation are proposed or required. The project therefore does not impede innocent passage through the territorial sea, while Ireland retains full competence to regulate the harvesting activity itself within its maritime zones.

Finally, the Maritime Jurisdiction Act 2021 provides the domestic legal framework through which Ireland defines and administers its maritime zones consistently with UNCLOS. Because the proposed harvesting takes place wholly within waters under Irish jurisdiction, it is subject to national regulatory

control (including any licence/consent conditions that give effect to conservation, navigational safety and environmental protection). The project's safeguards spatial buffers, no-anchor rules in sensitive habitats, seasonal restrictions and monitoring are the very type of measures contemplated by both UNCLOS and national law to ensure that the exploitation of living resources proceeds without adverse effects on the marine environment or other legitimate uses of the sea.

Conclusion

Taken together, the project's scope (nearshore, small-scale, hand-harvest), its embedded environmental safeguards and its amenability to Irish licensing and enforcement demonstrate consistency with Ireland's obligations under UNCLOS and with the Maritime Jurisdiction Act 2021. The activity sits squarely within areas where the State has clear competence to regulate and conserve living resources, is configured to meet the Convention's environmental protection duties, and does not interfere with navigation or other internationally protected uses of the sea.

4.4 Consistency with the National Climate Objective

Ireland's National Climate Objective as set out in the Climate Action and Low Carbon Development Act 2015 and strengthened by the 2021 Amendment commits the State to "*pursue and achieve, by no later than 2050, the transition to a climate-resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy.*" Delivery is organised through legally-binding, economy-wide carbon budgets and successive Climate Action Plans that chart sectoral pathways to 2030 and beyond. The proposed near-shore, small-scale, hand-harvesting of seaweed in Connemara is consistent with this framework and can demonstrate alignment with the National Climate Objective as follows.

Project emissions and mitigation hierarchy, the activity has a low direct emissions profile: harvesting is by hand; there is no mechanised cutting, dredging or seabed extraction; and vessel use is limited to short, near-shore transits for personnel and product transfer.

The primary Scope-1: source is fuel used by small craft (and occasional road transport to landing points). Scope-2 electricity use is negligible on site; Scope-3 downstream processing/transport lies outside the harvesting footprint but can be tracked separately by the operator. The proponent will maintain a simple GHG management plan (fuel logs for boats/vehicles; periodic estimation of CO_{2e} using recognised Irish inventory methods) to evidence the project's low-carbon operation and support continuous improvement in line with the national climate policy architecture overseen by the EPA.

Protection of blue-carbon habitats and climate resilience

Consistent with the biodiversity-rich and environmentally sustainable dimensions of the National Climate Objective, the project's embedded safeguards avoid disturbance to blue-carbon habitats that contribute to long-term carbon storage and coastal resilience seagrass meadows and maërl beds by applying no-anchoring, ≥100 m stand-offs, careful routing, and slow-speed approaches. This aligns with Ireland's policy emphasis on nature-based solutions and growing national research into blue carbon potential and monitoring. In practical terms, safeguarding these habitats prevents loss of stored carbon and helps maintain ecosystem services (sediment stabilisation, wave attenuation) that underpin climate adaptation goals on the Atlantic seaboard.

Contribution to a circular and low-carbon bioeconomy

While downstream uses lie outside this Screening, sustainably harvested seaweed is commonly directed to bio-stimulants, food ingredients, and materials that can displace higher-carbon inputs. Any such benefits will be treated as informative co-benefits rather than counted toward the project's on-site emissions tally, thereby maintaining integrity with Ireland's carbon-budgeting approach while still supporting CAP objectives for enterprise decarbonisation and resource efficiency.

Operational assurance and reporting. To keep the project aligned with the National Climate Objective over time, the operator will

- i) record fuel use for marine/road movements,
- ii) track harvested tonnage and trip frequency (to manage carbon intensity per tonne landed), and
- iii) review routing/gear choices annually to minimise emissions while respecting ecological safeguards. These light-touch measures complement the State's wider climate governance (carbon budgets/Climate Action Plans) and the EPA's national inventory role without imposing disproportionate burden on a small-scale coastal operation.

