

Muckairn IMTA Re-application - Site 1 - Method Statement

Version	Date	Description	Author(s)	Revised by
V1.0	09/01/2025	Draft	Stevie Jarron	Walter Speirs

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Muckairn IMTA Re-application - Site 1 - Method Statement

01 Introduction

Muckairn Mussels Limited (Muckairn) is a Private limited Company (SC142391), registered office - Achnacloch, Connel, Oban, Argyll, PA37 1PR. Incorporated on 2 February 1993. Argyll Aquaculture, who were authors of the previous license have been asked to act as Agent for Muckairn and write this Re-Application.

Muckairn hold 5 planning consents (Annex 1) and 5 marine licenses for combined Algal and Shellfish aquaculture and is part of a larger IMTA farm group. This document is for the reapplication of farm license **06566/18/0 (Site 1)**, specifically. The 5 license consents held by Muckairn Mussels all lie very close to each other. Their applications are required to be done individually, which obviously will produce a lot of repetition, both in the application content and the regulator's work in considering them. The site Operator has overlooked renewal to the suite of 5 licenses, to expire (May 2024) due to a bout of illness. They have thankfully recovered and wish to Re-apply for consent to farm again.

The boundaries of the existing MD IMTA license - 06566/18/0 (Site 1) are laid out as:

56° 27.353' N	5° 18.558' W
56° 27.353' N	5° 18.466' W
56° 27.299' N	5° 18.558' W
56° 27.299' N	5° 18.466' W

Northern Lighthouse Board were consulted at various re-licensing stages over the 30 plus years the 5 sites have operated and recommended that Special Marks are placed at the outer northwestern and northeastern extents of farm structures. Muckairn will ensure this is followed as equipment is deployed and recovered during operation phases. These are yellow-coloured floating buoys each marked by a top piece with a yellow St Andrews Cross. A solar powered light unit on each flash yellow at night. These allow local and visitor marine users to keep a safe distance from surface and submerged structures within the consented area. The light pattern is a conventional Yellow Flash every 5 seconds (Y FI 5s).

The MD license - 06566/18/0 (Site 1), has the site consented for 10 x (10m x 10m) rafts, all of which can be used for shellfish and algae cultivation.

Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (as amended) which apply to marine and freshwater finfish and shellfish developments (updated April 2021) states in Class 21F – Change of use (change of species):

Subsection 65. The Town and Country Planning (General Permitted Development) (Scotland) Amendment Order 2018 introduced change of use (production species) for shellfish farmers.

An operator may change the use of their farm from;

- mussels or pacific or native oyster cultivation to scallops;
- scallops or pacific or native oyster cultivation to mussels;
- pacific oyster, mussel or scallop cultivation to native oyster.

This change allows a multitrophic licensed site (such as Muckairn) to be a truly IMTA farm.



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The License Re-application and associated documents contained and referred to in this submission provide critical information required for Marine Directorate - Licensing Operations Team (MD-LOT) and other Statutory Consultees to ensure consenting of the farm site.

The attachment, "1 - Muckairn Mussels IMTA Re-application - Site 1 (Rafts)" is the official application form for MD-LOT. Further updates on any anchoring system changes (if any) will be detailed in future communication to Marine Directorate and Crown Estate Scotland through the appropriate Attestation forms.

This document "2 - Muckairn IMTA Re-application - Site 1 - Method Statement v1.0" details Muckairn's commitment to adhere to best practice when considering other users of the environment, both human and wildlife alike. This also contains a "Decommissioning Plan".

Muckairn's commitment to wildlife and environmental preservation and wellbeing can be found in the attachment "3 – Muckairn IMTA Re-application - Site 1 - Environmental Responsibilities v1.0", which also includes a Biosecurity Plan.

Navigational and marine safety can be found in the attachment "4 – Muckairn IMTA Re-application – All Sites - NRA MEAC Decom v1.0".

Muckairn's commitment to "Scotland's National Marine Plan" and "Scotland's Seaweed Cultivation Policy" can be seen in attachment "5 – Muckairn IMTA Re-application – All Sites – Scotland's Marine Planning considerations v1.0".



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02 Muckairn Mussels Limited – IMTA farm group

Muckairn Mussels Limited have used the waters of Loch Etive for the aquaculture of oysters, mussels and algae (2018) for over 30 years. Muckairn had used the IMTA site for growing mussels up until 2016, then to grow seaweed from then on. Muckairn have developed the site extensively for efficiency to access farming structures and have considerable equipment in water and on the foreshore for the growing and handing of seaweeds, mussels and oysters. Also buildings and equipment for the preparation of harvests for transport from site for further processing and marketing.

