Technical Advisors Report
AP1/2015 Licence Appeal Review

Prepared for the Aquaculture Licences Appeals Board
by

ALTEMAR
Marine & Environmental Consultancy

January 2016

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DOCUMENT CONTROL SHEET

Altemar, Marine and Environmental Consultants

Client:	Aquaculture Licence Appeals Board
Project Title:	AP1/2015 Licence Appeal Review
Document Title:	Technical Advisors Report
Document No:	ALAB/AP1/2016b

Revision	Status	Prepared by	Reviewed by	Date
01	First draft	Bryan Deegan	S Corcoran	16/07/2015
02	Second draft	Bryan Deegan	S Corcoran	27/07/2015
03	Third draft	Bryan Deegan	S Corcoran	04/01/2015
04	Fourth draft	Bryan Deegan		12/01/2016
05	Fifth draft	Bryan Deegan	S Corcoran	22/01/2016

Contents

Executive Summary

Description:	Aquaculture of Marine Shellfish (Oysters on trestles) in “Seal Cove”, Castletownbere, Bantry Bay
Licence Application	Site T05/579N1
Appeal Reference	AP1/2015
Department Reference No.	T5/579
Applicant	Dean Murphy, Felane, Castletownbere, Co. Cork.
Minister’s Decision	To Refuse Aquaculture and Foreshore Licences
Appeal	
Type of Appeal	Appeal against the refusal by the Minister for Aquaculture, Food and the Marine to grant Aquaculture and Foreshore Licences to Dean Murphy for the cultivation of oysters using bags and trestles.
Appellant(s)	Dean Murphy, Felane, Castletownbere, Co. Cork.
Observers	None
Technical Advisor	Altemar, Marine and Environmental Consultants www.altemar.ie
Site Inspection	Carried out on the 4th and 5th July 2015 by Bryan Deegan

1. General Matters/Appeal Details

1.1 Appeal Details and Observer Comments/submissions

Date Appeal Received by the Aquaculture Licences Appeals Board: 26th January 2015

Location of Site Appealed: Bere Haven Sound, Bantry Bay, Co. Cork.

1.2 Name of Appellant

Appellant	Address
Mr. Dean Murphy	Felane, Castletownbere, Co. Cork

1.3 Name of Observers

No official observations outside of appellants/applicants response were submitted.

1.4 Grounds for Appeal

The grounds for appeal are summarised below:

Substantive Issues

a) *Wild Fisheries*

The appellant appealed the Minister's determination to refuse the granting of an aquaculture licence "on the grounds that the Minister's decision lacks validity in stating that the proposed development "could considerably restrict wild fisheries.""

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.*"

It should be noted that the Appellant is also the Applicant, as the appeal is in relation to the refusal of the Minister to grant aquaculture and Foreshore licences. A detailed 5 page response was sent by Cronin Millar Consulting Engineers on behalf of Mr. Dean Murphy on the 23rd January 2015 and received by ALAB on the 26th January 2015. This response, submitted within the 1 month deadline, outlined the following issues in relation to the grounds for licence refusal i.e. the proposed aquaculture site "could considerably restrict wild fisheries":

A) Water Depth

"The site of the proposed aquaculture is intertidal i.e. at low tide there is a lack of water depth at the site. We estimate that at a mean low water level there is a depth of water of approximately 1m at the southernmost section of the site. This is wholly unsuitable as a habitat for fish; therefore the proposed aquaculture will not adversely impact on wild fisheries". "It is clear that harvesting of wild fisheries is not possible at such a site"

B) Senior Port Officer communications to SFPA

The applicant outlined two communications from the Senior Port Officer to the SFPA:

1) 8th April 2013 "The area subject to the application is being fished for shrimp. Periwinkles are also harvested from the area. Both of these activities will be considerably restricted in the event that the application is successful. Because of the marine topography in outer Bantry Bay there are few periwinkle harvesting locations on the southern side of the Beara Peninsula."
2) 15th October 2013 "the type of shore area available in Seal Cove is unusual along this particular section of the Beara Peninsula (West of Adrigole) and it is particularly unusual on the mainland coast adjacent to the fishing port of Castleownbere from which a small number of small vessels engage in shrimp harvesting…. It is also possible to harvest shrimp from the shore here without using a vessel. This would not be easily done elsewhere in the area as it is mostly steep rocky shore"

The appellant states that the above comments from the Senior Port Officer are "misleading" as:

1) "….there is no legal or authorised harvesting of periwinkles at this site"
2) "There are limited numbers of periwinkles at the site"
3) "In the opinion of the appellant, BIM's Regional Development Officer and the previous Senior Port Officer in Castletownbere, the site is not suitable for shrimping as it is shallow and intertidal"
4) "We are not aware of methods to harvest shrimp without a vessel…."

The appellant has consulted with the previous Senior Port Officer (Mr Dominick Gallagher) and "he has stated that the site is not suitable for trawling and gill netting of demersal or pelagic fish species" ….. "potting for shrimp, crab lobster or prawns or for the dredging of scallops". "In his closing remarks…the proposed aquaculture will not negatively impact on wild fisheries." This communication dated 19/1/2015 was noted as an appendix to the letter.

C) Public submissions During the Application Process

"During the application process, only two objections were received from fishermen in Castletownbere. One of these objections has since been withdrawn". This letter or withdrawal is noted in the Departmental file. "According to Bord Iascaigh Mhara, there are 106 inshore vessels (less than 12m in length) in the port of Castletownbere."

D) Bord Iascaigh Mhara

1) Communication from David Millard Regional Development Officer, BIM, to the appellant following site visit:
   "I would observe that the area seems eminently suitable for intertidal oyster cultivation, I did not observe evidence of any substantial competing inshore fishery activity which might be discommoded by the presence of a bag and trestle oyster farm and furthermore this kind of activity would not adversely affect any existing fishery."

   This communication dated 20/1/2015 was noted as an appendix to the letter.

2) Communication from Mr. Huan Tan, Fisheries Development Regional Officer following site visit:
   "The proposed site and aquaculture operation would, in my opinion, not overlap or interfere with or displace any inshore commercial fishery in the specific area or wider harbour area" …. "including the commercial hand gathering of molluscan and bivalve shellfish".
   This communication dated 23/1/2015 was noted as an appendix to the letter.

E) Murrisk Shellfish

The appellant stated that he consulted with Mr Sean O Grady of Murrisk Shellfish who stated that "winkle pickers can still pick periwinkles around and through the oyster site". The "appellant would have no objection to the legal and authorised harvesting of periwinkles at the sites should this be the case."

Additional Information Request submitted by ALAB to the Applicant

Following a request for additional information made by ALAB to the applicant on 24th August 2015 the following information was provided by Cronin Millar and received by ALAB on the 7th September 2015: It should also be noted that as outlined in a communication from Cronin Millar to ALAB on the 11th January 2016 "The site to be licensed is Site T05/579N1 comprising 2.96ha as indicated on the enclosed drawing C6111A111D(Plate 1) "Location Maps, Plans and Details". The original site area was reduced during the application process.

A) Farm Layout

A copy of the proposed trestle layout plan for the site was submitted by Cronin Millar (Plate 1).