Conclusion

The proposed seaweed harvesting is consistent with achieving the National Climate Objective: it operates with very low direct emissions, incorporates safeguards that protect blue-carbon habitats and support climate resilience, and is amenable to simple, transparent emissions tracking compatible with Ireland's climate-budget framework. As such, the activity supports the State's transition to a climate-neutral, biodiversity-rich and environmentally sustainable economy by 2050.

4.5 Consistency with the National Biodiversity Action Plan 2023–2030

Ireland's 4th National Biodiversity Action Plan (NBAP) 2023–2030 sets out a legally-backed national programme to halt and reverse biodiversity loss by 2030 through five headline objectives, underpinned by circa.194 actions and new obligations on public bodies.

The five objectives are:

- 1) adopt a whole-of-government, whole-of-society approach;
- 2) meet urgent conservation and restoration needs;
- 3) secure nature's contributions to people;
- 4) enhance the evidence base for action; and
- 5) strengthen Ireland's international contribution.

The plan was launched by the Department of Housing, Local Government and Heritage (DHLGH) and is the first NBAP to be explicitly supported by legislation for implementation across the public sector.

The proposed small-scale, hand-harvesting of seaweed in nearshore Connemara is consistent with the NBAP's aims and delivery model. It embeds design measures to avoid sensitive habitats (no mechanisation, holdfast retention, $\leq 25\%$ biomass removal, ≥ 3 -year rotational return, no anchoring on seagrass and maërl, spatial buffers to lagoons and seal haul-outs), and includes monitoring and data-sharing commitments that can support local and national biodiversity datasets. This places the project within the NBAP emphasis on preventing harm, improving evidence, and enabling community-scale stewardship of marine ecosystems.

Objective 1: Operations will be coordinated with relevant authorities and stakeholders (NPWS, DHLGH/Marine spatial planning teams, the Marine Institute/INFOMAR for seabed information, SFPA for shellfish production areas, and local fishery/aquaculture operators). Clear channels for incident reporting (e.g., wildlife disturbance, invasive species sightings) and seasonal briefings for harvesters reflect the NBAP call for mainstreamed biodiversity action across public bodies and communities.

Objective 2: Conservation and restoration needs. The project is explicitly designed to avoid deterioration of qualifying interests and other sensitive features by: prohibiting anchoring on *Zostera* meadows and maërl beds; applying ≥ 100 m stand-offs and route planning to minimise abrasion; avoiding lagoons by ≥ 50 -100 m; using defined foot access to limit intertidal trampling; and timing activity to avoid sensitive bird and seal periods. These measures track the NBAP's marine actions to protect vulnerable habitats and species and to reduce key pressures in coastal ecosystems.

Objective 3: Nature's contributions to people. By protecting the ecological condition of inlets/bays and avoiding impacts on blue-carbon habitats and shellfisheries, the project supports ecosystem services valued by the NBAP—coastal protection, water quality support, nursery grounds for fish/shellfish, and local livelihoods and heritage connected to seaweed and small-boat fisheries. The low-impact method preserves these contributions while enabling a traditional maritime use to continue under clear safeguards.

Objective 4: Evidence base for action. The project will maintain a light-touch monitoring programme (GPS plot logging, fixed-point photos, simple biomass checks, and a log of avoided-sensitivity interactions such as seagrass stand-offs and seal haul-out buffers). Where appropriate, summary data can be shared with NPWS/Local Authority biodiversity officers to complement marine evidence and help target conservation actions, aligning with the NBAP emphasis on better biodiversity data, indicators and reporting.

Objective 5: International contribution. The activity sits within a regulatory framework that delivers Ireland's commitments under EU nature law and international biodiversity frameworks, which the NBAP expressly seeks to operationalise (e.g., Natura 2000 site protection, addressing wildlife crime and invasive species, and integrating marine conservation into national planning). By adhering to embedded safeguards and transparent monitoring, the project provides a compliant, small-scale model for sustainable use of coastal living resources consistent with NBAP's outward-facing objectives.

