

# Technical Advisors Report

## AP3/2014 Licence Appeal Review



Prepared for the Aquaculture Licence Appeals Board  
by

**ALTEMAR**  
Marine & Environmental Consultancy

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## DOCUMENT CONTROL SHEET



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## Executive Summary

<b>Description:</b>	Application to cultivate native indigenous macro-algae ( <i>Alaria esculenta</i> ) in outer Bantry Bay Co. Cork
<b>Licence Application</b>	Site T5/547A
<b>Appeal Reference</b>	AP3/2014
Department Reference No.	2014/51037P/CD
Applicant	Daithi O'Murchu Marine Research Station Ltd.
Minister Decision	Granted Licence 28/05/2014
<b>Appeal</b>	
Type of Appeal	Granting of licence to Daithi O'Murchu Marine Research Station Ltd.
Appellant(s)	The Seefin Group c/o Ian Stretch, Glenlough West, Bantry, Co. Cork
Observers	None
Technical Advisor	Altemar, Marine and Environmental Consultants <a href="http://www.altemar.ie">www.altemar.ie</a>
Site Inspection	Carried out on the 25 <sup>th</sup> October 2014 by Bryan Deegan

## 1) Appeals Details & Observer Comments/Submissions

Date Appeal Received: 9<sup>th</sup> July 2014

Location of Site Appealed: Gearhies, Bantry Bay, Co. Cork

### 1.1 Appeal Timeframe

A public announcement with details of the Aquaculture and Foreshore application grant decision was published in the Southern Star on June 14<sup>th</sup> 2014.

An Objection letter was sent by the following appellants within the one month timeframe:

9<sup>th</sup> July 2014 (Received by the Aquaculture Licence Appeals Board)- “The Seefin Group”.

### 1.2 Name of Appellants

The “Seefin Group” c/o Ian Stretch, Glanlough West, Bantry, Co. Cork. The appeal contained 34 signatures.

c/o Ian Stretch

Telephone: 027-61061

Email: [ianstretch1@eitcom.net](mailto:ianstretch1@eitcom.net)

Appeal No. AP3/2014

### 1.3 Name of Observers

**No observations outside of appellants and applicant response**

### 1.4 Grounds for Appeal

As outlined in Appendix I (Text from the “Seefin Group”) a range of issues were expressed. These are summarised below and divided into Substantive and Non substantive Issues:

#### Substantive Issues

##### 1) Visual

“Destruction of a particularly attractive seascape on a highly sensitive route encompassing Wild Atlantic Way, Sheeps Head Way (A126) and Walk, and Natura 2000.”

“The low visual impact of the proposed aquaculture activity: Once again, this statement is misleading and does not represent the real situation. Cork County Council has recognised the visual heritage attached to the Sheep's Head Peninsula and has designated it as a scenic route and has specifically noted the importance attached to the views from the east-west road with full view of the proposed development: the A126.”

“the presence and enjoyment of the existing parking/viewing points that would overlook the proposed aquaculture development would be greatly diminished for tourists and locals alike by the fifteen acre aquaculture site immediately offshore.”

“Habitats Screening Matrix for aquaculture activities in outer Bantry Bay, Co Cork, 2013: In relation to the other foreshore areas of the outer bay, Gearhies is overdeveloped. Such excessive use of an area which has been designated as of high amenity value (Cork County Council), part of the Wild Atlantic Way and The Sheeps Head Walk will undoubtedly result in an intolerable spoiling of a cherished viewing inlet through additional pollution discharge and visual destruction of the placement of a fifteen acre site dominated by barrel flotation, longlines and accompanying raft spaces.”

## **2) Planning**

“we address our appeal against the background of the Minister's decision not to seek an Environmental Impact Statement and contend that the Ministerial Determination issued in relation to the application, denying any meaningful consultative process, was indicative of the decision to grant the licence as a fait accompli and effectively denied any meaningful public engagement or consultative process.”

## **3) Environmental**

“Advent of further aquaculture into an inlet already enduring more than its proportionate and required share.”

“Virtually the entire peninsula west of the proposed site is designated as a Natura 2000 site of special environmental importance. Yet the Minister has dismissed the significance of this designation with the sweep of a keypad in suggesting that the absence of any protected structures or recorded monuments 'in the area of the proposed aquaculture activity' renders the Natura 2000 designation totally meaningless and redundant.”

“The proposed site is immediately adjacent to an existing salmon farm composed of six cages in total (two sites of three cages each). Research has indicated that eutrophication -- pollution caused by activities such as fish farming -leads to excessive amounts of nutrients.”

## **4) Site Characteristics**

“The site chosen for this proposed development is totally unsuitable. This inlet is already used intensely for salmon farming and given the major escape of approximately a quarter of a million fish as a result from cages which had not been properly maintained over the years there can be little hope that yet another ingression of aquaculture into this area of Bantry Bay will result in improved levels of environmental responsibility and propriety.”

“The low population density of the surrounding area: This statement is factually incorrect and intentionally misleading. It is clearly intended to suggest that virtually nobody lives in the proximate area. There are in fact literally scores of homes within a very short distance of and as, if not more significantly, within full vista of the proposed site. The Minister's statement is very light

on accuracy and has been presented with the clear intention of justifying the granting of the licence for this development.”

## **5) Management Practices**

“The co-existence of two aquaculture industries side- by-side would greatly increase the probability of such seaweed culture chemicals being used.”

“The minor risk of accidents occurring as result of the proposed aqua culture activity: Given the history of previous incidents in associated aquaculture in this inlet (already referred to as the 2005/2006 cages being released onto Reen Point and the escape of the quarter of a million salmon in February 2014 this aspiration is just that - an aspiration as opposed to a risk assessment of the potential for accidents or incidents if this development is allowed progress.”

“The Whiddy Island Oil Storage facility is located in Bantry Bay, just to the east of the proposed aquaculture site. In 2012, the year for which The Central Statistics Office provides its last published full-year figures, Bantry Bay received 2,264,000 gross tonnage of traffic. Virtually all of this was generated by the Whiddy facility while Glengarriff Harbour (north-east of the proposed site) has long been established recipient of luxury cruise liners and Bantry inner harbour receives almost weekly visits by Irish naval ships who use the bay for crew changes, etc. Given the previous incidents referred to by salmon cages evacuating their moorings what guarantees can credibly be sustained in this site?”

## **Non Substantive Issues**

**None**

## **1.5 Ministers Submission**

Section 44 of the Fisheries (Amendment) Act 1997 part 2 states that “*The Minister and each other party except the appellant may make submissions or observations in writing to the Board in relation to the appeal within a period of one month beginning on the day on which a copy of the notice of appeal is sent to that party by the Board and any submissions or observations received by the Board after the expiration of that period shall not be considered by it*”

No submissions are enclosed from the Minister or any other party in light of appeals.

## 1.6 Applicant Response

As per Section 44 part 2 of the Fisheries Amendment Act 1997 which states “*The Minister and each other party except the appellant may make submissions or observations in writing to the Board in relation to the appeal within a period of one month beginning on the day on which a copy of the notice of appeal is sent to that party by the Board and any submissions or observations received by the Board after the expiration of that period shall not be considered by it*”

No response from the applicant was received following the appeal by the Seefin Group. A detailed (11 page) response from the applicant dealing with the following concerns from was received by the Aquaculture & Foreshore Management Division, prior to appeal, on the 23<sup>rd</sup> December 2013:

- 1) Visual impact
- 2) Tourism
- 3) Existing Longlines
- 4) Pollution
- 5) Planning Context
- 6) Public Amenities
- 7) Climate Change
- 8) Safety & Health
- 9) Traffic
- 10) Statutory Context
- 11) Conflict of Interest
- 12) Technical
- 13) Ecological

## 2. Consideration of Non-Substantive Issues

Each issue raised by the appellant is considered substantive and has been reviewed.

## 3. Oral Hearing Assessment

In line with Section 49 of the Fisheries Amendment Act 1997 an oral hearing may be conducted by the ALAB regarding the licence appeals.

## 4. Minister's File

In line with particulars of Section 43 of the Fisheries Amendment Act 1997 the following documented items were sent to the ALAB from the Minister:

1. Draft copy of the Aquaculture Licence with Maps, charts, Co-ordinates and drawings.
2. Copy of the Screening Matrix for Aquaculture Activities in outer Bantry Bay
3. Copy of the submission to the Minister
4. Copy of the Applicants Response to concerns and objections
5. Copy of Notification to the Applicant of Ministers Decision
6. Copy of the advertisement of Ministers Decision
7. Overview map of sites in the surrounding area.

(For copies of the above please see the Departmental File)

## 5. Context of the Area

### 5.1 Physical descriptions

Bantry Bay (Figure 1) is a long marine inlet located in south west County Cork. It is the largest of the long marine inlets in south-west Ireland. It is approximately 35 km long, running in a south-west to north-easterly direction. The entrance to the bay is approximately 10 km wide, steadily narrowing to 3-4 km at its head. Bere Island, situated on the north shore adjacent to Castletownbere, and Whiddy Island lying near the head of the bay on the southern shore are the two largest islands in the Bay. The main population centres around the Bay include Bantry (3,348 in 2011), Castletownbere (868 in 2006), Glengarriff (870 in 2006) and Adrigole (457 in 2006).

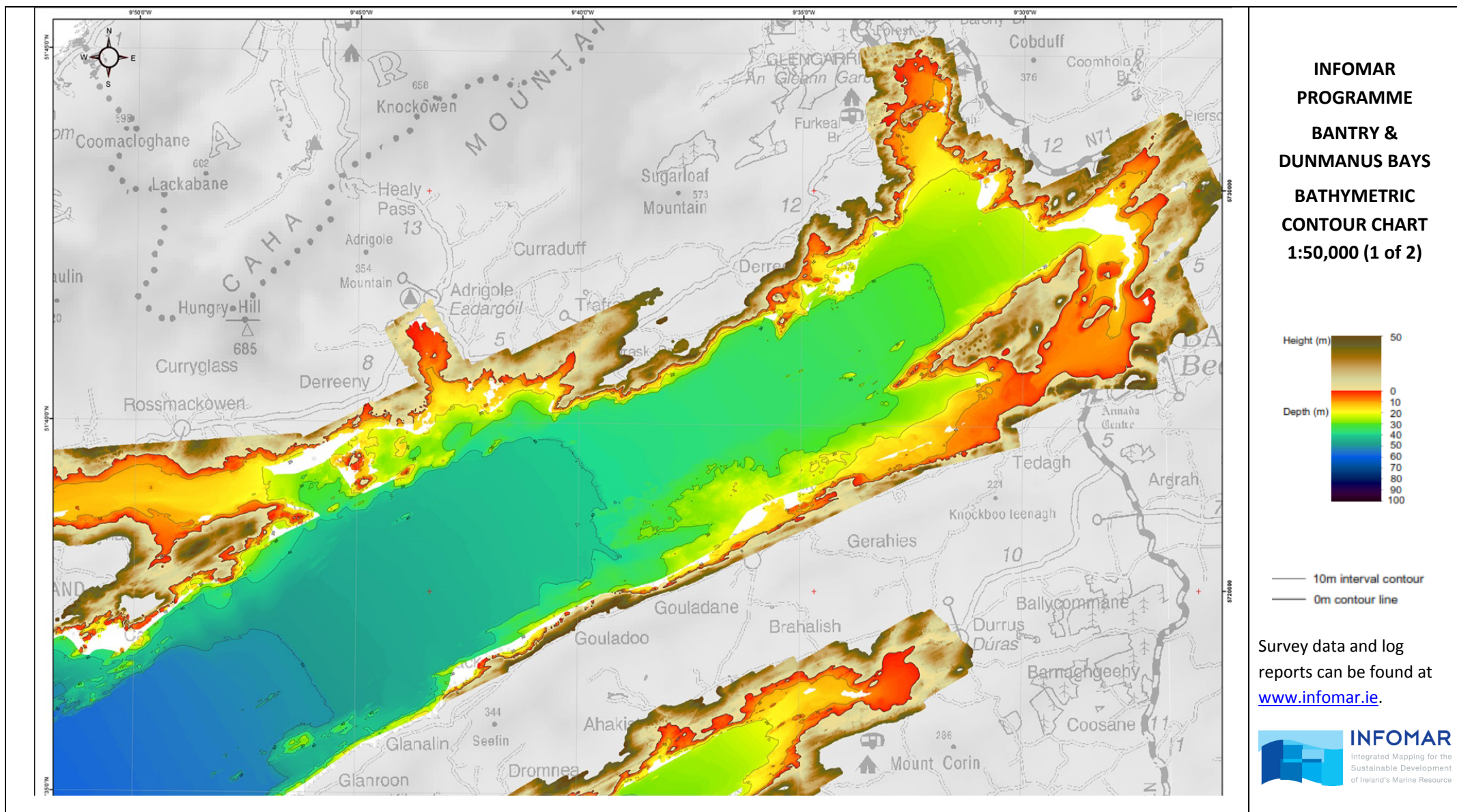
The SW facing bay is open to the prevailing south westerly winds and is relatively deep in nature, with 20 -30m water depth at the head of the Bay (Figure 2). This would indicate that in stormy conditions from SW direction Atlantic swell would penetrate far into Bantry Bay which would have an impact on aquaculture installations within the Bay.

Bantry Bay is located in temperate climate with the closest weather station being Sherkin Island Marine Station (24 km to the south), which has on average over 1200 mm of rain per annum Figure 3. It has a 30 year long term average Max of 18°C (July/Aug) and Min of 5°C (January/February).

