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GEOSOLUTIONS

# Risk Assessment for Annex IV Species (RAAIVS) for Seaweed Harvesting Maritime Usage Licence

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| Client | **Rovensa NEXT (OGT)** |
| Document Ref. | 24052-REP-007-01 RAAIVS |
| Project Title | Seaweed Support Rovensa OGT |
| Date | 12/09/2024 |

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| Client: | Rovensa NEXT (OGT) |
| Ultimate Client: | Oilean Glas Teoranta |
| Confidentiality | Non Confidential |

## REVISION HISTORY

| Rev | Date | Reason for Issue | Originator | Checker | Reviewer | Approver |
|---|---|---|---|---|---|---|
| [00] | 31/07/2024 | Draft for client review | [redacted] | | | |
| 01 | 12/09/2024 | Final | | | | |

## DISCLAIMER

## REVISION SUMMARY

| Rev | Date | Section(s) | Detail of Change |
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| [00] | [Selec] | [Section] | [Enter details] |

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# 1 INTRODUCTION

## 1.1 BACKGROUND

Gavin and Doherty Geosolutions (GDG) have been commissioned by Oilean Glas Teoranta (OGT, the applicant) to undertake an Annex IV Species Risk Assessment of the proposed hand harvesting of the seaweed *Ascophyllum nodosum* from the intertidal shoreline within Dungloe Bay, Mulroy Bay and Trawbreaga Bay in Co. Donegal, as shown in Figure 1.1 below.

It is proposed to hand-harvest *A. nodosum* from the harvestable areas within two (2) Special Areas of Conservation (SAC) and one (1) Special Protection Area (SPA):

- Rutland Island and Sound SAC, Dungloe Bay
- Mulroy Bay SAC, Mulroy Bay
- Trawbreaga SPA

As this report is intended to assess potential impacts on Annex IV species, this includes the Qualifying Interests (QI) of SACs. SPAs are designated for the protection of populations (wintering/breeding) and habitats of bird species that are designated as Special Conservation Interests (SCIs) protected under the EU Birds Directive (2009/147/EC).