Conclusion

With built-in avoidance of sensitive habitats, proportionate monitoring and cooperative governance, the proposed seaweed harvesting is consistent with the 4th NBAP 2023-2030. It operationalises NBAP priorities at site level preventing harm, improving evidence, supporting nature's benefits, and working with public bodies and communities and therefore supports Ireland's pathway to halting and reversing biodiversity loss by 2030.

4.6 Consistency with National / EU strategic policy and research objectives

The overall purpose of the proposed maritime use (small-scale, hand-harvesting of intertidal seaweed with embedded ecological safeguards) is to enable a low-impact, locally viable coastal activity while remaining tightly aligned with Ireland's and the EU's current marine, biodiversity, and bioeconomy policy architecture. The project's design (manual methods, $\leq 25\%$ biomass removal, ≥ 3 -year rotation, no anchoring on seagrass/maërl, seasonal stand-offs, and monitoring) is consistent with the following strategic frameworks.

National Marine Planning Framework (NMPF)

The NMPF is Ireland's overarching marine spatial plan and sets the Government's vision, objectives and marine planning policies across all sectors, including aquaculture/seaweed. By keeping impacts within defined concession polygons, avoiding sensitive habitats, and coordinating with adjacent marine users (e.g., shellfish areas), the proposal aligns with the NMPF's ecosystem-based approach and good governance principles for marine activities.

Marine Strategy Framework Directive (MSFD) – Ireland's 2024 Marine Strategy

Ireland's latest MSFD strategy updates Good Environmental Status assessments and targets for the 11 descriptors. The project's design avoids pressures relevant to D1 (biodiversity), D6 (seafloor integrity) and D10 (litter) by using hand-harvesting, prohibiting anchoring on seagrass/maërl, and maintaining buffers and seasonal timing, therefore supporting GES objectives in transitional and coastal waters.

Water Framework Directive (WFD) & River Basin Management Plan 2022-2027

The WFD requires no deterioration and restoration to at least Good status by 2027. The activity is non-mechanised, produces negligible turbidity, and incorporates routing/stand-offs that protect lagoon inlets

and vegetated shallows, supporting the RBMP's water-quality and hydro-morphology objectives for estuarine and coastal water bodies.

The WFD requires no deterioration in status and the achievement of at least Good ecological and chemical status (or potential) for surface waters, including transitional and coastal water bodies, supported by measures in Ireland's River Basin Management Plan (RBMP) 2022-2027. Protected Areas (e.g., Shellfish Waters) must also be safeguarded.

For receiving water bodies & Protected Areas, the concession areas are within coastal waters of Connemara (Galway), overlapping Shellfish Waters Protected Areas and adjacent to Natura 2000 sites. These waters are monitored by the State for ecological status (biological quality elements, physico-chemical elements, hydro-morphology) and, where relevant, shellfish classifications.

Potential WFD-relevant pressures from the project.

- Hydro-morphology / physical disturbance: foot access on intertidal reefs; small-craft transits.
- Suspended solids/turbidity: brief, localised disturbance from foot traffic in the intertidal; negligible subtidal resuspension.
- Pollution risk: small volumes of marine fuel associated with short near-shore boat trips; waste/litter risk from operations.
- Biological quality elements: temporary canopy reduction in harvested fucoid stands; no deliberate removal of rooted macrophytes (seagrass) or biogenic habitats (maërl).

Embedded design controls (WFD alignment).

- Non-mechanised method (hand cutting only); holdfast retention; cut height $\geq 10\text{--}15\text{ cm}$; $\leq 25\%$ biomass removal; $\geq 3\text{-year}$ rotation limits pressure on intertidal macroalgal communities (BQE) and supports recovery.
- No anchoring on seagrass and maërl; $\geq 100\text{ m}$ stand-offs; routing via established channels; $< 5\text{ km}$ near shore; no loitering over reefs avoids hydro-morphological damage to sensitive habitats and prevents deterioration of supporting conditions.
- Lagoon buffers ($\geq 50\text{--}100\text{ m}$) and defined shore access points prevents bank/bed erosion and protects hydrological regime.
- Pollution prevention: no refuelling afloat; spill kit ashore; pre-departure fuel checks; drip-trays at landing; zero-discharge policy; all wastes removed (including rope/straps).
- Turbidity control: work on falling tides; avoid muddier creeks; keep under-keel clearance; slow-speed approaches minimises suspended solids.
- Operational logs/monitoring: GPS plot logging, fixed-point photos, biomass checks; incident and litter logs; annual review with adaptive management.