Walter Speirs, owner of Muckairn, is founder (former Director) and member of both the Association of Scottish Shellfish Growers (ASSG) and the Scottish Seaweed Industry Association (SSIA) and has been a pioneer in the development of both industries.

To develop this IMTA farm group, Muckairn will draw on decades of experience in design, deployment and operation of aquaculture farming. Utilising the existing farm structure in place (Fig 1), Muckairn plan to hybridise the system of rafts and longlines to incorporate multiple trophic species.

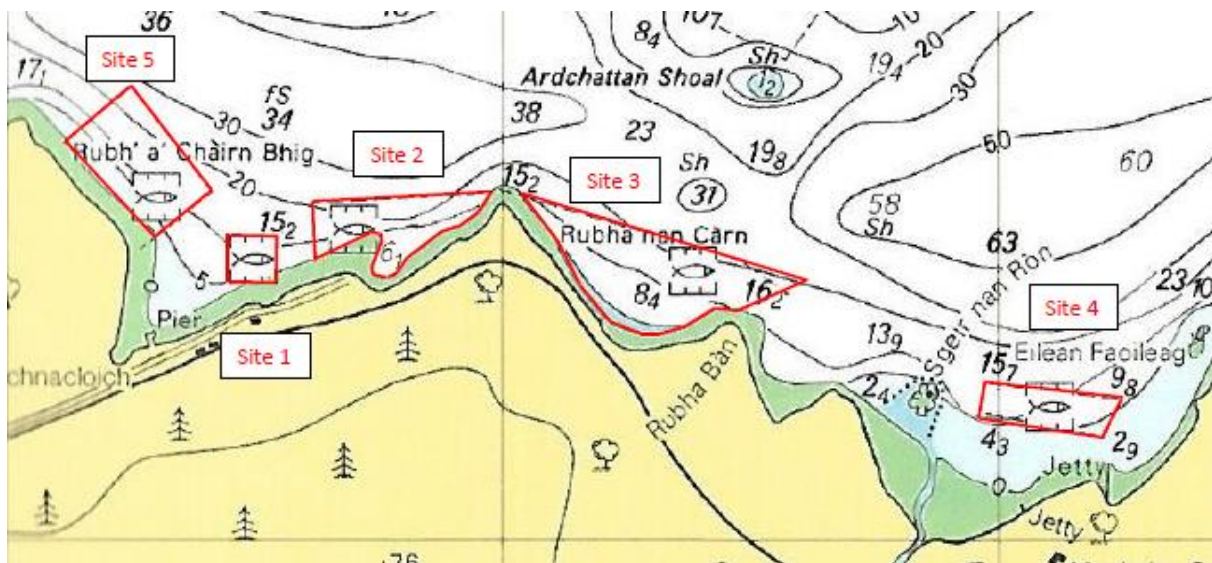


Fig 1 – Muckairn Mussels IMTA site, showing the 5 consented sites.

Different trophic species will require a range of space and structure configurations to develop fully. For example:

- large brown kelps such a *sacharina latissima* (sugar kelp) will grow up to 4m long in a season, on horizontal growing lines, spaced up to 4m apart.
- mussels require to be tended (regular husbandry to prevent predation by starfish etc), on long vertical droppers spaced 1m apart.

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The site is also being considered for developing other species of seaweed such as the red seaweed, Dulse, which will reach no more than 25cm in length. This would allow more dense seaweed line layout and would match the increased amount of farm husbandry more commonly seen in mussel farming than brown seaweed farming, so that level of attention to the lines would be achievable.

The farming structure can and has been adapted for farming other trophic species such as oysters and scallops in lantern baskets. Through experience it has been found that spat from mussel lines can have a negative effect on seaweed cultivation growing rates and quality, so any IMTA deployments will need to be well thought through and the timings of deployment and harvest well managed.

The Muckairn IMTA sites (Fig 2) are more sheltered than other seaweed farms, which have been purposely deployed in active waters for the growth of large brown kelps that require higher levels of agitation to grow clean, quality fronds. The Muckairn site is well flushed by strong tides flowing up from Loch Linnhe, through the Falls of Lora and up into Loch Etive. This is perfect for the filter feeding shellfish and for red seaweeds being considered.