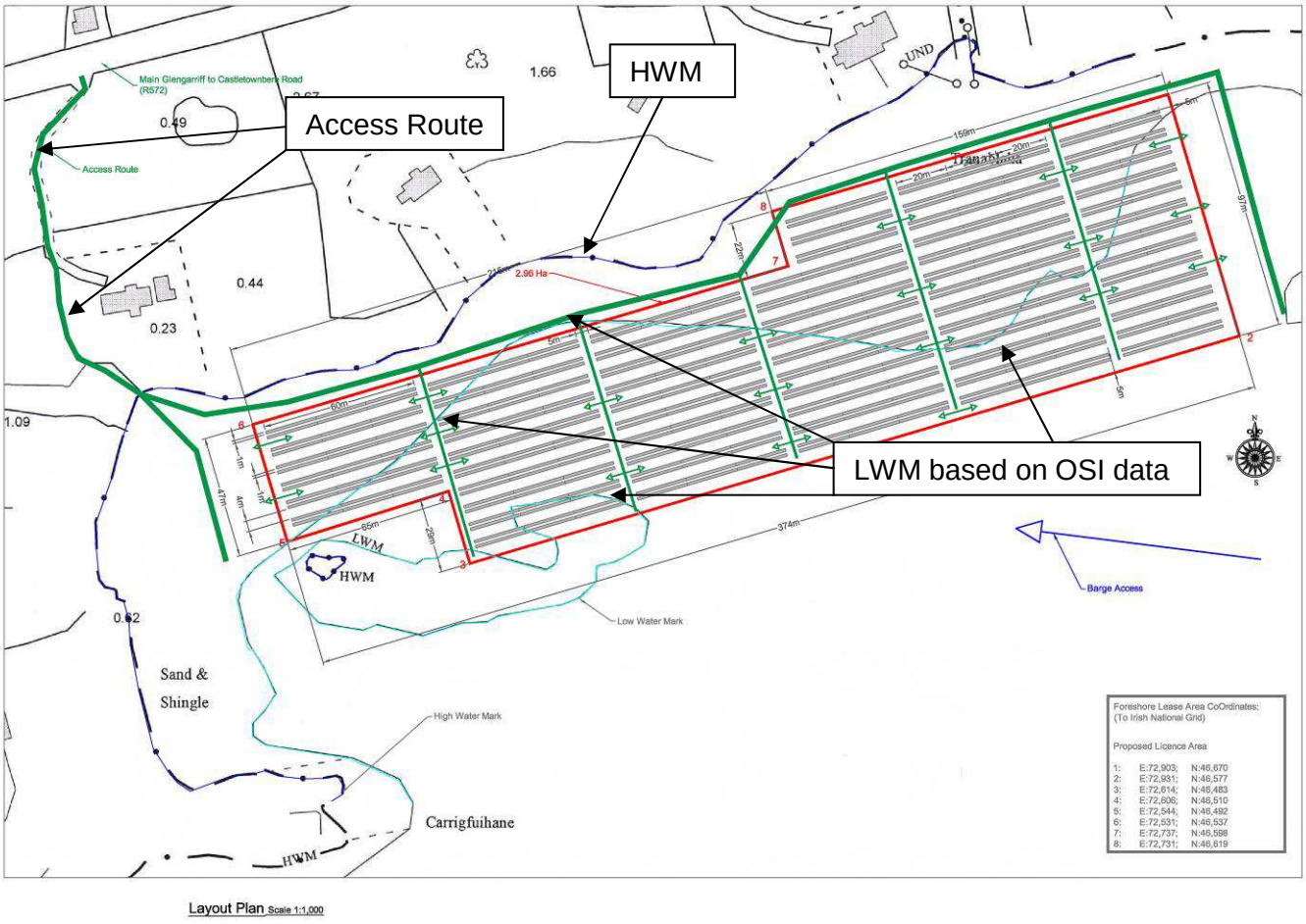


Plate 1. Proposed farm layout and trestle plan (Drawing 26/08/2015)

B) Details of the proposed production plan for the site

It was stated in this correspondence that the applicant has been farming and developing another licenced farm in the area and revised outputs based on pro rata kg/ha basis were submitted:

Year	Original 2012 estimated output (tonnes)	Revised 2015 estimated output (tonnes)
1	0	0
2	5	10
3	8	30
4+	10	45

C) Site Access

Landside Access

Access to the site was indicated on the trestle layout plan (green line) (Figure 1). As outlined in the reply "access to the site from the R572 (Glengarrif to Castletownbere road) will be via an existing access road which is approximately 150m long by 2.5m wide" Plate 2.

Plate 2: Access Road

Sea side Access

Approximately 90% of the work on site (T05/577N1) in Berehaven Sound has been carried out by a small workboat (Plate 3) and a floating barge (Plate 4). "Mr. Murphy believes that this site will be readily accessible from the road and allows easier access during the tidal cycle…Mr. Murphy intends to commission the building of a purpose built flat bottomed work boat which will be specifically designed for oyster farm work" It was also stated by Cronin Millar on the 11th January 2016 that "Access to the site shall be by means of the public road and via a floating barge. The Appellant does not currently have clarification with regard to the ownership of the public road which currently serves the Site and a number of houses. The Appellant can fully access the site from a floating barge if required. Access via the road would not be required in this case."

Plate 3: Small Workboat

Plate 4: Aquaculture Barge

D) Clarification as to how you anticipate the expected site production of 13 tonnes will support 6 jobs.

"it is estimated that a yield of 10-15 tonnes per hectare per annum may be achieved for this site. This would result in an eventual (year 4+) yield of up to 45 tonnes per annum."

2. Consideration of Non-Substantive Issues

Each issue raised by the appellants 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.

The applicant/appellant submitted a request for an oral hearing with his letter received on 26/01/2015. It is stated that he also submitted the requisite fee for the appeal and request for the oral hearing (€380.92 + €76.18).

Having reviewed the Ministers File, additional correspondence from the appellant/applicant/ Department of Agriculture, Food and the Marine and carried out a site visit, there is sufficient evidence in this technical report to make a clear decision in relation to the appeal. As a result, it is felt that an Oral Hearing is not required in this case.

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 and were reviewed:

1. Copy of the Application Form with maps, charts, co-ordinates and drawings
2. Copy of the EIA Screening Assessment
3. Copy of the Ministerial Determination in relation to EIS requirements.
4. Copy of submission to the Minister
5. Copy of relevant observations from technical advisors (SFPA)
6. Copy of objections at Public Notice
7. Copy of the Applicants Response to concerns and objections
8. Copy of Notification to the Applicant of Ministers Decision
9. Copy of the advertisement of Ministers Decision
10. Overview map of sites in Bere Haven Sound.

ArcGIS shapefiles were also sent from the Department to Altemar Ltd. for the review.

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). 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^{o}C (July/Aug) and Min of 5^{o}C (January/February).

Figure 1. Bantry Bay and location the site under appeal.

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, near the proposed aquaculture site, in the outer part of Glengarriff 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 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 Glengarrif Harbour.

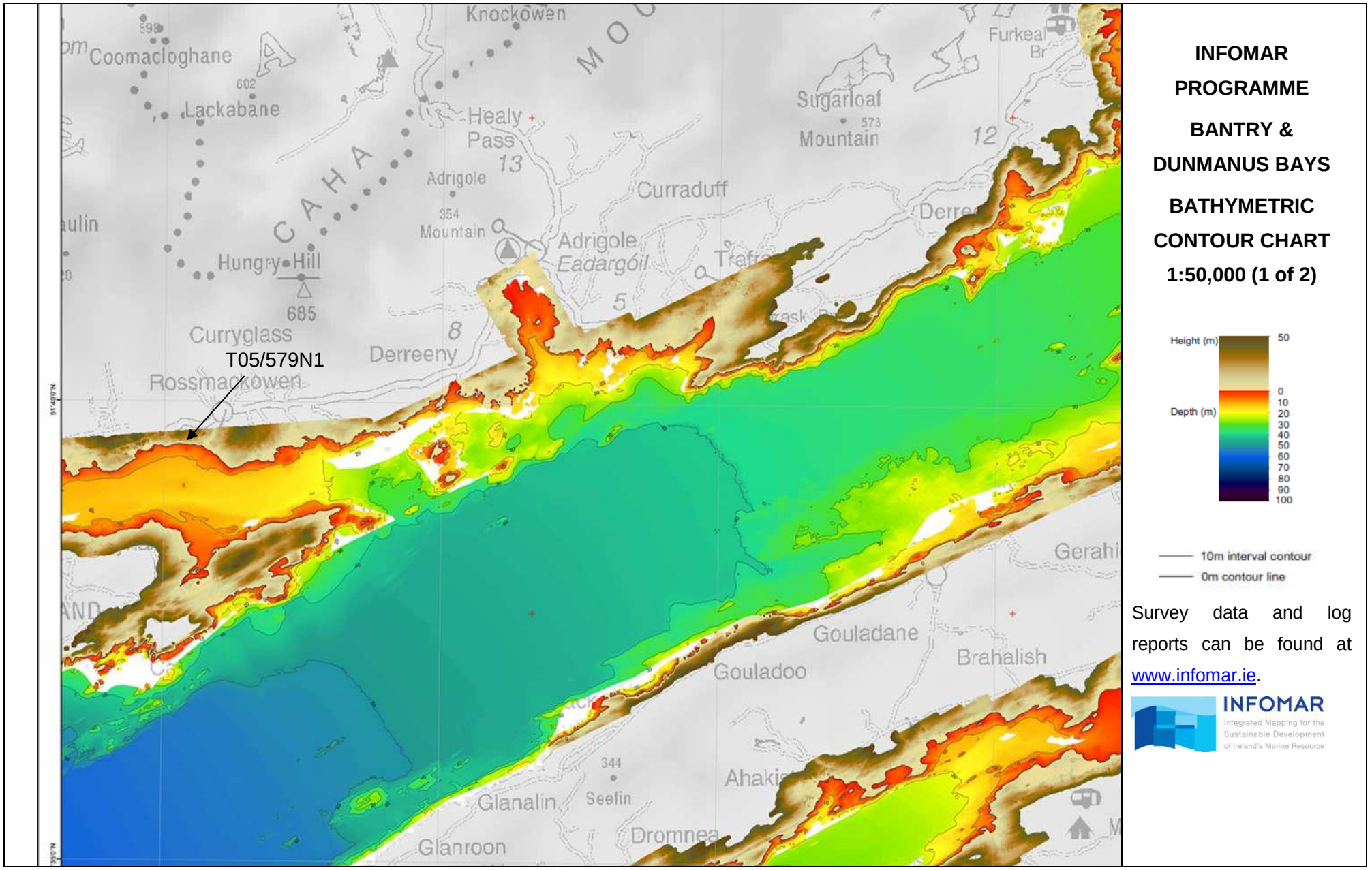
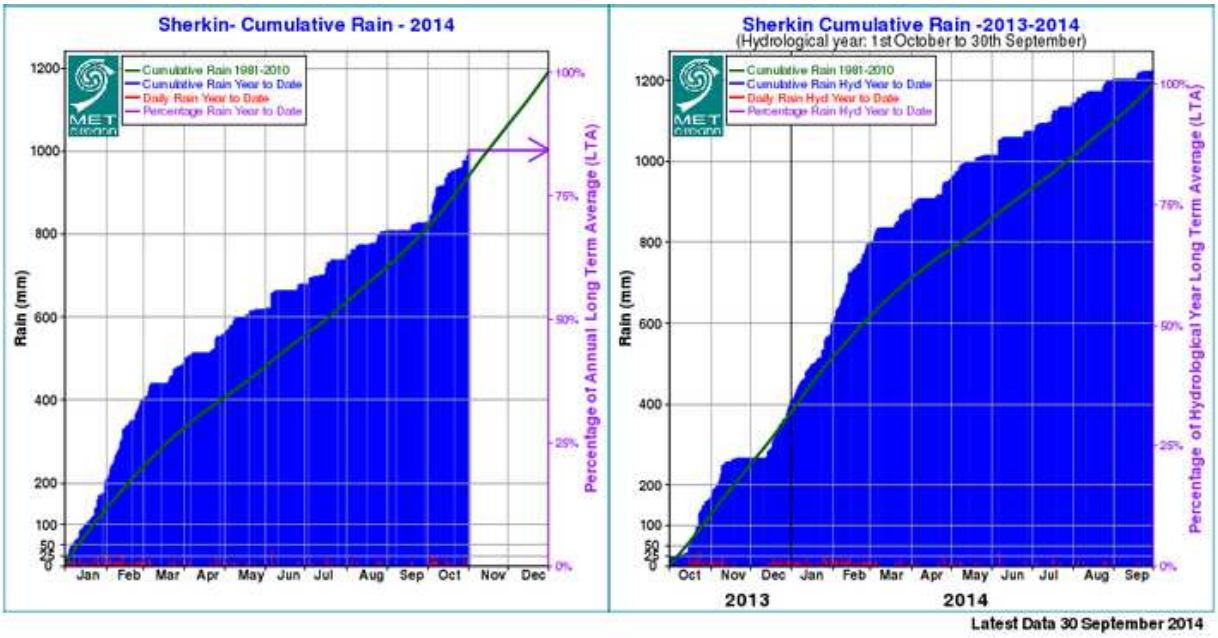


Figure 2: Bathymetry of Bantry Bay based on INFOMAR Data.