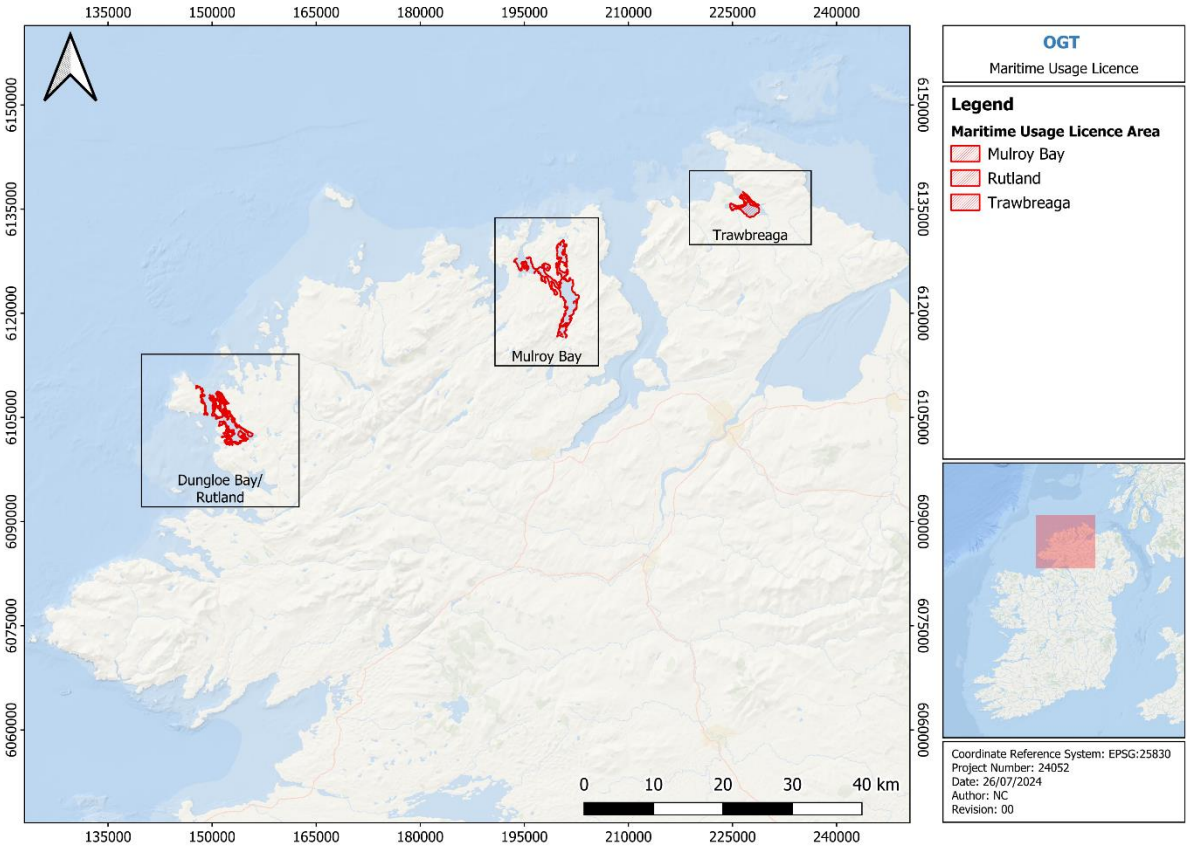


**Figure 1.1 Proposed MUL Application Area across three harvestable sites**

## 1.2 PROPOSED PROJECT AND LOCATION

OGT is planning to harvest up to 8,000 wet tonnes per annum of *A. nodosum* from the harvestable area in Dungloe, 2,000 wet tonnes per annum from Mulroy Bay and 4,000 wet tonnes from Trawbreaga for processing in its plant at Kilcar, Co. Donegal. The seaweed will be processed to produce fertilisers and feeds for animals.

The seaweed will be harvested by hand in the traditional 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 of the seaweed holdfast 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 1 to 1.5 wet tonne, that are bound by nets and ropes. Each harvester will collect approximately 3 to 4 callaí in a day. The 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. No callaí are left on the foreshore overnight.

Typically, one or two harvesters per site will harvest the seaweed.

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 linear fashion along the coast between high and low tide. However, some areas that are proposed for harvesting have islands and small pockets of beach that only support a days harvesting, where the harvesters will move to another section when all the seaweed is harvested. At the end of each harvesting day, the callaí will be collected from the intertidal area at high tide (no callaí will remain onshore overnight).

In Table 1.1, the proposed wet tonnage of *A. nodosum* per annum is outlined as per each of the harvestable areas within the MUL Area or processing in its plant at Kilcar, Co. Donegal.

**Table 1.1 Proposed weight of seaweed to be harvested within the MUL Area.**

| Site name and code | Weight (wet tonnes) per annum |
|---|---|
| Rutland Island and Sound SAC (2283) | 8,000 |
| Mulroy Bay SAC (2159) | 2,000 |
| Trawbreaga Bay SPA (4034) | 4,000 |

## 1.3 AIM OF THIS REPORT

A Risk Assessment for Annex IV Species Report is a document prepared to evaluate the potential impacts of proposed projects or activities on species listed under Annex IV of the European Union's Habitats Directive (Directive 92/43/EEC) and is part of a Maritime Usage Licence (MUL) Application.

This report aims to support the application process and provide the necessary information to the competent authorities to assist them in making an informed decision on whether this proposed project removes the system of strict protection established for Annex IV species, whether a derogation licence is required, and if so, whether the criteria for derogation are met.

Within this report, the term "No LSE" (i.e. No Likely Significant Effect) will be used where the proposed project, or a specified source of impact from the proposed project, are not likely to have a significant effect on a Natura 2000 site.

It should be noted, other non-Annex IV species such as the phocid species, Grey Seal (*Halichoerus grypus*) and Harbour (Common) seal (*Phoca vitulina*), and potential impacts from this Proposed Project have been assessed in the Assessment of Impacts of the Maritime Usage (AIMU) report (document reference number 24052-REP-004). to ensure no adverse effects occur to any protected species that have been identified within the MUL area.