Assessment against WFD objectives.

- No deterioration: With the above controls, the scale, frequency and intensity of pressures are too low to cause status deterioration in the relevant coastal water bodies.
- Good status support: By avoiding seagrass and maërl, limiting canopy removal on reefs, and preventing litter/spills, the project is compatible with maintaining or improving biological and supporting physico-chemical conditions.
- Protected Areas (Shellfish Waters): No turbidity-generating machinery, no seabed extraction, and strict pollution prevention including no adverse effect on shellfish water quality objectives.
- Programme of Measures coherence: The activity's controls align with RBMP measures on physical pressures, pollution prevention, litter reduction, and Protected Areas safeguarding.

Conclusion (WFD). The proposed activity, as designed and managed, is consistent with the WFD and RBMP 2022–2027: it avoids deterioration, supports the maintenance of Good status in transitional/coastal waters, and safeguards Protected Areas (Shellfish Waters). No WFD-triggered mitigation beyond the embedded design measures is required.

Confirmation Schedule 5 (Parts 1 & 2), Planning and Development Regulations, S.I. No. 600 of 2001

small-scale manual harvesting of wild seaweed within intertidal/very nearshore areas, with no mechanised cutting, no seabed extraction, and no aquaculture installation or structures.

- (i) Schedule 5: Part 1 (Annex: I-type projects):
The proposed activity is not of a class listed in Part 1. Part 1 covers Annex I EIA Directive project types (e.g., large industrial/energy/mineral extraction, major infrastructure). Wild seaweed harvesting by hand is not included.
- (ii) Schedule 5 – Part 2 (Annex: II-type projects with national thresholds):
The proposed activity does not equal or exceed any relevant threshold or limit for the classes listed in Part 2. In particular:
 - It is not an aquaculture installation (no pens, trestles, structures, or intensive rearing), so the Part two Aquaculture classes/thresholds for fish/shellfish production do not apply.
 - It does not fall under other Part two classes (e.g., waste, energy, industrial, road/port works), and therefore no Part two threshold is met or exceeded.

On the basis of the project description, the activity (a) is not of a class listed in Part-1, and (b) does not meet or exceed any Part two threshold. Accordingly, it is not mandatorily EIA-development under the Planning and Development Regulations. (Note: sub-threshold screening is only relevant to Part 2-listed classes; as this project is not within a Part-2 class, that provision is not triggered. Any environmental assessment obligations instead arise under the Foreshore consent process and Habitats Regulations (AA) where applicable.) Foreshore licensing note, harvesting of wild seaweed generally requires Foreshore consent (unless covered by pre-existing private rights), and will be considered with due regard to environmental legislation.

EU Biodiversity Strategy for 2030

The Strategy seeks to place EU biodiversity on a path to recovery by 2030, improve management of protected areas, and restore degraded marine ecosystems (including carbon-rich habitats). By avoiding disturbance to *Zostera* meadows and maërl beds and respecting Natura 2000 conservation objectives, the project operationalises these aims at site scale. EU *Towards a strong and sustainable EU algae sector* (Algae Initiative, 2022), the Commission's algae communication promotes the sustainable production and innovative use of algae in the EU. The proposal exemplifies the Initiative's emphasis on sustainability and product diversification (e.g., bio-stimulants/ingredients) while remaining within strict environmental limits.

Ireland's Bioeconomy Action Plan 2023–2025

The Action Plan aims to replace fossil-based carbon with renewable bio-based alternatives and develop biobased value chains under coordinated governance. Sustainably harvested seaweed is a recognised feedstock for low-carbon products; the proposal's safeguards ensure that any value-chain expansion remains consistent with environmental integrity and circular-bioeconomy goals.

Food Vision 2030

Food Vision 2030 sets a 10-year pathway for an environmentally sustainable, innovative agri-food and seafood sector, including aquaculture. A low-impact, monitored seaweed activity that protects Natura features and water quality is consistent with the Strategy's missions on climate, biodiversity and resilient coastal economies.