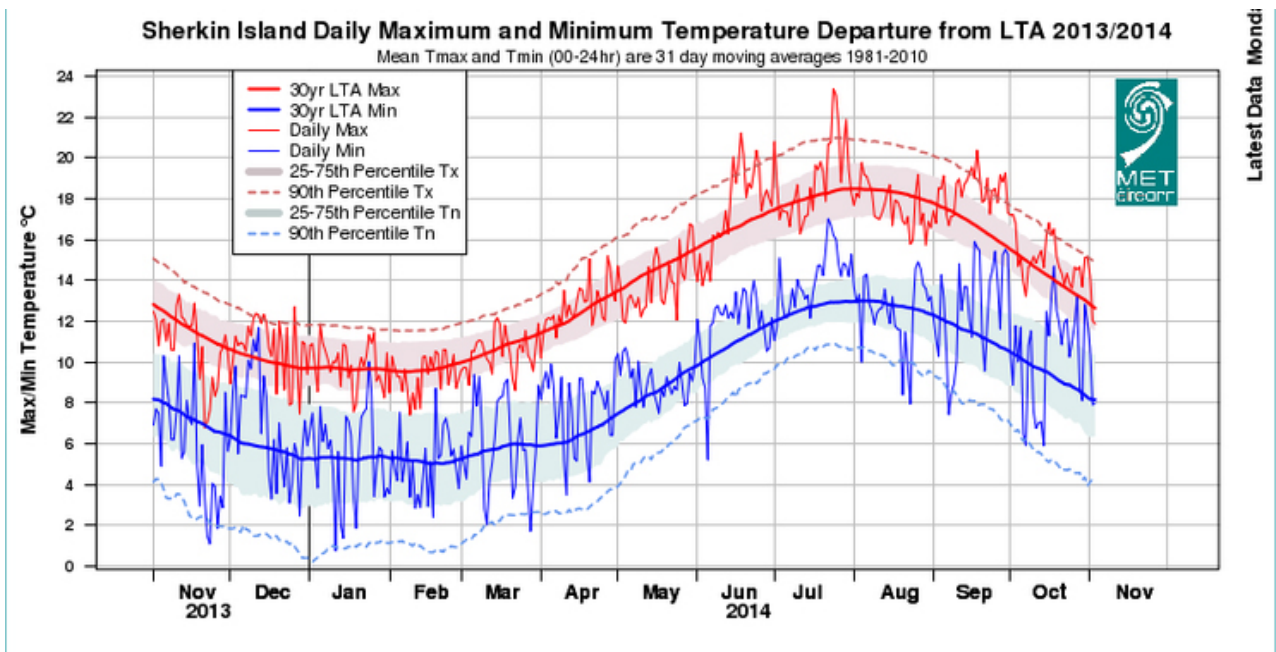
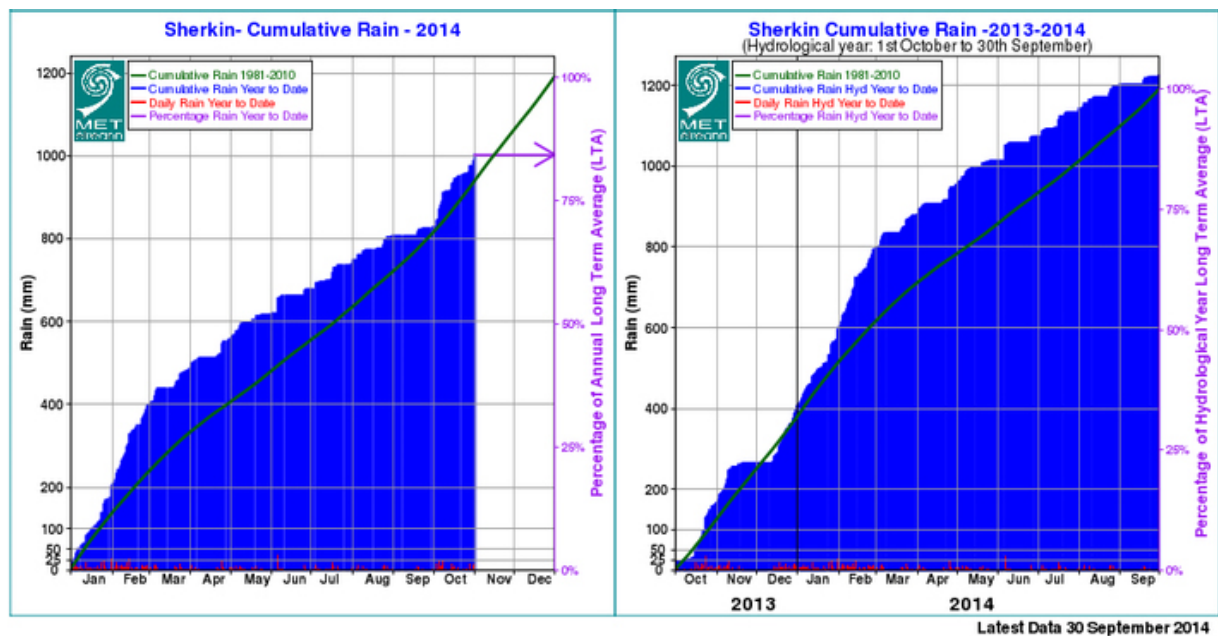


**Figure 1.** Bantry Bay





**Figure 2:** Bathymetry of Bantry Bay based on INFOMAR Data.



**Figure 3.** Sherkin Island Marine Station weather data.



## 5.2 Resource Users

### Aquaculture

Bantry Bay is a major centre for marine aquaculture; and the principal farmed species are:

#### 1. Rope Grown (Suspended) Mussel Culture

In Bantry Bay, most of the production of rope grown mussel is concentrated east of Whiddy Island, in the inner part of Bantry Bay, with significant additional production in Berehaven, in the outer part of Glengariff Harbour, in Adrigole Harbour, along the southern shore of the Bay near Reen Point, and a short distance further south-westwards seaward of Gearhies. The initial competition for space in the sheltered areas of the inner Bay resulted in some mussel growers establishing long-lines in more exposed areas, with the consequence that mussel culture is now spread widely around Bantry Bay. The tonnage harvested in 2012 is understood to be around 3,300 to 3,480 tonnes.

#### 2. Clams

Relatively small amounts of clams are grown in Bantry Bay, and in 2011 the tonnage harvested amounted to 24.9 tonnes.

#### 3. Scallops

Scallops are grown intensively and extensively in Bantry Bay. The main intensive aquaculture areas are Traillaun Harbour, Bere Island and East of Whiddy Island. Extensive scallop growing is also carried out in these areas in addition to the mouth of Glengariff Harbour.

#### 4. Abalone

There is an abalone hatchery and farm located on Bere Island, and a hatchery at near Quarry Point, west of Bere Island.

#### 5. Salmon

Salmon (*Salmo salar*) farming is also well-established in three operations in Bantry Bay. Murphy's Irish Seafood, located at Gearhies. Marine Harvest operates a salmon farm at Mehal Head while Silver King Seafoods Ltd. also operate two salmon farms at Aghabeg in Bantry Bay.

#### 6. Designated shellfish areas

The aim of the Shellfish Waters Directive is to protect or improve shellfish waters in order to support shellfish life and growth. It is designed to protect the aquatic habitat of bivalve and gastropod molluscs, which include oysters, mussels, cockles, scallops and clams. The Directive requires Member States to designate waters that need protection in order to support shellfish life and growth. The Directive sets physical, chemical and microbiological requirements that designated shellfish waters must either comply with or endeavour to improve.

Fourteen shellfish areas were originally designated in 1994 under the Quality of Shellfish Waters Regulations (S.I. No. 200 of 1994, revoked by S.I. No. 268 of 2006). A further 49 areas were subsequently designated in 2009 under the European Communities (Quality of Shellfish Waters) (Amendment) Regulations, 2009 (S.I. No. 55 of 2009). There are six Designated Shellfish Areas in Bantry Bay (Figure 4):

- a. **Bantry Bay Inner Shellfish Area**, is 11 km<sup>2</sup> in area and is located due south from Ardnamanagh South on the mainland to Whiddy Point East on Whiddy Island, and from Cusroe on Whiddy Island due south to the mainland near Dromclough, with the exclusion of Bantry Harbour. This is the largest designated shellfish area in Bantry Bay.
- b. **Castletownbere Shellfish Area** lies between Bere Island and the mainland, on the northern shore of outer Bantry Bay. It is 6.2 km<sup>2</sup> in area, and its boundaries are the northern shore of Bere Island eastwards from Sheep Islands to Donegans Point, thence from Donegans Point across Berehaven to Coarrid Point on the mainland, westwards along the mainland coast from Coarrid Point to Minanekeal, and from Minanekeal across Berehaven back to Sheep Islands.
- c. **Bantry Bay South Shellfish Area** is 2.9 km<sup>2</sup> in area and is located on the southern shoreline of Bantry Bay, extending out in the bay along the shoreline from Collack to Indigo Rock.
- d. **Adrigole Harbour Shellfish Area** lies within Adrigole Harbour on the northern shore of Bantry Bay, and is 1.4 km<sup>2</sup> in area. It includes the relatively sheltered inner part of Adrigole Harbour, and the more exposed outer area south of Orthon Island.
- e. **Glengariff Shellfish Area** is located in Glengariff Harbour at the north-eastern corner of Bantry Bay. The designated shellfish area is 4.1 km<sup>2</sup> in area and includes all of Glengariff Harbour. The southern boundary of the designated area is a line from Big Point on the western side of Glengariff Harbour entrance to a point immediately south of Illauncreeveen on the eastern side of Glengariff Harbour.
- f. **League Point Shellfish Area** is 0.5 km<sup>2</sup> in area and is located on the southern shoreline of Bantry Bay, extending out into the Bay east of League Point.

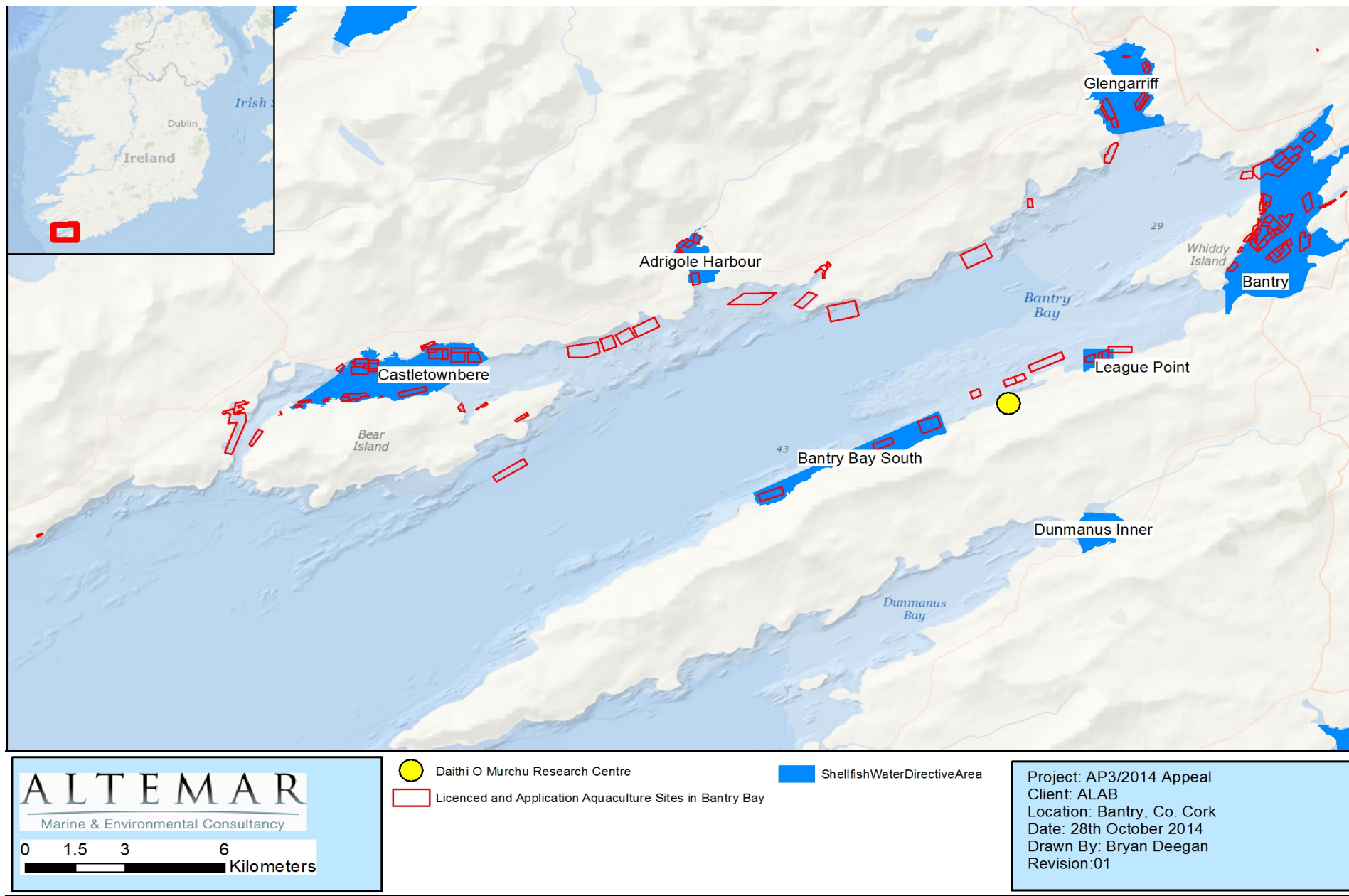
### Angling and Inshore Fishing Activity

The Inshore Fishing Atlas (2006) GIS shapefiles (<http://data.marine.ie/Dataset/Details/20963>) were consulted in relation to this application. Fishing methods used in Bantry Bay include, bottom trawling for *Nephrops*, whiting and other white fish; midwater trawling for pelagic species; tangle netting; line fishing; setting pots for large and small crustacea (lobsters, crabs, *Nephrops* and shrimps); bottom dredging for scallops; and, gathering of periwinkles by hand.

According to these data the area where the site is proposed is used for inshore fishing. Methods used within this area includes hook and line fishing, pelagic mid water trawl, chartered angling and potting for *Nephrops*, shrimp and large crustaceans. However, the proximity to the existing finfish farm and shore may exclude some of these activities e.g. mid-water pelagics.

### Inshore Angling

According to Inland Fisheries Ireland in its assessment of shore angling in Bantry Bay (<http://www.fishinginireland.info/sea/maps/docs/Bantry%20Bay.doc>) there are 25 sites suitable for shore angling in Bantry Bay. Gearhies Pier is suitable for float fishing for mullet. There is also bottom fishing for conger and night time is the best time for fishing. Sea angling, both from the shore and from boats, is available from a number of centres, and a network of shore angling locations has been established around the Bay. However, Gearhies is not one of these centres.



**Figure 4:** Designated Shellfish Waters and shellfish aquaculture sites in Bantry Bay, Co. Cork.

### Tourism and Leisure Uses

The South-West region (Cork/Kerry) is the most popular holiday destination in Ireland with over a quarter of all holidaymakers travelling to this region (Fáilte Ireland, 2009), and has accommodated the highest number of foreign tourist nights in the country in recent years. The potential of the marine tourism industry has been clearly acknowledged (Heritage Council and Fáilte Ireland 2009; Fáilte Ireland, 2007), with the region's natural assets providing the principal attraction for visitors (Kopke *et al.*, 2008).

No definitive figures are available for tourism in Bantry, but it is generally agreed that tourism and recreation are important contributors to the local and regional economy of Bantry Bay. Onshore attractions include Bantry House, the Bamboo Park at Glengarriff, Glengarriff Wood and the Marine Heritage Centre in Castletownbere. Every year, a number of cruise liners enter Bantry Bay to anchor in either Glengarriff Harbour, or Inner Bantry Harbour.

The Marine Leisure Infrastructure Strategy for the 720 km coast of West Cork, published in 2008, was commissioned by Cork County Council. It was to address the lack of leisure facilities by improving infrastructure in old fishing harbours and by developing slipways and associated facilities in popular holiday destinations in West Cork, to augment the established services. The Strategy lists the following marine leisure activities: sea angling from boats and from the shore, sailing (racing and cruising), board sailing, surfing, scuba diving, snorkelling, rowing, canoeing, power-boating, water-skiing, swimming, enjoyment of beaches, whale and dolphin watching, bird watching from the coast or at sea, visiting the beach or seaside, visiting islands and coastal walks. All of these activities are available to varying extents in Bantry Bay, and the Strategy designates Bantry and Castletownbere as proposed primary hubs for tourism and recreation, Glengarriff and Rerrin on Bere Island as proposed secondary hubs, and the remainder of the piers owned by Cork County Council as proposed tertiary hubs.

"The Wild Atlantic Way is a world-famous coastal route that spans seven of Ireland's counties, taking in some breath taking scenery along the way. From Donegal to Galway, Kerry to Cork, the Wild Atlantic Way is a journey of discovery" (Discover Ireland 2014). The L4703 which runs along the southern shore of Bantry Bay forms part of the Wild Atlantic Way initiative. "Leaving Bantry behind you, the landscape gets wild and rugged once more with another peninsula that juts out into the wild Atlantic. Undiscovered and untouched, Sheep's Head is the very definition of a hidden gem, with walking routes through some of the island's most inspirational scenery" Failte Ireland, 2014.

A marine Leisure Audit & Carrying Capacity Study for West Cork was prepared for Cork County Council by the Coastal and Marine Resources Centre in 2008 (<http://www.corkcoco.ie/co/pdf/135523873.pdf> & <http://www.corkcoco.ie/co/pdf/135523873.pdf> ). Gearhies was noted as a location for shore angling and as an access point to the sea. However, it was not classed as a "hot spot" for sea angling. For sailing there are no official moorings near Gearhies and Bantry is the closest sailing club and there are no yacht charters in Bantry Bay. The report did not record any adventure centres, areas for surfing, windsurfing, kitesurfing, kayaking, canoeing, diving, boat tours or whale, dolphin and bird watching or beaches on the southern side of Bantry Bay.

### Agricultural Activity

The proposed site is located midway between Bantry Bay South Designated Shellfish Area and League Point Designated Shellfish Area (Figure 4). Based on the information provided in the Site Characterisation Reports of these two Designated Shellfish Areas, over 50% (Bantry Bay South Designated Shellfish Area) and approximately 65% (League Point Designated Shellfish Area) of the catchments are “farmed land and, though livestock densities are similar to the national average, the estimates of fertiliser usage in this catchment are quite high compared to the national averages. The EPA’s diffuse model risk assessment, which investigates the relationship between catchment attributes (percentages of diffuse land cover including agriculture), water chemistry and ecological status, does not highlight many diffuse risk areas. However, the prevalence wet soils in the catchment could result in runoff from agricultural land and the steep slopes could increase the risk of runoff.”