## 1.4 LEGISLATIVE AND REGULATORY CONTEXT (INTERNATIONAL DIRECTIVES)

As directed by Article 12 of the Directive, species listed in Annex IV are considered species of community interest in need of strict protection due to their vulnerability, rarity, or declining populations across their entire natural range within the EU, both within and outside Natura 2000 sites. In addition to cetaceans, this assessment now includes sea turtles, namely the leatherback turtle (*Dermochelys coriacea*), the Eurasian otter (*Lutra lutra*), and commentary on Annex IV terrestrial species, bats, which occur along Irish coastal waters.

The Habitats Directive has been transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No 477 of 2011). These consolidate the earlier European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010.

These Regulations provide for the strict protection of Annex IV listed species, including all cetaceans, in their natural range. As such, it is an offence to:

- Deliberately capture or kill any specimen of these species in the wild;
- Deliberately disturb these species particularly during the period of breeding, rearing, hibernation and migration;
- Deliberately take or destroys eggs of those species from the wild;
- Damage or destroy a breeding site or resting place of such an animal; or
- Keep, transport, sell, exchange, offer for sale or offer for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive.

'Deliberate' has been interpreted by the European Commission in its 2007 'Guidance document on the strict protection of animal species of community interest under the Habitats Directive 92/43/EEC', as

*"'Deliberate' actions are to be understood as actions by a person who knows, in light of the relevant legislation that applies to the species involved, and the general information delivered to the public, that his action will most likely lead to an offence against a species, but intends this offence or, if not, consciously accepts the foreseeable results of his action".*

Therefore, anyone carrying out an activity which they should reasonably have known could cause injury as defined in the Regulations, could be committing an offence.

Under Article 16 of the Habitats Directive, a derogation licence may be granted by the Minister, which would allow otherwise illegal activities to go ahead provided that:

- There is no satisfactory alternative; and,
- The action authorised will not be detrimental to the maintenance of the population of the species concerned at a Favourable Conservation Status in their natural range.

In addition, Ireland is also signatory to conservation agreements for the protection such as the Bonn Convention on Migratory Species (1983), CITES, the Berne Convention on Conservation of European Wildlife and Natural Habitats (1979), the OSPAR Convention for the Protection of the Marine Environment of the northeast Atlantic (1992) and ICRW Convention. Cetaceans are also provided protection under the Whale Fisheries Act 1937.

## 1.5 STATEMENT OF AUTHORITY

The report has been completed by [redacted] (BSc. (Hons) Marine Sciences). [redacted] is a Marine Ecologist and Ornithologist with experience in terrestrial, aquatic and marine/coastal ecology and is a trained Marine Mammal Observer (MMO). Her current work includes ecological and environmental desktop studies for terrestrial, aquatic and marine environments, specialised mammal surveys, ornithological surveys, and map preparation.

This report has been reviewed by [redacted]. [redacted] is a Senior Environmental Scientist with extensive experience as an environmental consultant, undertaking various multi-disciplinary projects within consulting engineering.

This report has been checked by [redacted] (BSc. Hons Marine Science, MSc. Engineering in the Coastal Environment). [redacted] is a Principal Marine Ecologist with coastal engineering expertise and extensive experience of offshore benthic survey and Marine Protected Area monitoring who has undertaken multiple environmental assessments under the Habitats Directive for GDG and as a statutory adviser to the UK government and its devolved administrations with the Joint Nature Conservation Committee.

The approval for this report was completed by [redacted] (BSc. Hons Biology, MSc. Applied Environmental Science, Chartered Environmentalist). [redacted] is Head of the Offshore and Marine Advisory Team at GDG and an experienced environmental professional, who previously held scientific and regulatory roles within the Scottish Government Directorate of Marine Scotland. He has undertaken multiple environmental assessments under both the Habitats and Environmental Impact Assessment Directives for GDG and as a regulator with Marine Scotland.

# 2 BASELINE INFORMATION

Irish waters are home to and refuge for a number of Annex IV species including at least twenty-six (26) species of cetaceans (IWDG, accessed April 2024 online), four (4) out of the seven (7) known species of sea turtles and the Eurasian otter. However, it should be noted, as this project is proposed to occur within the intertidal zone at low tide (when the *A. nodosum* is exposed), cetaceans are excluded from this report as there is no Source-Pathway-Receptor (S-P-R)[1] to these strictly marine mammal species.

