



License Application for Sustainable hand-harvesting of *Ascophyllum nodosum* at Clew Bay (SAC Site Code 1482).

**Response to non-statutory consultation with relevant
public bodies from 05/12/2025 to 27/02/2026
(Ref: MUL240043)**

Prepared by: BioAtlantis Ltd.
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1. Introduction:

On 05 December 2025, the Maritime Area Regulatory Authority (MARA) issued a non-statutory consultation notice to relevant public bodies in relation to Maritime Usage Licence Application Reference MUL240043, submitted by BioAtlantis Ltd. The application is a relevant foreshore authorisation (FS006269) which has been transferred to MARA in accordance with the provisions of Section 1E(5A) of the Foreshore Act 1933 (as amended). The application is for a Maritime Usage Licence under Section 117 of the Maritime Area Planning Act 2021 (as amended) (the MAP Act) to undertake the sustainable hand harvesting of *Ascophyllum nodosum* within Clew Bay, Co. Mayo.

A number of observations were subsequently received from public bodies and made available to BioAtlantis Ltd. for review and consideration. This document provides BioAtlantis Ltd.'s response to those observations and identifies, where relevant, amendments, clarifications and additional information incorporated into the application documentation.

The responses set out in this document should be read in conjunction with the Maritime Usage Licence application, including the Main Application Document, Natura Impact Statement (NIS), Code of Practice and associated appendices (including Appendices 4, 5 and 6). Where amendments have been made to the application documentation in response to particular observations received, these are identified within the relevant sections of this document.

The table in the following section presents the observations received from each public body, together with BioAtlantis Ltd.'s response and references to the relevant application documents where applicable.

2. Summary of Public Body Observations and Applicant Responses

Public Body (comment no.)	Comment by Public Body	Response to Public Body
NPWS (1)	The NIS does not adequately assess the potential impacts of the proposed harvesting activity on the qualifying interests of the Clew Bay SAC against the site-specific conservation objectives for the relevant habitats and species.	New Section 7.4 has been added to the Natura Impact Statement (NIS) – Appropriate Assessment Matrix Against Site-Specific Conservation Objectives.
NPWS (2)	The assessment does not clearly demonstrate how the proposed activity will avoid adverse effects on the integrity of the site, particularly in relation to Annex I reef habitat (1170) and Large shallow inlets and bays (1160).	New Section 7.5 has been added to the NIS – Integrity of the Clew Bay Complex SAC.
NPWS (3)	The NIS does not adequately consider the site-specific conservation objectives for Clew Bay SAC and does not clearly demonstrate that the proposed activity will not undermine the achievement of those objectives.	New Section 7.4 has been added to the NIS – Appropriate Assessment Matrix Against Site-Specific Conservation Objectives.
NPWS (4)	The recovery rates for <i>Ascophyllum nodosum</i> following harvesting are assumed based on literature and are not demonstrated to apply under the specific environmental conditions of Clew Bay.	New Section 2.4 has been added to the NIS – Recovery of <i>Ascophyllum nodosum</i> Following Harvesting.
NPWS (5)	The NIS does not provide sufficient baseline information on the condition of the habitats within the proposed harvesting areas, particularly reef habitats.	Expanded Section 4.4 has been added to the NIS – Clew Bay / New subsection “Baseline Condition of Reef Habitats”.
NPWS (6)	The NIS does not clearly map the extent of proposed harvesting locations in relation to the distribution of Annex I habitats within the SAC.	All the maps in the NIS have been updated.
NPWS (7)	The assessment does not differentiate between reefs of differing exposure, community composition or conservation sensitivity.	New subsection within Section 4.5 has been added to the NIS – Variation in Reef Communities and Exposure Gradients.

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NPWS (8)	The NIS does not demonstrate that more sensitive or less resilient reef features will be avoided by the proposed harvesting activity.	New subsection Section 6.1.1 has been added to the NIS – Avoidance of Sensitive and Less Resilient Reef Features.
NPWS (9)	The disturbance threshold applied in the assessment (15%) is not clearly derived from site-specific conservation objectives and appears to have been applied from other habitat contexts.	New subsection 5.1.1.1 has been added to the NIS - Clarification of the Disturbance Threshold Approach.
NPWS (10)	The NIS does not sufficiently explain the relationship between biomass removal and the functional attributes of reef habitats.	New subsection 5.1.1.2 has been added to the NIS - Functional Role of <i>Ascophyllum nodosum</i> Canopy.
NPWS (11)	The assessment of potential disturbance to wildlife species, including marine mammals and birds, relies heavily on avoidance measures without sufficient supporting evidence.	Expanded Section 5.1.3 and 6.2 of the NIS.
NPWS (12)	The ecological rationale for seasonal or spatial restrictions is not clearly explained and the mechanisms for monitoring and enforcement are not fully described.	New Section 6.2.3 has been added to the NIS – Mitigation Measures for Annex II Species.
NPWS (13)	The proposed monitoring programme lacks clearly defined ecological indicators, thresholds for action, and adaptive management responses.	New Section 6.5 has been added to the NIS – Ecological Monitoring and Adaptive Management Framework.
NPWS (14)	The monitoring framework appears focused on operational compliance rather than on detecting ecological impacts on SAC features.	New subsection 6.5.2 has been added to the NIS – Relationship Between Operational Monitoring and Ecological Protection.
NPWS (15)	The assessment of in-combination effects does not sufficiently consider ongoing traditional harvesting activities and other shoreline uses within the SAC.	New subsection 5.3.2 – In-Combination Effects with Existing Shoreline Activities and Traditional Harvesting.
NPWS (16)	The NIS does not adequately evaluate the potential for repeated low-level impacts over time to affect the integrity of the SAC.	New subsection 6.4.1 has been added to the NIS – Prevention of Repeated Low-Level and Cumulative Ecological Impacts.
Marine Institute (1)	The Assessment of <i>A. nodosum</i> resources and associated biodiversity in Clew Bay SAC	The following text has been added the main application document (Section 1.3.1.2) for clarification purposes:

