

**Habitats Regulation Appraisal  
Report to Inform Appropriate Assessment**

MARINE (SCOTLAND) ACT 2010  
Proposed Construction of a Seaweed Farm at Loch Bay, North West Skye  
Kaly Group Limited

Plate 1 - Admiralty Chart with Site Extents

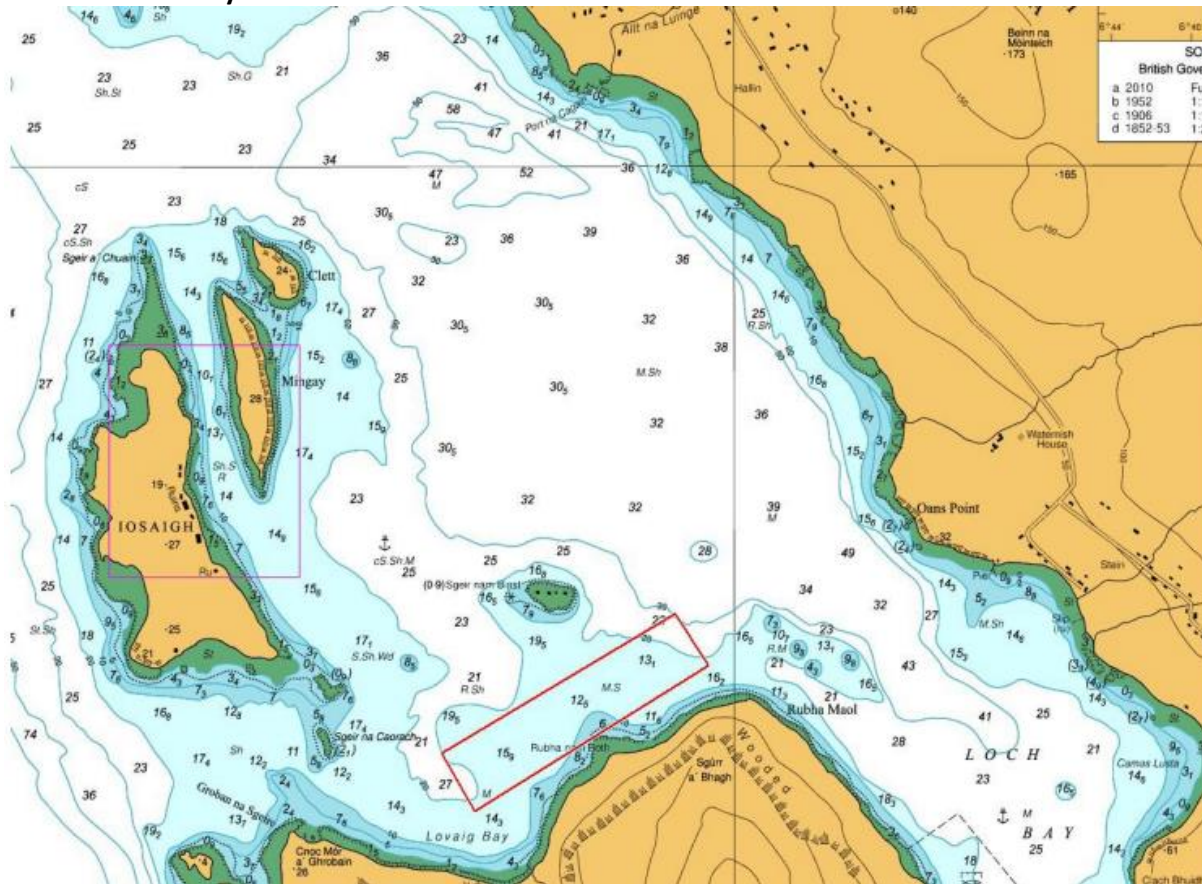
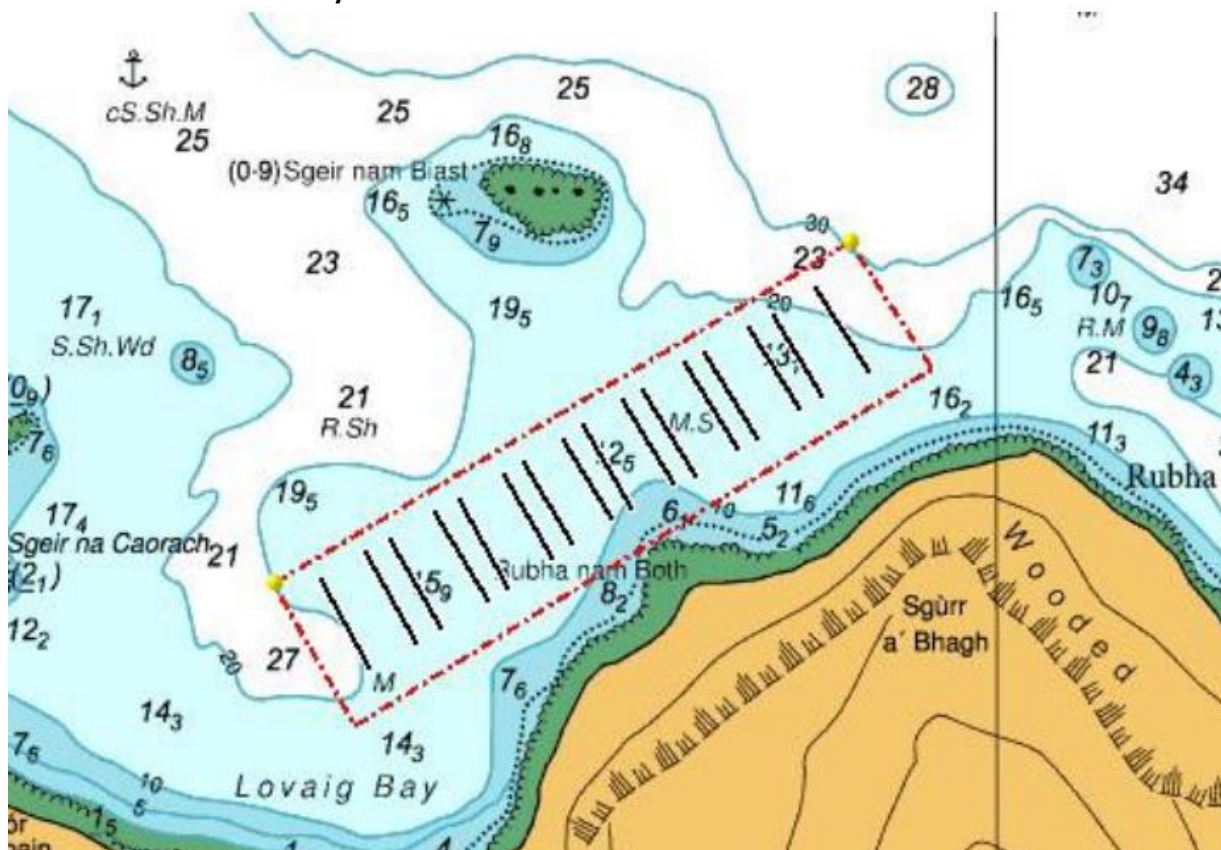