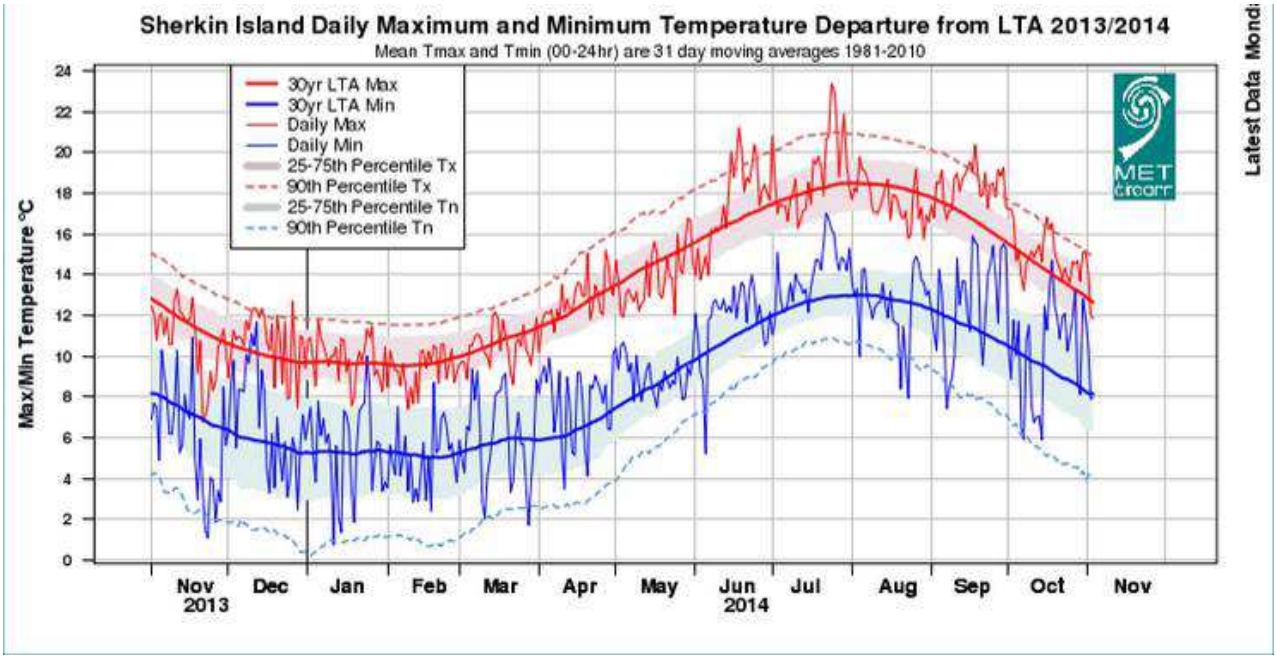


Figure 3. Sherkin Island Marine Station weather data.

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 and trout

Data from 2014 indicates that 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. (purchased by Marine Harvest) also operate two salmon farms at Aghabeg in the bay. Based on the Departmental GIS shapefile there is also a marine based rainbow trout site near the proposed aquaculture site.

6. Designated shellfish areas

There are six Designated Shellfish Areas in Bantry Bay (Figure 4):

a. **Castletownbere Shellfish Area** lies between Bere Island and the mainland, on the northern shore of outer Bantry Bay. It is 6.2 km² 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. The aquaculture site (T5/579N1) is within this Designated Shellfish Area (Figure 4).

b. **Bantry Bay Inner Shellfish Area**, is 11 km² 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.

c. **Bantry Bay South Shellfish Area** is 2.9 km² 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 km² 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 km² 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 km² in area and is located on the southern shoreline of Bantry Bay, extending out into the Bay east of League Point.

Aquaculture is carried out by several operators in the Castletownbere designated shellfish area. As can be seen from figures 5 & 6, derived from the Departmental GIS shapefile, provided for this appeal, and Bing satellite imagery, there are several aquaculture sites licenced in the vicinity of the site under appeal. Aquaculture sites in close proximity to this site are primarily subtidal sites for mussel, with one marine site licenced for rainbow trout. Dean Murphy has another licenced site on the western side of the Castletownbere designated shellfish area, also on the northern shore. It is important to note that in a communication from Cronin Millar (11th January 2016) that the licenced area was reduced during the application process to the scale of the drawing seen in Plate 1 (p8). This in essence is the same aquaculture site than initially outlined in the Departmental GIS shapefile, with the western portion of the site removed. It should be noted that the difference in site outline was taken into account in this Technical Advisor Report, even though the initial field assessment was carried out on the larger, but all-encompassing GIS site outline provided by the Department in relation to this appeal.

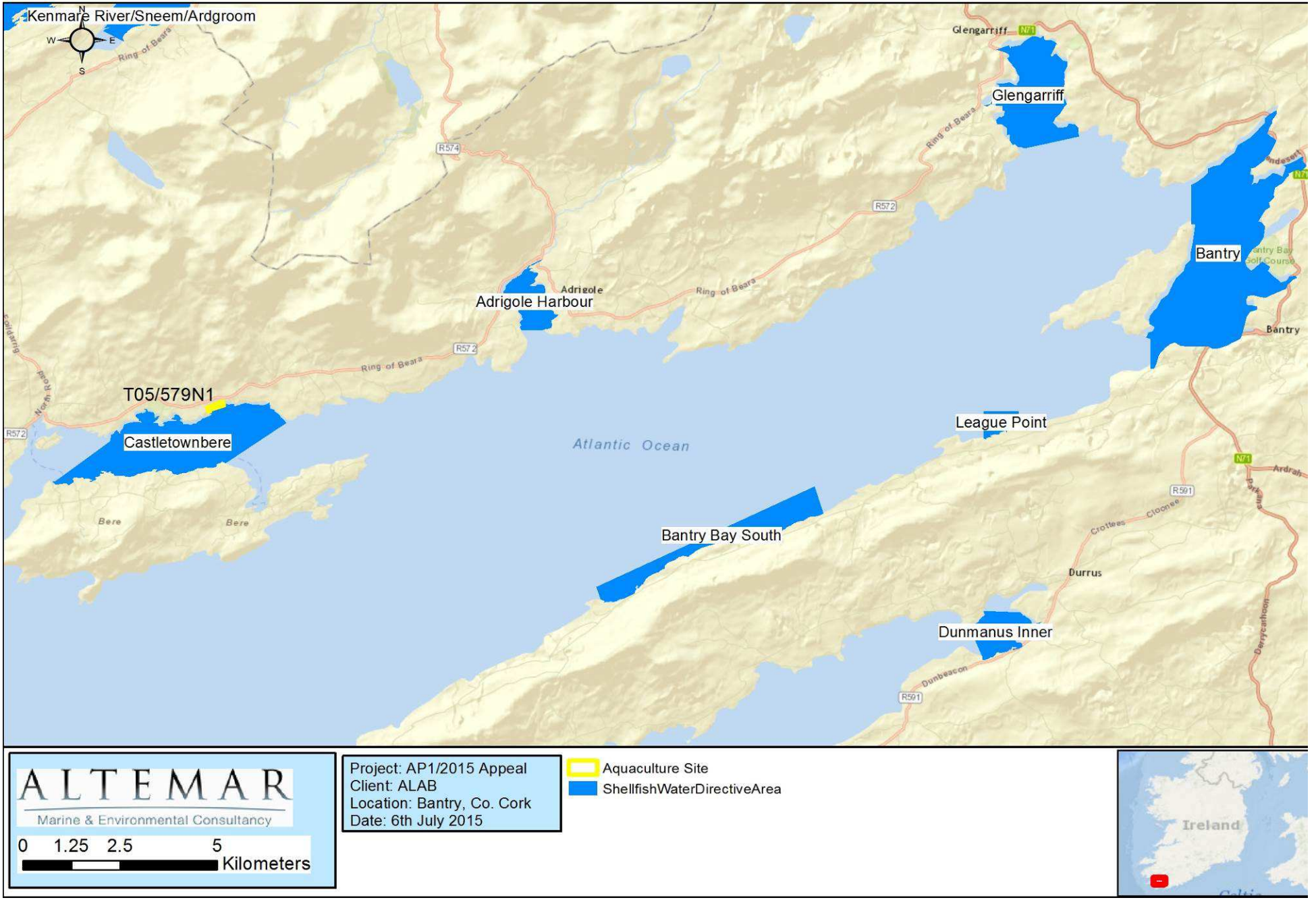


Figure 4: Designated Shellfish Waters in Bantry Bay, Co. Cork and the shellfish aquaculture site under appeal.