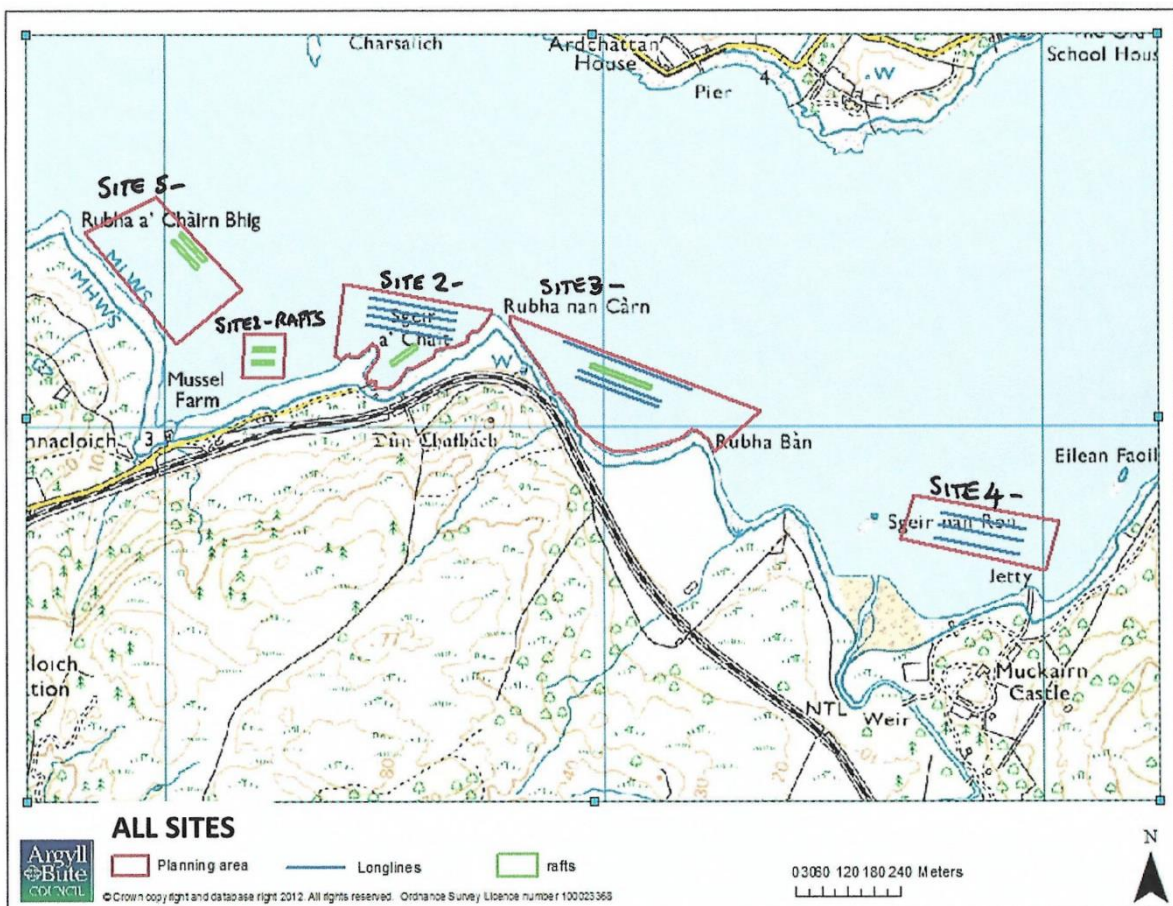


Fig 2 – Muckairn Mussels, showing consented area and structures of all 5 sites.

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Longlines and subsurface structures are made of high quality ropes as standard throughout the aquaculture industry and buoyancy is provided by 400l mussel floats. Heavy duty lifting stops are used to bridge gaps and fix lines to weighs. These are better wearing than shackles and D-rings and produce less rust pollution in the water.

The existing IMTA farm structures have a low visual and environmental impact. We foresee no indication of risk to wildlife or other marine user interactions. The adapted structures and all farming activity will still be undertaken wholly within the existing licensed area boundary and all operations at the site(s) will be undertaken in daylight.

For Site 1 (Fig 3) – the 10 rafts (10m x 10m each) are anchored in such a way to allow both vertical and horizontal line to be deployed, maintained and harvested.