Plate 2 – Seaweed Farm Layout





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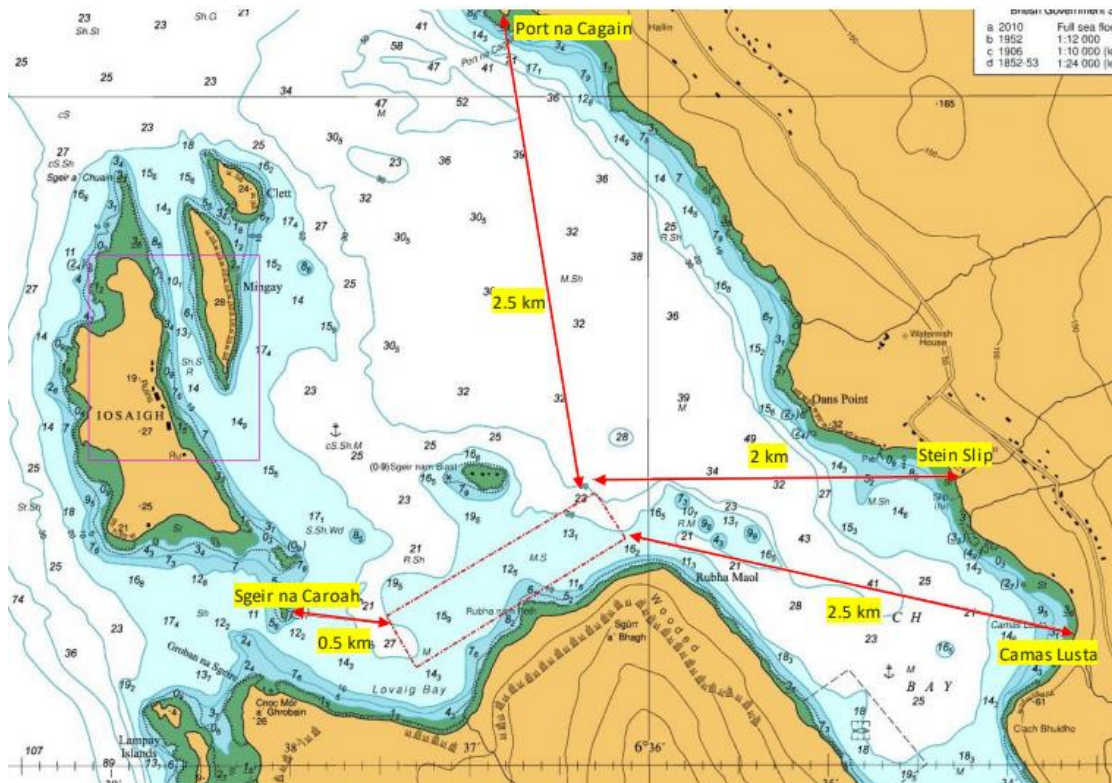
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**Plate 3 – Relative Distances to Key Features in Loch Bay**



## 1 Introduction

### 1.1 Purpose and Format of the Report

1.1.1 Ironside Farrar has produced this Habitats Regulation Appraisal for Kaly Group Limited to support a Habitats Regulation Appraisal for proposed construction of a Seaweed Farm at Loch Bay, North West Skye.

1.1.2 A site location plan, layout plan and plan showing the designations within and adjacent to the site are provided at the end of this document:

Drawing 62067\_001 Figure 1 - Site Location

Drawing 62067\_002 Figure 2 - Proposed Site Layout

Drawing 62067\_003 Figure 3 - Environmental Designations

### 1.2 The Proposed Development

1.2.1 The proposed seaweed farm site comprises a total area of 40.5ha within Loch Bay, North West Skye. The coordinates for the site extents are as follows:

- 57°30.687'N, 6°36.144'W
- 57°30.822'N, 6°36.308'W
- 57°30.452'N, 6°37.469'W
- 57°30.296'N, 6°37.304'W

1.2.2 Distances to prominent spots on Loch Bay Coast are shown on Plate 4:

- Sgeir na Caorah – 0.5 km
- Stein Slip – 2 km
- Camas Lusta – 2.5 km
- Port na Cagain – 2.5 km

1.2.3 The key characteristics of the proposed farm are summarised below:

- LOA site - 1,350 m x 300m
- Total Area - 40.5Ha
- Area of Grid - 2Ha each x 8 grids
- Total area under cultivation 16Ha
- Majority of the structure is sub-surface - 40km lines in total
- The average water depth across site is 15m

1.2.4 Both the OS 1:25,000 map and aerial photos indicate a beach between the upper and lower tidal range characterised by a mix of shingle, loose rock and boulders. The site is approximately 135m to Mean Low Water Spring (MLWH) at closest point and approximately 200m from Mean High Water Spring (MHWS) at its closest point.

- 1.2.5 The annual tonnage produced for the scheme as a whole (8 no grids) is expected to be around 344T based on 20 boat based harvests with 40 loads exported from site by lorry.

### 1.3 Consents and Programme

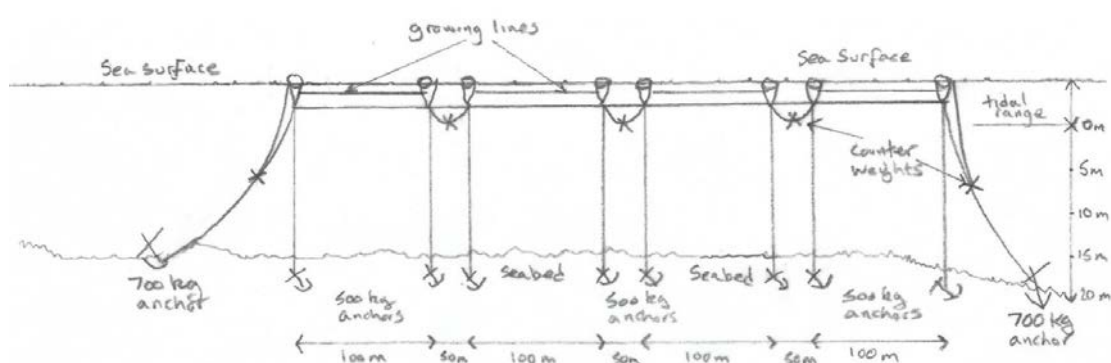
- 1.3.1 This HRA supports a Marine Licence Application for Algal Farms under the Marine (Scotland) Act 2010. It is hoped that the necessary consents would be in place to allow the equipment to be deployed by late Autumn 2023. The next step would be to seed the lines which is done in October and November each year (weather dependent) to produce a harvestable crop in late spring and early summer each year.

### 1.4 Seaweed Farming

#### Installation / Construction

- 1.4.1 The seaweed farm will be constructed using work vessels who will lay the anchor blocks as per Plate 4 before the interconnected grid of seaweed growing lines is laid. Deployment in each phase is anticipated to last 2 weeks. The anchoring system is robust to ensure farm stability but uses the minimum amount of infrastructure possible to reduce the footprint of the site and reduce seabed impact and is removable as part of decommissioning.

**Plate 4 – Illustration Showing Anchor Arrangements**



#### Operational Elements

- 1.4.2 The operational management of the seaweed farm is low intensity and is based around use of small vessels based locally. The key periods of activity as summarised above are based on the following:
- Seeding of seaweed lines in (Oct/Nov) with potential second deployment in (Jan/Feb) - each of approx. 2 weeks
  - Harvesting of the matured seaweed plants (late Mar to late May depending on growth) – approx. 4 week harvesting period
  - During the growing periods, the seaweed farm is checked weekly by boat to ensure the structures are secure, with additional checks following significant storms. This also allows a general check of crop health and growth
  - Any equipment or ropes brought ashore from the farm site will be treated by cleaning with

fresh water above the high tide mark

#### **Landing Area of Harvested Seaweed**

- 1.4.3 All harvested kelp from Loch Bay in Y1 (2024) will be landed by agreement (annual rent) with Dunvegan Estates at their pier in Dunvegan. We have estimated 172 tonnes of biomass which will be harvested in mid April/May in the first year and transported by a 16.5-meter boat. It is anticipated there will be 1 boat trip and landing per day. This equates to 10 boat and lorry loads during late April/May next year.
- 1.4.4 During full production from Y2, the seaweed farm will yield 344 tonnes, again landed by agreement (annual rent) with Dunvegan Estates at their pier in Dunvegan. This equates to 20 landings using 16.5m vessel which holds 17.2 tonnes per landing - 1 boat trip and landing per day. The harvested biomass is landed in 600kg bins with each holding 400kg of material equating to 43 bins per landing. Each landing is transferred directly to a lorry holding 17.2 tonnes meaning a total of 20 lorry movements with 1 lorry collection per day.