Sectoral guidance: Seaweed/Aquaculture

National technical assessments underscore the need to integrate MSP, MSFD and WFD requirements within seaweed licensing and operations. The project directly responds to this by embedding avoidance/monitoring measures and coordinating with existing shellfish/aquaculture uses.

Overall policy fit:

- i) meets spatial-planning expectations under the NMPF;
- ii) supports MSFD/WFD outcomes by minimising pressures in sensitive coastal waters;
- iii) implements EU Biodiversity Strategy aims by protecting priority marine habitats;
- iv) contributes to bioeconomy and sustainable food system strategies without relying on carbon offsets or high-impact technologies; and
- v) aligns with strategic research objectives by generating proportionate, shareable evidence on sustainable seaweed harvesting in an Irish Natura context.

5. Potential Impacts

Habitat impacts: cutting and temporary canopy reduction on intertidal areas could reduce structural complexity and invertebrate refuge; Irish evidence supports recovery within three – four years under $\leq 25\%$ removal and ≥ 3 -year rotation. Trampling on reef fringes may affect sessile fauna; sensitive subtidal habitats (maërl, seagrass) are vulnerable to physical damage and resuspension. However, Seagrass are also known to be vulnerable to various anthropogenic activities, not least bottom contacting fishing gears such as dredging and potting, Breen et. al., (2024) set out to test the effects of dredge fishing, in early spring and potting in late summer, in a historically fished but considered “pristine” seagrass meadow on the west coast of Ireland. Breen et. al., (2024) found that despite dredging and potting pressures, growth of seagrasses was driven by seasonal changes in light and temperature and that neither fishing activity had any effect on rhizome weight or shoot or blade densities during the growing season.

Species disturbance: seals may be displaced within 100–150m of approach; harbour porpoise may avoid areas with persistent small-craft activity within several hundred metres; waterbirds can be displaced from feeding/roosting areas within 50–200 m of disturbance.

In-combination effects: other activities in Cill Ciaran Bay include aquaculture, fisheries, and recreation. Coordination and spatial planning reduce cumulative risk.