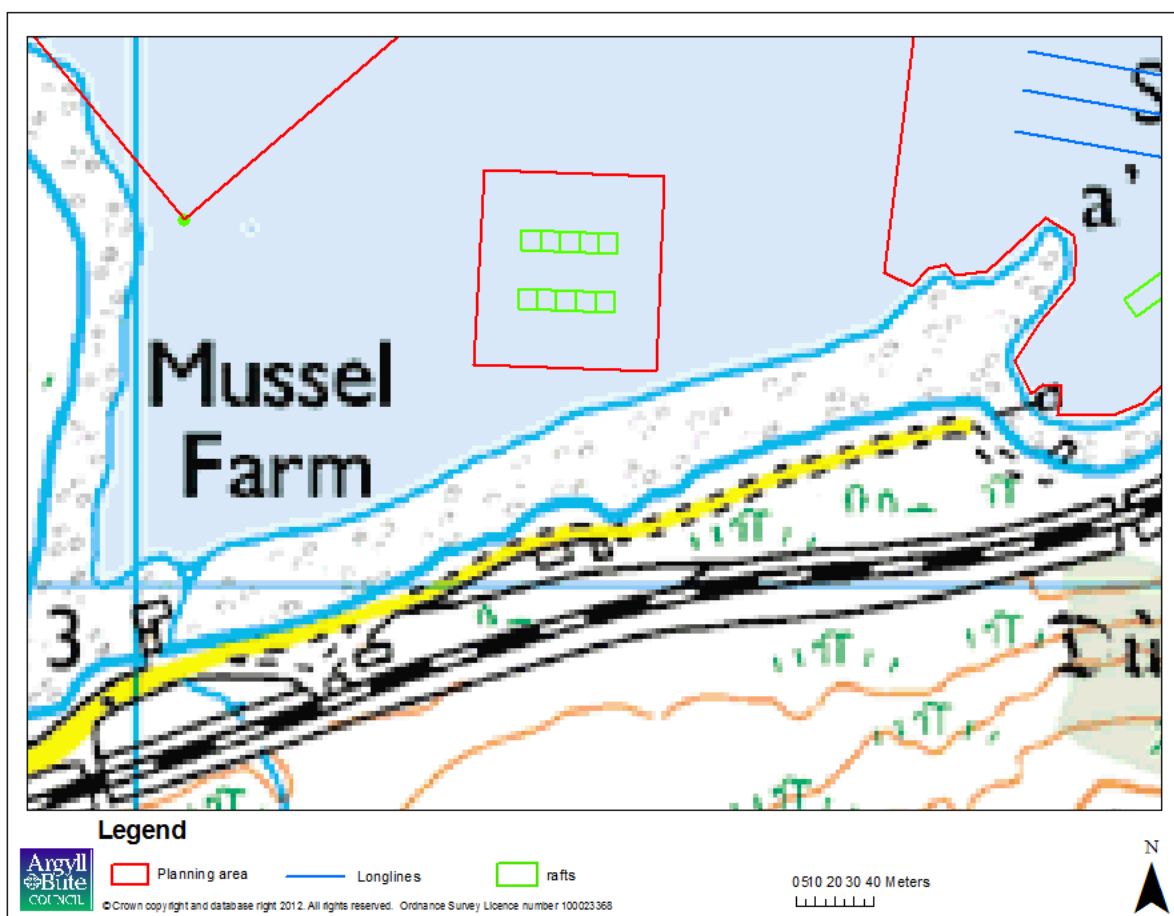


Fig 3 – Muckairn Mussels, showing consented area and structures of Site 1.

In summary - The IMTA site has provided good seaweed and mussel growth in previous harvest years. It is located off the main fishing grounds; is not a detriment to sensitive wildlife habitats, creates minimal visual impact to area; and is not a barrier to free movement of commercial or pleasure vessel traffic in and out of local harbours and anchorages.

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03 Seaweed seeding and operations

Muckairn intend to cultivate several native species of seaweed. At this time, the main seaweed cultivation species at the site will be, Sugar Kelp (*saccharina latissima*) and potentially Oar Weed (*laminaria digitata*)¹. These large brown seaweeds or “kelps” are found naturally on lower littoral and sub-littoral rocks on the shores of Loch Etive. Other large brown seaweeds, such as Furbelows (*saccorhiza polyschides*) may also be trialled to test for natural self-seeding of lines and for their chemical and nutrient content.