Table 1 provides an estimate of the average number of dairy and drystock livestock units and the average loadings of nitrogen and phosphorus chemical fertiliser per hectare of farmed land within the contributing catchment area. The figures beneath the table express the nitrate limit (and Ireland’s derogation) under the Nitrates Directive in terms of livestock densities. “Discharges related to agriculture can affect the levels of faecal coliforms, suspended sediments, nutrients and dissolved oxygen in receiving waters. In addition, the use of pesticides and herbicides can introduce a range of harmful chemicals to the water environment. “Monitoring in this shellfish area does not indicate any water quality issues likely to be associated with agriculture and therefore agriculture is unlikely to be affecting shellfish water quality in this shellfish area.”

**Table 1.** Livestock units and chemical fertiliser usage

<b>Indicator</b>	<b>Catchment (per ha of farmed land)</b>	<b>National Average (per ha of farmed land)</b>
<b>Livestock units</b>	1.12 LU	1.20 LU
<b>Nitrogen fertiliser usage</b>	116.48 kg	92.09 kg
<b>Phosphorus fertiliser usage</b>	8.31 kg	9.74

Nitrates Directive limit = 170 kg N per hectare = approx. 2 LU per hectare

Nitrates Directive derogation = 250 kg N per hectare = approx. 3 LU per hectare.

## 5.3 Environmental Data

### 5.3.1 Site Location/Suitability

Section 61 (a) of the Fisheries (Amendment) act 1997, which refers to “the suitability of the place or waters at or in which the aquaculture is or proposed to be carried on for the activity in question.” In order to assess the suitability of the site, the site was visited by Bryan Deegan on the 26<sup>th</sup> October 2014. A walk over assessment of the pier and vantage points along the L4703 and the surrounding area was carried out.

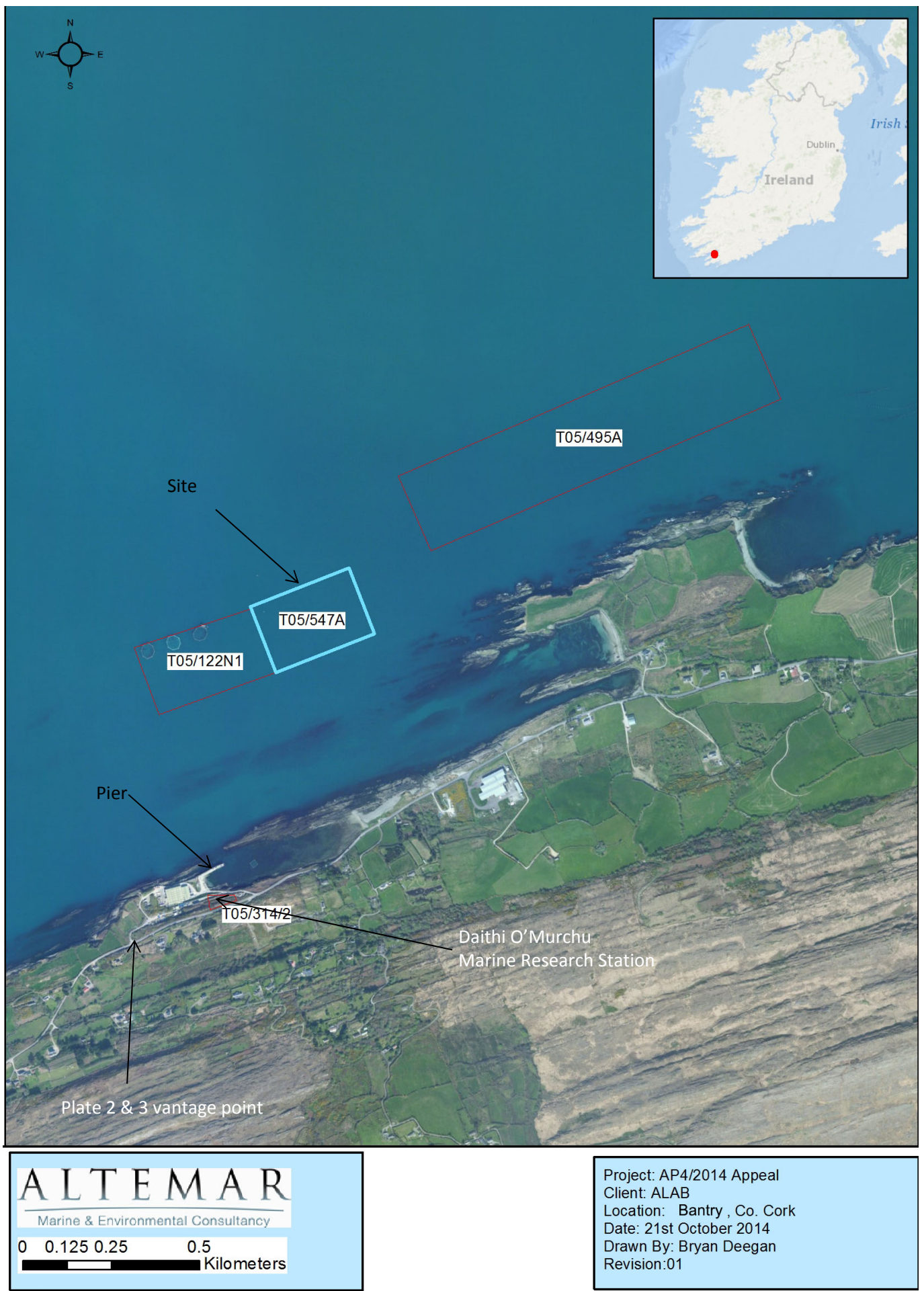
Satellite imagery of the site, seen in Figure 5, was taken in March 2012. The proposed macroalgal aquaculture site of the Daithi O’Murchu Marine Research Station (T05/547A) is outlined in light blue.

Plate 1. Shows the view of the area of interest from Gearhies Pier, the existing salmon farm and the approximate size of the proposed aquaculture site. Plates 2 was taken from the rear of Murphy Irish Seafoods from the L4703 and Plates 3 and 4 were taken from the landward end of Gearhies Pier.

#### ***Alaria esculenta***

*Alaria esculenta*, the species that is proposed to be cultured at the site, is a native Irish seaweed. Guiry (1973) carried out an investigation of the Marine Algal Flora in Bantry Bay. *Alaria esculenta* was found at sites 1, 2, 3, 4, 5, 8,10, 11 (Figure 6). Site 8 is located at Gearhies. *Alaria esculenta* was found in the Sublittoral and in the littoral in pools. Additional information on *Alaria esculenta* is seen in Appendix II.





**Figure 5:** Location of proposed site overlaid on satellite imagery.





**Plate 1:** View from Gearhies Pier



**Plate 2:** View from L4703





**Plate 3:** Gearhies Pier



**Plate 4:** Daithi O'Murchu Marine Research Station (background) beside Gearhies Pier

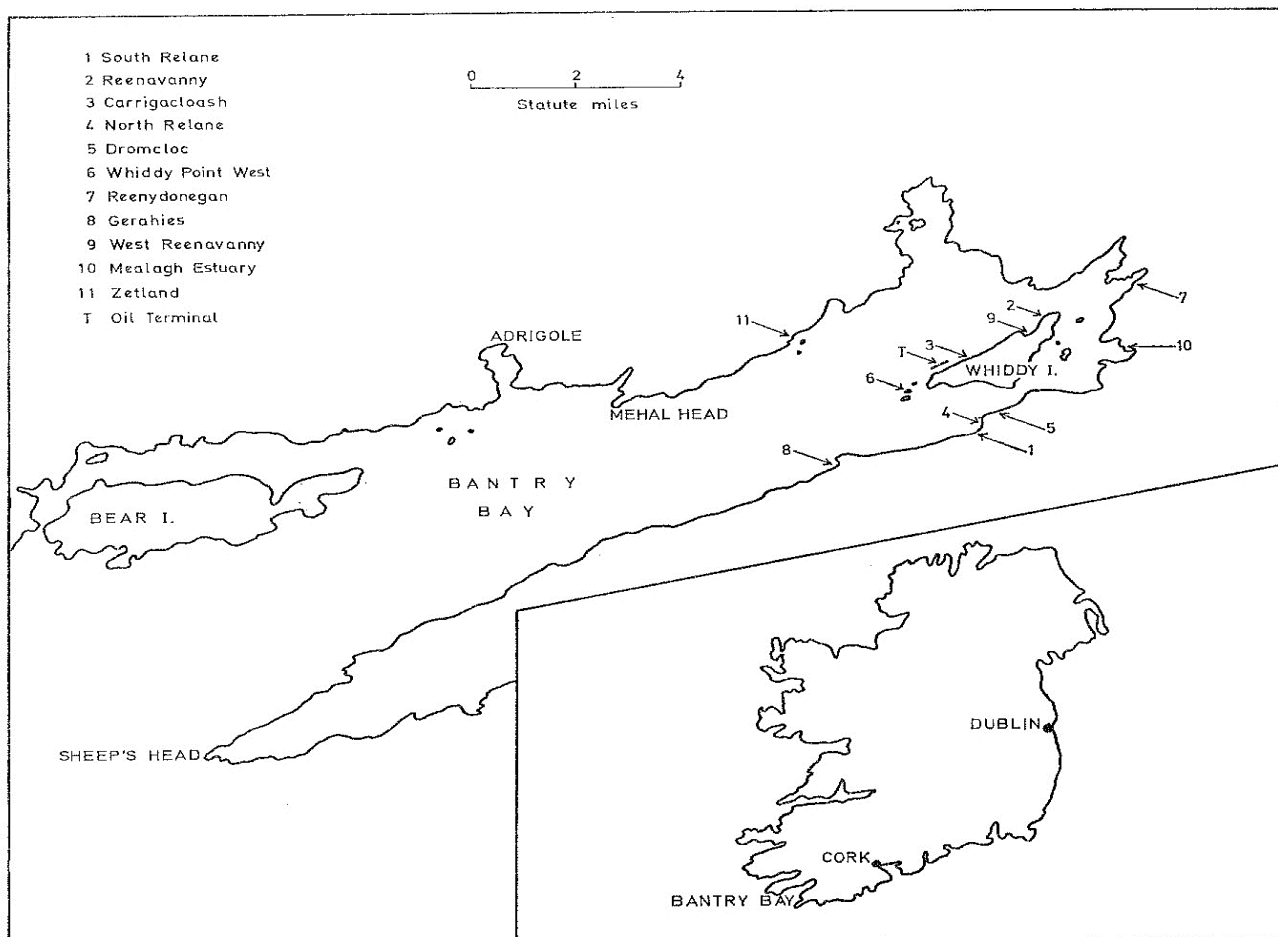


Fig. 1. Map of Bantry Bay showing the location of the survey sites. (Based on the Ordnance Survey by permission of the Government, Permit no. 1833.)

**Figure 6.** Macroalgal survey sites assessed by Guiry 1973

### 5.3.2 Water Quality

#### Environmental Protection Agency (EPA) Results

The EPA Marine Monitoring Programme analyses for general components in water samples at a large number of coastal and transitional waters around Ireland. Bantry Bay is not one of the bays covered by this programme. The closest bays that are monitored are Kenmare River and Roaringwater Bay to the North and South respectively. Both of these bays were classed as “unpolluted” (EPA, 2012). Both summer and winter dissolved inorganic nitrogen and molybdate reactive phosphorus levels in Kenmare were the lowest levels on the reference scales i.e. less than 25 mg/l and 20ug/l respectively while in Roaringwater Bay (near Baltimore) these levels were slightly elevated.

#### WFD Monitoring Programme

The proposed site is covered under the Bantry Bay South- Dunmanus Bay WMU. The stream that enters the sea to the south of Reen Point is in the 21-2222 catchment. It has a “good status”.

#### Shellfish Flesh Monitoring Programme

Shellfish flesh classifications carried out under the European Communities (Live Bivalve Molluscs) (Health Conditions for Production and Placing on the Market) Regulations, 1996 (S.I. No. 147 of 1996)) indicate faecal contamination in shellfish flesh. Sampling is carried out by the Sea Fisheries Protection

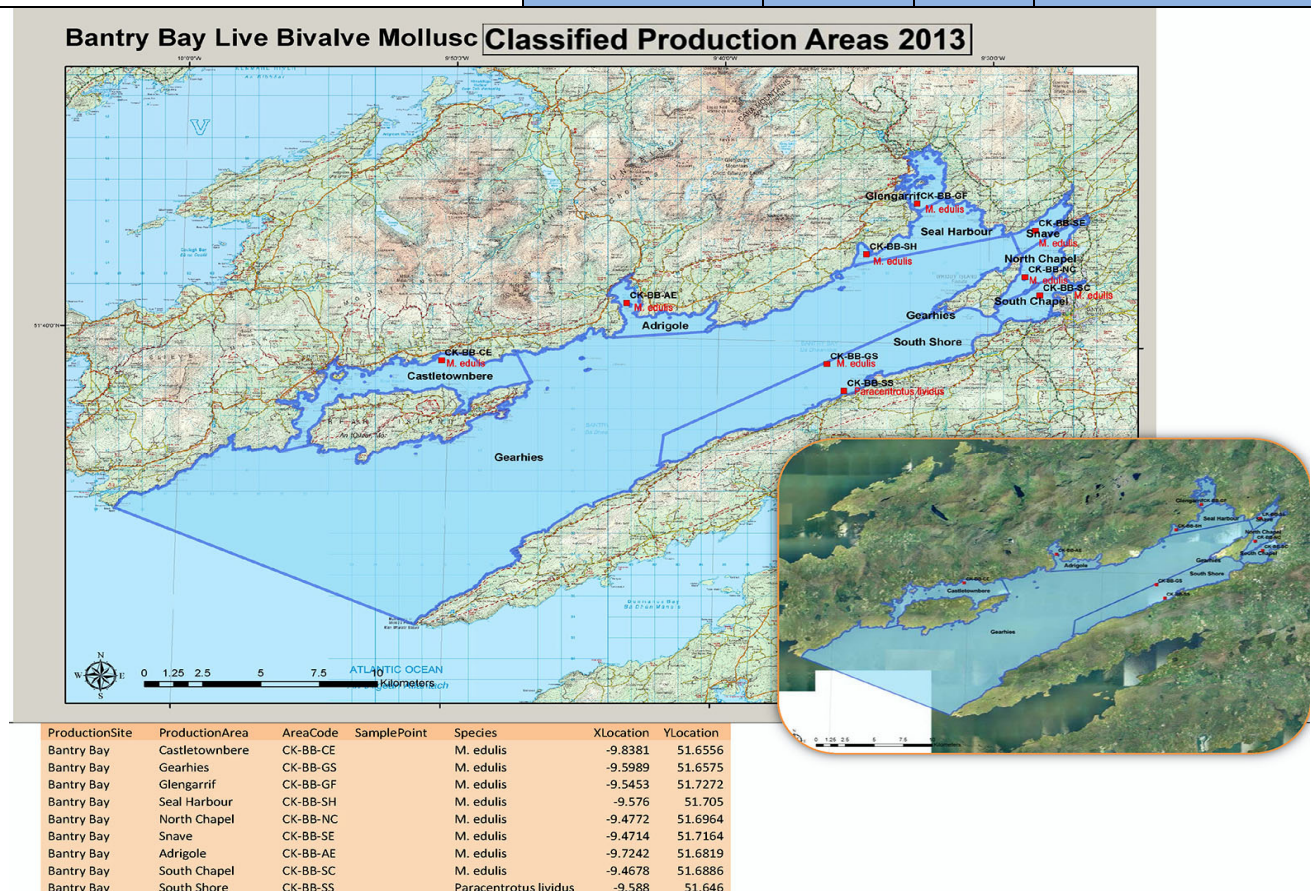


Authority (SFPA) on at least a monthly basis.