This report addresses other marine and terrestrial species listed in Annex II and Annex IV of the Habitats Directive which are known to occur in Ireland and are identified as being relevant to the proposed hand-harvesting of *A. nodosum* within the intertidal zone.

## 2.1 RELEVANT ANNEX IV SPECIES

Given the nature of the proposed hand-harvesting of *A. nodosum* at low tide, adverse effects from these proposed activities are not predicted on cetaceans and turtles as all activities will be conducted at low tide in the intertidal zone (i.e. no pathway in the S-P-R model concept, (OPR, 2021)). Of the Annex IV species known to occur in Ireland[2], the following were identified as relevant to the proposed project:

- Eurasian otter (*Lutra lutra);*
- *Microchiroptera** – all species (all bat species present in Ireland); and
- Annex IV flora species (Slender Naiad *Najas flexilis*).

*Bats are terrestrial species; however, they have been considered for this risk assessment as the proposed project is located in the intertidal zone where these species could potentially utilise the area as foraging grounds.

[1] The source of impact (e.g. pollution) is the activity that leads to the impact causing an effect. The pathway (e.g. water) is the part of the environment that an impact (e.g. pollution) travels on its journey towards the receptor. The receptor is the species, habitat, or non-living entity (e.g. a monument) that is being affected by the source.

[2] 1 https://www.npws.ie/legislation

## 2.2 EURASIAN OTTER (*LUTRA LUTRA*)

The Eurasian otter occurs throughout Ireland, including along the coast of Co. Donegal (NPWS, 2019). They are opportunistic semi-aquatic predators preying on a range of prey sources where available, including but not limited to insects, freshwater and marine invertebrates, small mammals, birds, amphibians and fruit. Otters residing along coastlines have a greater niche breadth than otters living in freshwater systems, encompassing a wide range of intertidal prey (NPWS, 2010/12). Territories of otters can extend several kilometers, however, the smallest territories are thought to occur at coastal sites, where territories may be as small as 2km (Vincent Wildlife, online 2024). Coastal otters mostly feed close to the shore within 80-100m of the coastline, typically in depths of <3m with a diving depth limit of up to 10-12m (Kruuk, 2006). Otters have two basic habitat requirements: adequate prey; and safe refuges where they can rest and breed. In coastal areas rockling, wrasse, eel, sea scorpion, blenny and molluscs are the known preferred prey of the otter.

Due to their plasticity in habitat types suitable for otter and their wide variety in prey taxa, their territories and hunting range can reach several kilometers, depending on food availability. Generally, otters residing along a coastline tend to have smaller hunting/foraging range as food resources are plentiful. Although otters are a mobile species, they have defined territories, with territorial markings typically occurring by means of sprainting or anal secretions deposited as territorial signposts. Male otter territories are approximately 13.2 ± 5.3km in length along mesotrophic (i.e. rivers with an intermediate level of productivity) and oligotrophic rivers (i.e. river with low levels of productivity), however with a high degree of variability as territorial males respond quickly to social perturbation. The territory of female otters in mesotrophic rivers is approximately 7.5 ± 1.5km in length and 6.5 ± 1.0km in coastal environments (Reid, *et al*., 2013, and references therein).

Otters that reside along the coastline require access to freshwater habitat to drink and bathe (i.e., to wash the salt from their fur) and terrestrial areas for resting and breeding, therefore their foraging range in the marine environment is limited to coastal areas. The availability of freshwater is suggested to strongly influence the distribution of coastal otters (Liles, 2003).

The main threats to otter include accidental deaths (i.e. entrapment in fishing gear and road traffic) and pollution (in particular organic pollution resulting in fish kills). The most recent Article 17 conservation assessment for otters in the Republic of Ireland deemed the species as being in favourable conservation status) (NPWS, 2019).