Figure 5: Licenced aquaculture Sites to the north of Bere Island

Figure 6: Licenced aquaculture Sites to the north of Bere Island

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 appeal. 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. This atlas has a poor data resolution. All areas up to the HWM along the entire coastline are classed as fishing areas. As a result it may over exaggerate the potential fishing resource. Data relating to the site in question indicate that only Charter Angling (Hook and line fishing) is carried out in this area.

The Marine Institute GIS based data on the inshore fishing activity/extent that were compiled in 2014, were also examined. As can be seen from Figure 8, there is inshore fishing activity in Bere Haven Sound. The resolution of the data is not high but, it does indicate that the area of the proposed site is not being fished. It also shows the difficulty that larger vessels would encounter in fishing the proposed aquaculture site due to the presence of other aquaculture installations and their moorings.

During the site visit no fishing gear or fishing/harvesting activity were noted. Two buoys were located within the subtidal element of the site and these were connected to two running moorings in poor condition. An additional buoy was noted in this area. This was also a mooring, but was subtidal as a result of heavy fouling.

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. None of these sites are located in Bere Island Sound where the proposed aquaculture site is located.

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. "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." (Discover Ireland, 2014). The R572 forms part of the Wild Atlantic Way initiative and runs beside this site. It should be noted that Berehaven Lodge self-catering accommodation in Castletownbere has direct access to this shore from the eastern corner of the site. This accommodation has at least 15 self-catering bungalows aimed at family holidays.

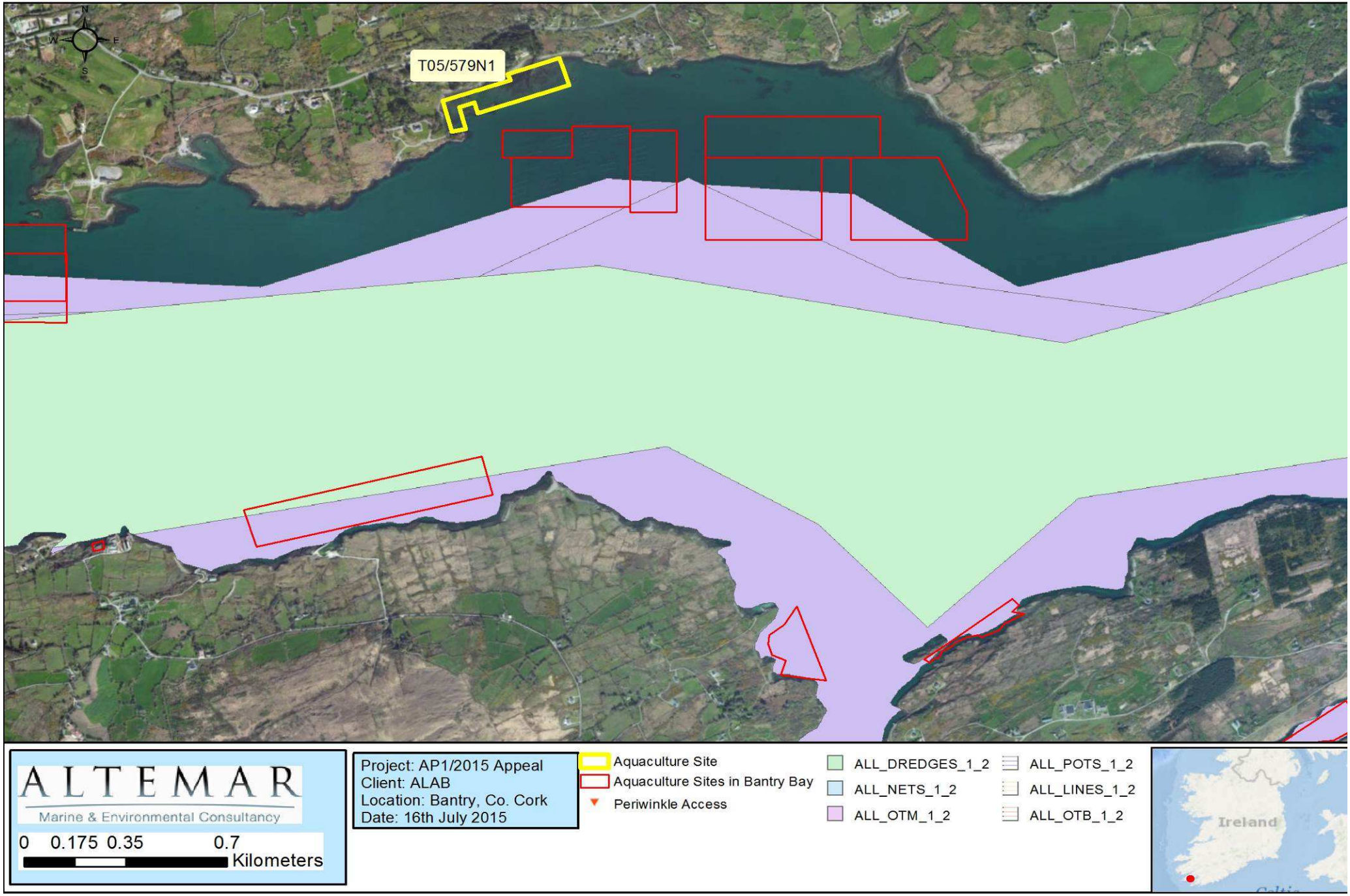


Figure 8. Fishing methods and their extent in the area of the proposed aquaculture site (Marine Institute GIS server)

Agricultural Activity

The proposed site is located within the Castletownbere Designated Shellfish Area (Figure 4). Based on the information provided in the Site Characterisation Report "Approximately 50% of the area of this catchment is farmed land but, the livestock density estimates are roughly half of the national averages and the fertiliser usage estimates are equal to roughly two thirds of the 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 any diffuse risk areas in this catchment, However, the prevalence of peat and other wet soils in the catchment could result in runoff from agricultural land and the steep slopes could increase the risk. Agriculture is a possible source of the faecal contamination indicated by shellfish monitoring and therefore agriculture could possibly be affecting shellfish water quality in this shellfish area."

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."

There are several freshwater inputs into the site including the Owgarriff River. The site characterisation report classified the vulnerability of surface waters to pathogens from subsoil discharges flowing into this site as "high risk" and "very high risk" potential.

Table 1. Livestock units and chemical fertiliser usage

Indicator	**Catchment (per ha of farmed land)**	**National Average (per ha of farmed land)**
Livestock units	0.53 LU	1.20 LU
Nitrogen fertiliser usage	68.38 kg	92.09 kg
Phosphorus fertiliser usage	5.02kg	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.

A significant portion of the proposed aquaculture installation is within the estuarine flow of the Owgarrif River, which has been deemed to be at "high risk to pathogens from subsoil discharges". This would tend to indicate that there is potential for the filter feeding oysters, placed in the flow of this river to ingest pathogens such as norovirus and become a health risk to consumers (e.g Rajko-Nenow et al 2012). As outlined in the Water Quality section, this area is classed B#, primarily for mussels which are located in deeper water with less freshwater influence. Poor bacteriological results from the oysters on site, as a result of contamination from freshwater with high pathogen loadings, could risk the water quality status of this designated shellfish area.

Other Activities

Periwinkle Harvesting

It has been stated that periwinkle (*Littorina littorea*) harvesting is carried out on the intertidal area at this site. During the site visit an intensive walk over survey of the intertidal was carried out. In one portion of the site (approximately 5% of the proposed licence area) periwinkles were found in high densities (Plate 5). In the remainder of the site periwinkles were relatively rare. This high density site (Figure 9) was located away from the freshwater inputs into the aquaculture site and was dominated by juvenile periwinkles, possibly indicating hand picking may be carried out, due to the lack of larger individuals in the population.

Plate 5. High density of periwinkles in one area of the site.

Seaweed Harvesting

The Ministerial file also indicated that seaweed harvesting is potentially carried out on site. The intertidal shore is dominated by fucoid algae and in particular *Fucus vesiculosus* and *Fucus ceranoides*. The latter of which was located in the main flow of the freshwater inputs into the site. *Ulva intestinalis* dominated the upper shore in many locations and is likely to be as a result of the high quantity of freshwater input into the site. *Ascophyllum nodosum* the principle seaweed that is harvested intertidally was also located on the rocky shore on the west of the site (Plate 6), but in low quantities. There was a good distribution of both young and very old fronds indicating this species is not currently being harvested to a great extent on this site.

Plate 6. *Ascophyllum nodosum*

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 4th and 5th July 2015. Intertidal walkover and subtidal assessments of the site were carried out.

Satellite imagery of the site, seen in Figure 9, was taken in March 2012. The proposed aquaculture site (T05/579 N1) is outlined in yellow. Plate 7 was taken from the eastern portion of the site looking west at LW spring (0.4m). The tall trees in the distance are located beside a small pier and mark the most western point of the site. As can be seen from this image, a portion of the site is subtidal at this tide (0.4m). Plate 4 was taken in the flow of the Owgarriff River looking north and Plate 5 was taken from the Western portion of the site looking east (Figure 9).