The licensed area is within “South Shore” area and is classified as Class A meaning that shellfish may be collected for direct human consumption and meet the health standards for live bivalve molluscs laid down in the EC Regulation on food safety (Regulation (EC) No 853/2004). Therefore, there is no indication of faecal contamination in the area.

**Table 1: Bantry Bay 2014/15 List of Classified Bivalve Mollusc Production Areas in Ireland (08 July 2014)**

Boundaries	Bed Name	Species	Class	Notes
Ardnakinna Point to Fair Head and Lonehort Point to Bank Harbour Area bounded to the North by a line from Gortnakilla Pier to a point at 51° 37.5'N, 09° 42'W to Whiddy Point West to Relane Point. Sheep's Head to Black Ball Head	Castletownbere	Mussels	A*	*Seasonal Classification 01 Sept – 01 Jan reverts to Class B at other times (Note 1).#Preliminary Classification (Note 2)
		Urchins	A#	
	Gearhies	Mussels	B	
	Glengarrif	Mussels	B	
	Seal Harbour	Mussels	A	
	North Chapel	Mussels	B	
	Snave	Mussels	B	
	Adrigole	Mussels	B	
	South Chapel	Mussels	B	
	South Shore	Urchins	A	



**Figure 7. Bantry Bay Classified Production Areas**

## Bathing Water Quality

Bathing Water quality is not monitored by the EPA within Bantry Bay. The nearest location where bathing water quality is monitored is Barley Cove, approximately 20 km to the southwest. For the 2013 bathing season, Barley Cove achieved good water quality status and complied with the EU guideline standards. In 2012 it achieved sufficient water quality status and complied with EU mandatory values. Barley Cove had good water quality status for the previous 10 years.

### 5.3.3 Benthic Habitats

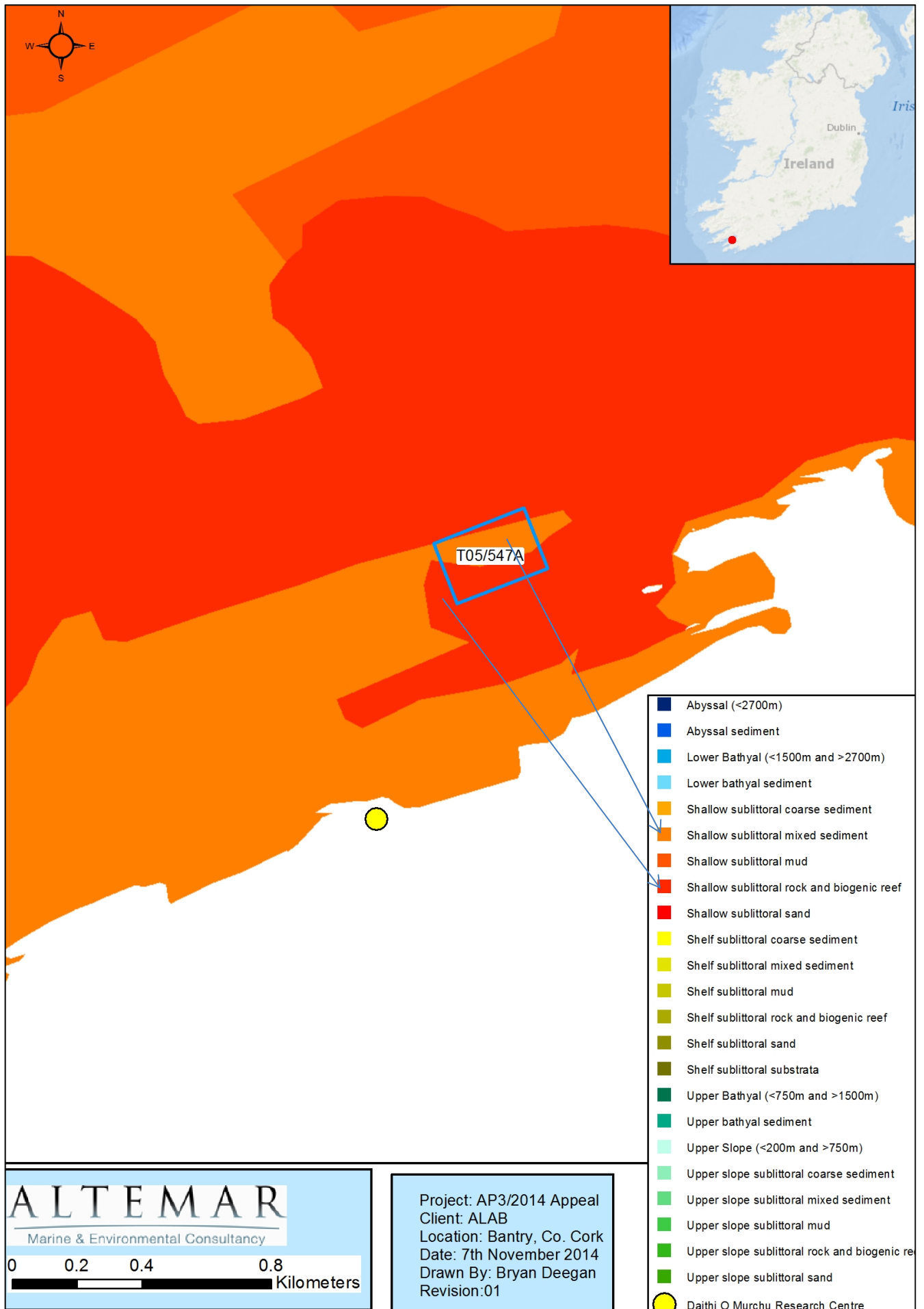
The proposed site is not located within a Special Areas of Conservation, Special Protection Area, Natural Heritage Area, a proposed Natural Heritage Area or RAMSAR site. The site has not been subject to the NPWS or Marine Institute habitat mapping programmes. As a result limited data on benthic habitats is available. A survey of benthic habitats of the Bay was carried out during the BioMar survey in 1993, but this did not include subtidal sites near the proposed site (BioMar Viewer). The closest site was located on the east side of an isolated rock at the east end of Bear Island, away from the main swell (East of Roon carrigmore, Berehaven, Bantry Bay.). “The seabed at 5 m was dominated by a *Laminaria hyperborea* forest. At 10.5 m BCD to bedrock became less dominated by kelp moving into the lower circalittoral with *Delesseria sanguinea* and the brown algae *Dictyota dichotoma* and *Desmarestia aculeata* the dominant algae. Animals were dominated by the jewel anemone *Corynactis viridis* on the more exposed rock faces. Crevices were filled with sea cucumbers particularly *Aslia lefevrei* and occasional *Pawsonia saxicola*. *Antedon bifida* were common on the rock surfaces, particularly on the upper parts.”

An additional sublittoral site was surveyed by Emblow *et al.* (2004) West of Glanrooncoosh. “The site was located on the south side of Bantry Bay approximately midway along the south shore west of Gearhies. It consisted of moderately exposed bedrock. “The kelp forest extended to 16 m. Below the kelp forest the rock was terraced, and the red algae *Delesseria sanguinea* was common. Coarse sand and shell were present in fissures and hollows within the rock and the sponge *Ciocalypa penicillus* was characteristic of this micro habitat. *Corynactis viridis* was characteristic of the vertical surfaces and *Polymastia spp.*, *Urticina jelina*, and *Stelligera rigida* on the horizontal surfaces.”

However, an intertidal site was studied by Biomar at Carrigaroad, Gearhies. “A west facing rocky spit which was surveyed as an example of a number of such spits which project from and run more or less parallel to the shore line on the southern shore of a south-west facing inlet in the south-west coast of Ireland. While the inlet is open to prevailing south-west winds it is long and relatively narrow thus affording at least moderate shelter on its southern shores. The present survey location is half way along the southern shore of the inlet on the seaward side of a deep water oil terminal and storage facility in the inner part of the inlet. The area in general was surveyed in the context of an oil-spill accident some years previously. Salmon rearing sea cages are located in deep water to the north-east of the survey location while a water intake point and water/effluent outfall service an onshore aquaculture hatchery/rearing facility a short distance inside the survey location. The area experiences moderate tidal flows (see Chart No. 1838). The substrate is bedrock which comprises slate or shale and possibly softer mudstone (?). The rock is compressed into stratified jagged folds or ridges set at a fairly steep incline. The overall shore

slope is fairly shallow on the lower shore, increasing over the midshore and becoming moderately steep on the upper shore. The shore is backed by a moderate cliff of clay overlying bedrock. Gullies cut into the rock at a slight angle to the shore. These are sites of rock scour with localised unstable small boulder and cobble substrates which can be tightly cemented. Some freshwater seeps onto the upper shore from the clay cliff. The upper shore is characterised by a dense *Verrucaria maura* biotope which grades into a barnacle/Patella zone with a clear banding of *Chthamalus* and *Semibalanus* on steep vertical faces. *Fucus vesiculosus* occurs as scattered plants or patches in the midshore barnacle community. The lower shore supports a *Fucus serratus* canopy over *Corallina officinalis*. *Ascophyllum nodosum* and *Fucus vesiculosus* occur on higher parts of this zone in more sheltered places. The lower shore slopes quickly into a sublittoral fringe community of *Laminaria digitata* canopy with *Saccorhiza polyschides* and an understorey of *Corallina* and selected red algae.”

As can be seen from the MSFD predicted habitat type the area (Figure 7) of the proposed aquaculture site is predicted to be a mixture of “Shallow sublittoral mixed sediment” and “Shallow sublittoral rock and biogenic reef.” Databases of OSPAR Special Habitats (Marine Institute/NPWS data) were searched. The proposed site is not within, or close to, known/surveyed Maerl Beds, *Zostera* beds, *Ostrea edulis* beds, seapens and burrowing megafauna or horse mussel beds.



**Figure 7.** Marine Strategy Framework Directive MSFD predicted habitat type the area of the proposed aquaculture site

### 5.3.4 Biototoxicology

The Marine Institute carries out shellfish monitoring at designated shellfish areas. This dedicated shellfish monitoring programme involves analysing for general components, metals and organics in both water and biota samples. The proposed aquaculture site is within “Bantry Bay Outer” Bantry Outer (CK-BO-BO). Reen Point is the western limit of the “Gearhies” area. Reports from the Marine Institute HABS website <http://www.marine.ie/home/publicationsdata/data/habs+search+database/> were examined (2010-2014). Three species are monitored within this area, *Mytilus edulis* (2010-2011), *Haliotis discus hannai* (2010) and *Pecten maximus*. Significant restrictions were seen in this area including “harvest restrictions”, “closed status” and “closed Pending” due to ASP and DSP positive bioassays during the 2010-2014 period.

### 5.3.5 Other

The proposed site is not within a marine munitions or dumping site based on Marine Institute records.

## 5.4 Statutory Status

### 5.4.1 Nature Conservation Designations

The proposed aquaculture site is not located within a NATURA 2000 or other protected site. There are a number of protected sites located nearby including SAC's and SPA's, (Figure 8), NHA's and pNHA's (Figure 9). There are no Special Protection Areas, within 5km of the proposed site. Leahill Bog (NHA) is the closest NHA at 5 km. Sheep's Head SAC is the only SAC within 5km and it is just over 2 km from the proposed aquaculture site. The Sheeps Head pNHA is 2km from the proposed site while the Shelane Island pNHA is approximately 4km from the T05/547A. Based on a comment from the appellant in his submission, it should be noted that NATURA 2000 designation is solely based on the Habitats and Birds Directives and has no relationship to National Monuments. Table 3 contains the details of the NATURA 2000 sites (SAC & SPA's) and its qualifying interests in the vicinity of the proposed aquaculture sites.

**Table 3:** NATURA 2000 sites within 5km of the proposed aquaculture sites and qualifying features.

Site	Qualifying features (EU Importance) and conservation objective
Sheeps Head SAC (000102)	[1024] Kerry Slug ( <i>Geomalacus maculosus</i> ) [4010]Northern Atlantic wet heaths with <i>Erica tetralix</i> [4030] European dry heaths  Objective: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected: The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

## 5.5 Bantry Bay Species Records

### 5.5.1 Cetaceans

The Irish Whale and Dolphin Group Cetacean Sightings ([www.iwdg.ie](http://www.iwdg.ie)) in the vicinity of the proposed aquaculture site are seen in Figure 10. As can be seen from figure 10 due to the deep nature of Bantry Bay minke whales and other dolphin/porpoise species have been seen within and further up the Bantry Bay. It is likely that the proximity of the salmon farm and wild fish feeding on waste from the farm may attract cetacean species close to the proposed site.



### 5.5.2 Birds

The proposed site is not within a Special Protection Area (Birds Directive) or Ramsar site. Beara Peninsula SPA (004155) is 16km to the west and Sheep's Head to Toe Head SPA (004156) is 14 km to the south west of T05/547A. Species of conservation importance within the Beara Peninsula SPA and Sheeps Head to Toe Head SPA, include chough, fulmar and peregrine falcon. No bird species of conservation importance were seen during the site visit at Gearhies. Due to the paucity of bird data from this site, the NPWS Ranger (Patrick Graham) was consulted in relation to species of conservation interest. The NPWS ranger stated that to his knowledge there were no birds of conservation importance in this area.

### 5.5.3 Harbour or Common Seals (*Phoca vitulina*) and Grey Seals (*Halichoerus grypus*)

Harbour and grey seals are designated under Annex II EU Habitats Directive. Data from National grey and harbour seal surveys carried out by NPWS were examined (NPWS, 2003 & Lyons 2004). The "principal sites for Harbour seals continue to be found in the inner reaches of the bay, i.e. Whiddy Island area and Glengarriff Harbour". From 1978 to 2003, a total of 251 observations were made on this population. The population had been increasing since 1978 with a maximum count of 403 adult common seals (2003). Only two Grey Seals were counted in Bantry Bay out of all the sites surveyed for common and grey seals in Bantry Bay, County Cork from 1978 to 2003 by NPWS (Lyons 2004).

In recent years, 303, 268 and 329 harbour seals were recorded on 7<sup>th</sup> Sept 2006, 10<sup>th</sup> Sept 2007 and 15<sup>th</sup> Sept 2008 respectively (NPWS, 2010). A peak exceeding 400 animals in the bay, as a whole, was recorded in 2003. Local disturbance of harbour seals (i.e., evacuation of haul-out sites) was recorded in inner Glengarriff Harbour in 2011. This was due to people walking ashore on sites normally occupied by seals, while fishing activity adjacent to Coulagh Rocks also led to seals entering the water. A notable increase in Harbour seal numbers was observed within Glengarriff Harbour. While this coincided with significantly reduced recreational activity in the area, it may also have been a natural phenomenon linked to prevailing weather conditions or other biological or environmental factors (NPWS 2011).

No seals were seen during the site visit. However, it would be expected that the existing salmon farm may attract seals due the presence of salmon within the cages and other species that would feed on waste pellets etc.