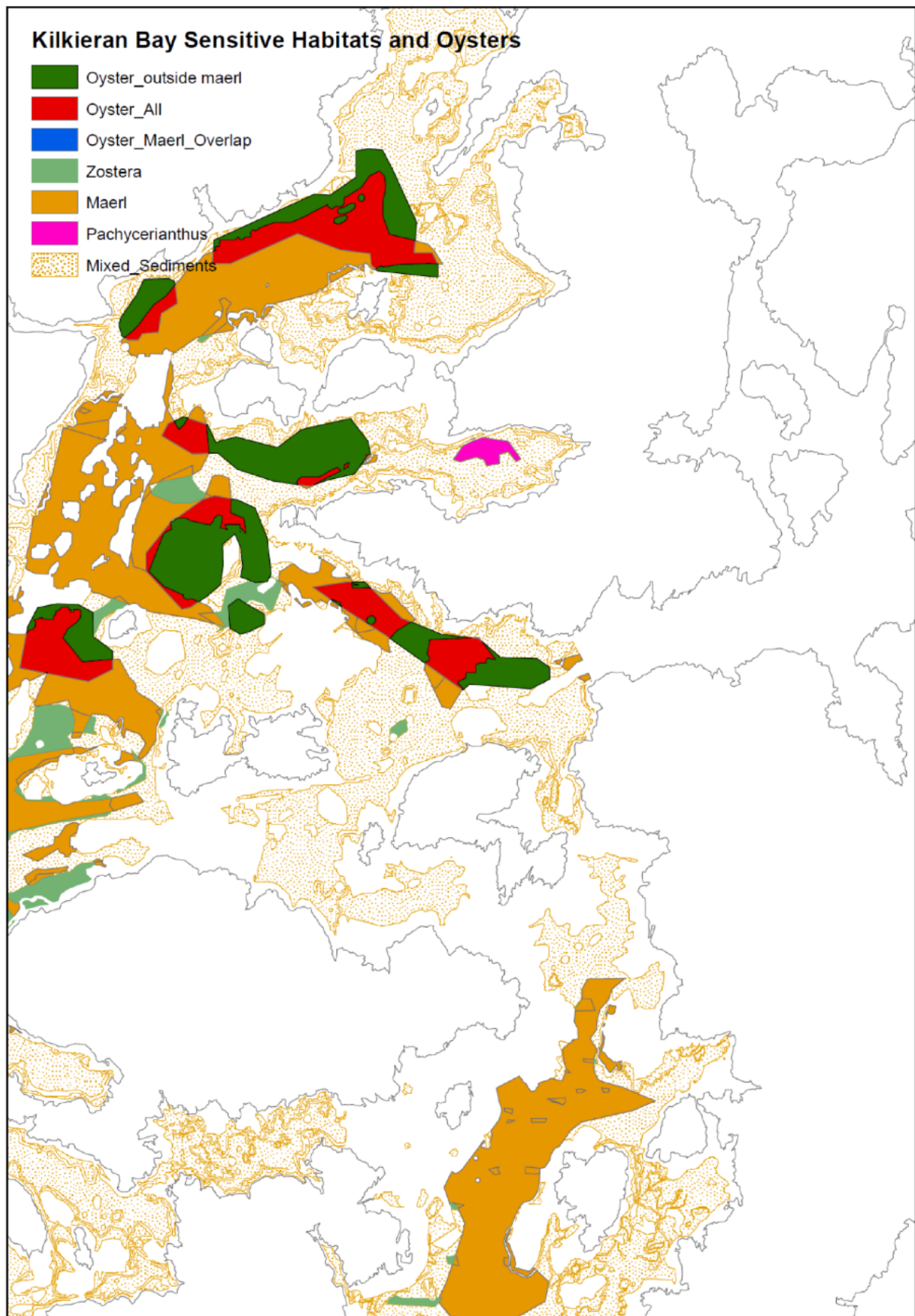


Figure 3, Overview of the sensitive habitats and oyster bed for Cill Ciaran Bay.

Table 2: Receptors and potential impact pathways

Receptor	Pathway	Risk	Relevance to project
Reefs [1170]	Canopy removal; trampling	Medium	Intertidal cutting; access on foot
Large shallow bays [1160] – seagrass/maërl	Anchoring; prop wash; sediment	High	Boat transport; routing
Coastal lagoons [1150]	Physical/hydrological disturbance	High	Excluded by buffers
Harbour seal [1365]	Human/vessel disturbance	Medium	Foot/boat presence
Harbour porpoise [1351]	Acoustic/visual disturbance	Medium	Small-craft movements
Otter [1355]	Disturbance of foraging/resting	Low–Medium	Shore access routes
SPA birds	Visual/noise disturbance	Medium	Seasonal activity near roosts

6. Safeguards & Project Design

Safeguards are embedded in project design and are not post-hoc mitigation. They include:

- retention of holdfasts and minimum cut height; $\leq 25\%$ biomass removal;
- ≥ 3 -year rotation, 200m buffer zones to lagoons, seagrass and maërl;
- ≥ 150 m buffer zones to seal haul-outs;
- seasonal restrictions to mitigate anthropogenic disturbance of important species;
- Vessel passage; vessel speeds < 5 knots within 500m of shore; and
- monitoring of biomass recovery and community condition with specialists and resource management systems.

Table 3: Compliance matrix

Measure	Ecological rationale	Evidence (Irish context)
Retain holdfast; cut ≥ 10 –15 cm	Promotes regrowth; preserves canopy-forming individuals	Kelly et al. (2001)
$\leq 25\%$ biomass; ≥ 3 -year rotation	Allows canopy and invertebrate community recovery	O'Connor et al. (2007)
No anchoring on maërl/seagrass	Avoids irreversible physical damage	NPWS (2019); INFOMAR (2017)
Buffers to lagoons (≥ 50 –100 m)	Protects fragile hydrology and vegetation	NPWS (2013)
Seal stand-off ≥ 150 m	Reduces disturbance at haul-outs	NPWS (2019)
Porpoise acoustic radius 500 m	Minimises persistent disturbance	NPWS (2019)
Seasonal restrictions	Avoids sensitive breeding/overwintering periods	NPWS (2019); Crowe et al. (2013)

7. Screening Conclusion

Having regard to the characteristics of the project and the conservation objectives of the relevant Natura 2000 sites, and considering the embedded safeguards, it is concluded that the proposed activity will not give rise to likely significant effects on site integrity, alone or in combination with other plans or projects. Harvesting activities will not have a long-term significant effect on the ecology of the harvest areas with the Cill Ciaran SAC.