#### **Species Cultivated**

- 1.4.5 The species to be cultivated are native to the local area and requires only sunlight and the seawater to grow. There are no chemicals or other additions to the water column at the site from the activities.
- 1.4.6 Three species to be cultivated are native to, and frequent along, the west coast and are common 'brown seaweeds'. They naturally occupy an ecological niche around and below MLWS, the extreme lower shore and shallow sea.
- Atlantic wakame (*Alaria esculenta*)
  - Sugar kelp (*Sacharina latissimi*)
  - Oarweed (*Lamatia digitata*)
- 1.4.7 The seed for the proposed farmed seaweed is sourced from local shore sites in very small volumes and is then cultured onto growing medium before being used to seed the lines. Seeding material will be collected during February and March each year from within Loch Bay. Kaly are working with a local diving and conservation family owned company who will undertake the collection which will take no longer than a day. The seeding material will be collected from points near the proposed farm site but at a good distance from where any seals are present.

## 1.5 Environmental Designations

1.5.1 Two statutory designated nature conservation sites have been assessed as part of this HRA Report. A data summary of the main sites is provided below:

### **Ascrib, Isay and Dunvegan (Special Area of Conservation) SAC**

1.5.2 The Ascrib, Isay and Dunvegan SAC<sup>1</sup> was declared for its complex of skerries, islets, undisturbed mainland shores and offshore islands in northwest Skye which consistently support a breeding colony of the Harbour seal (*Phoca vitulina*). The site represents one of the larger discrete colonies of common seals in the UK, holding around 2% of the UK population.

### **Inner Hebrides and the Minches SAC**

1.5.3 The Inner Hebrides and the Minches SAC<sup>2</sup> was declared to provide protection to harbour porpoise (*Phocoena phocoena*). The Inner Hebrides and the Minches SAC is the second largest Marine Protection Area (MPA) for harbour porpoise in Europe and the only one for harbour porpoise in Scotland. The designation provides protection to approximately 32% of the harbour porpoise population found on the west coast of Scotland and the highest density of harbour porpoise in Scotland.

1.5.4 According to the NatureScot Conservation and Management Advice, the main sensitivities relate to:

- Removal of non-target and target species (i.e. entanglement of harbour porpoises in fishing gears and removal of their prey species)
- Contaminants (e.g. through effects on water quality and bioaccumulation of contaminants that in turn affects the survival and productivity rates of harbour porpoises)
- Underwater noise (e.g. from acoustic surveys)
- Death or injury by collision (predominantly in relation to collision with various types of fast moving vessels from commercial shipping to personal leisure craft and potentially from tidal turbines)

1.5.5 The current Conservation and Management Advice does not include seaweed harvesting given relatively novel nature of the activity, although it does cite potential for a variety of impacts, e.g. species disturbance, abrasion of seabed habitats and changes to trophic links although data is limited.

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<sup>1</sup> <https://sitelink.nature.scot/site/8193>

<sup>2</sup> <https://sitelink.nature.scot/site/10508>

## 1.6 Content of the HRA Report

1.6.1 The remainder of this report is split into the following main sections according to NatureScot HRA guidance:

- **Section 2** – Habitats Regulation Appraisal – Natura Site Details
- **Section 3** – HRA Stage 1 - What Is The Plan Or Project?
- **Section 4** – HRA Stage 2 - Is The Plan Or Project Directly Connected With Or Necessary To Site Management For Nature Conservation?
- **Section 5** – HRA Stage 3 - Is The Plan Or Project (Either Alone Or In Combination With Other Plans Or Projects) Likely To Have A Significant Effect On The Site?
- **Section 6** – HRA Stage 4 - Appropriate Assessment of the Implications for the Site in View of its Conservation Objectives
- **Section 7** – HRA Stage 5 - Can It Be Ascertained that the Proposal will Not Adversely Affect the Integrity of the Site?
- **Section 8** – Environmental Commitments

Plate 5 – Photomontage from The Stein Inn





## 2 Habitats Regulation Appraisal – Natura Site Details

### Legislation

2.1.1 The following legislation has been taken into account when undertaking the assessment:

- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (the ‘Habitats Regulations’);
- European Council Directive 2009/147/EC on the Conservation of Wild Birds (the ‘Birds Directive’);
- European Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the ‘Habitats Directive’); and
- The Wildlife and Countryside Act 1981 (as amended) (WCA).

2.1.2 Marine Scotland, as a 'competent authority' under the Regulations, must be satisfied that the proposal will not adversely affect the integrity of any European site (SACs and SPAs, known as Natura sites) either alone or in combination with other plans or projects before authorisations can be given for the proposal.

### Guidance

2.1.3 In addition, the following guidance documents were consulted:

- NatureScot Guidance on Habitats Regulation Appraisal<sup>3</sup>
- NatureScot Priority Marine Features Guidance (2016) and associated documents<sup>4</sup>

### Baseline Information

2.1.4 This report has been informed by a range of baseline data sources including similar consented seaweed farms and we have referred to these where they assist in the assessment process. Relevant data includes:

**Table 1 – Baseline Data Summary**

Source	Summary of Key Findings / Information
Scotland’s National Marine Plan, adopted in March 2015	The Marine Plan recognises the opportunities associated with farming of seaweed ‘Other opportunities to grow and diversify the sector include: Increasing seaweed production for a variety of products, such as human food, a gelling and thickening agent, animal feed, and nutraceuticals (food products that provide health and medical benefits) as well as in integrated multi-trophic aquaculture systems, where the by-products from one species are recycled to become inputs for another’. The report notes that ‘The Scottish Government also supports the sustainable growth of the seaweed sector’. The Plan is based around 21 General Planning

<sup>3</sup> <https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra>

<sup>4</sup> [Priority Marine Features Guidance | NatureScot](#)

Source	Summary of Key Findings / Information
	Principles which seek to promote sustainable development and are based around key social, economic and environmental drivers.
Seaweed Cultivation Policy Statement – Marine Scotland, 2017 <sup>5</sup>	The Policy Statement covers small-medium sites which the Loch Bay proposals would fall under and discusses potential impacts. <i>‘Small-medium (0-50 x 200m lines) At the lower end of this scale, seaweed farms are a similar size to a typical mussel farm, with up to 30 x 200m lines. Anecdotal evidence suggests this sector may grow significantly in the short-to-medium term. The SEA Environmental Report indicated that there is likely to be limited environmental impact from such sites, but potential negative environmental impacts from larger sites of 30-100 200m lines, primarily in relation to benthic shading, but also in relation to visual impacts, collision risks, spatial issues, and coastal impacts. Such farms will be required to demonstrate mitigation measures, particularly in relation to sensitive areas’</i>
SNH Commissioned Report 406: Descriptions of Scottish Priority Marine Features (PMFs) <sup>6</sup>	<p>This report published in 2016 provides a summary of the 81 priority marine features (PMFs) identified in Scotland’s seas. The report includes information on characteristics, distribution and status. In terms of the qualifying interests of the Natura interests covered in this report:</p> <ul style="list-style-type: none"> <li>• Harbour porpoises are noted as the most common small cetacean in the eastern North Atlantic, with a wide distribution in the waters of the northern hemisphere. The report states that Harbour porpoise are particularly sensitive to noise disturbance and are the most frequently stranded cetacean on the Scottish coast. Other potential impacts relate to collisions with vessels, water quality impacts and incidental fisheries bycatch.</li> <li>• Harbour seals are noted as widely distributed throughout Scottish waters but with significant concentrations on the west coast, the Hebrides and historically throughout the Northern Isles. Populations within the major firths on the east coast of Scotland, have declined for reasons not yet clear. The report also notes that west coast populations appear to be stable/ increasing at levels equivalent to, or greater than, those seen in the 1990s. They are impacted by anti-predator shooting at fish farms and fisheries, bioaccumulation of toxic compounds and underwater noise disturbance.</li> </ul>
Harbour seal decline – vital rates and driver. Sea Mammal Research Unit Report to Marine Scotland, Scottish Government April	The report indicates that numbers of harbour seals ( <i>Phoca vitulina</i> ) have dramatically declined in several regions of the north and east of Scotland, while numbers have remained stable or increased in regions on the west coast.