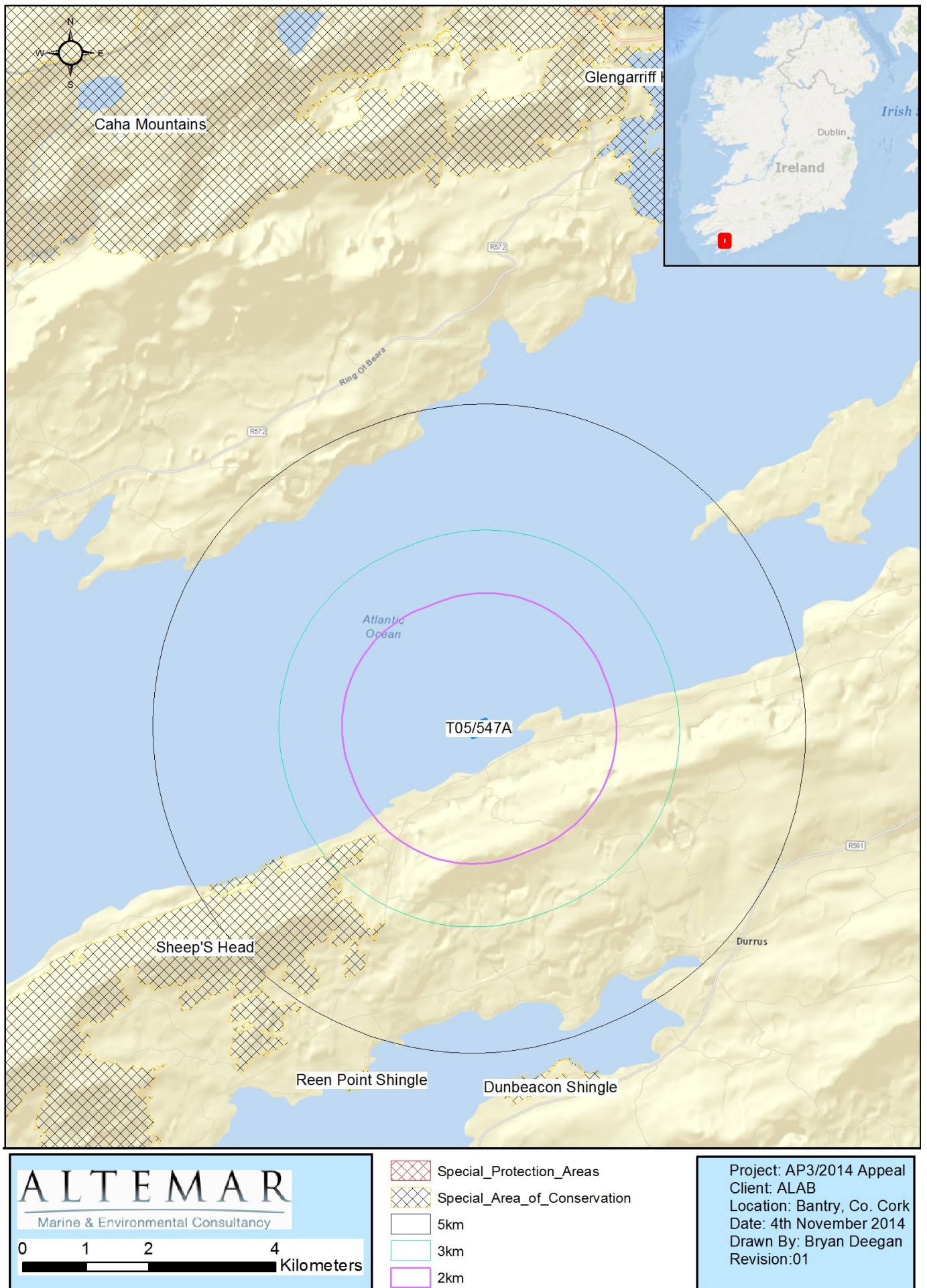
### 5.5.4 Otter -*Lutra lutra*

Otters are designated under Annex II EU Habitats Directive. Following a review of the literature there was no evidence found of Otters at Gearhies. No evidence of spraints was found during fieldwork. However, it would be expected that otters would be present in the area, given the proximity of the record noted in the National Biodiversity Data Centre, 1 km to the north east along the shore of Bantry Bay.

### 5.5.5 Salmon -*Salmo salar*

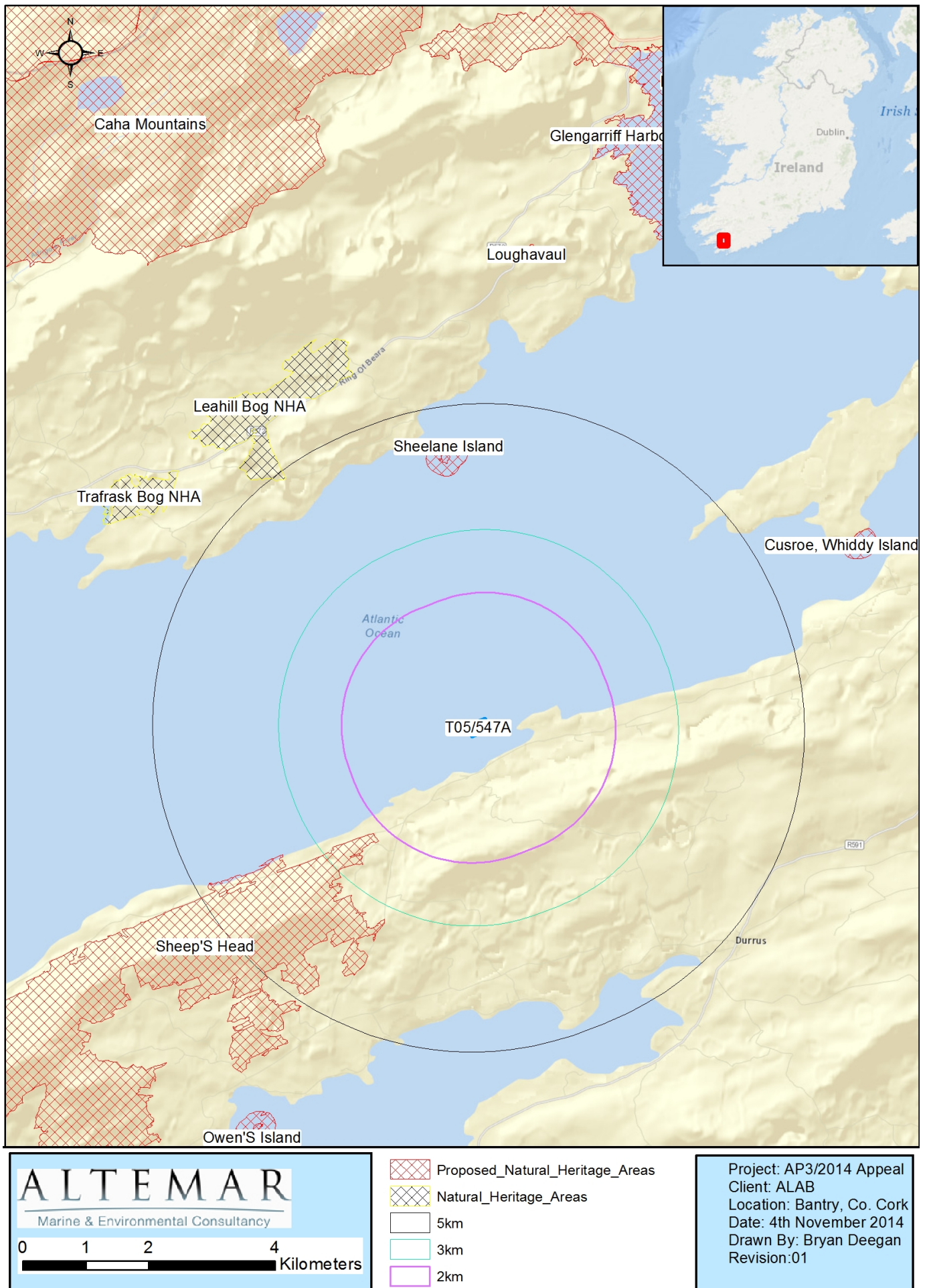
Salmon are designated under Annex II EU Habitats Directive. Based on CFB (2003) "quantification of Freshwater Salmon Habitat Asset in Ireland", all streams on the southern shore of Bantry Bay, including the stream which enters the sea at Reen Point, near the proposed aquaculture site, are "not considered a significant producer of Salmonids."



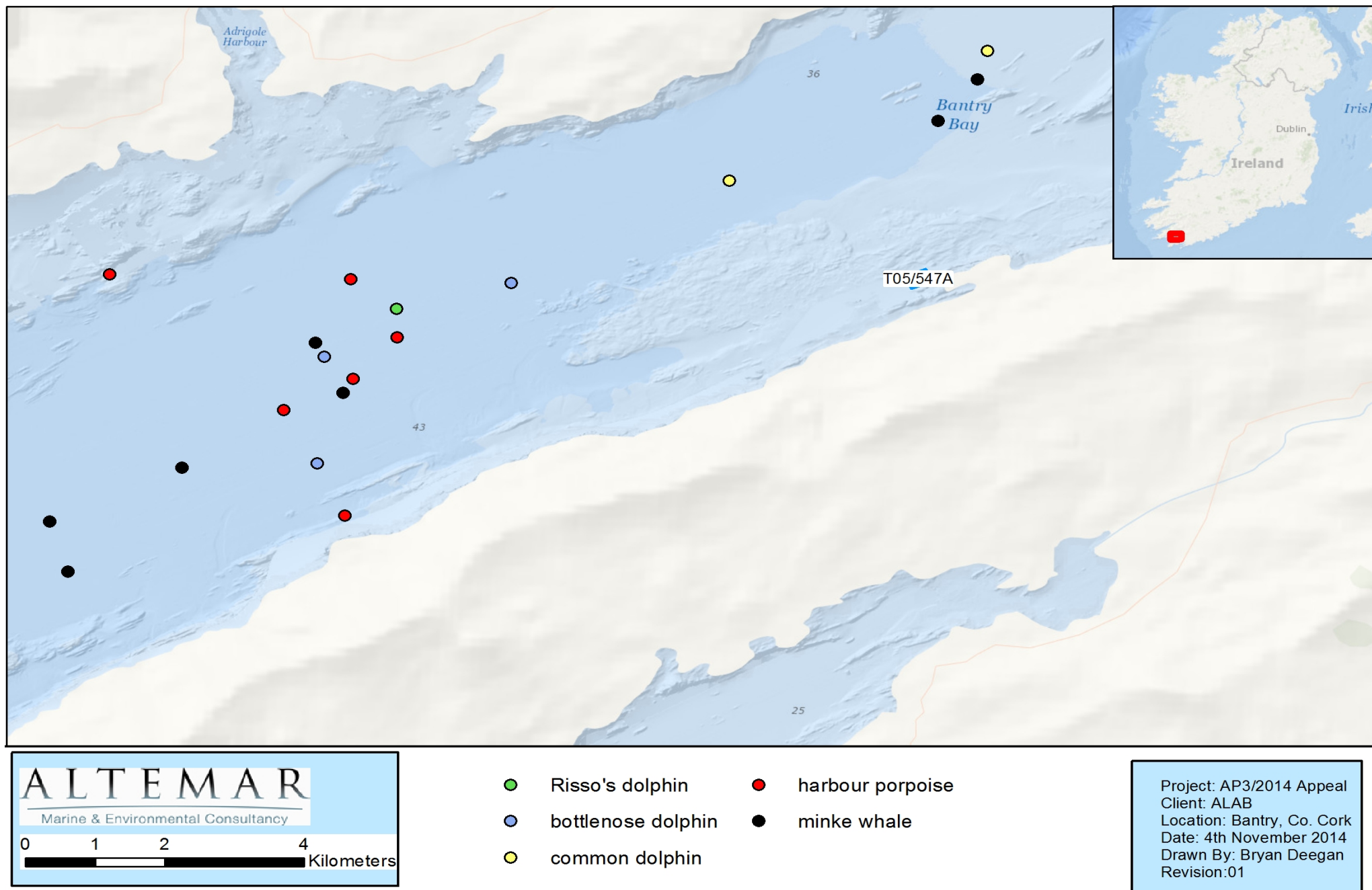


**Figure 8:** Special Areas of Conservation and Special Protection Areas within close proximity to the proposed aquaculture sites.





**Figure 9:** Natural Heritage Areas and proposed Natural Heritage Areas within close proximity to the proposed aquaculture sites.



**Figure 10.** Irish Whale and Dolphin Group Cetacean Sightings in the vicinity of the proposed aquaculture site.

## 5.6 Statutory Plans

There are no statutory plans that specifically deal with Bantry Bay. However, Bantry Bay is covered under the following plans:

### Cork County Development Plan

The Cork County Development Plan is currently at a transitional phase between the 2009 and 2013 plans.

### 2009 Cork County Development Plan

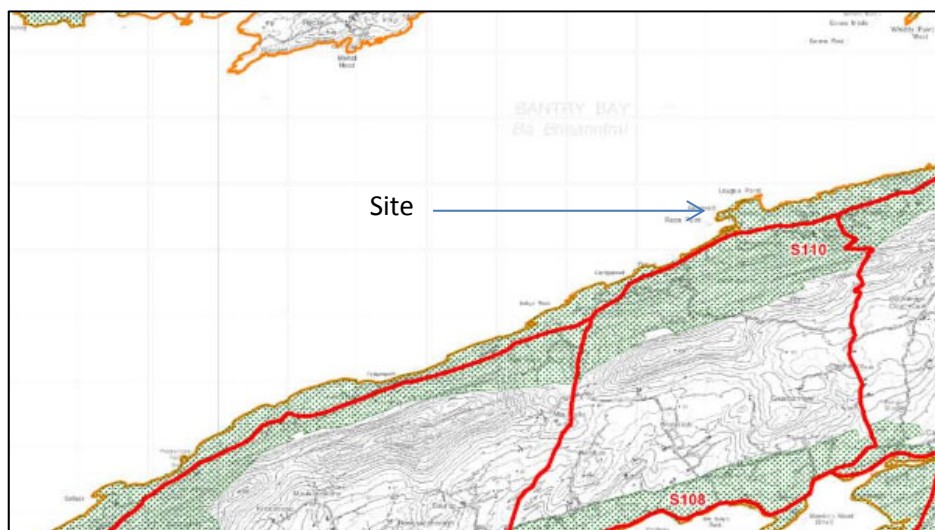
#### *Aquaculture*

“In accordance with Government policy, the Council will support and promote the sustainable development of the aquaculture sector in order to maximize its contribution to jobs and growth in coastal communities and the economic well-being of the County. Furthermore, it is recognised that aquaculture harvesting and associated processing have the potential to provide an economically viable alternative to commercial fishing and aid sustainable rural diversification.”

#### *Scenic Routes and Scenic Lands*

“This plan has identified specific scenic routes and scenic landscapes which in general make up those areas of natural beauty and the important views and prospects that people in Cork and visitors to the County value most highly. In the case of scenic landscapes these are based on designations established by previous development plans. The scenic landscapes are currently being reviewed however, due to significant issues raised by rural communities it is considered that further consultation with the public is necessary before finalising the County’s scenic landscape.”

“7.2.29. It is the intention of the Council to finalise the Landscape Strategy for County Cork to include policy recommendations for the County Development Plan before proceeding with a Variation to the County Development Plan to give effect to the Landscape Strategy.”



**Figure 10.** Scenic Route (red line) and Scenic Landscape (green) (CCDP, 2009)



“The established scenic routes include a variety of images, which relate to impressive or beautiful natural scenery. Any view or scene that is important to the image/character of an area can be defined as scenic. Scenic routes act as indicators of high value landscapes and identify more visually sensitive locations where higher standards of design, siting and landscaping are required. Scenic routes highlight the quality of the overall environment and landscape experienced within Cork County. It is important to protect the character and quality of those particular stretches of scenic routes that have special views and prospects particularly those associated with Scenic Landscapes.”

“7.2.32. The protection of these scenic routes and scenic landscapes is important in maintaining the uniqueness of Cork County and its distinctive landscape as a sustainable economic and tourist resource into the future. Whilst advocating the protection of such scenic resources the plan also recognises the fact that all landscapes are living and changing, and therefore an objection in principle to development situated on or adjoining scenic routes is not proposed. This principle will encourage appropriate landscaping and screen planting of developments along scenic routes.”

### *Objectives*

#### “ENV 2-11 Scenic Routes

“It is a particular objective to preserve the character of those views and prospects obtainable from scenic routes identified in this plan.” (Figure 10 above)

#### ENV 2-12 Details of Scenic Routes

“It is an objective to protect the character and quality of those particular stretches of scenic routes that have very special views and prospects.”

#### ENV 2-13

##### “Development on Scenic Routes

(a) It is also an objective of the Planning Authority to require those seeking to carry out development in the environs of a scenic route and/or an area with important views and prospects, to demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features. In such areas, the appropriateness of the design, site layout, and landscaping of the proposed development must be demonstrated along with mitigation measures to prevent significant alterations to the appearance or character of the area.