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	(Appendix 1 in the submitted reports) is dated November 2014 and reporting on data gathered in September 2013 and based on previous work in 1998 and 2001. An Assessment of “Algal harvesting in Clew Bay: pre-license survey, April – July 2016” is now approaching 10 years ago. This is of concern. Since 2013 / 2016 <i>Ascophyllum nodosum</i> abundance may have varied. As a littoral species, potential impact on biodiversity in the littoral zone of harvesting cannot be estimated.	“A. nodosum Abundance and Littoral Biodiversity: <i>A. nodosum</i> resources in Clew Bay were initially assessed based on studies published by the Marine Institute (Hession et al., 1998) and subsequent work presented in the main application document and associated Appendix 1. The biomass figures were subsequently updated following a pre-licence ecological survey carried out by ecologists at University College Dublin (UCD) between April and July 2016 (report attached to the application), which provides the most up-to-date assessment of the resource within the application area. <i>The UCD survey estimated a total biomass of 55,606 tonnes and calculated an annual harvest of approximately 11,121 tonnes based on a 20% harvest rate. The proposed annual harvest level was reduced to 11,018 tonnes to avoid overlap with existing appurtenant (folio) harvesting rights.</i> <i>In addition, A. nodosum is a renewable resource with documented regeneration rates (typically 11–17 months in the west of Ireland; Kelly et al., 2001). The application proposes that BioAtlantis will undertake additional surveys in addition to on-site assessments to verify that areas have fully recovered prior to re-harvesting, and will update the harvesting plan as necessary based on the results of these assessments.</i> <i>The potential impacts of hand harvesting have been considered in the application, and measures are in place in the Code of Practice (Appendix 4) to prevent impacts on community structure and biodiversity in the A. nodosum zone. As outlined in this application, BioAtlantis will build on the findings of Kelly et al., (2001) and over the life-time of the licence will assess rates of re-growth of A. nodosum post-harvest and associated biodiversity (see Sections 1.3.3 (d) and 3.5.3 (d) of main application document). This approach will build on existing data and knowledge from previous surveys and studies on an ongoing basis throughout the lifetime of the licence.”</i>
Marine Institute (2)	Fifty-seven licensed aquaculture sites fall within the proposed harvest area.	The following text has been added to the main application document (Section 3.6.2 (c)) for clarification purposes: “Interaction with Licensed Aquaculture Activities: <i>The application recognizes that a number of licensed aquaculture sites are located within the proposed harvest area, with Clew Bay a designated Shellfish Water Directive Area. The assessment presented in Appendix 7 confirms that the proposed activity is compatible with existing aquaculture operations, with mitigation measures in place in the Code of Practice (Appendix 4) to avoid potential impacts. BioAtlantis has engaged with local stakeholders to date and will continue consultation with licensed aquaculture operators to avoid and minimise any potential interactions.</i>

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Marine Institute (3)	A fisheries order is in place: European Flat Oyster ¹ and consultation with the local cooperative is recommended.	<i>The following text has been added to the main application document (Section 3.6.2 (c)) for clarification purposes:</i> <i>Interaction with the European Flat Oyster Fishery (Fisheries Order):</i> The application acknowledges that a fisheries order for European flat oyster (<i>Ostrea edulis</i>) applies within Clew Bay. The assessment presented in Appendix 7 confirms that the proposed activity is compatible with the existing native (wild) oyster fishery, and measures are in place to ensure that harvesting does not interact with or lead to in combination or cumulative effects with fisheries activities in the Bay. BioAtlantis has engaged with local stakeholders in Clew Bay including representatives of Clew Bay Oyster Co-operative Society Ltd. The company will endeavour to continue engaging with relevant local stakeholders, including the cooperative, with the aim of avoiding and minimising any potential interactions with this managed fishery”.
Marine Institute (4)	Clew bay is designated a Special Area of Conservation	The NIS was previously submitted and has been updated following public bodies consultation.
Marine Institute (5)	Salmon are also present in the area, both wild and hatchery reared, migrating out of and returning to the Burrishoole river system. Other diadromous species are also prevalent in the area, namely trout and eel.	The following text has been added to the main application document (Section 3.3.4) for clarification purposes: <i>“Potential Effects on Migratory (Diadromous) Fish Species:</i> The application acknowledges that Salmon are present in the area, both wild and hatchery reared, migrating out of and returning to the Burrishoole river system. Other diadromous species are also prevalent in the area, namely trout and eel. Measures are in place in the Code of Practice to ensure that potential impacts on salmon, trout and European eel are avoided.”
Marine Institute (6)	Some of the zone marked for harvesting are subject to considerable coastal erosion – does removal of Ascophyllum allow more wave action on the intertidal zone and therefore potentially contribute to further erosion?	The following text has been added to NIS (Section 5.7) and the main application document (Section 3.5.4) for clarification purposes: <i>“Potential Effects of Hand Harvesting of A. nodosum on Coastal Erosion and Wave Attenuation</i> <i>(a) Coastal Processes in Clew Bay</i> Clew Bay is a ‘drowned’ drumlin landscape, reflecting the erosional action of the sea on drumlins formed during the last glacial period (Hennessy et al., 2014, 2019, NPWS, 2011B). The heterogeneous sediment environment of the bay results from the erosion of existing and submerged drumlins and their coarse glacial deposits (NPWS, 2011A). The coarse material in the area may be an artefact of these glacial deposits rather than reflecting the level of energy present. Erosion is driven by wave action, storm events, tidal currents and sea-level rise. Erosion rates in low lying soft coasts areas of Ireland average between 0.2-0.5m per year, or up to 1-2m per year. For rocky shores of the south and west of Ireland, land loss can be as low as 0.01m per