<sup>5</sup> [Seaweed cultivation policy statement 2017 - gov.scot \(www.gov.scot\)](http://www.gov.scot)

<sup>6</sup> <https://www.nature.scot/doc/naturescot-commissioned-report-406-descriptions-scottish-priority-marine-features-pmfs>

Source	Summary of Key Findings / Information
2019 <sup>7</sup>	
Scientific Advice on Matters Related to the Management of Seal Populations: 2021, Natural Environment Research Council Special Committee on Seals <sup>8</sup>	<p>SMRU carries out annual moult surveys in August to count the number of harbour and grey seals along the Scottish coastline (SCOS, 2021). Populations in western Scotland are either stable or increasing. Counts in the central and northern sections of the large West Scotland SMU and the Southwest Scotland SMU have been increasing since the 1990s and in all other areas they have remained stable.</p> <p>The report also includes information on possible impacts and interactions between seals and anthropogenic activity e.g. renewable energy developments and aquaculture. The report notes that ‘Observed responses to disturbance are very site and context specific and the impact of responses are likely to vary significantly depending on the species, time of year and life history stage of the animals involved. There are also well documented examples of both species habituating to disturbance from land-based tourism, boats and low-flying aircraft. Lower-level stress responses may occur with no visible behavioural response’</p>
Recent seaweed consents granted by Marine Scotland <sup>9</sup>	<p>There are a range of projects across a range of scales that have been submitted / approved by Marine Scotland. Those of particular note include the following recent applications and consents:</p> <ul style="list-style-type: none"> <li>• Algal Farm at St. Andrews Bay, Fife (Reference 00009950, submitted Nov 2022)</li> <li>• Algal Farm- Badachro, Gairloch Loch, Wester Ross Reference 00009952, submitted September 2022)</li> <li>• Algal Farm – Aird Fada, Mull (Reference 00008878, consented June 2021)</li> </ul> <p>The supporting documentation submitted to Marine Scotland’s licencing portal indicates impacts can be reduced to an acceptable level through choice of location of the seaweed farm, relative scale of projects and methods of deployment and operational management.</p>

**Table 2 – Ascrib, Isay and Dunvegan SAC Conservation Objectives and Qualifying Interests**

<b>Name of Natura site(s) potentially affected:</b>	<b>Ascrib, Isay and Dunvegan SAC</b>
<b>Name of component SSSI if relevant:</b>	N/A
<b>Natura qualifying interest(s) &amp; whether priority/non-priority:</b>	Harbour seal ( <i>Phoca vitulina</i> )
<b>Conservation objectives for qualifying interests:</b>	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus

<sup>7</sup> [http://www.smru.st-andrews.ac.uk/files/2020/02/HSD2-yr4\\_annual-rep\\_web.pdf](http://www.smru.st-andrews.ac.uk/files/2020/02/HSD2-yr4_annual-rep_web.pdf)

<sup>8</sup> <http://www.smru.st-andrews.ac.uk/files/2022/08/SCOS-2021.pdf>

<sup>9</sup> <https://marine.gov.scot/marine-licence-applications>

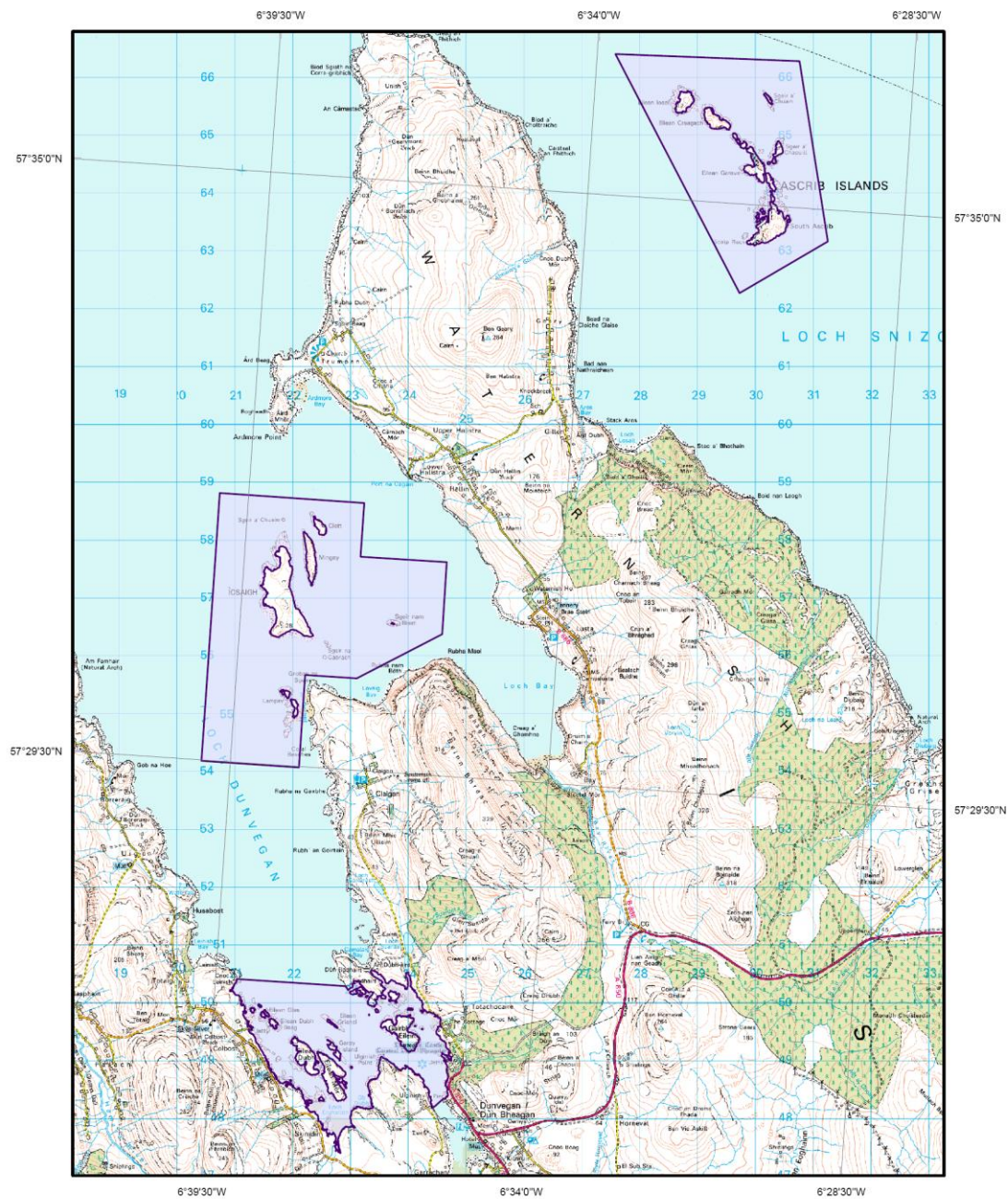
Name of Natura site(s) potentially affected:	Ascrib, Isay and Dunvegan SAC
	<p>ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure the qualifying species that the following are maintained in the long term:</p> <ul style="list-style-type: none"> <li>• Population of the species as a viable component of the site</li> <li>• Distribution of the species within the site</li> <li>• Distribution and extent of habitats supporting the species</li> <li>• Structure, function and supporting processes of habitats supporting the species</li> <li>• No significant disturbance of the species</li> </ul>

**Table 3 - Inner Hebrides and the Minches SAC Conservation Objectives and Qualifying Interests**

Name of Natura site(s) potentially affected:	Inner Hebrides and the Minches SAC
Name of component SSSI if relevant:	N/A
Natura qualifying interest(s) & whether priority/non-priority:	Harbour porpoise ( <i>Phocoena phocoena</i> )
Conservation objectives for qualifying interests:	<p>To ensure that the Inner Hebrides and the Minches SAC continue to make an appropriate contribution to harbour porpoise remaining at favourable conservation status.</p> <p>To ensure harbour porpoise within the context of environmental changes, the integrity of the Inner Hebrides and the Minches SAC is maintained through:</p> <ul style="list-style-type: none"> <li>• Harbour porpoises within the Inner Hebrides and the Minches are not at significant risk of injury or killing.</li> <li>• The harbour porpoise distribution throughout the site is maintained by avoiding significant disturbance.</li> <li>• The condition of supporting habitats and the availability of prey for harbour porpoises are maintained.</li> </ul>