As part of the walk over assessment the tide levels on a receding tide (Low Water Spring (0.4m)) were noted at hourly intervals from mid tide. The purpose of this was to map the contours of the site and ultimately indicate the portions of the site that were subtidal i.e. below Chart Datum. This involved taking GPS readings of the level of the tide and noting the time. The corresponding tidal levels for these times were extrapolated back to the Castletownbere tidal curve. At low water two assessments were made; the first was the actual tide level (0.4m) and the second was an interpolation of Chart Datum based on data points gathered at 0.4m below the tide level at the time of LW. This was carried out by walking in the subtidal at 0.4m depth at LW. The contours of the site, based on tidal height within the proposed aquaculture area are seen in Figure 10.

Plate 7. Taken from the eastern portion of the site looking west at LW spring (0.4m).

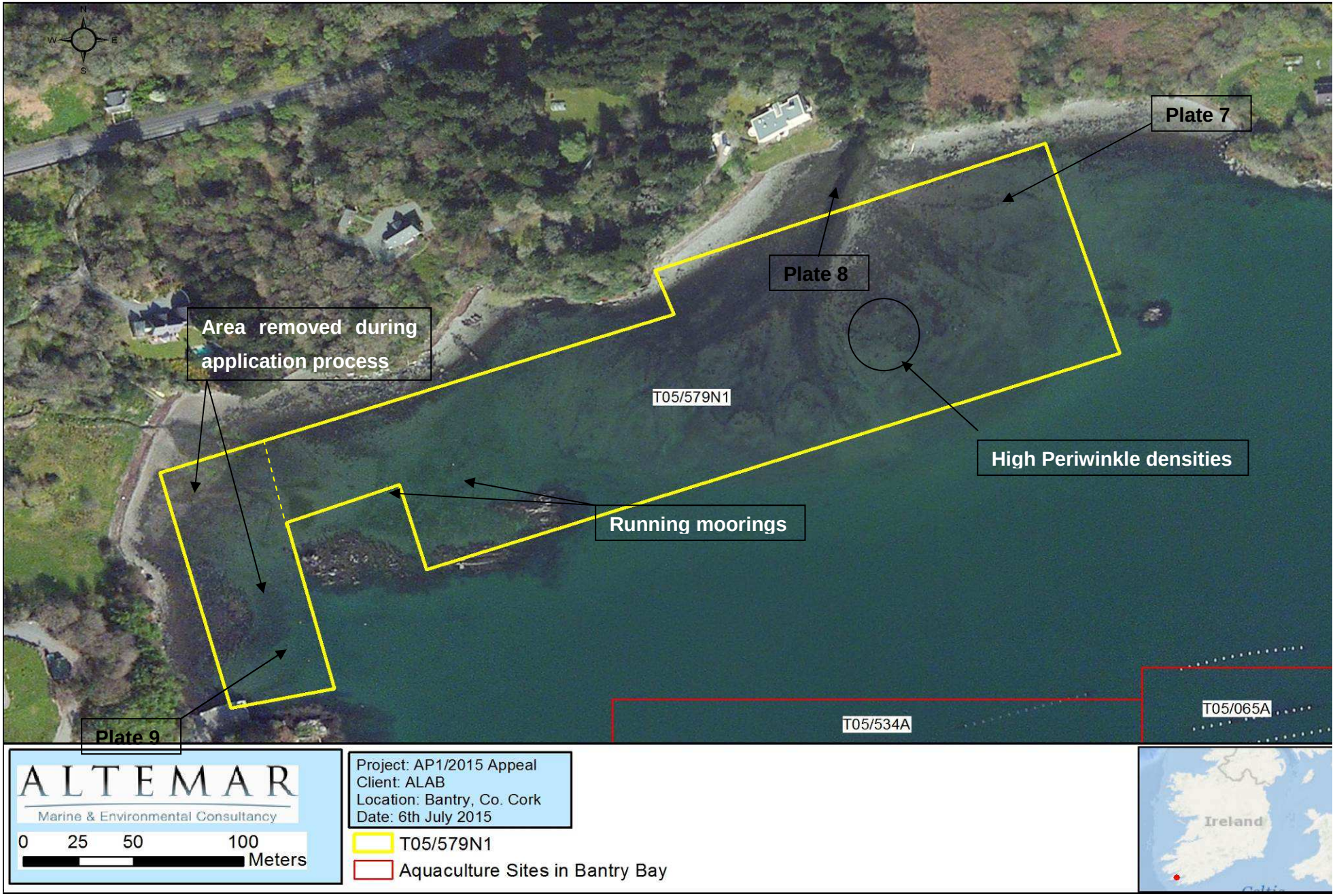


Figure 9. Outline of the proposed aquaculture site with satellite imagery (Bing, March 2012).

Plate 8. Owgarriff River

Plate 9. Western portion of the site looking east.

As can be seen from Figure 10, approximately 25-35% of the proposed site is in the subtidal. The subtidal area in the SW corner is close to a private pier, while the subtidal area in the middle of the site has two running moorings. It should be noted that in one area of the site it is subtidal across the full width of the site near an old disused pier. This area forms a restriction to vehicular access to the eastern section of the site due to the presence of the pier and subtidal areas. An indicative map of the proposed footprint of trestles on site as indicated by Cronin Millar (26/08/2015) overlaid on the tidal heights is seen in Figure 11.

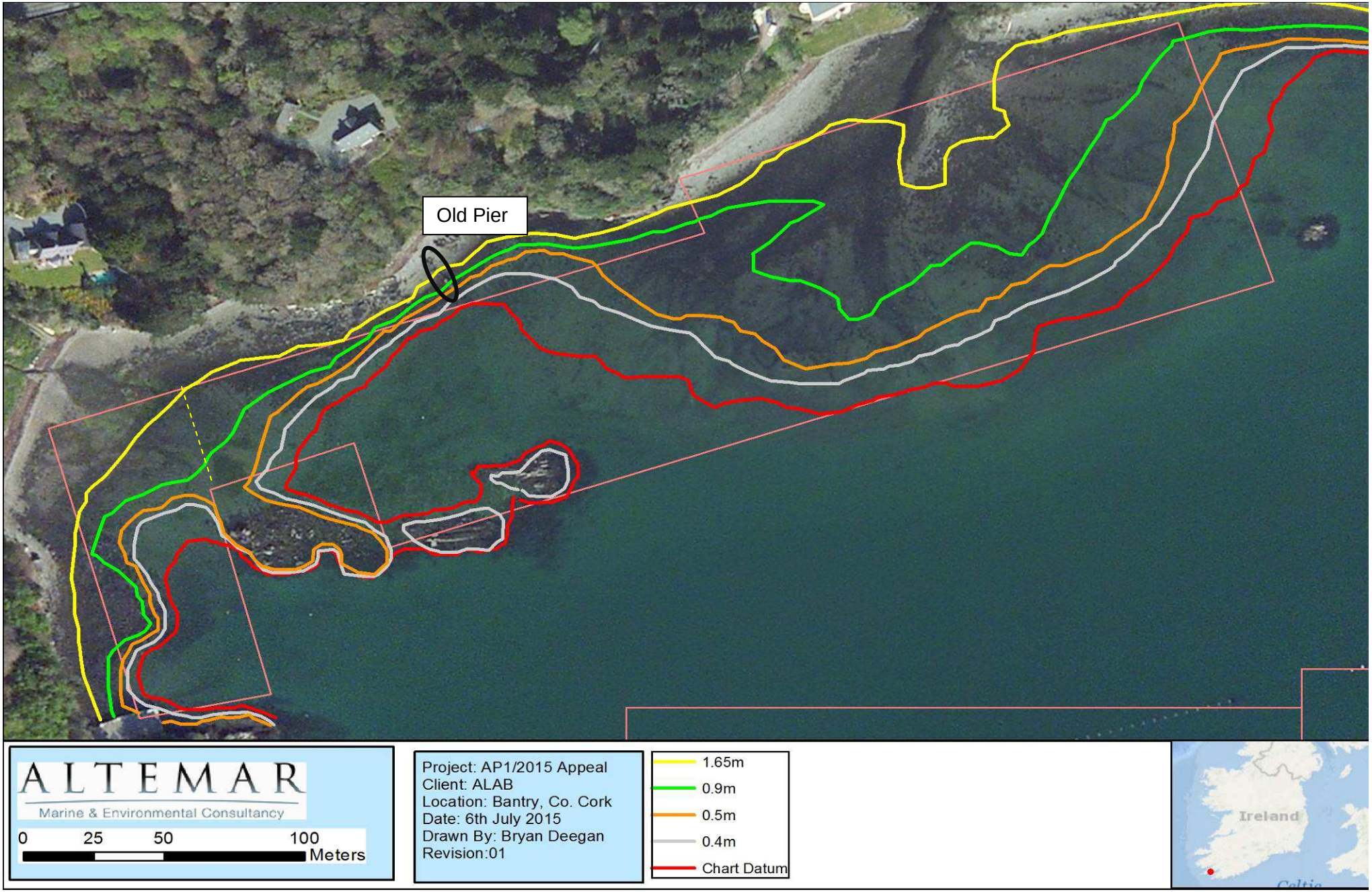


Figure 10. Outline of the proposed aquaculture site with satellite imagery (Bing, March 2012) and contours based on GPS based field assessment