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Annex 1

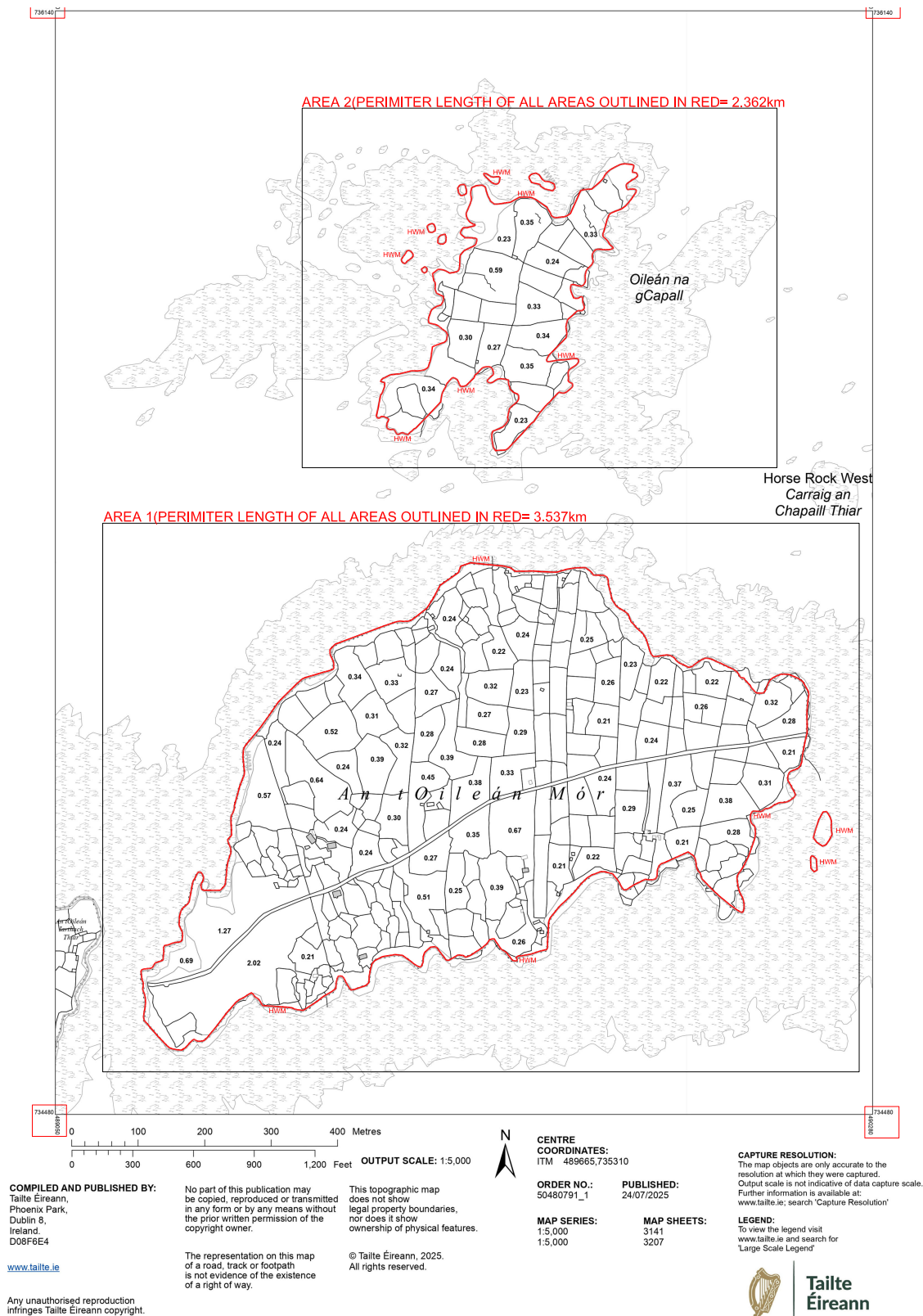


Figure 4, Proposed harvest