**Plate 6- Ascrib, Isay and Dunvegan SAC - from NatureScot SiteLink<sup>10</sup> (see also Figure 3)**



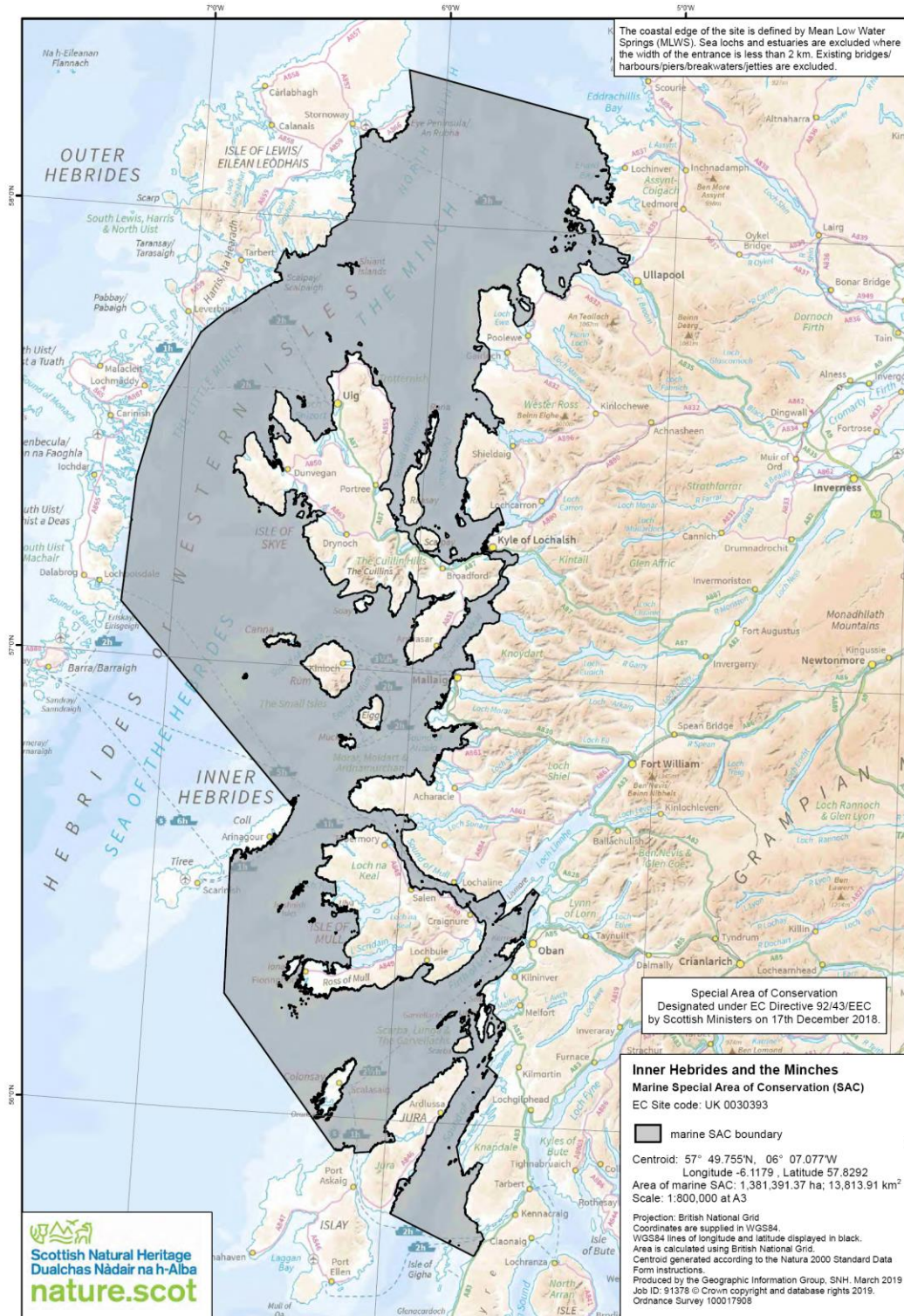
The landward boundary for this site is MHWS

<p><b>Ascrib, Isay and Dunvegan</b></p>			
<p>Special Area of Conservation (SAC)</p>	<p>Scale 1:85,000</p>		
<p>EC Site Code: UK0030230</p>	<p>This is an updated representation of the designated site boundary. Any apparent small differences are due to changes to the OS backdrop.</p>		
<p> Site boundary</p>			

<sup>10</sup> <https://sitelink.nature.scot/home>



Plate 7 - Inner Hebrides and the Minches SAC - from NatureScot SiteLink (see also Figure 3)



### 3 HRA Stage 1: What Is The Plan Or Project?

**Table 3 – Summary Project Information**

<b>Proposal Title</b>	<b>Proposed Construction of a Seaweed Farm at Loch Bay, North West Skye</b>
<b>Competent Authority</b>	<b>Marine Scotland</b>
<b>Details of proposal (inc. location, timing, methods)</b>	<p><b>Background</b> Kaly Group Ltd are proposing to develop a seaweed farm in Loch Bay, North West Skye. The development broadly comprises:</p> <ul style="list-style-type: none"> <li>• LOA site - 1,350 m x 300m</li> <li>• Total Area - 40.5Ha</li> <li>• Area of Grid - 2Ha each x 8 grids, western sector first</li> <li>• Total area under cultivation 16Ha</li> <li>• Majority of the structure is sub-surface - 40km lines in total</li> <li>• The average water depth across site is 15m</li> <li>• Annual Volume of seaweed cultivated and harvested: 344T based on 20 boat based harvests with 20 lorry movements.</li> </ul> <p><b>Marine Licensing Context</b> The proposed seaweed farm would be classed as a small – medium scale farm and this scale of production is typically supported under the Seaweed Cultivation Policy Statement (Marine Scotland, 2017) subject to ensuring potential impacts are suitably mitigated. This Report to Inform Appropriate Assessment supports the Marine Licence application.</p> <p><b>Site Location Relative to Designated Sites</b> The site is located within the Inner Hebrides and the Minches SAC and is partially within the Ascrib, Isay and Dunvegan SAC as shown on Figure 3 - Environmental Designations.</p> <p><b>Infrastructure</b> The seaweed farm will be constructed using work vessels who will lay the anchor blocks (mix of 700kg and 500kg anchors as per Plate 5) before the interconnected grid of seaweed growing lines is laid. The anchoring system is robust to ensure farm stability but uses the minimum amount of infrastructure possible to reduce the footprint of the site and reduce seabed impact and is removable as part of decommissioning.</p> <p><b>Seaweed Species</b> The species to be cultivated are native and seed for the proposed farmed seaweed is sourced from local shore sites in very small volumes and is then cultured onto growing medium.</p>

	<p><b>Operations and Timing</b></p> <p>The operational management of the seaweed farm is low intensity and is based around use of small vessels based locally. The key periods of activity as summarised above are based on the following:</p> <ul style="list-style-type: none"><li>• Deployment of seeded seaweed lines in (Oct/Nov) with potential second deployment in (Jan/Feb)</li><li>• Harvesting of the matured seaweed plants (late Mar to late May depending on growth).</li><li>• During the growing periods, the seaweed farm is checked weekly by boat to ensure the structures are secure, with additional checks following significant storms. This also allows a general check of crop health and growth</li><li>• Any equipment or ropes brought ashore from the farm site will be treated by cleaning with fresh water above the high tide mark</li></ul>
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**4 Stage 2: Is The Plan Or Project Directly Connected With Or Necessary To Site Management For Nature Conservation?**

No. The operation is not connected with or necessary to conservation management of the site

**Plate 8 – Photomontage from Lusta by the Thatched Cottage**





## 5 Stage 3: Is The Plan Or Project (Either Alone Or In Combination With Other Plans Or Projects) Likely To Have A Significant Effect On The Site?