Impacts to otters can occur as a result of permanent loss of breeding or resting sites, habitat loss, disturbance/displacement, and injury/mortality. Although an otter survey has not been carried out, the desk-based review noted several live sightings within the Rutland Channel and Sound for otter (NBDC[3], accessed online 2024). No NBDC records of otter are within or surrounding Mulroy Bay or Trawbreaga Bay. It is noted, otters are likely to occur within the intertidal zone of these the proposed harvesting areas for commuting and/or foraging, and as such are considered in more detail in this risk assessment.

## 2.3 BATS

This risk assessment has considered the potential for impacts from the proposed hand-harvesting of *A. nodosum* on the nine (9) species of bat that are confirmed as resident in Ireland (Kelleher and Marnell, 2006) and have been observed as present on the proposed harvesting sites and may use the areas for foraging.

[3] https://maps.biodiversityireland.ie/Map/Terrestrial/Species/119290

Most bat species are widely distributed in Ireland. The most common species is the soprano pipstrelle (*Pipistrellus pygmaeus*) which has been found in most surveyed 10km grid across Ireland (BCI[4] – distributions, online, 2024). Many species show a slight southern bias favouring warmer temperatures that are found in the south. The Nathusius' pipistrelle has the second most restricted distribution of the Irish bat species. Its stronghold is in Northern Ireland, particularly around Lough Neagh, although it has been recorded from many lakeland areas across the island (BCI, online accessed 2024). However, given the coastal nature of this location, the total abundance of bats is likely to be somewhat lower than more sheltered, inland areas, while the relative abundance of larger species, e.g. Leisler's bat (*Nyctalus leisleri*) is likely to be higher than smaller species such as the soprano pipistrelle.

No SACs for which bat species are designated as Qualifying Interests are listed near or within the proposed harvesting sites.

All bat species known to reside and breed in Ireland are considered likely to be present in the vicinity of the proposed project. However, given the coastal nature of this location, the total abundance of bats is likely to be somewhat lower than more sheltered, inland areas, while the relative abundance of larger species, e.g. Leisler's Bat (*Nyctalus leisleri*) is likely to be higher than smaller species, e.g. Soprano Pipistrelle (*Pipistrellus pygmaeus*).

The proposed hand-harvesting does not involve the removal of any built or natural features with potential to support a bat roost. Furthermore, the proposed hand-harvesting of *A. nodosum* does not involve the severing of any treelines or other commuting or foraging corridors for bats. Similarly, the hand-harvesting does not involve the installation of new artificial lighting. Any disturbance, if any, over the duration of the proposed hand-harvesting of *A. nodosum* would be negligible.

The hand-harvesting activities do not involve the removal of any built or natural features with potential to support a bat roost such as trees, hedges, buildings, bridges, caves, souterrains or changes in lighting, and as such, bats are not likely to be present or affected by the works. As bats are not likely to be present, the lack of spatial overlap or likely interactions between the Annex IV species and the hand-harvesting activities means there is no significant risk to the number of individuals to breed successfully, nor to the survival of the population. The species natural range will be secure and will not be reduced.

Bats are largely nocturnal and are most active for two to three hours shortly after dusk, when insect activity peaks. As hand-harvesting activities will commence within daylight hours (no temporal overlap with foraging bats and the hand-harvesters), it is considered **no LSE** from impacts will occur to foraging bats resulting from hand-harvesting activities (i.e. no source in the S-P-R model concept, (OPR, 2021)). Furthermore, activities involved in the hand-harvesting do not pose any disturbance to bat species. Therefore, as no mitigation is required, all bat species are not considered further in this risk assessment.

As described above, the proposed project does not offend the system of strict protection of bats under Article 12 of the Habitats Directive.

## 2.4 FLORA SPECIES

The natural range for the Annex II and IV species Slender Naid (*Najas flexilis*) is freshwater lakes (i.e. terrestrial environment). Slender Naid is also afforded protection under the Wildlife Acts (as amended), the Flora Protection Order and listed in Appendix I of the Bern Convention. This aquatic species is usually permanently submerged in freshwater deeper than 1m but shallower than 5m on substrate from mud to fine sand, where the preferred habitat is lit areas of clear, freshwater lakes (most often mesotrophic lakes, but will occur in some oligotrophic lakes) of circum-neutral pH. Slender

[4] https://www.batconservationireland.org/irish-bats/distributions

Naid has specific requirements with regard to pH, alkalinity, calcium and phosphate, as well as turbidity and depth.