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		century (Environmental Protection Agency, EPA, n.d.). Natural shorelines attempt to absorb the energy entering the coastal zone by redistributing sediment (NPWS, 2011B). NPWS specify a number of targets in relation to erosion in Clew Bay (NPWS, 2011B). As coastal systems are naturally dynamic and subject to change even within a season, these targets are assessed subject to natural processes, including erosion and succession. Coastal processes may also be influenced over time by broader climatic factors, such as climate change. Sedimentary bays in Ireland, composed of unconsolidated (soft) sediment, may be more susceptible to coastal erosion (Environmental Protection Agency, EPA, n.d.). The drumlin landscape of Clew Bay was formed from unconsolidated glacial deposits, which may be vulnerable to erosion in some areas due to attrition; for instance, soft cliffed island perimeters can be affected by wave energy during spring tides and storms, followed by rain and wind weakening the soil structure through expansion and contraction, leading to instability and landslips (Ref: An Island Study (n.d.)). Coastal soil susceptibility maps classify the islands as having 'medium' susceptibility to erosion (Heritagemaps.ie). Two areas regarded as having potentially higher susceptibility are: (a) the area located on the southern side of Clew Bay, at sandy beach pockets, the Bertra tombolo, and the mudflats behind Bartra, (b) Mulranny on the north shore (An Island Study (n.d.)). The drumlins of Clew Bay are not recognized as being highly susceptible to soil erosion. However, the shoreline on the western and southern side of Freaghillaun East appears to be more susceptible to erosion, where the following has been recorded: slope erosion, perimeter landslip & erosion, basal erosion, or large cracked rock dislocation from glacial till is observed. (b) Sensitivity of Habitats Saltmarsh, dune, machair, shingle and pioneer saltmarsh habitats are all naturally dynamic, relying on natural sediment processes and are potentially susceptible to interference with sediment supply or vegetation stability. Site-Specific Erosion is reported as follows: • Annagh Island (South East Clew Bay): Erosion of saltmarsh occurs along cliffs and intertidal areas due to natural processes and grazing pressure, with no significant loss of habitat extent. • Bartraw (South Clew Bay): Natural erosion of dune and shingle habitats is the most significant process due to the exposed setting, with the narrow spit vulnerable to tides and storms. The site may be sensitive to any interference with coastal processes. • Caraholly South (East Clew Bay): Erosion of saltmarsh at the seaward edge appears to be associated with poaching, although the site remains relatively stable overall. • Kiladangan (South East Clew Bay): Erosion of saltmarsh is evident at marsh cliffs and pan edges, with some potentially linked to poaching, but the site is generally stable.

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		• <i>Mallaranny (Mulranny) area (North West Clew Bay): Frequent erosion occurs in lower saltmarsh areas, potentially associated with sheep poaching, with active erosion and accretion along the Murrevegh River channel. The site is sensitive to further disturbance of sediment and vegetation.</i> • <i>Rosmurrevagh (North West Clew Bay - machair): Erosion of machair habitat is potentially compounded by grazing and poaching, particularly at the seaward edge, and the site may be sensitive to both natural and anthropogenic pressures.</i> • <i>Rosmurrevagh (North West Clew Bay - saltmarsh): Erosion of saltmarsh along the seaward edge and some overall erosion are evident, likely reflecting natural geomorphological processes. The system may be sensitive to changes in sediment dynamics.</i> • <i>Tooreen (North West Clew Bay): Localised erosion of saltmarsh is present along the seaward edge and is exacerbated by grazing, although no overall long-term erosion has been recorded. The site remains stable but locally sensitive.</i> (c) Conservation Context <i>Under the EU Habitats Directive, Clew Bay is designated as a Special Area of Conservation, requiring the maintenance of dynamic habitats such as saltmarsh, dunes and machair. In addition, at Rosmurrevagh, a long-standing dune and machair conservation project is in place, with a focus on supporting natural coastal processes and maintaining sediment dynamics and ecological function (Climate Ireland, 2025). More broadly, localised coastal management interventions are present within Clew Bay, including the repair and maintenance of coastal defences (e.g. rock armour and gabions) and dune protection and restoration initiatives, such as those undertaken at Bertra. These measures have been implemented by Mayo County Council and other stakeholders in response to storm damage and erosion risk, and are supported by broader strategic actions under the Mayo County Council Climate Adaptation Strategy, which addresses coastal erosion and resilience at a county scale (Mayo County Council, 2019; Mayo County Council, n.d. a; Mayo County Council, n.d. b).</i> (d) Assessment of potential impacts and mitigation <i>The proposed hand harvesting of A. nodosum is not expected to materially increase wave exposure in the intertidal zone or contribute to coastal erosion, as the activity involves the selective cutting of fronds only, retains the holdfast, maintains sufficient biomass for regeneration, and does not alter the physical processes that control erosion in Clew Bay. A. nodosum grows in naturally sheltered intertidal environments where wave energy is inherently low and therefore has limited influence on coastal hydrodynamics or wave action. Coastal erosion in these areas is primarily controlled by physical factors such as substrate type and</i>