5.1.1 Consultation with NatureScot and baseline data review identified the following potential Likely Significant Effects where further assessment is required under Stage 4 onward.

**Table 4 – Potential for Likely Significant Effects?**

Qualifying Interests	Sites	Likely Significant Effects?
Harbour seal ( <i>Phoca vitulina</i> )	Ascrib, Isay and Dunvegan SAC	Harbour seals may forage in, or transit through, the areas of the seaweed farm. Seals could be disturbed by noise and boat movements as well as other activities during deployment and harvesting. There may be impacts on the prey species of seals due to noise and localised changes due to the vertical seaweed ropes creating shade. Entanglement risk is associated with in-water infrastructure / seaweed farming gear.
Harbour porpoise ( <i>Phocoena phocoena</i> )	Inner Hebrides and the Minches SAC	Porpoises (and other cetaceans) could be disturbed by noise and boat movements. There may be impacts on the prey species of porpoises (and other cetaceans), either from placement of infrastructure or due to noise. Entanglement risk is associated with in-water infrastructure / fishing gear.
Priority Marine Features (PMFs)	The Harbour seal and Harbour porpoise are also covered as Priority Marine Features under NatureScot <sup>11</sup> Commissioned Report.	As above. The location of the seaweed farm contains locally diverse habitats and associated species. The main impacts are physical changes associated with the seaweed farm and disturbance associated with deployment and subsequent operations. The huge volume of water movement delivering fresh nutrients and limited shading effects from the vertical seaweed columns indicates that impacts on benthic habitats and species are not significant.

<sup>11</sup> Tyler-Walters, H., James, B., Carruthers, M. (eds.), Wilding, C., Durkin, O., Lacey, C., Philpott, E., Adams, L., Chaniotis, P.D., Wilkes, P.T.V., Seeley, R., Neilly, M., Dargie, J. & Crawford-Avis, O.T. 2016. Descriptions of Scottish Priority Marine Features (PMFs). Scottish Natural Heritage Commissioned Report No. 406.

Qualifying Interests	Sites	Likely Significant Effects?
European Protected Species	Otters	[Redacted]

**Plate 9 – Photomontage from ‘Skyskyns’ Carpark**



## 6 Stage 4: Undertake An Appropriate Assessment Of The Implications For The Site In View Of Its Conservation Objectives

### 6.1 Appropriate Assessment

**Table 5 – Appropriate Assessment - Ascrib, Isay and Dunvegan SAC**

Natura Site	Ascrib, Isay and Dunvegan SAC	Conservation Objectives (COs)	Appropriate Assessment
<p><b>Natura qualifying interest(s) &amp; whether priority/non-priority:</b></p>	<p>Harbour seal (<i>Phoca vitulina</i>)</p>	<p>To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and</p> <p>To ensure the qualifying species that the following are maintained in the long term:</p> <ul style="list-style-type: none"> <li>• Population of the species as a viable component of the site</li> <li>• Distribution of the species within the site</li> <li>• Distribution and extent of habitats supporting the species</li> </ul>	<p><b>CO1 Population of the species as a viable component of the site</b></p> <p>The North Sea as a whole is monitored through set of Ecological Quality Objectives (EcoQO), with harbour seal assessment based numbers hauled out as represented by a five-year mean. In 2011 the EcoQO was reported indicating no decline (Baxter et.al. 2011)<sup>12</sup>. In Scotland the Sea Mammal Research Unit (SMRU) monitor seven Seal Management Areas (SMAs) on the Scottish Coast, West Scotland Central being the relevant area for this proposed development. This area includes the Ascrib Island, Isay and Dunvegan SAC. SMRU’s latest reports<sup>13</sup> findings state that harbour seals are doing well on a national scale, however there are a regional differences, noting declines in some SACs. Possible cause of decline include predation by orcas and grey seals, competition with grey seals, algal toxins and diseases. The West Coast Scotland Area now holds most of</p>

<sup>12</sup> Baxter, J.M, Boyd, I.L., Cox, M., Donald, S.E., Malcolm, S.J., Miles, H., Miller, B., Moffat, C.F. (2011). Scotland’s Marine Atlas: Information for the national marine plan. Marine Scotland, Edinburgh.

<sup>13</sup> SMRU (2021). Aerial surveys of seals in Scotland during the harbour seal moult 2016-19. NatureScot Research Report 1256 and Duck, C.D. & Morris, C.D. 2019. Aerial survey of harbour (*Phoca vitulina*) and grey seals (*Halichoerus grypus*) in Scotland in August 2017: the Western Isles, part of West Scotland and part of East Scotland. Scottish Natural Heritage Research Report No. 1143.

Natura Site	Ascrib, Isay and Dunvegan SAC	Conservation Objectives (COs)	Appropriate Assessment
		<ul style="list-style-type: none"> <li>• Structure, function and supporting processes of habitats supporting the species</li> <li>• No significant disturbance of the species</li> </ul>	<p>the Scottish harbour seal population with 7447 counted in Central in 2016, the third highest total most recent 2016-19 census. The Central trend is positive, numbers having increased from 2,700 in the 1996-97 survey. The proposed seaweed farm will not have a significant adverse impact on this Conservation Objective due to the very small scale of the proposal, the very large marine resource available to harbour seals, the current positive local trend and a development that will not contribute to the possible causes of regionally negative trends. <u>This CO will continue to be met during construction and operation</u></p> <p><b>CO2 Distribution of the species within the site</b> Seals forage widely outside the breeding season, up to 104km (Harris 2008)<sup>14</sup> whilst showing high fidelity to haulouts throughout the year. Harbour seals breed, mate and moult during the summer months, with pupping June - July and moulting in August and September, times of greater vulnerability. The SAC covers three island groups and nearby waters, both Ascrib and Dunvegan groups are physically isolated by peninsulas and too distant, 11km NE and 7km SW respectively, for pupping or haulouts to be disturbed by the proposal. The Isay group includes Sgeir nam Biast. It lies approximately 300m north of the proposed farm site. Between 60 and &gt;100 seals have been recorded on five out of the last six SMRU August seal counts during the period 1996-2017. This haulout lies with boat disturbance distances</p>

<sup>14</sup> Harris, S. & Yalden, D.W. (2008). Mammals of the British Isles, 4<sup>th</sup> Edition. The Mammal Society



Natura Site	Ascrib, Isay and Dunvegan SAC	Conservation Objectives (COs)	Appropriate Assessment
			<p>for harbour seals see CO5 for detail. Despite their proximity there will be no significant adverse impact due to Kaly disturbance avoidance measures. The most sensitive period, late May-September, will be avoided for construction of both phases of development. Best practice measures recommended by NatureScot will be implemented<sup>15</sup> during what is considered to be a low level of operational boat activity. The latter is predicted by Kaly to be limited to a day, or a few days, in a few weeks a year. Vessels deployed will be less than 24m and mostly under 10m. These boats will be locally chartered and similar to those currently working and transiting through the sea at the farm site. <u>Therefore this CO will continue to be met during construction and operation</u></p> <p><b>CO3 Distribution and extent of habitats supporting the species</b></p> <p>Shading of the seabed from growing seaweed on the lines will be minimised by siting is deeper water, approximately 15m in depth, avoiding direct impact on the seabed, and the fact that growing seaweed will only be in situ October (seeding) to May (harvesting). The location has been chosen to avoid rocky reefs and other potentially species rich habitat. The seabed in the location of the seaweed farm is a mix of sand/mud and pebbles. The tall sea pen (<i>Funiculina quadrangularis</i>), flame shell (<i>Limaria hians</i>) and horse mussel (<i>Modiolus modiolus</i>) are priority marine feature species as are maerl beds, which are habitat forming deposits of red seaweeds as soft corals. All have been</p>