(b) It is an objective to encourage appropriate landscaping and screen planting of developments along scenic routes. Where scenic routes run through settlements street trees and ornamental landscaping may also be required. Refer to Objective ENV 4-13, which provides guidance in relation to landscaping.”

#### ENV 2-14 Viewing Points along Scenic Routes

“It is an objective to consider the provision of viewing points at suitable locations as appropriate along specific routes. It is considered that this may be further examined through the review of the individual Local Area Plans containing scenic routes.”

## 2013 Draft Cork County Development Plan

The Draft Cork County Development Plan (2013) was presented to the Members of Cork County Council on 22<sup>nd</sup> October 2013 and approved for public consultation starting on the 9<sup>th</sup> of December 2013 and the final development plan adopted before the 8<sup>th</sup> January 2015. The proposed amendments were reviewed and do not pertain to aquaculture development.

The 2013 Draft Cork County Development Plan states that:

“The Government’s Food Harvest 2020 report sets out the strategy for the medium-term development of the agri food (including drinks), fisheries and forestry sector for the period to 2020.”

“6.7.5 It contains the industry vision for the sector and sets ambitious targets for expansion over the next decade. It contains recommendations aimed at achieving sustainable growth, increasing efficiency, higher productivity and competitiveness in primary agriculture, forestry and fisheries as well as in food and drink production. The growth targets for the industry are underpinned by significant production increases in the milk, beef, sheep, pigment, poultry and aquaculture sectors.”

### Business Development

*“County Development Plan Objective EE 9-1: Business Development in Rural Areas*

The development of appropriate new businesses in rural areas will normally be encouraged especially where:

- *The scale and nature of the proposed new business are appropriate to the rural area,*
- *The development will enhance the strength and diversity of the local rural economy,*
- *The proposal will not adversely affect the character and appearance of the landscape,*
- The existing or planned local road network and other essential infrastructure can accommodate extra demand generated by the proposal,
- The proposal has a mobility plan for employees home to work transportation,
- Where possible the proposal involves the reuse of redundant or underused buildings that are of value to the rural scene; and
- The provision of adequate water services infrastructure.”

### Fishing and Aquaculture

“Commercial Fishing and Aquaculture represent an important economic activity in rural coastal areas. This plan supports the provision of appropriate harbour infrastructure that facilitates a modern and innovative fishing industry.”

“6.11.2 The Council recognises and will continue to support the sustainable development of the aquaculture industry in order to maximise its contribution to employment and the economic well being of rural coastal communities and the economic well being of the county. This plan also recognises the important role aquaculture can play in the diversification of rural areas.”

*“County Development Plan Objective; EE 11-1: Fishing and Aquaculture*

- a) Support the use of existing port facilities for the catching and processing of fish as an economic activity that contributes to the food industry in the County.
- b) Support and protect designated shellfish areas as an important economic and employment sector.”

## **Bioenergy**

Bioenergy Definition: “The general term used to denote renewable energy derived from organic matter. Bioenergy sources include, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and *aquaculture*, as well as the biodegradable fraction of industrial and municipal waste. The Bioenergy sector as a means of generating electricity, heat and transport fuel will play a key role in the delivery of renewable heat and renewable transport targets. Bioenergy can be categorised into three sub-groups: biomass, bioliquids and biofuels.”

*County Development Plan Objective. ED 4-3: Bioenergy*

“Support and encourage the development of the bioenergy sector and facilitate its development for energy production, heat storage and distribution. Encourage the development of commercial bioenergy plants; on brownfield sites which are adjacent to industrial areas or on lands which are reserved for industrial uses or on brownfield sites in rural areas.

Commercial bioenergy plants should be located close to the energy source and the point of demand, where they can be served by public roads with sufficient capacity to absorb increased traffic flows and adjacent to transport corridors.

Visual, noise and odour impacts on adjacent residential property will be key considerations when assessing any such proposals.”

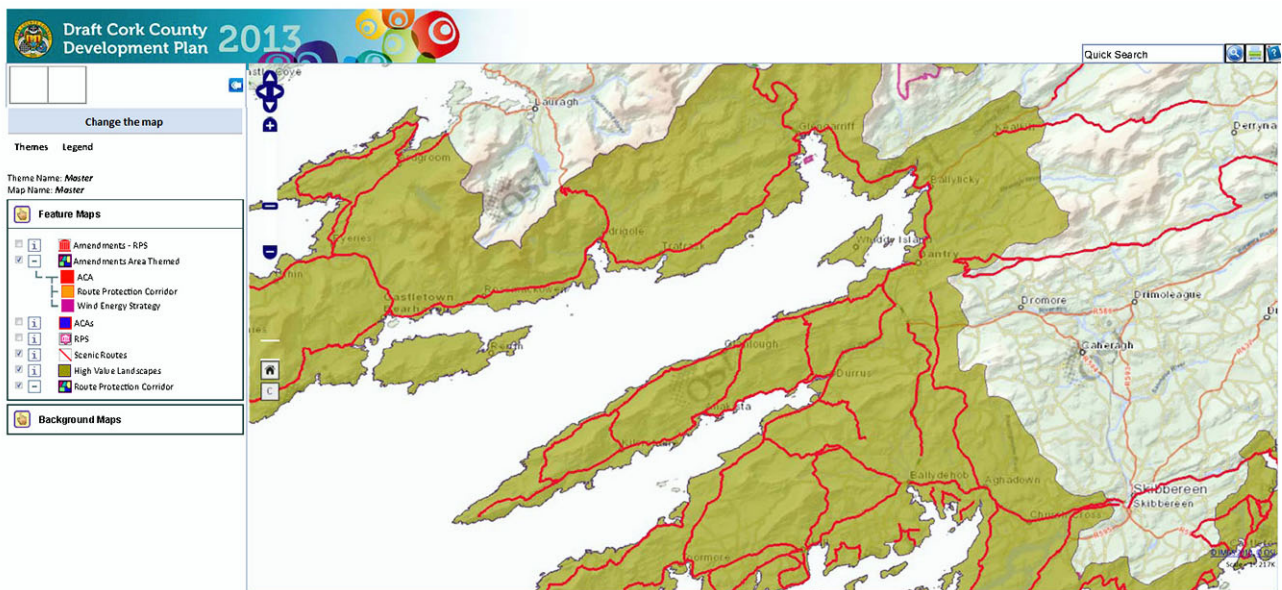
## **Landscape**

“Seascape Assessment is an extension of landscape character assessment and with 1,100km of coastline; seascape is a crucial element of the County’s history, identity and culture. A number of changes have been occurring along coastlines including the need for coastal protection works, upgrading and proposals for new ports, marinas, proposals for aquaculture schemes and investigation of wind energy and other renewable energy projects off shore. It would be premature to consider the feasibility of carrying out a seascape assessment for County Cork until the preparation of a National Landscape Strategy have been completed and legislation on the future management of foreshore development have been published.”

*County Development Plan Objective GI 6-1 : Landscape*

- “a) Protect the visual and scenic amenities of County Cork’s built and natural environment.
- b) Landscape issues will be an important factor in all land-use proposals, ensuring that a pro-active view of development is undertaken while maintaining respect for the environment and heritage generally in line with the principle of sustainability.”

As can be seen from figures 11 & 12 the southern shore of Bantry Bay is seen as a High Value Landscape and the L7043 is seen as a scenic route. The area is also classed as Tourism and Rural Diversification Area. “These parts of rural and coastal County Cork exhibit characteristics such as evidence of considerable pressure for rural housing in particular higher demand for holiday and second home development. These rural areas are more distant from the major urban areas and the associated pressure from urban generated housing. These areas also have higher housing vacancy rates and evidence of a relatively stable population compared to weaker parts of the County. These areas have higher levels of environmental and landscape sensitivity and a weaker economic structure with significant opportunities for tourism and rural diversification.”



**Figure 11: Scenic Routes (red line) and areas of High Value Landscape (olive)**



**Figure 12: Rural Housing Policy-Tourism and Rural Diversification Area (Yellow)**



### 5.6.2 South Western IRBD Transitional and Coastal Waters Action Programme

This action plan reviewed each of the coastal and transitional waters in the South Western IRBD and outlined the pressures and targets under the WFD. In relation to Bantry Bay (SW\_170\_000) it states that the Bay is of high water quality status and marine pressures included aquaculture. Bantry Bay Outer was not under threat from land based pressures including WWTP's and agriculture. The overall objective is to "protect" Outer Bantry Bay

## 5.8 Water Quality Status

The WFD water quality status of the Transitional and coastal water body Bantry Bay is classed as High Status.

## 5.9 Man-Made Heritage

National Monuments Service data of recorded National Monuments in the area was acquired (25/10/2014) and plotted (Figure 7). There are no National Monuments within 500 km of the proposed aquaculture site. The closest National Monuments were the following:

### 500m to 1km from the proposed site.

#### **CO117-003----Promontory fort – coastal**

Townland: KILLOVEENOGUE

Description: Small rectangular area projecting SW from slightly larger headland which projects N into Bantry Bay. Westropp (1921, 105) found no evidence of "entrenched headland" described by Carew in 1602. Modern field fence now runs across neck of headland. Beneath this, on N cliff-face, the profile of a silted-up fosse with a bank on its inside can be seen.

The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 1: West Cork' (Dublin: Stationery Office, 1992). In certain instances the entries have been revised and updated in the light of recent research. Date of upload/revision: 14 January 2009. Date of last visit: 13 March 1985

### 1km to 2km from the proposed site

#### **CO117-002----Class: Ringfort – rath**

Townland: GORTALASSA

Description: In pasture, atop natural knoll. Circular area (41m N-S; 40m E-W) enclosed by earthen bank (H 1.6m) with shallow external fosse. Interior raised on S side to compensate for hill slope.

The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 1: West Cork' (Dublin: Stationery Office, 1992). In certain instances the entries have been revised and updated in the light of recent research. Date of upload/revision: 14 January 2009. Date of last visit: 13 March 1985

**Burial Ground. (CO117-004----**

Townland: KILLOVEENOGUE

Description: In reclaimed land. Subcircular area (16m E-W; 12m N-S) bounded to W and N by field fences. Many grave markers noted.

The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 1: West Cork' (Dublin: Stationery Office, 1992). In certain instances the entries have been revised and updated in the light of recent research. Date of upload/revision: 14 January 2009. Date of last visit: 13 March 1985.

**Ringfort – rath (CO117-005----**

Townland: KILLOVEENOGUE

Description: In pasture, atop natural knoll, close to cliff edge. Circular, slightly raised area (30m N-S; 30m E-W) enclosed by earthen bank (H 1.6m) S->N; scarp elsewhere.

The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 1: West Cork' (Dublin: Stationery Office, 1992). In certain instances the entries have been revised and updated in the light of recent research. Date of upload/revision: 14 January 2009. Date of last visit: 13 March 1985.



## Section 61 Assessments

### Section 61 of the Fisheries Amendment Act 1997

This act states that “The licensing authority, in considering an application for an aquaculture licence or an appeal against a decision on an application for a licence or 11 revocation or amendment of a licence, shall take account, as may be appropriate in the circumstances of the particular case, of-

- (a) the suitability of the place or waters at or in which the aquaculture is or is proposed to be carried on for the activity in question,
- (b) other beneficial uses, existing or potential, of the place or waters concerned,
- (c) the particular statutory status, if any, (including the pro-visions of any development plan, within the meaning of the Local Government (Planning and Development) Act, 1963 as amended) of the place or waters,
- (d) the likely effects of the proposed aquaculture, revocation or amendment on the economy of the area in which the aquaculture is or is proposed to be carried on,
- (e) the likely ecological effects of the aquaculture or proposed aquaculture on wild fisheries, natural habitats and flora and fauna, and
- (f) the effect or likely effect on the environment generally in the vicinity of the place or water on or in which that aqua-culture is or is proposed to be carried on-
  - (i) on the foreshore, or
  - (ii) at any other place, if there is or would be no discharge of trade or sewage effluent within the meaning of, and requiring a licence under section 4 of the Local Government (Water Pollution) Act, 1977, and
- (g) the effect or likely effect on the man-made environment of heritage value in the vicinity of the place or waters.”

### 6.1 Site Suitability

The site under appeal **is** suitable for the intended purpose for the following reasons:

1. The species to be farmed (*Alaria esculenta*) is a native species of macroalgae to Ireland. The species is within its natural range, as it was recorded at the proposed aquaculture site by Guiry (1973).
2. *Alaria esculenta* is a macroalgal species indicative of exposure and its thallus should be sufficient to deal with the exposed nature of this site
3. Access to the site is excellent as the Gearhies pier is within 500m.
4. The site is within viewing distance of the applicant office and therefore will be monitored daily.
5. The proposed site is in a sparsely populated area (2011 Census data indicates that the total population in this Electoral District (ED) designated as 18038 (Glanlough) was 180, of which Males numbered 87 and Females were 93. The total housing stock was 167, of which vacant households numbered 87.)
6. There is sufficient space in this area of Bantry Bay for the development.
7. The proposed development will not significantly impact on tourism, NATURA 2000 sites, man made heritage, beneficial users, statutory status or the economy of the local or wider area.
8. The site is in the lee of a salmon on farm which would assist in protecting it from strong south



westerlies, while also providing it with the nutrients required for the multi trophic aquaculture. The removal of nutrients from close proximity to the salmon farm would be seen as beneficial to Bantry Bay's environment.

The proposed site **is not** suitable for the aquaculture development because of the following:

## **1. Reason: None**

## **6.2 Existing/Potential beneficial Uses**

### **Tourism/Recreation/Leisure**

As stated in 6.2 the proposed aquaculture site is located beside the L4703 which is part of the Wild Atlantic Way. It is also stated in the 2009 Cork County Development Plan that "It is important to protect the character and quality of those particular stretches of scenic routes that have special views and prospects particularly those associated with Scenic Landscapes." This area is classed as a "scenic route" and a "high value landscape."

The road at this location, based on Discovery mapping, is approximately 10-20m above sea level. Therefore the angle of view to the proposed aquaculture site will be low and not all rows will be seen clearly, as the lines will be running parallel to the shore. From the higher altitudes of Sheep's Head Way the full extent of the buoyage on the site will be seen.

From the site outline in the documentation and "approved drawings" it is envisaged that there will be 17 lines of buoys, each 110m long with a grey 210L at each end of a row. Bullet nose buoys will be used , 2m apart, within the 110m line and macroalgae will be grown from the 32mm ropes between the bullet nose buoys.

"While no objection in principle, Cork County Council made comments relating to pollution control and waste management." "The applicant will be required by the terms and conditions of the licence to comply with all applicable statutory provisions relating to aquaculture"

As stated in the "Recommendation to Grant an Aquaculture Licence" the Marine Survey Office stated no objection to this development from a navigational viewpoint." The Commissioner of Irish Lights had "No objections to the application."

The proposed aquaculture site could have a **moderate, but not significant, impact** on the scenic landscape

## Fishing/ Harvesting

The proposed site is close to Gearhies Pier and this is seen as the main access point. It should be noted that the documentation provided states that this is a private pier. The proposed aquaculture site should not impact on shore based activities such as periwinkle harvesting or angling. The site is purposely located beside an existing salmon aquaculture site. It would be expected that the presence of an existing salmon farm would have already reduced the fishing activity in the area due to the presence of mooring lines etc.

As outlined in the “Recommendation to Grant an Aquaculture Licence” the SFPA stated “that the proposed aquaculture would have little impact on the existing fishing activity” and it was stated that they had no objection to the application.

The proposed aquaculture site will not significantly impact on fishing and harvesting users of the area

## 6.3 Statutory Status

The proposed aquaculture site **will not have a significant impact** on the statutory status of the area for the following reasons:

It is not foreseen that the aquaculture operations at the site would impact on current or potential development plans or measures within the vicinity, in accordance with the Cork County Development Plans.

## 6.4 Economic Effects

The scale of the proposed aquaculture site is small and would only be expected to benefit the applicant. The long-term effect however, may be the development of a system to benefit aquaculture and seaweed production in Ireland, as this would be seen as a trial to reduce the impacts of finfish aquaculture nutrient inputs, while benefiting seaweed aquaculture development.