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		<i>geomorphology, rather than macroalgal cover. Hand harvesting involves the selective removal of fronds only, with the holdfast remaining intact, allowing for natural regeneration and maintaining biomass along the shoreline. The Code of Practice includes measures to prevent disturbance to mudflat, sandflat, intertidal sandy mud, estuarine mud, fine-sand, shingle and reef areas, including adherence to environmentally safe navigation practices and avoiding entry into soft sediment areas during low tide. On this basis, it is concluded that the proposed hand harvesting of A. nodosum will not contribute to coastal erosion. This conclusion is supported by the following:</i> <i>• Any potential effects on localized wave attenuation and sediment stabilization are limited in spatial extent, and do not exert a controlling influence on coastal processes.</i> <i>• Coastal processes in Clew Bay are controlled primarily by geomorphology, wave climate and tidal dynamics, with sediment largely derived from glacial deposits. Accordingly, the proposed activity does not involve sediment removal or alteration of these processes and therefore will not influence sediment transport pathways or shoreline evolution.</i> <i>• There is no plausible pathway by which the proposed activity could increase coastal erosion, as it does not alter wave energy, tidal processes, sediment supply or the integrity of stabilising habitats.</i> <i>• The sustainable hand-harvest methodology and rotational nature of harvesting, limit reductions in biomass and ensure recovery between harvesting cycles.</i> <i>• Access to sites and harvesting methods are designed to minimise physical disturbance to shoreline sediments and vegetation (e.g. saltmarsh, dunes and machair), thereby avoiding indirect effects on erosion processes.</i> <i>• While coastal wetlands, such as saltmarsh and mudflat habitats, and other intertidal habitats have the potential to contribute to localised coastal resilience, the proposed hand-harvesting activity is designed to be sustainable by retaining sufficient biomass, ensuring regeneration and avoiding adverse effects on sensitive areas, thereby maintaining these functions.</i> <i>• The limited number of personnel operating along the shoreline, together with other measures set out in the application, serves to limit anthropogenic effects and minimise the potential for impacts on shoreline stability and coastal erosion processes.</i> <i>(e) Mitigation Measures to prevent coastal erosion</i> <i>To ensure that no significant impacts on coastal erosion arise, additional mitigation measures are included in the Code of Practice, as outlined below:</i>

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		• <i>Follow environmentally safe navigation practices at all times, including avoiding entry into soft sediment areas during low tide, accessing sites at appropriate tidal states, and minimising contact with the seabed and shoreline (see Section 7: Environmentally Safe Navigation).</i> • <i>Use correct hand-cutting methods at all times, leaving the holdfast intact to facilitate regeneration and retain sufficient seaweed cover.</i> • <i>Adhere to sustainable harvesting practices, biomass limits and harvesting schedules to ensure regeneration and maintenance of biomass levels along the shoreline, and to prevent over-harvesting and any potential indirect impacts on organic drift material.</i> • <i>Activities related to harvesting, such as storage and transport, are not permitted within sand dune, machair or saltmarsh habitats. Harvesting shall be restricted to the intertidal Ascophyllum nodosum zone.</i> • <i>Do not harvest at the fringes of saltmarsh habitats (e.g. Atlantic salt meadow).</i> • <i>Particular care shall be taken to avoid disturbance of erosion-prone areas within saltmarsh, dune and machair systems, including: Tooreen (North West Clew Bay, CZ 5.15), Rosmurrevagh (North West Clew Bay, CZ 5.16 and CZ 5.17), Caraholly South (East Clew Bay, CZ 2.8), Kiladangan (South East Clew Bay; CZ 1.7, CZ 1.11, CZ 1.12), Annagh Island (South East Clew Bay, CZ 1.9), Bartraw including the Bertra tombolo area and associated intertidal mudflat systems (South Clew Bay, CZ 1.1 and CZ 1.2)</i> • <i>Ensure that harvesting activities do not interfere with dune and machair habitats at Rosmurrevagh, and avoid any disturbance to these systems</i> • <i>Ensure particular caution in more exposed areas of sites (e.g. western or southern areas), where natural erosion processes may be more active.</i> • <i>Avoid upper shore areas at sites where visual evidence of slope erosion, perimeter landslip and erosion, basal erosion, or large cracked rock dislocation from glacial till is present.</i> • <i>Do not interfere with existing coastal management measures within Clew Bay, including hard structures such as rock armour and gabions at Bartraw, and soft measures such as sand trap fencing in dune systems, as these support sediment dynamics and coastal stability.</i> • <i>Do not undertake harvesting in the Mulranny (Mallaranny, North West Clew Bay) area, thereby avoiding potential in-combination effects with other activities in that area.</i> • <i>Access to harvest sites:</i> - <i>Harvesting activities shall be confined to the intertidal zone where A. nodosum is present.</i> - <i>Avoid trampling across sensitive inland and coastal habitats, including dune systems, saltmarsh, machair and stony bank habitats (Perennial vegetation of stony bank).</i> - <i>Avoid trampling of vegetation and disturbance of sediments, particularly within soft intertidal areas.</i>