Natura Site	Ascrib, Isay and Dunvegan SAC	Conservation Objectives (COs)	Appropriate Assessment
			<p>observed in the area of Loch Bay, but not directly within the boundaries of the Loch Bay sea farm LOA, but it is highly probable that they do exist within the farm area. Kaly are confident that once the deployment phase of anchors has been completed, which will have obvious impacts to the direct spots the anchors are set, that operational activities will have a <i>de-minimis</i> impact on the benthic conditions of the site.</p> <p>This has been discussed with NatureScot on other seaweed farm consultations and it has been considered that, given that there are no chemical or feed additions, no faecal or wate deposits and that outputs, beyond the initial damage dome during the initial construction phase where anchors are laid, there is negligible impact on immoveable PMF species under or near a seaweed aquaculture site. As a benign aquaculture method, seaweed farming provides more habitat enhancements than any negatives. There are likely to be micro habitat benefits through seasonal shelter for marine organisms.</p> <p>Seaweed density will be low due to spacing of lines allowing greater light penetration to the seabed. The operation uses no chemicals for seaweed production, all infrastructure is temporary and 100% can be removed on cessation of farming. All potentially adverse effects are therefore reversible and short term.</p>

Natura Site	Ascrib, Isay and Dunvegan SAC	Conservation Objectives (COs)	Appropriate Assessment
			<p>It is concluded that the small footprint of the farm proposal will not affect the resource in the Minch supporting harbour seals.</p> <p><u>This CO will continue to be met during construction and operation</u></p> <p><b>CO4 Structure, function and supporting processes of habitats supporting the species</b> Presence of the continental shelf and the large-scale processes that drive prey populations for harbour seals operate on a scale far beyond any potential effect from a very local seaweed farm. <u>This CO will continue to be met during construction and operation.</u></p> <p><b>CO5 No significant disturbance of the species</b> NatureScot in their guidance advise that there is no standard disturbance distance as it varies according to source and time of year<sup>15</sup>. Pupping and moulting are periods of greater sensitivity to human activities. Danish studies (Andersen et al 2012)<sup>16</sup>, conducted disturbance experiments on one of Demarks most important harbour seal reserves during all periods of the breeding cycle. Their findings are summarised below. <b>Alert distances</b> 560-850m for boats and 200-425m for pedestrians</p>

<sup>15</sup> Marine Scotland (June 2014). Guidance on the Offence of Harassment at Seal Haul-out Sites

<sup>16</sup> Andersen, S.M., Teilmann, J., Dietz, R., Schmidt, N.M. (2012). Behavioural responses of harbour seals to human-induced disturbance,

Natura Site	Ascrib, Isay and Dunvegan SAC	Conservation Objectives (COs)	Appropriate Assessment
			<p><b>Flight initiation distances</b> - 510-850m for boats and 165-260m for pedestrians.</p> <p>On the basis of this research seal reserve boundaries were recommended at 425m on land and at least 850 at sea. Distance to the nearest Isay haulouts from the farm is approximately 300m, slightly further to the western phase sector.</p> <p>SNH commissioned research on Islay<sup>17</sup> studied the effect of controlled disturbance of harbour seals to inform boat disturbance issues. Modelling combined with remote camera systems found that disturbed seals were unlikely to transit from one haulout to another and flushed seals were likely to return to the same haulout during the same or subsequent low tide period.</p> <p>Seaweed farm boat disturbances are therefore likely to be of short duration with no likely adverse effect on the preferred haulout. Avoidance measures detailed under CO2 will ensure that overall disturbance by boats is not significant</p> <p><u>This CO will continue to be met during construction and operation</u></p>

<sup>17</sup> Paterson, W., Russell, D. J. F, Wu, M., McConnell, B. J. & Thompson, D. 2015. Harbour seal haul-out monitoring, Sound of Islay. Scottish Natural Heritage Commissioned Report No. 894.

**Table 6 – Appropriate Assessment - Inner Hebrides and the Minches SAC**

Natura Site	Inner Hebrides and the Minches SAC	Conservation Objectives	Appropriate Assessment
<p><b>Natura qualifying interest(s) &amp; whether priority/non-priority:</b></p>	<p>Harbour porpoise (<i>Phocoena phocoena</i>)</p>	<p>To ensure that the Inner Hebrides and the Minches SAC continue to make an appropriate contribution to harbour porpoise remaining at favourable conservation status.</p> <p>To ensure harbour porpoise within the context of environmental changes, the integrity of the Inner Hebrides and the Minches SAC is maintained through:</p> <ul style="list-style-type: none"> <li>• Harbour porpoises within the Inner Hebrides and the Minches are not at significant risk of injury or killing.</li> <li>• The harbour porpoise distribution throughout the site is maintained by avoiding significant disturbance.</li> <li>• The condition of supporting habitats and the availability of prey for harbour porpoises are maintained.</li> </ul>	<p><b>CO1 Harbour porpoises within the Inner Hebrides and the Minches are not at significant risk of injury or killing.</b></p> <p>Whilst we are not aware of reported cases of entanglement of cetaceans / seals and other species in seaweed farming, there have been studies on entanglement in creel fishing gear<sup>18</sup>. The NatureScot report defines entanglement as ‘wraps of line, netting or other materials around body areas (which may include cases in which animals are towing gear or anchored by gear) from which the animal cannot escape and which subsequently causes harm’. To minimise risk of entanglement, the seaweed farm lines will be kept taut<sup>19</sup> and spaced to allow passage through the farm and monitored regularly with assistance sought should an entanglement occur (see Best Practice). This CO will continue to be met during construction and operation</p> <p><b>CO2 The harbour porpoise distribution throughout the site is maintained by avoiding significant disturbance.</b></p> <p>The harbour porpoise is the most common and widely distributed cetacean in the Minches, and whilst present year-round their numbers peak August – September, particularly off north-east Skye, East of Raasay and around</p>

<sup>18</sup> MacLennan, E., Hartny-Mills, L., Read, F.L., Dolman, S.J., Philp, A., Dearing, K.E., Jarvis, D. and Brownlow, A.C. Scottish Entanglement Alliance (SEA) - understanding the scale and impacts of marine animal entanglement in the Scottish creel fishery. NatureScot Research Report 1268.

<sup>19</sup> <https://www.scottishentanglement.org/downloads/best-practice-guide-for-fishermen-reducing-entanglement-risk-2018/>



Natura Site	Inner Hebrides and the Minches SAC	Conservation Objectives	Appropriate Assessment
			<p>the Small Isles. Sightings are scarce November to March and records in Loch Bay are rare. (Evans 2017)<sup>20</sup>. Peak numbers in the Minch are reported later than the farming period (October-May).</p> <p>The median group size in British waters is 2 rising to 3 in summer months (Harris 2008)<sup>21</sup>. Evans reports low occurrence of a few porpoise in Loch Bay. Porpoise forage over a very large area, normally several hundred kilometres but up to 6% may travel 800-1000km (Johnston 2005)<sup>22</sup> Teilmann (2008)<sup>23</sup>. Activity is centred on the Continental shelf here they forage for pelagic fish, moving inshore to catch coastal and demersal fish in summer.</p> <p>No significant underwater noise will be created during the construction on the farm or operation. Importantly there will be no percussive activity associated with fixing screws or piles to the seabed, lines are attached to anchors and line tension maintained by the operators.</p> <p><u>Therefore, this CO will continue to be met during construction and operation.</u></p>

<sup>20</sup> Evans, P.G.H., James, K (2017) Status of Cetaceans in the vicinity of the Isle of Skye.