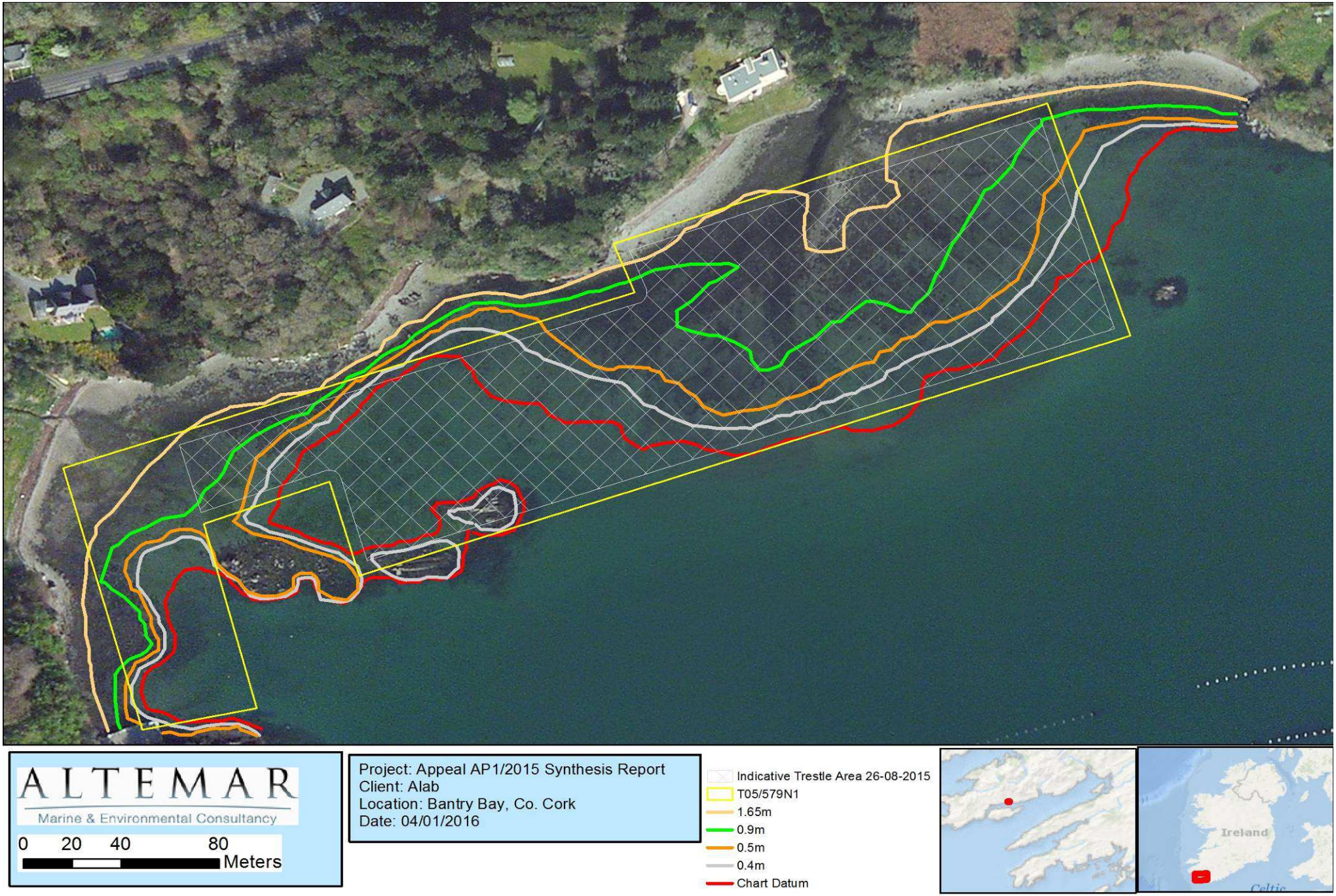


Figure 11. Indicative boundary of trestles (Grey hatch) showing 5m buffer from site edge as per Cronin Millar Drawing (26/08/2015).

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.

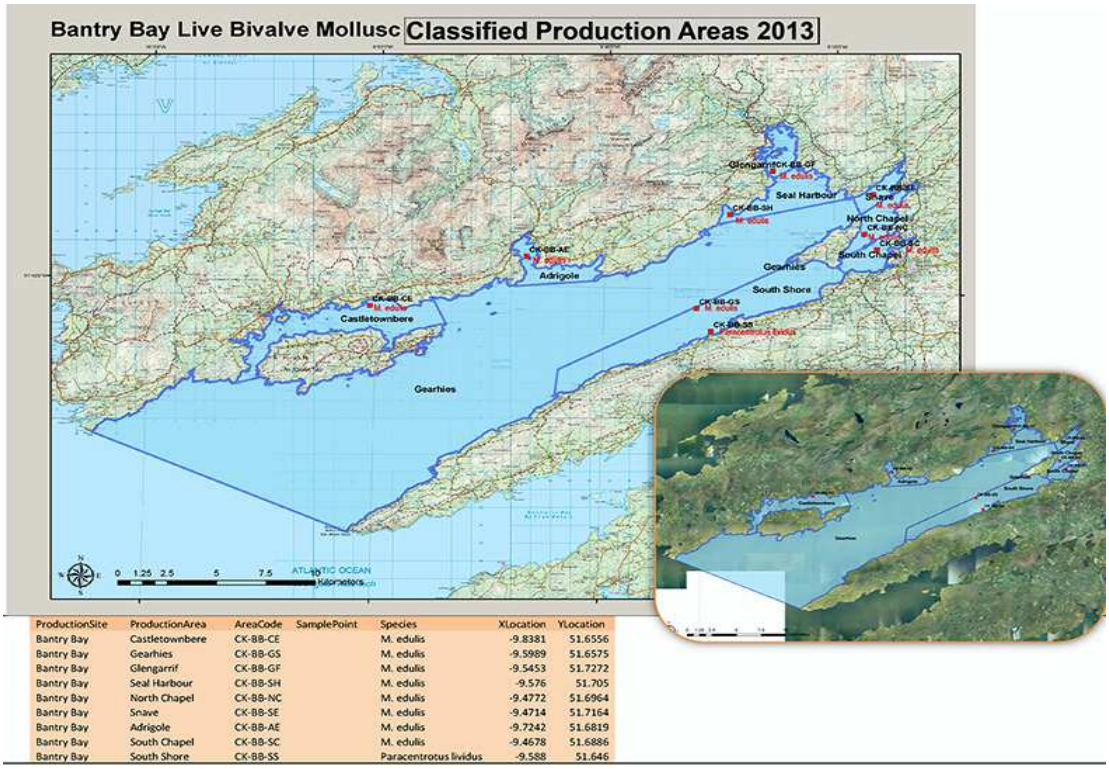
WFD Monitoring Programme

The proposed site is covered under the Beara Peninsula WMU. The Owgarriff River SW_21_7813 is classed as having a "moderate status".

Shellfish Flesh Monitoring Programme

Shellfish flesh classifications are 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)). Sampling is carried out by the Sea Fisheries Protection Authority (SFPA) on at least a monthly basis.

The licensed area is within "Castletownbere" (CK-BB-CE) area (Figure 12) which is classed as "B#" for oysters. The "#" denotes that the classification is preliminary. "Preliminary classifications are described as preliminary when an area is being classified for the first time or after a period in suspension. The term may also be used where an incomplete dataset of results was to hand." For mussels it has an A classification based on a seasonal Classification 01 Mar – 01 Jul but reverts to Class B at other times.



ProductionSite	ProductionArea	AreaCode	SamplePoint	Species	XLocation	YLocation
Bantry Bay	Castletownbere	CK-BB-CE		M. edulis	-9.8381	51.6556
Bantry Bay	Gearhies	CK-BB-GS		M. edulis	-9.5989	51.6575
Bantry Bay	Glengarrif	CK-BB-GF		M. edulis	-9.5453	51.7272
Bantry Bay	Seal Harbour	CK-BB-SH		M. edulis	-9.576	51.705
Bantry Bay	North Chapel	CK-BB-NC		M. edulis	-9.4772	51.6964
Bantry Bay	Snave	CK-BB-SE		M. edulis	-9.4714	51.7164
Bantry Bay	Adrigole	CK-BB-AE		M. edulis	-9.7242	51.6819
Bantry Bay	South Chapel	CK-BB-SC		M. edulis	-9.4678	51.6886
Bantry Bay	South Shore	CK-BB-SS		Paracentrotus lividus	-9.588	51.646

Figure 12. Bantry Bay Classified Production Areas

Bathing Water Quality

Bathing Water quality is not monitored by the EPA within Castletownbere or even Bantry Bay. The nearest location where bathing water quality is monitored is Barley Cove, approximately 20 km to the southwest. For the 2014 bathing season, Barley Cove achieved excellent 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. For the 2012 bathing season, Derrynane, to the north of Kenmare River, achieved good water quality status and complied with the EU guide and mandatory values. Good bathing water quality was also achieved for each of the preceding nine years.

5.3.3 Benthic Habitats and species

The aquaculture site under appeal 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. The BioMar survey in 1993, or Emblow (1994) did not carry out intertidal or subtidal surveys in this area. As a result limited data on benthic habitats is available.

Following the contour survey outlined above, a subtidal survey of the site was carried out in all subtidal areas, within the site outline. The purpose of this was to identify the main species present and in particular species of fisheries importance. On the seabed the bottom type graded from pebble in the more exposed areas to sand and anoxic mud in the more sheltered areas behind the shelter of the two small islands. This subtidal area was shallow ~1.5-2m BCD in depth and was predominantly sandy mud grading to anoxic mud near the stream inflow. Full coverage of this area was carried out. Two king scallop (*Pecten maximus*) were noted in this area in addition to a peacock worm (*Sabella pavonina*). Three shrimp (*Palaemon sp*) were also noted in addition to one shore crab (*Carcinus maenas*). One medium sized plaice (*Pleuronectes platessa*) was also noted. Several shoals of juvenile thick lipped mullet (*Chelon labrosus*) were noted feeding in the outflow of the streams on site. A noticeable halocline was present on the surface of the water due to the input of freshwater from the Owgarriff and the unnamed stream that enters the NW area of the site. This subtidal area was indicated by a local person that was walking along the shore to have previously been an important scallop area where “you could wade out at low tide and gather up to 50 scallop”. However, the area has been completely overfished, with only two scallop being found in the entire subtidal survey. One additional *Pecten maximus* was noted in the subtidal area near the pier in the SW corner of the site. No other species of potential fisheries importance were noted within the site.