The proposed site is likely to have a **non-significant positive effect** on the local economy of the area and has the potential for long term non-significant positive effect on the Irish economy.

## 6.5 Ecological Effects

### 6.5.1 Designated Sites

Potential impacts of the proposed aquaculture site on the qualifying interests of nearby NATURA 2000 sites

NATURA 2000 site	Species or Habitat of Qualifying Interest (Annex habitat or species within the Habitats Directives)	Potential impacts
Site Name: Sheep's Head SAC Site Code: 000102	<p><i>To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation status; European dry heaths (30% area of the site)</i></p> <p><i>and Northern Atlantic wet heaths with Erica tetralix (1% area of the site)</i></p> <p>•<i>To maintain the Annex II species for which the cSAC has been selected at favourable conservation status; Kerry Slug (Geomalacus maculosus)</i></p> <p>•<i>To maintain the extent, biodiversity and species richness of the site</i></p> <p>•<i>To establish effective liaison and co-operation with landowners, legal users and relevant authorities</i></p>	<p>This site is over 2 km from the proposed aquaculture site.</p> <p>The conservation objectives of this site are purely terrestrial while the proposed site is in the marine environment. Terrestrial and freshwater habitats and species will not be impacted upon by this development.</p> <p>Seals and cetaceans may be attracted to the salmon farm nearby. The layout of the proposed seaweed site does not appear to pose a significant threat to seals or cetaceans. However, care should be taken in the development of the site to reduce the potential for entanglement and acoustic noise from moorings.</p> <p>A screening matrix was carried out by the Marine Institute. "There will be no direct or indirect effects on the adjacent Natura 2000 site". "Furthermore any impacts on habitats are likely to be local and not extend beyond the footprint of the activities. Therefore they are not likely to impact on any of the adjacent SAC's"</p> <p><b>No significant impact is predicted.</b></p>

It is likely that there will be a **no significant impact** on the qualifying interests of the above NATURA 2000 sites, or Annex species outside these areas sites, as a result of the proposed aquaculture operation.

### 6.5.2 Flora and Fauna

#### Possible impacts of the proposed aquaculture site on estuarine and marine biota

Source of Impact	Biota Impacted	Nature Of Impact
Obstruction	None	
Deposition/accumulation of organic matter	None	
Altered water chemistry & reductions in nutrients	Phytoplankton & Seaweed/ Fish /Cetaceans	Positive impact through the reduction of nutrient loading.
Disturbance	Birds/Otters/Seals Cetaceans	The site is located beside an existing salmon aquaculture facility and fauna at this site would be used to similar activities of boats etc.

## 6.6 General Environmental effects

Although the declaration stating that an EIS is not required for this development or the EIA screening assessment were not included in the supplied documentation, it was stated in the “Recommendation to Grant an Aquaculture Licence” that “The Minister has already determined that an Environmental Impact Statement is not required for this project”. It was also stated by the applicant (20<sup>th</sup> December 2013) point 10, “This development is sub-threshold for the requirement of an Environmental Impact Statement in accordance with the Aquaculture (Licence Application) Regulations, 1998 and amendments as it is not a Salmonid breeding installation. A request has not been made by the Minister of Agriculture, Food and the Marine for the same.”

### 6.6.1 Potential impacts

Having assessed the potential environmental impacts outlined above, the proposed site will not have a significant impact on the environment.

## 6.7 Effect on Man-Made Heritage

See section 5.9 for additional details. No National Monuments are within 500m of the proposed aquaculture development. As outlined in the “Recommendation to Grant an Aquaculture Licence” the Department of Arts, Heritage and the Gaeltacht: “from the underwater archaeological and nature conservation perspective) have no objections to the application”

The proposed aquaculture site will not significantly impact on man-made heritage of the area



## 7 Section 61 Assessment Conclusions

A technical review was carried out by Altamar Ltd. in relation to an aquaculture licence appeal for the awarding of a licence to the Daithi O'Murchu, Marine Research Station under Section 61 of the Fisheries (Amendment) Act 1997. The suitability of the place and waters at or in which the aquaculture site is proposed was assessed.

A review of the Ministerial file was also carried out. The concerns addressed by the "Seafin Group" had been adequately assessed in the Ministerial file. These included the following comments:

- 1) "No hazardous or chemicals are used in the process"
- 2) "The proposed cultivation of seaweed in proximity to a salmon farm is an example of a process termed "Integrated Multitrophic Aquaculture" i.e. "culture of species for environmental and economic benefit."
- 3) "there were no objections to the farm from a technical perspective"
- 4) The Department of Arts, Heritage and the Gaeltacht from the underwater archaeological and nature conservation perspective "have no objections to the application"
- 5) Re: Cork County Council, authors of the Cork County Development Plans, "While no objection in principle, Cork County Council made comments relating to pollution control and waste management"
- 6) The Marine Survey Office "Stated no objection to this development from a navigational view point."
- 7) "The magnitude of the visual effect can be described as moderate due to the low visual impact of the proposed structures and existing salmon farm." (Cronin Millar Consulting Engineers). "The Department's Engineering Division agrees with this statement."

**It is concluded that the proposed site is not likely to significantly impact on the environment, navigation or man-made heritage.**

## 8 Recommendations with Reasons and Considerations

Having carried out an inspection of the proposed site and in accordance with Sections 59 & 61 of the Fisheries (Amendment) Act 1997, it is recommended **to grant the licences for the site T5/547A to the Daithi O'Murchu Marine Research Station.**

The proposed site poses ***no significant impact*** on:

- 1) other users of the area,
- 2) the particular statutory status of the place or waters,
- 3) the economy of the area,
- 4) the environment generally in the vicinity of the place or water on or in
- 5) the foreshore,
- 6) on the man-made environment or heritage value in the vicinity.

The proposed site poses ***a moderate but not significant impact*** on:

- 1) Visual Landscape

## Note on Environmental Impact Statement Requirements

S.I. No. 236/1998: AQUACULTURE (LICENCE APPLICATION) REGULATIONS, 1998

Environmental impact statement required for certain applications

5. (1) An application under section 10 of the Act for an aquaculture licence **in respect of seawater salmonid breeding installations shall be accompanied by an environmental impact statement.**

(2) In the case of an application other than one referred to in paragraph (1), the Minister may require the applicant to submit an environmental impact statement **if the Minister considers that the proposed aquaculture is likely to have significant effects on the environment.**

As outlined in Statutory Instruments S.I. No. 410 of 2012 (European Union (Environmental Impact Assessment (Aquaculture) Regulations 2012:

“In the case of an application other than one referred to in paragraph (1), the Minister may require the applicant to submit an environmental impact statement if the Minister considers that the proposed aquaculture is likely to have significant effects on the environment.

“(2) An environmental impact assessment shall be carried out by the Minister in respect of an application for- (a) aquaculture of a class specified in Regulation 5(1)(i) and (ii), unless the application is one which is solely for movement of navigation buoys, internal reconfiguration of the site, upgrading equipment used on the site, technology changes or improvements, or to comply with public safety requirements or a combination of these and which the Minister determines would not be likely to have significant effects on the environment, or (b ) aquaculture of a class specified in Regulation 5(1) (ii) which does not exceed a quantity, area or other limit specified in that Regulation which the Minister determines would be likely to have significant effects on the environment.”

**This application for an aquaculture licence is not for a “salmonid breeding installation” and the Minister has considered that it is deemed not to have a significant effect on the environment. Therefore an Environmental Impact Statement is not required.**

## Recommendations

None

## 9 Draft Determination

**It is recommended to grant a licence for this site.**

## References

<http://www.archaeology.ie/ArchaeologicalSurveyofIreland/SitesandMonumentsDatabases> Accessed on October 22<sup>nd</sup> 2014

[http://cmrc.ucc.ie/publications/reports/Harbour\\_Seal\\_aerial\\_survey\\_report\\_20033.pdf](http://cmrc.ucc.ie/publications/reports/Harbour_Seal_aerial_survey_report_20033.pdf) (Accessed on October 22<sup>nd</sup> 2014)

Duck, C. & Morris, C. (2013) An aerial survey of harbour seals in Ireland: Part 1: Lough Foyle to Galway Bay. August 2011. Unpublished report to the National Parks & Wildlife Service, Department of Arts, Heritage & the Gaeltacht, Dublin.

Emblow, C.S., Picton, B.E., Morrow, C.C., Sides, E.M. and Costello, M.J. 1994 Marine communities of the Bantry Bay area, and an assessment of their conservation importance. Field survey report, Environmental Sciences Unit, Trinity College, Dublin.

- EPA (2012), Water Quality in Ireland 2007-2009. Environmental Protection Agency, Office of Environmental Assessment
- European Commissions: Managing Natura 2000 Sites. The provisions of Article 6, of the Habitats Directive 92/43/EEC
- Guiry (1973) carried out an investigation of the Marine Algal Flora in Bantry Bay (Irish Fisheries Investigations No 10) in 1973. The marine algal flora of Bantry Bay, Co. Cork).
- Hession, C., Guiry, M., McGarvey, S., & Joyce, D. (1998) Mapping and assessment of the seaweed resources (*Ascophyllum nodosum*, *Laminaria* spp .) off the west coast of Ireland. March 1998 [www.iwdg.ie](http://www.iwdg.ie) (strandings and sightings) Accessed on 11<sup>th</sup> February 2014
- Lyons D. O. (2004) Summary of National Parks & Wildlife Service surveys for common (harbour) seals (*Phoca vitulina*) and grey seals (*Halichoerus grypus*), 1978 to 2003. *Irish Wildlife Manuals*, No. 13. National Parks & Wildlife Service, Department of Environment, Heritage and Local Government. Dublin, Ireland
- National Parks & Wildlife Service, 2010 HARBOUR SEAL POPULATION MONITORING 2009-2012: Report No. 1 REPORT ON A PILOT MONITORING STUDY CARRIED OUT IN SOUTHERN & WESTERN IRELAND, 2009.
- National Parks & Wildlife Service, 2011. HARBOUR SEAL PILOT MONITORING PROJECT, 2011 [www.npws.ie](http://www.npws.ie) GIS Shapefiles, Site Synopses and Conservation objectives (Accessed Oct 21<sup>st</sup> 2014) [http://www.npws.ie/marine/marinereports/NPWS\\_2010\\_Harbour%20Seal\\_pilot%20monitoring.pdf](http://www.npws.ie/marine/marinereports/NPWS_2010_Harbour%20Seal_pilot%20monitoring.pdf) – Accessed on February 7<sup>th</sup> 2014
- McGovern, E., Cronin, M., Joyce, E and McHugh, B. (2011). An Assessment of Dangerous Substances in Water Framework Directive Transitional and Coastal Waters: 2007 - 2009 Marine Environment and Health Series, No. 38, 2011.
- Shellfish Pollution Reduction Programme (Characterisation Report Number 24) <http://www.environ.ie/en/Publications/Environment/Water/PublicConsultations-ShellfishWatersDirective/FileDownload,21895,en.pdf>
- Redmond, S., L. Green, C. Yarish, , J. Kim, and C. Neefus. 2014. New England Seaweed Culture Handbook-Nursery Systems. Connecticut Sea Grant CTSG-14-01. 92 pp. PDF file. URL: <http://seagrant.uconn.edu/publications/aquaculture/handbook.pdf> . 92 pp.

## Appendix I. Grounds for appeal as outlined by the “Seefin Group”:

1. “We wish to appeal the decision of the Minister for Marine granting a licence for the cultivation of macro-algae in Gearhies, Co Cork (T5/547 A). Specifically, we address our appeal against the background of the Minister's decision not to seek an Environmental Impact Statement and contend that the Ministerial Determination issued in relation to the application, denying any meaningful consultative process, was indicative of the decision to grant the licence as a *fait accompli* and effectively denied any meaningful public engagement or consultative process. In his determination the Minister contends that 'it (proposed aquaculture activity) is not likely to have significant effects on the environment' and that an EIS is not required. Our submission details serious concerns arising from the granting of the licence - concerns that arise from specific statements which appear to have guided the Minister in granting the licence.”

“Giving reasons for not directing the provision of an EIS, the Minister states that he had regard to the provisions of national and European regulations and directives. Having consulted with counsel we have been advised that before seeking redress at both national and European levels we are required to exhaust established procedures and appeal the decision. Counsel has advised that, *ab initio*, the Minister's *modus operandi* and ultimate decision lacked transparency, that they represented clear examples of the predetermination of an outcome while an approved assessment process was available but not engaged with, that the reasons given for not requiring an EIS represented a blatant denial of potential risks and problems, that it should be contextualised against the marked avoidance of other such EIS requirements since he has taken office, and that a basis for a legal challenge to this decision is compelling and open to engagement to us at national and, if necessary, at European Union levels. We await your consideration of this submission which addresses the reasons for the Minister for choosing not to require an EIS and his granting of the licence, and your reply.”

### “Submission to appeals board

- a) The nature and scale of the proposed aquaculture activity: The site chosen for this proposed development is totally unsuitable. This inlet is already used intensely for salmon farming and given the major escape of approximately a quarter of a million fish as a result from cages which had not been properly maintained over the years there can be little hope that yet another ingression of aquaculture into this area of Bantry Bay will result in improved levels of environmental responsibility and propriety. The cages from which these fish escaped had already dragged their mooring attachments in 2005/2006 so little would appear to have been learned from that incident.
- b) The limited magnitude and extent of the direct impacts arising from the proposed aquaculture activity: This is totally aspirational. Studies such as those cited indicate that there are real and meaningful concerns surfacing for more than a decade. In intensive and semi-intensive aquaculture, various chemicals have been used for the prevention and control of disease, water treatment, removal of predators and prevention of fouling organisms. In some cases concern has arisen over the potential impacts of such chemicals on the environment and the health of farm



workers and consumers. So far, there are only a few reports of chemicals used in seaweed culture to control disease, remove fouling organisms and predators and to assist processing. Formaldehyde has been used for controlling the growth of epiphytes on *Gracilaria* (Santelices and Doty, 1989)<sup>1</sup> and slaked lime has been used to control other predators (North, 1987)<sup>2</sup>. It is important to ensure that practices continue to be conducive to production of a healthy project with minimal environmental impact. And therein lies the problem. The co-existence of two aquaculture industries side-by-side would greatly increase the probability of such seaweed culture chemicals being used. And the record of the Minister's department with regards regulation has been derisory. Two un-licensed test lines for macro-algae were anchored, seeded and harvested by the current applicants and totally ignored by the Minister's department.

- c) The absence of any protected structures or recorded monuments in the area of the proposed aquaculture activity: The European Environment Agency has suggested that significant changes are already underway and more can be expected as a result of human intervention ... 'Human activities are causing unprecedented environmental changes for coastal and marine ecosystems. Pressures from fishing, pollution from land- and sea-based sources, urbanisation, loss and degradation of valuable habitat, and invasions of non-native species are growing worldwide. All these impacts are likely to be exacerbated by the changing climate'<sup>3</sup>. Virtually the entire peninsula west of the proposed site is designated as a Natura 2000 site of special environmental importance. Yet the Minister has dismissed the significance of this designation with the sweep of a keypad in suggesting that the absence of any protected structures or recorded monuments 'in the area of the proposed aquaculture activity' renders the Natura 2000 designation totally meaningless and redundant.
- d) The low population density of the surrounding area: This statement is factually incorrect and intentionally misleading. It is clearly intended to suggest that virtually nobody lives in the proximate area. There are in fact literally scores of homes within a very short distance of and as, if not more significantly, within full vista of the proposed site. The Minister's statement is very light on accuracy and has been presented with the clear intention of justifying the granting of the licence for this development.
- e) The low visual impact of the proposed aquaculture activity: Once again, this statement is misleading and does not represent the real situation. Cork County Council has recognised the visual heritage attached to the Sheep's Head Peninsula and has designated it as a scenic route and has specifically noted the importance attached to the views from the east-west road with full view of the proposed development: the A126.