Threats to this species include water abstractions from groundwater, diffuse pollution to surface waters from agriculture, forestry activities, from household waste and waste waters, invasive non-native species, changes to abiotic conditions, and pollution to surface waters by industrial plants.

Given that the natural range for the aquatic Annex IV species Slender Naid (*Najas flexilis*) is freshwater lakes (i.e. terrestrial environment), this species is highly unlikely to be impacted by the hand-harvesting activities that will be carried out within the intertidal area of the marine environment up to the high-water mark (i.e. no pathway in the no S-P-R to these strictly freshwater flora species). Therefore, it is considered **no LSE** resulting from the proposed hand harvesting activities will occur to slender naid from the proposed activities. This species is not considered further in this risk assessment.

The proposed project does not offend the system of strict protection of flora species under Article 12 of the Habitats Directive.

# 3 RISK ASSESSMENT

This section examines the potential impacts of the proposed project on the Eurasian otter, and address protective measures aimed at reducing any impact to the Annex IV species, Eurasian Otter.

## 3.1 IDENTIFICATION OF POTENTIAL IMPACTS

The potential effects of seaweed hand-harvesting on otter were addressed by assessing the likelihood that the species would be exposed, or interact, with the activity.

Assessment of likelihood of potential impacts should include the following considerations:

- Type of activity;
- Duration and frequency of the activity (section 1.3 above);
- Extent of the activity (section 1.3 above);
- Timing and location of the activity (section 1.3 above); and
- Other known activities in the area at the same time (i.e. cumulative impacts).

Based on the proposed activities, the potential impacts that could arise from the hand-harvesting activities are considered to be as described below:

- Disturbance to life cycle due to human, boat and vehicular traffic; and
- Physical disturbance/displacement of species from habitat area;

Therefore, these potential impacts will be taken forward for further consideration and appropriate mitigation measures will be implemented, as required.

Note, although seaweed beds provide critical foraging grounds for otters, offering abundant prey such as fish and invertebrates, potential impacts to preferred prey species is considered to be unlikely. While hand harvesting is selective and low-impact, it can still affect the local abundance of prey species if not managed sustainably. Reduced prey availability can impact otter foraging success. The physical removal of seaweed can alter the marine habitat, affecting the distribution and abundance of prey species and potentially leading to longer foraging trips. A fallow system will be employed where areas are harvested one year and not returned to until the seaweed has recovered and no one area will be completely harvested of all seaweed. Furthermore, the seaweed will be cut leaving approximately 15-20cm of the seaweed holdfast attached to the substrate to ensure fast re-growth of the plant. Hand harvesting is a selective, low-impact method that involves manually cutting seaweed without disturbing the underlying substrate. This minimises the disruption to the marine environment and the habitats of various prey species such as fish and invertebrates. Therefore, prey species of otter that live/depend on seaweed coverage will not be greatly affected from the harvesting methods applied for this project.

It should also be noted, as there is existing fishing and boating activities in the region, otters are accustomed to physical disturbance from vessel/boat movements. The level of disturbance is likely to be very low given the likely encounter rates will be dictated primarily by tidal state and in daylight hours. Furthermore, the temporary nature of the works and the spatial area to be harvested relative to the total areas of suitable habitat, the highly mobile and crepuscular nature of the otter, and their favourable conservation status, it is highly unlikely that significant disturbance will occur. Therefore, the introduction of a slow-moving small boat to collect the callaí at high tide is not likely to cause

significant disturbance to otters. The use of one boat required for the collection of seaweed will not significantly increase vessel traffic in the area. Collisions between the boat and otters are considered highly unlikely.

The callaí will be collected at the end of each harvesting day (i.e. the callaí will not remain onshore overnight), therefore the potential for entanglement between species with the equipment is highly unlikely.

## 3.2 Risk Assessment for Annex IV Species - Otter

Given the distribution of otter in the MUL application area and the presence of otter as a Qualifying Interest in adjacent SACs, there is potential that otter from these sites may occur in the proposed harvesting sites and access routes, and thereby interact with activities.