The Kelps have similar seeding seasons and scatter seeds into the water in late November through to early January. Fruiting bodies develop on varying parts of the seaweeds, near the base of the plants in the case of alaria, or along the fronds in the other species. Fertile seeded stock will be collected from local shore sites and will be cultured onto growing medium at a commercial hatchery.

Dulse (*palmaria palmata*) and Pepper Dulse (*osmundea pinnatifida*) are valuable, small red seaweeds and Sea Lettuce (*ulva lactuca*) a valuable, small green seaweed that are native to the area. At the moment they are mostly hand harvested but the technology to cultivate them has been development by a commercial hatchery partnering Muckairn. We include these species in the application in anticipation of the technology to viably farm them being available imminently.

The volumes of seeding plants required to be collected will be very small, a standard bucket of fertile seaweed could nurture 20km worth of seeded farm growing line which could produce over 150 tonnes of mature seaweeds.

The process for seaweed farming is to wrap seaweed seed infused string (0.5mm) around growing lines (thin ropes 10mm to 12mm) which are deployed to mimic the seeding cycle of seaweeds in autumn and harvested in late spring before the natural biofouling of other sea organisms spoil the quality of the seaweed crop.

¹ In previous years it was found that Atlantic wakame (*alaria esculenta*) did not grow well in the (relatively) sheltered waters of Loch Etive.



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04 Shellfish seeding and operations

Muckairn intend to cultivate several native species of shellfish. The site has been used in previous years for the cultivation of blue lipped mussel (*mytilus edulis*) and pacific oysters (*crassostrea gigas*), but there is great interest in beginning to culture native oyster (*ostrea edulis*) which has up until very recently, only been cultured purely for habitat restoration projects but is being is attracting commercial interest in the food market. It is hoped that joining with local native oyster farming schemes, we may be able to utilise the IMTA farm for these. Lantern baskets are also a well used and know method for oyster farming and could be used at the site on the existing infrastructure.

Blue lipped mussel farming may clash with seaweed farming as the heavy spat from mussels may cover seaweeds and reduce crop and quality levels.

05 IMTA Line Deployment

The basic underlying structure of the Muckairn IMTA farms are floating rafts and longlines. Floating rafts are constructed of steel and timber with pontoon floats fixed underneath. Longlines are double roped headlines supported by 400l mussel farm floats. They provide the surface structure and flotation for all other activities at the farm sites.

Growing lines and formations are unique for the various species at the IMTA farm. For seaweeds, growing lines are strung out horizontally between the headlines, to maintain the optimum light and nutrient condition for the growing of seaweed. For blue lipped mussels, lines will hang vertically in the water column, collecting nutrient particles as they pass with the tides. Oyster cultivation requires affixing lantern baskets to points along the headlines, probably at the point of contact with the mussel floats to assure buoyancy. Rafts, such as at Site 1 create a solid structure for the hanging of lantern baskets and mussel lines. There are no chemical additions or treatments used for these low trophic species growing process and no feeds introduced to the water.

Regular and repeated plant and animal husbandry will be required to prevent the mussels and oysters being overwhelmed by predators such as starfish and sea urchins. And for the seaweed, to check on growth and quality to assure harvesting at maximum growth level versus acceptable biofouling levels.

During production cycles, samples of seaweed and shellfish will be taken and the quality tested. Periodic samples of shellfish will be collected for Environmental Health testing as per normal shellfish farming procedures.



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06 Harvesting Process

The concept of IMTA is strongly focussed on a year round capability to harvest the multiple species grown at any one site. Any large brown kelps will be able to be harvested in April/May. Red seaweeds coppiced in May, July and September. Mussels, scallops and oysters will be dictated by the markets, likely avoid harvesting over the warmer summer weather for quality assurances during harvesting, processing and transport.

Automated seaweed harvesting machines are being developed which will use a simple frame with rollers and guides to channel seaweed past cutting heads. These will trim the useable frond of the plant into bins or boxes while leaving the rope and growing base (stipe and holdfast) of the plant intact. Red seaweed coppicing capability may be used to allow multiple harvests from these rapidly growing plants.

Automated mussel harvesting and riddling machines are available. Muckairn will buy these in, if the intention is to go back into full mussel farming. But if the levels of mussel farming are to be kept low, then the processing may remain more manual. Scallops and oysters are a more manual process, inspecting each shell for size and health before readying for market.