[https://marine.gov.scot/datafiles/lot/Kyleakin/Environmental\\_Statement/4.%20Appendices/App\\_19.2\\_Status\\_of\\_Cetaceans.pdf](https://marine.gov.scot/datafiles/lot/Kyleakin/Environmental_Statement/4.%20Appendices/App_19.2_Status_of_Cetaceans.pdf)

<sup>22</sup> Johnstone, D.W., Westgate, A.J and Read, A.J. (2005). Effects of fine-scale oceanographic features on the distribution and movements of harbour porpoises *Phocoena phocoena* in the Bay of Fundy. Marine Ecology Progress Series 295, 279-293

<sup>23</sup> Teilmann, J., Sveegaard, S., Dietz, R., Petersen, I.K., Berggren, P. & Desportes, G. (2008). High density areas for harbour porpoises in Danish waters. National Environmental Research Institute, University of Aarhus. 84 pp. - NERI Technical Report No. 657

Natura Site	Inner Hebrides and the Minches SAC	Conservation Objectives	Appropriate Assessment
			<p><b>CO3 The condition of supporting habitats and the availability of prey for harbour porpoises are maintained.</b></p> <p>Habitat effect of the tiny footprint will <i>de-minimis</i> and will not significantly affect fish prey species populations.</p> <p><u>This CO will continue to be met during construction and operation.</u></p>

## 6.2 In Combination Impacts

6.2.1 We have reviewed the Marine Scotland website for relevant projects around Skye as well as the Highland Council onshore planning portal to allow consideration of potential ‘in combination effects’ with a summary provided below.

**Table 7 – Consideration of Possible ‘In Combination’ Impacts**

Project	Status	Description	Date?	Potential Interaction?	Potential for Likely Significant Effects?
22/00339/SCOP Ardmore Sub-Station, Ardmore, Hallin, Dunvegan	EIA Scoping Stage	Skye Reinforcement Project - construction of 132 kV overhead transmission line (OHL)	In planning	No direct or indirect impact relative to the qualifying interests of the relevant designated sites.	No ‘in combination’ adverse effects with Natura Interests.
Marine Licence - Pontoon - Loch Dunvegan, Isle of Skye – 00010006 (Loch Duart Ltd)	Licence from Marine Scotland	Pontoon	Granted 23.12.22	No direct or indirect impact relative to the qualifying interests of the relevant designated sites.	No ‘in combination’ adverse effects with Natura Interests.
Marine Licence - Finfish Farm - Ardtreck Bay, by Portnalong, Isle of Skye – 00009946 (MOWI Scotland Ltd)	Licence from Marine Scotland	Fish (including shellfish) farm	Granted 1.10.23	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the relevant designated sites. Remote from the proposed seaweed farm as located on the far west of the island.	No ‘in combination’ adverse effects with Natura Interests.
Marine Licence - Marine Farm - Uig Bay, Isle of Skye - 00009840 (Sgeir Mhor (Salmon) Ltd)	Licence from Marine Scotland	Fish (including shellfish) farm	Granted 19.12.22	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the	No ‘in combination’ adverse effects with Natura Interests.

Project	Status	Description	Date?	Potential Interaction?	Potential for Likely Significant Effects?
				relevant designated sites. Remote from the proposed seaweed farm as located in Uig Bay c. 13km to the east.	
Marine Licence - Marine Farm - Leinish, Dunvegan, Isle of Skye – 00009900 (Scottish Sea Farms Shetland Ltd)	Application	Fish (including shellfish) farm	Application 24.05.22	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the relevant designated sites. Remote from the proposed seaweed farm as located c. 12km to the west.	
Marine Licence - Marine Farm - Gob Na Hoe, Loch Dunvegan, Skye – 00009896 (Scottish Sea Farms Shetland Ltd)	Application	Fish (including shellfish) farm	Application 24.05.22	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the relevant designated sites. Remote from the proposed seaweed farm as located c. 12km to the west.	No 'in combination' adverse effects with Natura Interests.
Marine Licence - Marine Farm - Loch Snizort, Isle of Skye – 00009895 (Scottish Sea Farms Shetland Ltd)	Application	Fish (including shellfish) farm	Application 23.05.22	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the relevant designated sites. Remote from the proposed seaweed farm as located c. 14km to the North East.	No 'in combination' adverse effects with Natura Interests.

<b>Project</b>	<b>Status</b>	<b>Description</b>	<b>Date?</b>	<b>Potential Interaction?</b>	<b>Potential for Likely Significant Effects?</b>
Marine Licence - Marine Farm - Greshornish, Edinbane, Isle of Skye - 00009842 (Mowi Scotland Limited)	Licence	Fish (including shellfish) farm	Licence 27.04.22	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the relevant designated sites. Remote from the proposed seaweed farm as located c. 14km to the North East.	No 'in combination' adverse effects with Natura Interests.
Marine Licence Application - Algal Farm - Uig Bay, Isle of Skye – 00009699 (Climavore CIC)	Application	Macroalgae	Application 24.12.21	Proposed small-scale testing area in Uig Bay will have minimal impact on the environment according to supporting information. All materials will be removed at the end of feasibility study. No cumulative impacts relative to small scale nature of the proposals and locational separation.	No 'in combination' adverse effects with Natura Interests.
Marine Licence - Marine Farm - Cairaidh Farm, Loch Ainort, Skye – 000009473 (Mowi Scotland)	Licence	Fish (including shellfish) farm	Granted 12.05.22	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the relevant designated sites. Remote from the proposed seaweed farm as located c. 40km to the South East.	No 'in combination' adverse effects with Natura Interests.



Project	Status	Description	Date?	Potential Interaction?	Potential for Likely Significant Effects?
Marine Licence - Marine Farm - Sconser, Isle of Skye – 00009482 (MOWI Scotland Ltd)	Licence	Fish (including shellfish) farm	Granted 13.05.22	Licence Renewal of Existing Site - No direct or indirect impact relative to the qualifying interests of the relevant designated sites. Remote from the proposed seaweed farm as located c. 32km to the South East.	No 'in combination' adverse effects with Natura Interests.

## 7 Stage 5: Can It Be Ascertained That The Proposal Will Not Adversely Affect The Integrity Of The Site?

7.1.1 In the light of the appraisal, this seaweed proposal will not adversely affect the integrity of Natura Sites assessed or the qualifying interests.

**Table 8 – Conclusion**

Natura Site	Conclusion
Ascrib, Isay and Dunvegan SAC	The proposal will not adversely affect the integrity of the site
Inner Hebrides and the Minches SAC	The proposal will not adversely affect the integrity of the site

7.1.2 Mitigation is not required due to nature and scale of the proposals, however, Best Practice will be applied based on the following:

**Table 9 – Best Practice Measures**

Best Practice Measures	Reason
Scale and location	This site has been surveyed and is suitable in terms of scale and location for a seaweed aquaculture installation without conflict with other fishing activity or recreational users. The site is marked by required navigational marker buoys and lights. The seaweed farm is located c. 135m to Mean Low Water Spring (MLWH) at closest point and approximately 200m from Mean High Water Spring (MHWS) at its closest point. The seabed in the seaweed farm is a mix of Sand / mud and pebbles
Timing of the construction and operational works	Following deployment (20 days each for Phases 1 and 1) the seeding and harvesting periods are also limited in duration (two and four weeks respectively) with weekly visual check throughout the year by small local vessel which minimises disturbance to Harbour seal, Harbour porpoise and other EPS [Redacted] Overall timing of farming activity, October-May, avoids periods of harbour seal sensitivity and the main reporting period for local porpoise.
Precautionary best practice seal haulout disturbance avoidance measures	Although no significant adverse impacts are predicted, boat approach speeds will be kept to minimum and a soft start up procedure will be followed during construction and on arrival for each operational visit.
Emergency Response	Whilst entanglement risk for marine species is extremely unlikely, the seaweed farm will be inspected regularly (from shore and via weekly boat based inspections) and SEA partners (Scottish Entanglement Alliance [Redacted] and British Divers Marine Life Rescue (BDMLR) would be called to

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Best Practice Measures	Reason
	assist with a release ( <a href="https://bdmlr.org.uk/">https://bdmlr.org.uk/</a> Hotline 01825 765546)

**Plate 10 – Proposed Extent as seen from Waternish Hall, War Memorial**





# FIGURE 1 LOCATION PLAN





FIGURE 2  
PROPOSED SITE LAYOUT

Key

- Special Mark
- Surface Structure
- × Anchor
- Sub-surface Structure





FIGURE 3  
ENVIRONMENTAL DESIGNATIONS