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<sup>1</sup> Santelices, B, and Doty, M.S. 1989, A review of *Gracilaria* farming. *Aquaculture* 78, 95-133

<sup>2</sup> North, W.J. 1987. Oceanic farming of *Macrocystis*, the problems and non-problems, *Seaweed Cultivation for Renewable Resources* [ed, K.T. Bird and P.H. Benson, pp 39-68.]

<sup>3</sup> [http://www.eea.europa.eu/themes/coast\\_sea](http://www.eea.europa.eu/themes/coast_sea)

If one travels this route from an eastern point of origin, e.g. The Westlodge Hotel in Bantry, the first open stretch of water one views is the site which the Minister has designated as suitable as not being injured by the low visual impact of the activity. This view is taken from high up the ridge to the south of the proposed development - a perspective from which an even more dominant impact of the site and potential impact would be visible. And this viewpoint is on the famed Sheep's Head Walk- accepted to be one of the loveliest and most cherished in Ireland and abroad.

This assertion on our part is not a localised or one made without basis. The Wild Atlantic Way is being promoted with energy to welcome additional tourist numbers to peninsulae such as that under discussion: Sheep's Head. Aesthetic aspects and multiuser conflicts have surfaced as contentious issues and the potential aesthetic impact of aquaculture has dominated arguments over aquaculture development in some countries and aquaculture planners are having to ensure that potential aesthetic changes are considered during the development of new aquaculture ventures in order to avoid conflicts with other users (Dixon et al., 1990)<sup>4</sup>."

- f) "The non-use of toxic or hazardous substances as part of the aquaculture activity: The proposed site is immediately adjacent to an existing salmon farm composed of six cages in total (two sites of three cages each). Research has indicated that eutrophication -- pollution caused by activities such as fish farming -leads to excessive amounts of nutrients. The known consequences of cultural eutrophication include blooms of blue-green algae tainted drinking water supplies, degradation of recreational opportunities<sup>5</sup>.

Given the widespread extent of water quality degradation associated with nutrient enrichment, eutrophication has and continues to pose a serious threat to potable drinking water sources, fisheries, and recreational water bodies."<sup>6</sup>

Furthermore, Art has found that in eutrophication ."The nutrients especially phosphates and nitrates, typically promote excessive growth of algae. As the algae die and decompose, high levels of organic matter and the decomposing organisms deplete the water of available oxygen, causing the death of other organisms, such as fish."<sup>7</sup>

Yet, and quite incomprehensively, this licence grant ignores completely the co- existence of the salmon cages which inevitably discharge large nutrient levels into the water side-by-side with the proposed macro-algae site. It beggars belief that a rigorous scientific analysis of the two sites being placed in such proximity would result in the approval of this licence.

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<sup>4</sup> Dixon, F. Cox, R. and Bourne, N. 1990. Shellfish and marine p nt aquaculture in British Columbia - conflicts and solutions. Paper presented at World Aquaculture '90. Jun 10-14, 1990, Halifax, Canada.

<sup>5</sup>Chislock, M. F., Doster, E., Zitomer, R. A. & Wilson, A. E. (2013) Eutrophication: Causes, Consequences, and Controls in Aquatic Ecosystems. Nature Education Knowledge 4(4):10

<sup>5</sup> Ibid

<sup>7</sup> Art, H.W., 1993, Eutrophication, in Art, H. W. ed., A dictionary of ecology and environmental science (1<sup>st</sup> ed.): New York, Henry Holt & Company,

And if one looks at the historic development of aquaculture in this location it is striking that the (now closed) much larger scaled Bantry Bay Mussels - the premises of which are visible in the bottom-right of the photograph - never applied for mussel lines in the waters immediately in front of his factory. Why not? Quite clearly the eutrophication effect of the salmon being raised in the inlet were recognised and acted on by never applying for an unsustainable aquaculture adjacent to these salmon cages.

- g) The minor risk of accidents occurring as result of the proposed aqua culture activity: Given the history of previous incidents in associated aquaculture in this inlet (already referred to as the 2005/2006 cages being released onto Reen Point (visible on right- hand side of photograph) and the escape of the quarter of a million salmon in February 2014 this aspiration is just that - an aspiration as opposed to a risk assessment of the potential for accidents or incidents if this development is allowed progress.
- h) The low risk of impacts on navigational safety: A reading of the justifications for not demanding an Environmental Impact Statement leads one to conclude that the writer(s) concluded that everything will be fine, everything will be okay because we hope it will be. The Whiddy Island Oil Storage facility is located in Bantry Bay, just to the east of the proposed aquaculture site. In 2012, the year for which The Central Statistics Office provides its last published full-year figures, Bantry Bay received 2,264,000 gross tonnage of traffic. Virtually all of this was generated by the Whiddy facility while Glengarriff Harbour (north-east of the proposed site) has long been established recipient of luxury cruise liners and Bantry inner harbour receives almost weekly visits by Irish naval ships who use the bay for crew changes, etc. Given the previous incidents referred to by salmon cages evacuating their moorings what guarantees can credibly be sustained in this site? And if any ropes or other attachments from these macro-algae lines gain release and enter the navigational channels for Bantry Bay what will the 'low risk of impacts on navigational safety' count for then? The potential for a major environmental disaster are present if this development is allowed to proceed. And it is even more extraordinary for a minister of an Irish government which has a national oil reserve interest in the Whiddy Island complex to countenance the possibility of putting national interests at such a low premium. It will certainly make interesting reading to have a journalistic investigation of the ranking of priorities which are in direct conflict with each other.
- i) The minimal impact on recreational use of the adjoining use of the adjoining foreshore: Most significantly, the health of any people using the foreshore will be put at risk if the chemicals referred to in b) above are used. It would certainly raise issues of dereliction of public responsibility if water tests indicate the presence of such chemicals and their source traced to aquaculture in the locality. There have been too many examples of hopefulness being placed behind a rigorous scientific assessment of what emerges under a properly constructed EIS. Its absence in the case of the awarding of this licence strongly resonates the avoidance of real responsibility and transparency in the salmon escape/,deaths' in February 2014 which were

addressed as a Dail question and also, inter alia, featured on RTE Radio in Today with Sean O'Rourke.

Similarly, the presence and enjoyment of the existing parking/viewing points that would overlook the proposed aquaculture development would be greatly diminished for tourists and locals alike by the fifteen acre aquaculture site immediately offshore.

- j) Habitats Screening Matrix for aquaculture activities in outer Bantry Bay, Co Cork, 2013: In relation to the other foreshore areas of the outer bay, Gearhies is overdeveloped. Such excessive use of an area which has been designated as of high amenity value (Cork County Council), part of the Wild Atlantic Way and The Sheeps Head Walk will undoubtedly result in an intolerable spoiling of a cherished viewing inlet through additional pollution discharge and visual destruction of the placement of a fifteen acre site dominated by barrel flotation, longlines and accompanying raft spaces.

## Appendix II *Alaria esculenta*

### Scientific Classification

**Phylum** : Heterokontophyta

**Class** : Phaeophyceae

**Order** : Laminariales

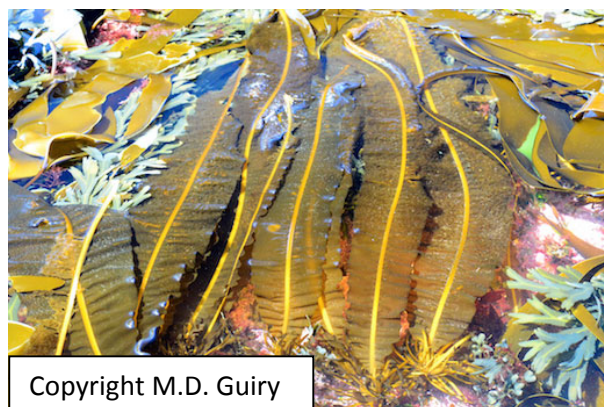
**Family** : Alariaceae

**Genus** : *Alaria*

**Species** : *Alaria esculenta* (Linnaeus) Greville

**Common Names** : Irish Wakame, Atlantic Wakame, Dabberlocks, Murlins, Winged Kelp and Honeyware

**Irish Names** : Láir, Láracha



**Description:** Plants with olive or yellow-brown fronds to 4 m long and 25 cm wide, more often about 1 m and 7.5 cm wide. Attached by a root-like holdfast at the base from which a narrow flexible stipe arises which continues into the leafy part of the plant as a distinct mid-rib, generally with a yellow-brown colour (above). The reproductive structures, apparent as dark-brown areas, are confined to unbranched leafy appendages borne on the stipe, usually in two rows.

**Habitat:** Generally growing on rock in wave-exposed places, often forming a band at low water and in the shallow subtidal, but also occurring in tidal pools in the lower shore.

**Distinguishing features:** Two kelps in the NE Atlantic have distinct midrib: the introduced alien *Undaria pinnatifida* (currently on the S coast of England and NW France) and *Alaria esculenta*. In *Undaria*, the midrib is much more flattened and is more or less the same colour as the frond, and the reproductive structures are borne basally in a fluted structure. In *Alaria*, the midrib is more or less terete (circular in cross-section), is usually a lighter colour, and the reproductive structures are borne at the base of the frond in special leaflets called sporophylls" ([www.seaweed.ie](http://www.seaweed.ie))

**History and Uses** : "Irish Wakame – *Alaria esculenta* – is mainly used as a Sea Vegetable – edible seaweed. It has a slightly sweetish taste. Like all sea vegetables it is easily digested and can be used extensively in cooking. In Japan, it is *Undaria pinnatifida* that is known as Wakame and *Alaria esculenta* has a very similar taste to it, and they both belong to the same Family. It is known for its low light limitations and by mid summer most of the plants have died back.

Prannie Rhatigan has done extensive work with Irish Wakame – *Alaria esculenta* – and there are numerous recipes in her book "Irish Seaweed Kitchen – The Comprehensive Guide to Healthy Everyday Cooking With Seaweeds" (ISBN 978-1-906886-22-6)"

<http://www.irishseaweeds.com/irish-wakame-alaria-esculenta/>

BIM Booklet on farming of *Laminaria digitata*

<http://www.bim.ie/media/bim/content/publications/BIM%20Aquaculture%20Explained%20Issue%2026%20-%20Cultivating%20Laminaria%20digitata.pdf>



## Appendix III SITE SYNOPSIS Sheep's Head SAC

Site Code: 000102

Sheep's Head in Co. Cork is a narrow peninsula with a north - east to south - west orientation, bounded on the northern side by Bantry Bay and on the southern side by Dunmanus Bay. The site extends from near Ahakista in the east, to the Sheep's Head lighthouse in the west. A rocky ridge of sandstone, supporting heath vegetation, runs the entire length of the peninsula. The heath vegetation extends from the summits of the ridge to the seashore on the more exposed northern side, but grades into enclosed farmland in the south. The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes): [4010] Wet Heath [4030] Dry Heath [1024] Kerry Slug ( *Geomalacus maculosus* ) The rocky parts of the peninsula are covered by dry heath, where Western Gorse ( *Ulex gallii* ), Heather ( *Calluna vulgaris* ) and some Bell Heather ( *Erica cinerea* ) form a compact canopy moulded by the wind. On ledges with some trapped soil, Common Bent ( *Agrostis capillaris* ), Red Fescue ( *Festuca rubra* ) and Heath - grass ( *Danthonia decumbens* ) are more common, with some Wild Thyme ( *Thymus praecox* ), Common Dog - violet ( *Viola riviniana* ) and, locally, Burnet Rose ( *Rosa pimpinellifolia* ) - species that are characteristic of this community over much of the south coast. The Pale Dog - violet ( *Viola lactea* ), a rare and legally protected (Flora (Protection) Order, 1999) species listed in the Irish Red Data Book, has also been recorded from this area. The western extremity of the headland is marked by numerous rocky ribs on which the Spotted Rock - rose ( *Tuberaria guttata* ), a threatened species listed in the Irish Red Data Book, reaches spectacular numbers. It grows in open rocky places with Sheep's - bit ( *Jasione montana* ), Early Hair - grass ( *Aira praecox* ) and English Stonecrop ( *Sedum anglicum* ). Where water accumulates, especially in the depressions between the ridges of sandstone, peat develops more thickly and here wet heath or even small pockets of blanket bog are found. These areas are characterised by the growth of mosses, especially bog mosses ( *Sphagnum* spp.). Other typical species of the wet heath are Purple Moor - grass ( *Molinia caerulea* ), Carnation Sedge ( *Carex panicea* ), Heather, Cross - leaved Heath ( *Erica tetralix* ) and Creeping Willow ( *Salix repens* ). The wet heath often merges into fen or swamp vegetation in the vicinity of lakes. In such situations Bog Pondweed ( *Potamogeton polygo nifolius* ), Marsh St. John's - wort ( *Hypericum elodes* ) and Common Reed ( *Phragmites australis* ) are found. Some of the species present suggest that there can be nutrient input from the slopes above, or from sea spray. Deeper basins have remained as lakes, such as Lough Akeen and Lough Doo, which are largely free of marginal vegetation. Laharandota Lough lies in a more circular depression and has shallow peaty edges where cutting has much enlarged the water area. Royal Fern ( *Osmunda regalis* ) and Eared Willow ( *Salix aurita* ) characterise these parts , along with Bottle Sedge ( *Carex rostrata* ), Bogbean ( *Menyanthes trifoliata* ) and Ragged - Robin ( *Lychnis flos - cuculi* ). In the vicinity of this lake a laneway is colonised by the uncommon Sand Spurrey ( *Spergularia rubra* ). Some small patches of fen peat and hillside flush occur throughout the site. These more mineral - rich areas are characterised by Black Bog - rush ( *Schoenus nigricans* ), Bog - myrtle ( *Myrica gale* ), Purple Moor - grass, sedges ( *Carex flacca* , *C. pulicaris* , *C. echinata* ) and a range of more calcium - loving mosses such as *Campylium stellatum* , *Aneura pinguis* and *Bryum pseudotriquetrum* . Small stands of deciduous woodland occur near the disused copper mine in Killeen North townland. These are dominated by Sessile Oak ( *Quercus petraea* ), Downy Birch ( *Betula pubescens* ), Holly ( *Ilex aquifolium* ), Hazel ( *Corylus avellana* ) and Rusty Willow

( *Salix cinerea* subsp. *oleifolia* ), with a ground layer of Bramble ( *Rubus fruticosus* agg. ), Bracken ( *Pteridium aquilinum* ), Honeysuckle ( *Lonicera periclymenum* ), Irish Spurge ( *Euphorbia hyberna* ) and Hard Fern ( *Blechnum spicant* ), amongst others. The site is of note for holding a population of Kerry Slug ( *Geomalacus maculosus* ), a species that is listed on Annex II of the E.U. Habitats Directive and one that has a remarkably disjunct distribution in Europe, being known only from south - west Ireland, north - west Spain and northern Portugal. At Sheep's Head the species is particularly associated with open areas of rocky wet heath and grassland. Sheep's Head is an important ornithological site and much of it is a Special Protection Area (SPA) under the E.U. Birds Directive. It supports an important population of Chough, a species that is listed on Annex I of this Directive. The birds are found in pairs and flocks, and the main concentration of the species at Sheep's Head is near the tip of the peninsula, where an estimated 12 - 13 pairs were recorded in a survey in 2002/03. Roosting is confined to the southern side of the end of the peninsula, with small numbers (up to eight birds) gathering occasionally. The site overlaps with the breeding territory of a pair of Peregrine, a species that is also listed on Annex I of the E.U. Birds Directive. Black Guillemot nest on the coast and the population found on Sheep's Head and the nearby Mizen Head Peninsula is of national importance; several other seabird species also use the site, but in small numbers, including Fulmar, Shag, Great Black - backed Gull and Herring Gull. Sheep's Head is notably unaffected by over - grazing though it does support some cattle and sheep. The main conservation value of the area is the presence and good condition of both dry heath and wet heath, habitats that are listed on Annex I of the E.U. Habitats Directive, as well as the population of the Annex II species, Kerry Slug.

The presence of two Red listed plant species, Pale Dog violet and Spotted Rock rose, is of note.

Sheep's Head is also an important ornithological site, most notably for the population of Chough that it supports.