5.3.4 Biotoxicology

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 "Castletownbere" (CK-CE-CE). Reports from the Marine Institute (http://www.marine.ie/home/publicationsdata/data/habs+search+database/) HABS website were examined from 2002-2015.

The majority of samples tested pertained to the blue mussel (*Mytilus edulis*) in addition to *Crassostrea gigas* (2), *Echinus esculentus* (49) *Paracentrotus lividus* (8) and *Pecten maximus* (158). Of the 540 status records during this period 275 were "open", 53 "closed pending", 21 "Harvest Restricted" and 191"closed" due to a mixture of positive DSP bioassay, ASP, AZP and DSP. All samples for PTX and YTX were below the levels of detection.

Species	Tests
Crassostrea gigas	2
Echinus esculentus	49
Mytilus edulis	461
Paracentrotus lividus	8
Pecten maximus	158
Total	**678**

Status	Records
Harvest Restricted	21
Closed	191
Open	275
Closed Pending	53
Total	**540**

Table 2. Marine Institute Results for shellfish sampling in Castletownbere site (CK-CE-CE) (2002 to the 15th July 2015.

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 conservation site. There are a number of protected sites located nearby including SAC's (Figure 13) and SPA's (Figure 14), NHA's (Figure 15) and pNHA's (Figure 16). There are no conservation areas within 3.51km of the proposed aquaculture site.

5.5 Bantry Bay Species Records

5.5.1 Cetaceans

The Irish Whale and Dolphin Group Cetacean Sightings (www.iwdg.ie) in the vicinity of the proposed aquaculture site are seen in Figure 17. As can be seen from figure 17 based on IWDG records there are no sightings of cetaceans in Berehaven Sound. It is unlikely that cetaceans would frequent the aquaculture site given the fact that the majority of this site is intertidal in nature. However, it would be expected that cetaceans would be seen infrequently from shore.

5.5.2 Birds

The proposed site is not within a Special Protection Area (Birds Directive) or Ramsar site. During the site visit bird species were seen included herring gull (7), oystercatcher (2) and hooded crow (1).

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 Bantry 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 from 1978 to 2003 by NPWS (Lyons 2004). In recent years, 303, 268 and 329 harbour seals were recorded in Bantry Bay on 7th Sept 2006, 10th Sept 2007 and 15th 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.

Additional NPWS seal population assessment reports were examined and even though the site is called "seal cove" there is limited information on the site including information classifying it as a breeding or haul out site. It is also outside designated conservation sites. Given the lack of information and the fact that the site is located beside Berehaven Lodge self-catering accommodation, it would be expected that this site is not of conservation importance to grey or harbour seals.

5.5.4 Otter -*Lutra lutra*

Otters are designated under Annex II EU Habitats Directive. No evidence of spraints was found during fieldwork. However, it would be expected that otters would be present in the area.

5.5.5 Salmon –*Salmo salar*

The proposed aquaculture site is located on the estuarine element of the Owgarrif River. This is classed as being "not a significant producer of salmonid" by McGinnity *et al.* (2003).

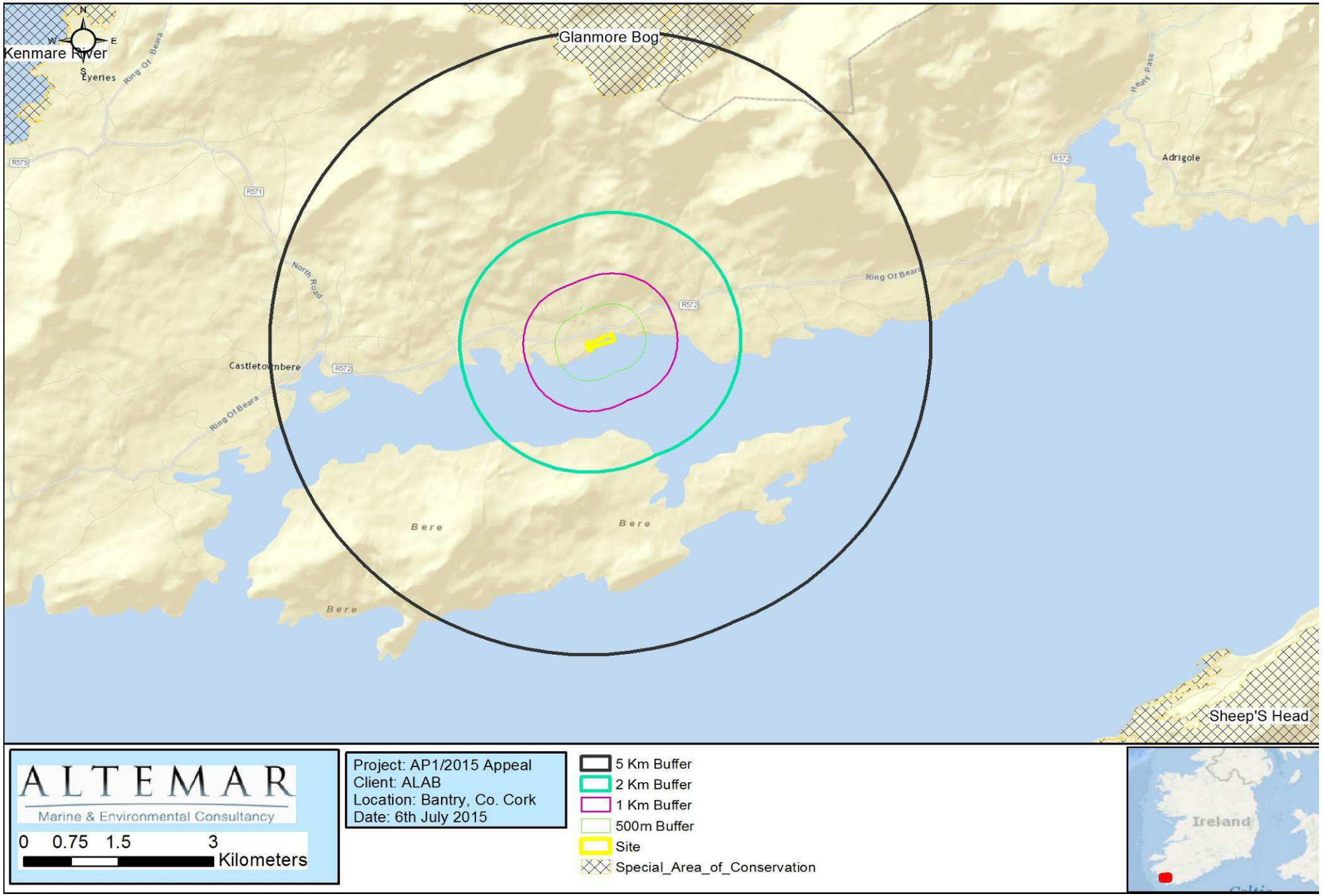


Figure 13: Special Areas of Conservation within close proximity to the proposed aquaculture site.