07 Vessel use and operational cycle

During any initial IMTA farm structure development/replacement/maintenance phases, Muckairn's work vessel, "Molly Malone" (12m x 5m landing craft style workboat), will accurately reposition existing anchors or lay new anchor blocks on the seabed. The vessel is generally anchored near the site and so vessel movements are kept to a minimum. There should be no more than a few days a year where anchors and structure work is done. Mostly this will be survey and maintenance work to ensure structures are in good order.

The surface floats and lines will be prepared ashore and can then be towed into place and the farm tensioned to hold the structure taught and in place. At all other parts of the operational cycle of the farm, Muckairn will use "Molly Malone" at their local shoreside resources.

Depending on which other species are grown at the IMTA farm will determine what level of vessel activity the site will see, but it will be no more than 1 or 2 small vessel operations a week, in what is already a well used commercial and pleasure vessels area.

Vessels are required to visit the farm weekly to inspect the site to check on the structures (part of the license conditions) and Muckairn will use this time to check on crop growth and quality. A register of vessel movements and observations will be kept and available upon request from relevant authorities.

A full description of all activities at the farm site including vessels and their timings of use, to consider the wider impacts on the environment, can be seen in "5 – Muckairn IMTA Re-application – All Sites - NRA MEAC Decom Plan v1.0".



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08 Onward Processing

To ensure the IMTA farm produce retains its quality it will be landed locally and loaded onto temperature controlled vehicles for onward delivery to be processed.

Drying is the main processing method used at this time for seaweeds. Water content is be reduced through compressing or spinning equipment before chopping then drying at low temperatures. This creates a stable, storable product that can be rehydrated as a future new ingredient. Currently, seaweed processing is done further afield but there is discussion underway with other seaweed farmers and processors for the creation of an Oban processing hub, to suit pre-agreed buyer specifications.

Shellfish have many local routes for further processing and distribution to a wide and well developed market. There are many more shellfish companies across Argyll and Bute.

09 IMTA Farm Further information

Northern Lighthouse Board were consulted at various re-licensing stages over the 30 plus years the 5 sites have operated and recommended that Special Marks are placed at the outer northwestern and northeastern extents of farm structures. Muckairn will ensure this is followed as equipment is deployed and recovered during operation phases. These are yellow-coloured floating buoys are marked by a top piece with a yellow St Andrews Cross. A solar powered light unit on each flash yellow at night. These allow local and visitor marine users to keep a safe distance from surface and submerged structures within the consented area. The light pattern is a conventional Yellow Flash every 5 seconds (Y Fl 5s).

The materials needed for the maintenance and upgrading of the existing farm structure are all in place and ready to go. Floats and ropes accumulated over the years are being utilised in the improvements. So, expected cost of the IMTA farm will be \leq £2,500. The new license holder and site owner, need pay the minimum required fee of £74, which they will pay immediately by BACS to begin the process.



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10 Economic and Social Case for approval

Muckairn are making a commitment to provide local employment; building on the talent and skillsets to be found in the Oban area.

They envisage 1 full time equivalent (FTE) to manage the farming operations, with a further 2 to 3 people at busy times during line deployment and harvesting. These jobs are likely to be taken by local fishermen or members of the community already experienced in marine activities. The IMTA nature of the farm will also hopefully create more opportunities for sustainable employment in the area. Reversing the negative trend of economic emigration and an ageing demographic.

The proposed Oban processing and administration hub will employ up to 6 FTE staff, as Muckairn, Seaweed Enterprises, AA, Samudra Oceans and other processor/farmer partners' seaweed farming operations grow. There may be overlap between staff that work at the sea farm and at the Hub, providing year round as well as seasonal opportunities for local residents.

11 Decommissioning Plan

Muckairn have in place a Lease with Crown Estate Scotland for the existing IMTA farm sites at Muckairn Mussels (AR2-29-21).

Part of that agreement includes the financial arrangements agreed between Muckairn and Crown Estate Scotland on a 'Site Decommissioning Plan' in the event that Muckairn choose to relinquish the site, or in the event that Crown Estate Scotland revoke their Lease, or where Muckairn become insolvent.

Muckairn propose to mirror this arrangement with Marine Directorate as part of the Re-licensing process through MD-LOT; as with the conditions of receiving the CES Lease; Muckairn will ensure it retains sufficient funds to decommission the IMTA farm in proportion to the number of farm units installed.