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		- Where appropriate, use signage or local guidance to direct access along durable surfaces and established access routes. (f) Flooding and Coastal Inundation <i>Flooding and coastal inundation are recognised issues in coastal areas. However, A. nodosum is naturally adapted to sheltered intertidal environments where wave energy is inherently low, and therefore has limited influence on broader coastal hydrodynamics or flood processes. The proposed activity involves the selective hand harvesting of fronds only, retains the holdfast and sufficient biomass for regeneration, and does not involve alteration of shoreline morphology, sediment transport processes, hydrology, tidal exchange or coastal defences. No evidence is available to indicate that sustainable hand harvesting of A. nodosum within sheltered intertidal areas contributes to coastal flooding, shoreline inundation or changes in regional hydrodynamic processes. Accordingly, no pathway exists by which the proposed activity could contribute to flooding or coastal inundation.</i> (g) Conclusion <i>Erosion in Clew Bay is a natural process, but may be locally intensified in some areas by grazing and disturbance, and these habitats may be sensitive to such pressures. Conservation objectives require that natural sediment processes are maintained, and that proposed activities do not interfere with sediment dynamics or vegetation structure (e.g. saltmarsh, dunes and machair), or result in increased or accelerated erosion. On this basis, and taking account of the mitigation measures outlined above, it is concluded that the proposed activities will not result in impacts on coastal erosion processes."</i> (h) References • An Island Study (n.d.) Erosion & deposition – natural processes in Clew Bay. https://anislandstudy.weebly.com/uploads/4/5/6/6/45666867/erosion_edited.pdf • Climate Ireland (2025). Rosmurrevagh Dunes Conservation Project Case Study. https://climateconnected.ie/wp-content/uploads/2025/09/5-Rosmurrevagh-Dunes-CS.pdf • Environmental Protection Agency (EPA) (n.d.) Coastal erosion. Climate Ireland. https://www.climateireland.ie/impact-on-ireland/climate-hazards/coastal-erosion/ • Hennessy R, Feely M, Parkes M, Gatley S (2014, 2019) Mayo - County Geological Site Report: Clew Bay. Geological Survey Ireland. https://gsi.geodata.gov.ie/downloads/Geoheritage/Reports/MO032_Clew_Bay.pdf

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		• Mayo County Council (2019). Climate Ready Mayo: Mayo County Council Climate Change Adaptation Strategy 2019–2024. Available at: https://www.mayo.ie/getmedia/ede67b0e-a4e4-4e7c-a40b-fb1fcbdfd00c/Mayo-Climate-Adaptation-Strategy.pdf • Mayo County Council (n.d. a). Offshore & Coastal Erosion. Available at: https://www.mayo.ie/en-ie/your-council/services/marine/marine-planning/offshore-coastal-erosion • Mayo County Council (n.d. b). Climate Adaptation Strategy for County Mayo. Available at: https://www.mayo.ie/en-ie/your-council/services/environment/climate-action/adaption • NPWS, 2011A. Clew Bay SAC (site code: 1482). Conservation objectives supporting document –marine habitats and species. • NPWS, 2011B. Clew Bay SAC (site code: 1482). Conservation objectives supporting document –coastal habitats.
Marine Institute (7)	While fishing operations are recorded in the area (periwinkle harvesting, dredge fishing, pot fishing) and within close proximity (net and line fishing) along with spawning and/or nursery grounds for cod and horse mackerel ² , the littoral distribution of <i>A. nodosum</i> tends to be shallow and therefore the impact on fishing activities is likely to be minimal.	Fishing operations in the area, including periwinkle harvesting, dredge fishing, pot fishing, and net and line fishing, as well as spawning and/or nursery grounds for cod, horse mackerel and other commercial species, are addressed throughout the application (e.g. Appendix 7, 9 and 10). Hand harvesting is considered compatible with fisheries activities such as these, and in combination or cumulative effects and other impacts are unlikely to occur. In addition, the Code of Practice includes measures to ensure that no impacts arise on angling and fisheries activities.
Marine Institute (8)	In general, and particularly where the proposed activities occur within Natura 2000 sites, it should also be verified that the particular activity complies with regulations that will safeguard the ecological integrity of the proposed site in view of the site's conservation objectives under Article 6(3) of the Habitats Directive and also have regard to the requirements of the Environmental Impact Assessment Directive. The activity must also be deemed to be in the public interest.	• Natura Impact Statement (NIS): An NIS was prepared, and compliance with Article 6(3) of the Habitats Directive (no adverse effect on site integrity) has been demonstrated. • Compliance with Environmental Impact Assessment (EIA) requirements (where applicable): The application has considered the requirements of the Environmental Impact Assessment Directive. As set out in the application (Section 1.8 and Section 5.1), the proposed activity does not constitute a ‘project’ or ‘development’ for the purposes of the EIA Directive, and therefore an EIA/EIS is not required.” • Activity justified as being in the public interest: As outlined throughout the application, the proposed activity is considered to be in the public interest, as it supports sustainable economic development and employment in coastal communities, enables value to be added to Ireland’s indigenous seaweed resource within Ireland rather than being exported as an unprocessed or minimally processed raw material, contributes to national policy objectives including the Blue Bioeconomy and climate action, ensures the sustainable management of a renewable marine resource, and delivers wider environmental and societal benefits through the development of sustainable agricultural technologies.
Marine Institute (9)	Potential impact on individuals who have the right to harvest wild seaweed, namely those	As outlined in Sections 2.7 and 4.2 of the application form, BioAtlantis liaised with the Property Registration Authority of Ireland (PRAI; now Tailte Éireann) to identify the extent and nature of