The main impacts associated with the proposed hand-harvesting activities on otter are detailed and assessed below.

### 3.2.1 Disturbance to life-cycle due to Human Presence.

Hand harvesting involves human presence, which can disturb otters, leading to temporary displacement from their habitats.

As the location of otter holts is highly sensitive information and is typically redacted for the public consultation, it cannot be determined with certainty if otter holts are within areas proposed for harvesting from desk studies alone. However, as the proposed project is to take place within the intertidal zone, along coasts denning sites are often found adjacent to freshwater streams. Holts and couches may be found some distance from freshwater, but most are within the immediate area of riparian vegetation (NPWS, 2009). Natal holts may also be sited some distance from the normal areas of activity; a form of protection/avoidance of other otters and species within the area that may pose a threat. In general, however, otters exploit a narrow strip of habitat at the aquatic – terrestrial interface (O'Neill, 2008).

In Ireland there is no defined breeding season for otters; otters can breed at any time of year but most otters mate in spring or early summer, with females giving birth to a single litter annually, 2-3 cubs per litter. Mating may take place on land but is more likely to occur in the water.

Given the nature of hand harvesting activities, disturbance to otters is unlikely. Hand harvesting is a low-impact manual process. This method allows for careful selection and cutting of seaweed, avoiding large-scale habitat disruption. Harvesters typically operate in alone or as a pair and over limited areas, reducing the likelihood of significant disturbance to otters and their habitats. Additionally, the presence of harvesters is temporary and localised, allowing otters to quickly return to their routines once the activity ceases. Consequently, the low-intensity and transient nature of hand harvesting minimises potential negative impacts on otter populations.

### 3.2.2 Physical disturbance/displacement of species from habitat area.

Physical disturbance from the workers presence within the harvesting areas could potentially occur to otters, especially in secluded areas such as the proposed harvesting areas. The proposed hand-harvesting activities will be carried out in daylight hours. The interaction with the otter will be minimal, given that otter foraging is primarily crepuscular (i.e. more active in the twilight hours). Given the nature of the proposed activities (i.e. hand-harvesting methods using sickles, knives and forks - no machinery) to be carried out within the intertidal zone, it is considered no significant disturbance of otter foraging or resting sites is likely to occur from the proposed project.

### 3.2.3 CONCLUSION

Habitats within Dungloe Bay, Mulroy Bay and Trawbreaga Bay support otters; specifically the intertidal areas and shallow, rocky environments with seaweed cover is considered ideal for foraging and refuge. In coastal areas rockling, wrasse, eel, sea scorpion, blenny and molluscs are known preferred prey of the otter.

Given the very temporary and small-scale nature of the works, and the highly mobile and crepuscular nature of the species, the potential impacts to otter are considered highly unlikely. As described above in section 2.2, the habitats within and surrounding the harvesting sites provide highly suitable foraging and resting sites for otter. However, the lack of significant spatial overlap or likely interactions between otters and the hand-harvesting activities ensures there is no significant risk to the number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced.

Therefore, the proposed project does not offend the system of strict protection of otters under Article 12 of the Habitats Directive.

## 3.3 CUMULATIVE EFFECTS

There is no other seaweed harvesting planned or taking place in and around the proposed harvesting sites. There is no potential for significant in-combination/cumulative effects from the proposed project activities and other plans or projects (e.g., aquaculture production sites and activities in the surrounding area) on otter. An assessment of in-combination and cumulative effects is presented in section 6.15 of the accompanying AIMU report.