Muckairn agree to use local vessels, where possible, to remove all surface structures. These are light floats and longlines and would not require specialist vessels. Materials removed would be stored or disposed of ashore once all waste and environmental conditions have been complied with.

Subsurface anchors would be lifted by a chartered specialist vessel. Costs would be borne by Muckairn to mobilise suitable vessel to site, lift risers and recover anchors. Navigation marks, risers and anchors would be removed from site. Materials removed would be stored or disposed of ashore once all waste and environmental conditions have been complied with.



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12 – Annex 1 - SG Planning Consent

marinescotland

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Walter Speirs
Muckairn Mussels
Achnacloich
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Argyll
PA37 1PR

14 January 2013

Dear Sir or Madam

TOWN AND COUNTRY PLANNING (MARINE FISH FARMS PERMITTED DEVELOPMENT) (SCOTLAND) ORDER 2011

On 23 February 2011 the Town and Country Planning (Marine Fish Farms Permitted Development) (Scotland) Order 2011 came into force. You can view this at <http://www.legislation.gov.uk/ssi/2011/144/contents/made>.

This Order grants planning permission for the operation of marine fish farms which meet the criteria specified in the Order.

Those marine fish farm(s) that are operated by your company and which we understand meet these criteria are stated overleaf. We have also provided the information we hold about equipment permitted by your Crown Estate lease, or Works Licence (where relevant). Where equipment was placed into the water before 2007 and differs from that on your Crown Estate lease or Works Licence you should clarify this with the Planning Authority who has enforcement responsibility.

This is not a definitive statement of the legal position which depends upon meeting the criteria in the Order but merely represents our understanding of the position based on the information we have available to us. The criteria are set out below:

(a) the farm is situated in one of the named marine waters specified in the Schedules to the Order;

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- (b) that the operation of the fish farm involves the use of relevant equipment¹
- (c) the relevant equipment was in use for the purpose of breeding, rearing or keeping finfish or shellfish; and
- (d) the relevant equipment was either in use on 23 February 2011 or between 1 January 2008 and 23 February 2011 for the purposes of fish farming.

Please also note the following:

- Planning permission granted by this Order is subject to the condition that in the event of any equipment falling into disrepair or becoming damaged, adrift, stranded, abandoned or sunk in such a manner to cause an obstruction or danger to navigation, the developer shall carry out such works (including lighting, buoying, raising, repairing, moving or destroying the whole or any part of that equipment) so as to remove the obstruction or danger to navigation.
- You no longer have to apply for a Works Licence if your farm is in Orkney or Shetland, but you will still need a Crown Estate lease. You should speak to the Crown Estate if your lease is due for renewal.
- You will not receive any additional documentation relating to the planning permission granted for these sites in the form of stamped maps etc. However, all local authorities and the Crown Estate have been sent copies of these letters and will be aware of those sites which we believe meet the criteria as well as the equipment data which we hold about these sites (as stated overleaf). This will form the baseline for any modifications which you may require to make to your planning permission in the future.

If you have any queries please call me on the above telephone number.

Yours faithfully

Bridget Kelly
Aquaculture Planning Officer

¹ Relevant equipment is equipment referred to in section 26AA(1)(b) of the Town and Country Planning (Scotland) Act 1997 (as amended by section 4 of the Planning etc. (Scotland) Act 2006). This means equipment which is placed or assembled in the water-
(i) before 1st April 2007; or
(ii) after 31st March 2007 and before 1st April 2010 if done under a Crown Estate consent or a works licence.

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Farms covered by Town and Country Planning (Marine Fish Farms Permitted Development) (Scotland) Order 2011

Site Name	MSS Ref	Crown Estate Lease	Equipment Stated on Crown Estate Lease
Rubha Ban (Site 3)	SS0200	AR2-29-6	1 LONGLINE 700 M L ; also 10 MURRAFT 10 MSQ (DIM 1000); Mussels
Sgeir nan Ron (Site 4)	SS0576	AR2-29- 6 - 3	3 LONGLINE 220 M L; Mussels
Achnacloch (Site 1)	SS0575	AR2-29-21	10 MURRAFT 10 MSQ (DIM 1000); Mussels
Rubh A'Caime Bhig (site 6)	SS0303	AR2-29-15	12 x MURRAFT x 10M L; Mussels
Achnacloch (Site 2)	SS0571	AR2-30-31	4 LONGLINE 800 M L Also 5 MURRAFT 10msq DIM, area 500; Mussels

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