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	who hold appurtenant rights and profit-a-prendre rights, should be assessed.	existing seaweed harvesting rights within the proposed licence area. This assessment, which included an in-depth examination of Land Registry folios, identified a number of folios specifying existing appurtenant rights and burdens relating to the gathering or removal of seaweed in Clew Bay. The findings are set out in a separate report submitted with the application, including mapping of these rights. As outlined in the application, BioAtlantis wish to work in partnership with local hand harvesters in Clew Bay to create a vibrant industry, and add value to the seaweed resource in Ireland. The application ensures that traditional seaweed harvesting rights are fully respected and measures are included to ensure the license has no impacts on existing harvesting rights in Clew Bay. In particular, BioAtlantis will not harvest in any area where existing appurtenant (folio) rights exist, without first obtaining permission from the owner of such rights. Where Profit-à-Prendre rights are successfully registered with Tailte Éireann, the harvesting plan will be adjusted to ensure that those individuals can continue to harvest. It is envisaged that a clause may be included in the licence issued to allow the harvesting of <i>Ascophyllum nodosum</i> seaweed, stating that if a Profit-à-Prendre rights holder provides sufficient proof to their right, the licensee would be prohibited from harvesting in that area, without first obtaining permission from the owner of such rights.
DAFM (1)	It is essential that the sea-fishing and aquaculture sectors are fully recognised and given a high priority as a long-standing, pre-existing, and traditional activity in the marine environment as the proposed activity is being evaluated.	The following text has been added to the main application document (Section 3.6.2 (c)) for clarification purposes: <i>“Coexistence with Sea Fishing and Aquaculture as Established Marine Uses</i> <i>The application has been developed on the basis of the sustainable management of natural and renewable environmental resources and the use of best practice. As outlined in the application documents, sea-fishing, inshore fisheries, and aquaculture are recognised and given a high priority as long-standing, pre-existing, and traditional activities within the marine environment. The proposal has been designed to operate on the principle of maximising coexistence with these and other established activities, in accordance with the National Marine Planning Framework (NMPF), including the principles of avoiding, minimising, and mitigating impacts on access to existing marine users (see Appendix 10).</i> <i>The assessment of in-combination and cumulative effects presented in Appendix 7 confirms that no significant adverse effects arise in relation to existing licensed aquaculture, inshore fisheries, and sea-fishing activities, and demonstrates that the proposal is compatible with these activities. Mitigation measures have also been incorporated to avoid potential interactions, impacts, or in-combination or cumulative effects with these and other activities in the area (see Appendix 4).”</i>

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		It is also noted that, since the submission of the original application, additional aquaculture licence applications have been submitted, including applications to cultivate salmon at sites east of Inishcannon Island (T10-054), east of Inishdoonver (T10-067), and off and east of Clare Island (T10-058-4 and T10-058-8) in Clew Bay. As outlined in the Code of Practice, measures are in place to prevent interactions with existing aquaculture activities in Clew Bay, and appropriate measures will also be implemented, where required, to avoid impacts associated with any additional aquaculture operations that may be licensed within Clew Bay.
DAFM (2)	BIM advised that they promote sustainable management of environmental resources and the use of best practices. Due to overlaps, the proposed hand harvesting seaweed activity would need to be compatible with existing active licenced aquaculture and inshore fisheries activities within the sought application area.	As above for DAFM 1.
DAFM (3)	MI note that the assessment of <i>A. nodosum</i> resources and associated biodiversity in Clew Bay SAC (Appendix 1 in the submitted reports) is dated November 2014 and reporting on data gathered in September 2013 and based on previous work in 1998 and 2001. An Assessment of “Algal harvesting in Clew Bay: pre-license survey, April – July 2016” is now approaching 10 years ago. Since 2013 / 2016 <i>Ascophyllum nodosum</i> abundance may have varied. DAFM would highlight the MI statement that the age of the scientific assessment is of concern. Please see the attached report from the MI for further information.	As outlined in response to comments by the Marine institute (see reply to “Marine Institute 1”).
DAFM (4)	The MI also note that fifty-seven licensed aquaculture sites fall within the proposed harvest area, with Clew Bay a designated Shellfish Water Directive Area. Consultation	As outlined in response to comments by the Marine institute (see reply to “Marine Institute 2”).

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	with local licensed aquaculture operators is recommended.	
DAFM (5)	DAFM recognises that the applicant's aim is to promote co-existence and minimise potential disruption to commercial fishing activities in the area. The evaluation of potential impacts of seaweed harvesting on commercial sea fishing activities needs to be given consideration within the context of the requirements set out under the Maritime Area Planning Act and the National Marine Planning Framework. (NMPF).	As above for DAFM 1. In addition, Appendix 10 provides an assessment of the application to hand harvest <i>A. nodosum</i> , and its consistency with the National Marine Planning Framework (NMPF) and Marine Spatial Planning (MSP) policies, particularly with regard to: Fisheries Policy, Fisheries – effort, Fisheries species and Fisheries - Ports, harvesting, distribution.
DAFM (6)	The principles in the NMPF of avoiding, minimising, or mitigating impacts on access to existing activities (including specific policies on Fisheries and Aquaculture) should be followed and any proposed activity should incorporate the principle of maximising coexistence with established activities in marine areas.	As above for DAFM 1.
DAFM (7)	Vessel Monitoring System (VMS) data regarding fishing in, and around, the licence application area may be limited as many of the vessels in the inshore fishing segment (less than 12 metres in length) are not currently required to carry VMS on board. While the proposed activity is not anticipated to impact unduly on inshore fishers, relevant local fishing organisations should nevertheless be engaged with at the earliest opportunity, to avoid disruption and potential displacement. Organisations representing inshore vessels include: • The National Inshore Fisheries Forum (NIFF): https://inshoreforums.ie/niff/ • The Irish Islands Marine Resource Organisation (IIMRO): https://www.iimro.org/	As outlined in the application, the proposed activity is compatible with, and is not anticipated to result in significant impacts on inshore fisheries or to cause disruption or displacement of fishing activities. Mitigation measures are set out in the Code of Practice (Appendix 4) to avoid potential impacts, where applicable. BioAtlantis has engaged with stakeholders in Clew Bay to date. The company recognises the importance of engagement with local stakeholders such as fishing organisations, and consultation will continue to ensure stakeholders are informed and to avoid any potential for disruption or displacement. A Marine Notice will be issued if required, to inform relevant stakeholders to ensure optimum coordination and avoid potential interactions, impacts or disturbances to other marine activities (such as fishing) to the greatest extent possible.