areas one and two

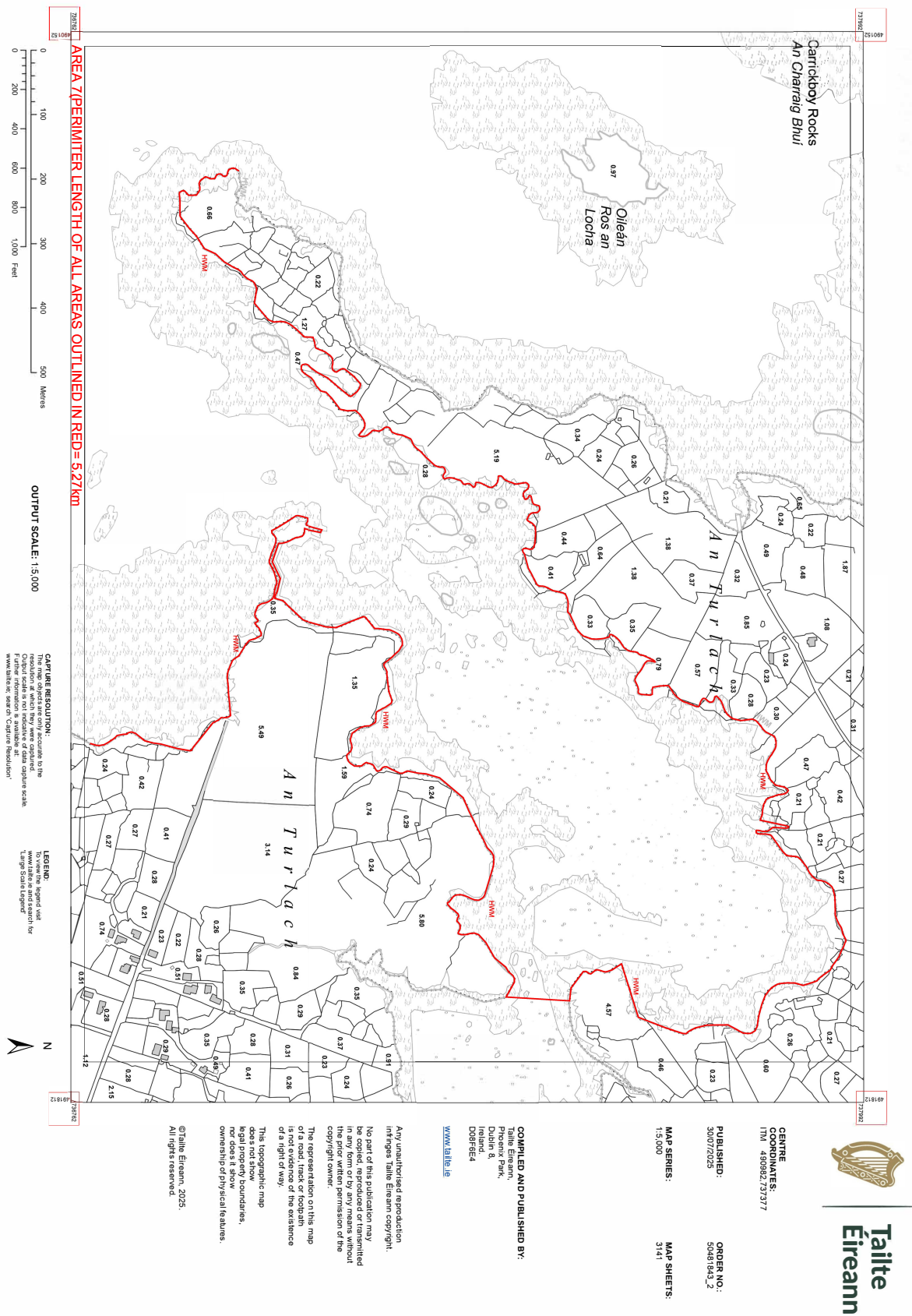


Figure 6, Overview of area number seven of proposed harvest sites