# 4 NPWS ASSESSMENT CRITERIA

**Do individuals or populations of Annex IV species occur within the proposed area?**

There are important foraging and resting sites for otter within and surrounding the proposed harvesting sites. In particular there are important foraging grounds for otter in the Rutland Channel and Sound, and rocky islets adjacent to Rutland. The proposed harvesting occurs within the Rutland Island and Sound SAC and directly adjacent to this is the Gweedore Bay and Islands SAC with otter as a qualifying interest. There are numerous sightings of otter recorded in NBDC within and surrounding the proposed hand-harvesting areas. The Annex IV species Otter have been recorded (NBDC) within the proposed harvesting sites of Dungloe Bay, Mulroy Bay and Trawbreaga Bay

**Is the plan or project likely to result in death, injury or disturbance of individuals?**

The activities proposed during this project consist of small-scale seaweed hand-harvesting operations. It is extremely unlikely any noise (from the boat during transportation or from the presence of the workers carrying out the harvesting by hand) generated will be capable of causing death or injury. Hand-harvesting of seaweed will not cause permanent or temporary hearing injury to otter.

Localised disturbance/displacement to otter in the proposed harvesting area may occur during the hand-harvesting activities.

**Is it possible to estimate the number of individuals of each species that are likely to be affected?**

As detailed in section 2.2, otters are crepuscular, meaning they are most active during dawn and dusk. They are also elusive by nature, making it challenging to observe and study them directly. Due to their secretive behaviour, information about their holts (dens) is often redacted from publicly available records to protect these sensitive locations from disturbance. The NBDC only records incidental sightings of otters, and detailed information about their holts is not disclosed for conservation reasons. This lack of specific data makes it difficult to estimate the exact number of otters in a given area and, consequently, to predict how many individuals might be affected by the hand harvesting of seaweed. Due to the absence of precise data on otter populations and holt locations, it is challenging to quantify the potential impact.

**Will individuals be disturbed at a sensitive location or sensitive time during their life cycle?**

Otter holts, especially natal holts, tend to be located in more secluded locations, more often hidden in dense riparian vegetation, not too far from freshwater systems. As the proposed harvesting areas are within marine sites, potential disturbance to sensitive locations or to sensitive times during the otter's life-cycle is not predicted. Otters may respond to the presence of the harvesters within the intertidal area during foraging, however, this should not result in any significant impact to the life-cycle of otter.

**Are the impacts likely to focus on a particular section of the species' population, e.g., adults vs. juveniles, males vs. females?**

Otters are sensitive to disturbance from the presence of humans and require their resting places to be protected from disturbance. Female otters with young are particularly sensitive. Natal holts close to the intertidal area (if any) where the proposed harvesting areas are located may become disturbed/displaced from the physical presence of the harvesters. This disturbance to natal holts would have a negative impact on otter populations. The magnitude and extent of the impact is difficult to assess without population data for all sites and an up-to-date otter survey. However, the duration of activities potentially leading to displacement, in terms of the actual activity, is generally limited and

may only last a few hours to a few days for any one harvesting area. Given the nature of the proposed activities, it is unlikely that detrimental impacts to otter populations will occur.

**Will the plan or project cause displacement from key functional areas, e.g., for breeding, foraging, resting or migration?**

Yes, there is potential for displacement of otters from foraging and resting grounds within all three harvesting sites.

Migration of species is not predicted to be affected by the proposed hand-harvesting activities.

**How quickly is the affected population likely to recover once the plan or project has ceased?**

It should be considered that hand-harvesting activities are already managed with ecological interests in mind and have been adapted to address these features where possible (cutting the seaweed by hand with knives and sickles – no "noisy" machinery used, cutting the seaweed in such a way that the holdfast remains intact – fast regrowth is guaranteed).

If the otter population is affected/displaced from the proposed hand-harvesting activities, it is predicted that the population will recover immediately. Further to this, it is expected that otters foraging in the MUL area will immediately return to the harvesting site once the harvester(s) move to another harvestable site within the MUL area.

# 5 CONCLUSION

The relevant Annex IV species likely to be present in the area and potentially affected by the survey activities is:

- Otter (*Lutra lutra*)

As described in section 3 of this risk assessment, the proposed hand harvesting activities are a low-impact activity compared to mechanised methods and, although these activities can still cause physical disturbances to otters (in particular foraging and resting grounds), the hand-harvesting activities of *A. nodosum* are unlikely to have significant effects on otters within the MUL area. Given the scale and nature of the proposed activities it can be concluded that the proposed activities will not result in the committing of any offence under Article 12 of the Habitats Directive towards any of the species listed in Annex IV of the Habitats Directive that have been considered in this report.

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