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	- The National Inshore Fishermen's Association (NIFA): https://inshore.ie/ - North West Regional Inshore Fisheries Forum (NWRIFF): https://inshoreforums.ie/northwest-overview/	
DAFM (8)	All relevant fishing organisations should receive any applicable Marine Notices, and be made aware of any proposed activities, at the earliest opportunity to ensure the optimum coordination of activities and to limit potential disturbances to fishing activities to the greatest extent possible.	As above for DAFM 7.
BIM (1)	BIM promotes the sustainable management of environmental resources and the use of best practice.	The existing application and Code of Practice reflects best practice and sustainable resource management.
BIM (2)	Due to overlaps, the proposed hand harvesting seaweed activity would need to demonstrate that it is compatible with existing active licenced aquaculture and inshore fisheries activities within the application area. Any potential overlap would need to consider in-combination and cumulative effects.	The proposed hand-harvesting activity is compatible with existing aquaculture and inshore fisheries in the area and, as outlined in Appendix 7 of the application, no significant in-combination or cumulative effects arise. Spatial overlap with these activities is limited, and mitigation measures are set out in the Code of Practice (Appendix 4) to avoid potential interactions or impacts. This is further detailed in the responses provided above to similar comments from the Marine Institute and DAFM.
BIM (3)	Although BIM has no remit in the hand harvesting of seaweed some of our clients and their communities have strong hand harvesting traditions/rights and the proposed activity would need to be consistent with existing activity.	The application acknowledges existing hand-harvesting traditions and rights in the area and has been designed to operate in a manner consistent with these activities. As outlined in the application, BioAtlantis wish to work in partnership with local hand harvesters in Clew Bay to create a vibrant industry, and add value to the seaweed resource in Ireland. The application ensures that traditional seaweed harvesting rights are fully respected and measures are included to ensure the license has no impacts on existing harvesting rights in Clew Bay. This is further detailed in the response to similar comments from the Marine Institute (see response to Marine institute comment number 9 above).
BIM (4)	Demonstrating compliance with sustainable management and best practice is considered important	The application has been developed on the basis of the sustainable management of natural and renewable environmental resources and the use of best practice. This is demonstrated through the inclusion of a Code of Practice (Appendix 4) to guide sustainable hand harvest harvesting activities, the implementation of mitigation measures to avoid potential impacts, and the adoption of an adaptive management approach incorporating ongoing monitoring and site assessments to ensure the long-term sustainability of the resource.

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BIM (5)	Early and continuous communication should be made with stakeholders in the proposed mapped areas to avoid any conflicts arising with fishermen and aquaculture operators in the areas regarding proposed activities.	BioAtlantis has engaged with local stakeholders to date and will continue to consult an ongoing basis (e.g. with fishermen and aquaculture operators) to avoid potential interactions, impacts or conflicts regarding the proposed activity.
GSI (1)	With reference to your emails received on the 9 December 2025, concerning the MUL Applications for Seaweed Harvesting, we recommend using our various data sets when conducting the EIAR, SEA, planning and scoping processes for developments, plans and policies. For more detailed information on how to access this data please access 'Data and Maps' Data & Maps (gsi.ie) on our 'Geoscience for planning' webpage. Use of our data or maps should be attributed correctly (please refer to each individual dataset's metadata for correct attribution).	• The availability of datasets from the Geological Survey Ireland (GSI) is noted and may be considered where relevant, with appropriate attribution to source data in accordance with GSI guidance. • As outlined in the application form, the proposed activity does not constitute a project for the purposes of the EIA Directive and therefore an Environmental Impact Assessment is not required. This is further detailed in the response to comments from the Marine Institute (see response to Marine institute comment number 8 above).
GSI (2)	For specific data available for Environmental Assessment and Planning topics please follow this link [Data by Environmental Assessment and Planning Topic (gsi.ie)], where you will find our data arranged by environmental assessment topic as illustrated below: • Land and soils: Soil – Subsoils (Quaternary Geology); Tellus Geochemistry; Geotechnical. Geology – Bedrock; Geophysics; Bedrock & Quaternary 3D. • Water: Groundwater – Aquifers GW vulnerability, GWPSs (GWPPS); Surface water – Tellus Geochemistry; Estuarine & marine waters – Marine and coastal; Flooding – GWClimate; Karst. • Climate Change: Carbon accounting / Carbon balance – Geothermal; Carbon capture and storage. Climate change trends – National coastal change assessment.	As above for GSI 1. In addition: The information and datasets identified by Geological Survey Ireland, including those available through the Marine and Coastal Unit and the INFOMAR programme, have been reviewed. Having regard to the nature, scale and intertidal location of the proposed hand-harvesting activity, these datasets are not considered directly applicable to the proposal and do not give rise to any additional impact pathways. Accordingly, no further assessment is required at this stage. In terms of Cultural Heritage, Section 5.10 of the application form provides a list of sites in close proximity or within to the license area. As outlined in 5.13 of the application form, Archaeological sites or features will be avoided by a distance of 20m. Prior to harvesting near these sites, the Resource Manager will mark them.

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	• Cultural Heritage: Archaeology – Cherish; Underwater Archaeology – Shipwrecks. • Material Assets: Built Services – Natural resources (Minerals & Aggregates); Active quarries. • The Landscape: Landscape Appearance & Character – Physiographic units; Historical landscapes – Historic mines. • Other Relevant Data: Natural (Geo) hazards – Landslide Susceptibility Mapping; Groundwater flooding; Coastal vulnerability; Subsidence; Radon. Natural heritage – Geoheritage (County Geological Sites); Dimension Stone/Stone Built Ireland.	
GSI (3)	Our marine environment is hugely important to our bio-economy, transport, tourism and recreational sectors. It is also an important indicator of the health of our planet. Geological Survey Ireland's Marine and Coastal Unit in partnership with the Marine Institute, jointly manages INFOMAR, Ireland's national marine mapping programme; providing key baseline data for Ireland's marine sector. The programme delivers a wide range of benefits to multi-sectoral end-users across the national blue economy with an emphasis on enabling our stakeholders. INFOMAR data such as bathymetry, backscatter, sediment classification, shipwrecks and survey metadata can be downloaded free of charge in a variety of formats at the INFOMAR Marine Data Download Portal. INFOMAR also produces a wide variety of seabed mapping products that enable public and stakeholders to visualize Ireland's seafloor environment.	As above for GSI 1 and GSI 2. Regarding coastal change and coastal erosion, various sources, including ESA Coastal Erosion from Space, the National Coastal Change Assessment, and the Office of Public Works Irish Coastal Protection Strategy Study (ICPSS) 2050 Erosion Line dataset, www.heritagemaps.ie and https://www.floodinfo.ie/map/coastal_map/, have been consulted. As outlined in our response to the Marine Institute (response 6 above), measures have been incorporated into the Code of Practice to ensure that the proposed harvesting will not result in impacts on coastal erosion.

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	Story maps have also been developed providing a different perspective of some of the bays and harbors of the Irish coastline. We would therefore recommend use of our Marine and Coastal Unit datasets available on our website and Map Viewer. The Marine and Coastal Unit also participate in coastal change projects and are undertaking mapping in areas such as coastal vulnerability and coastal erosion. Further information on these projects can be found here.	
GSI (4)	ObSERVE Programme The ObSERVE Programme is a collaborative initiative between the Department of Climate, Energy and the Environment (DCEE) and the Department of Housing, Local Government and Heritage (DHLGH). Managed by DCEE, the programme delivers aerial and acoustic survey data on marine megafauna — including cetaceans, seabirds and other protected species — to address critical baseline data gaps in Irish waters. These datasets support marine spatial planning, biodiversity conservation, and Ireland’s obligations under EU and international environmental frameworks.	The ObSERVE Programme is acknowledged as a key national dataset providing baseline information on the distribution and occurrence of marine megafauna in Irish waters, including cetaceans, seabirds and other protected species. Many of the species identified within ObSERVE were already considered in the application. The remaining species and groups have been reviewed and incorporated into the assessment where relevant (e.g. see updated Appendix 6 and Appendix 5). As the dataset is regional in nature and not necessarily site-specific to Clew Bay, and as many species are offshore or pelagic or have no spatial overlap or obligate relationship with <i>A. nodosum</i>, there is limited potential for interaction with the proposed intertidal activities. The conclusions of the environmental assessments remain unchanged. Potential effects on other marine megafauna have been further assessed and incorporated into the updated Appendix 5. To ensure no impacts on marine megafauna, the following additional measures have been included in the Code of Practice in updated Appendix 4: “SECTION 14: Other requirements: • Other mammalian and large non-mammalian marine fauna: To prevent disturbance the following is required: - Harvesters will be trained to identify presence of marine mammals such as Harbour Porpoise, Grey seals, Dolphins and other cetaceans, and other large non-mammalian marine fauna (such as basking shark and turtles), as part of the general environmental awareness training. - Harvesters must adhere to measures to prevent disturbance of other marine mammals and non-mammalian marine fauna, and steps to record disturbance events (e.g. section 5.4. of Code of Practice).

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		• Training: <i>Harvesters will be provided with training, where necessary, regarding habitat recognition and measures to prevent impacts on marine and coastal habitats and species, including those outlined in the Code of Practice."</i>
MSO (1)	After careful consideration, the Marine Survey Office has no objection to the proposed works from a navigational safety perspective.	No action required.
MSO (2)	The Licensee shall ensure all hazards to safe navigation are easily identifiable to all mariners operating within or in the vicinity of the licence area.	No navigation hazards are expected; however, any potential hazards that may arise will be clearly marked and easily identifiable to all mariners operating within or in the vicinity of the licence area.
MSO (3)	All buoys deployed must be visible by day and fitted with appropriate lighting during hours of darkness.	The following text has been added to the main application document (Section 1.3.3 (a) (viii)) for clarification purposes: <i>"Additional Navigation, Marking and Lighting Measures:</i> • <i>Any buoys deployed will be visible by day and fitted with appropriate lighting during hours of darkness, if applicable.</i> • <i>The proposed activity does not involve the deployment of moored instruments and, accordingly, this requirement is not applicable. However, should such equipment be deployed, it's marking and lighting will be carried out in consultation with the Marine Survey Office and the Commissioners of Irish Lights and shall comply with International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) requirements.</i> • <i>BioAtlantis will comply with all Irish maritime licensing and certification requirements."</i>
MSO (4)	The marking and lighting of any moored instruments shall be carried out in consultation with the Marine Survey Office and Commissioners of Irish Lights and shall comply with IALA requirements.	
MSO (5)	All vessels engaged in the proposed works must conform to Irish licensing and certification standards and be manned by appropriately qualified personnel.	