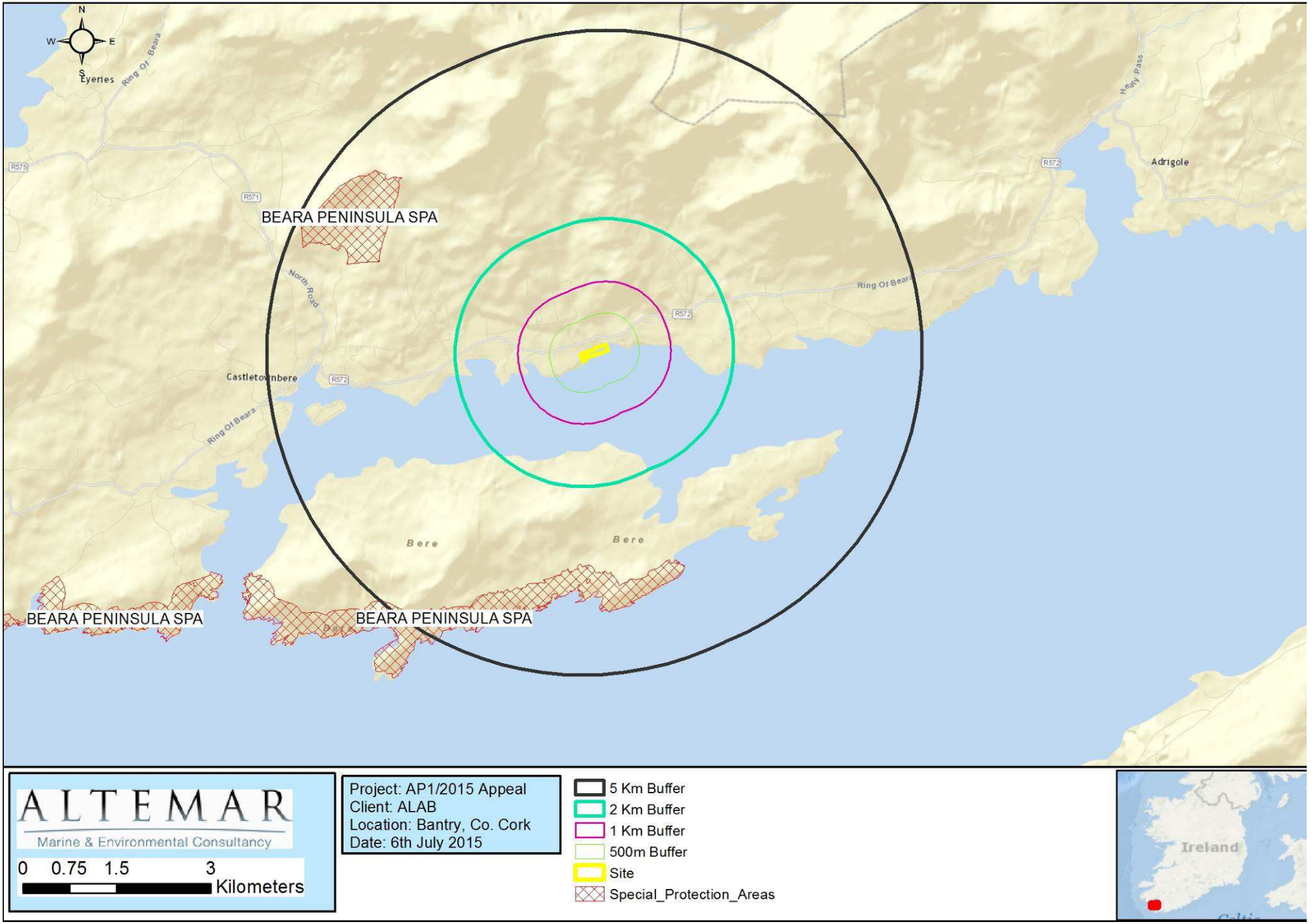


Figure 14: Special Protection Areas within close proximity to the proposed aquaculture site.

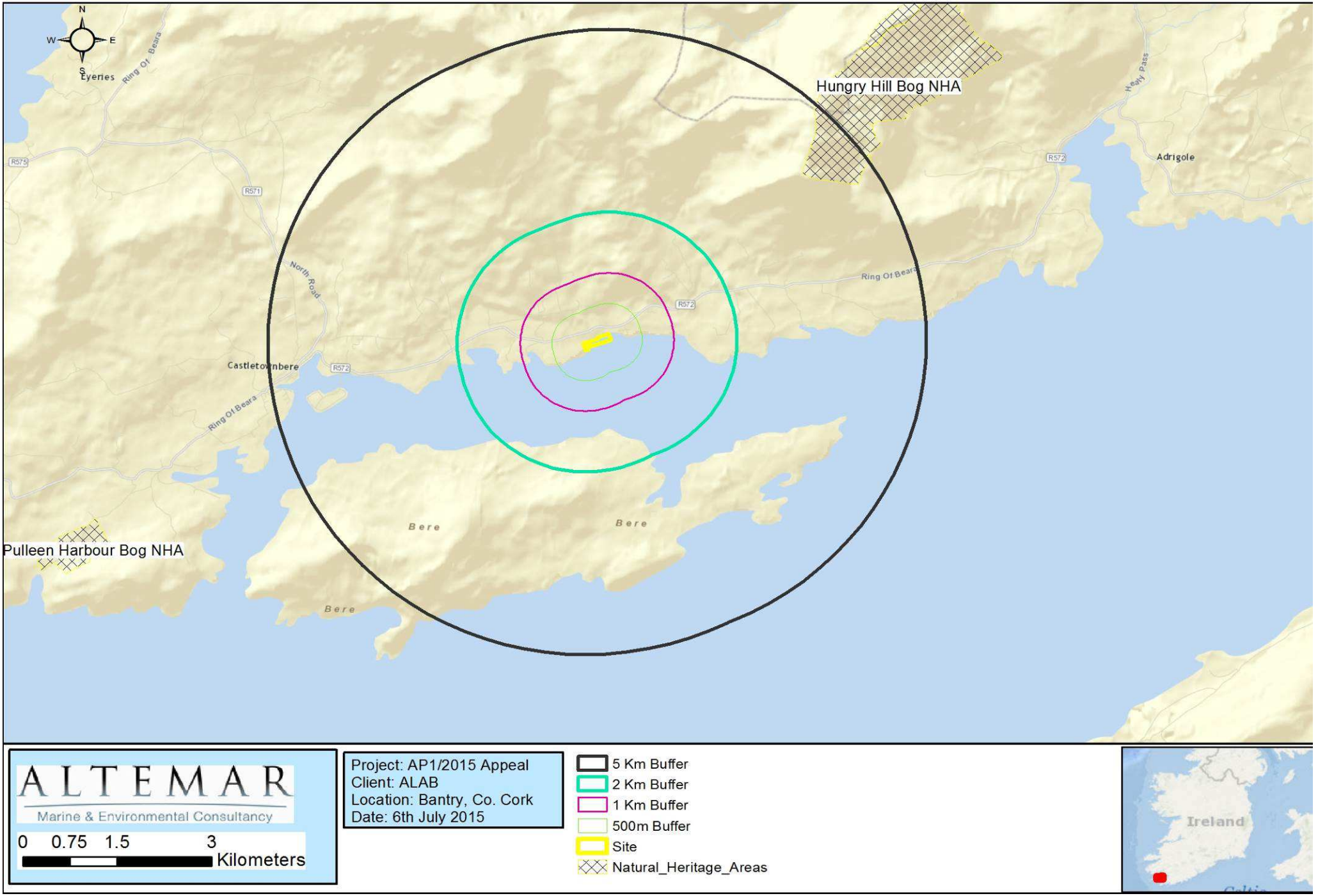


Figure 15: Natural Herieage Areas within close proximity to the proposed aquaculture site.

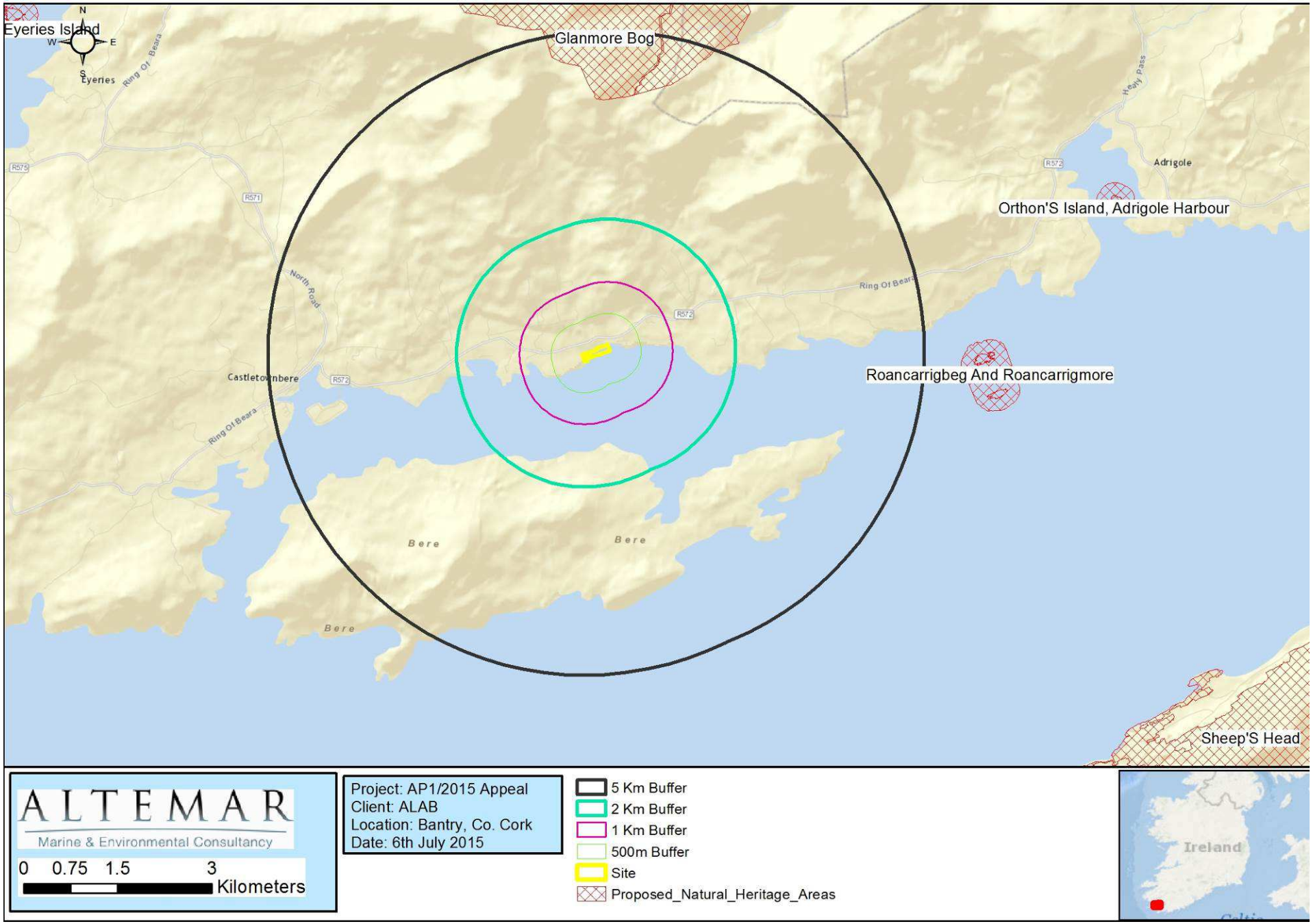


Figure 16: Proposed Natural Heritage Areas within close proximity to the proposed aquaculture site.

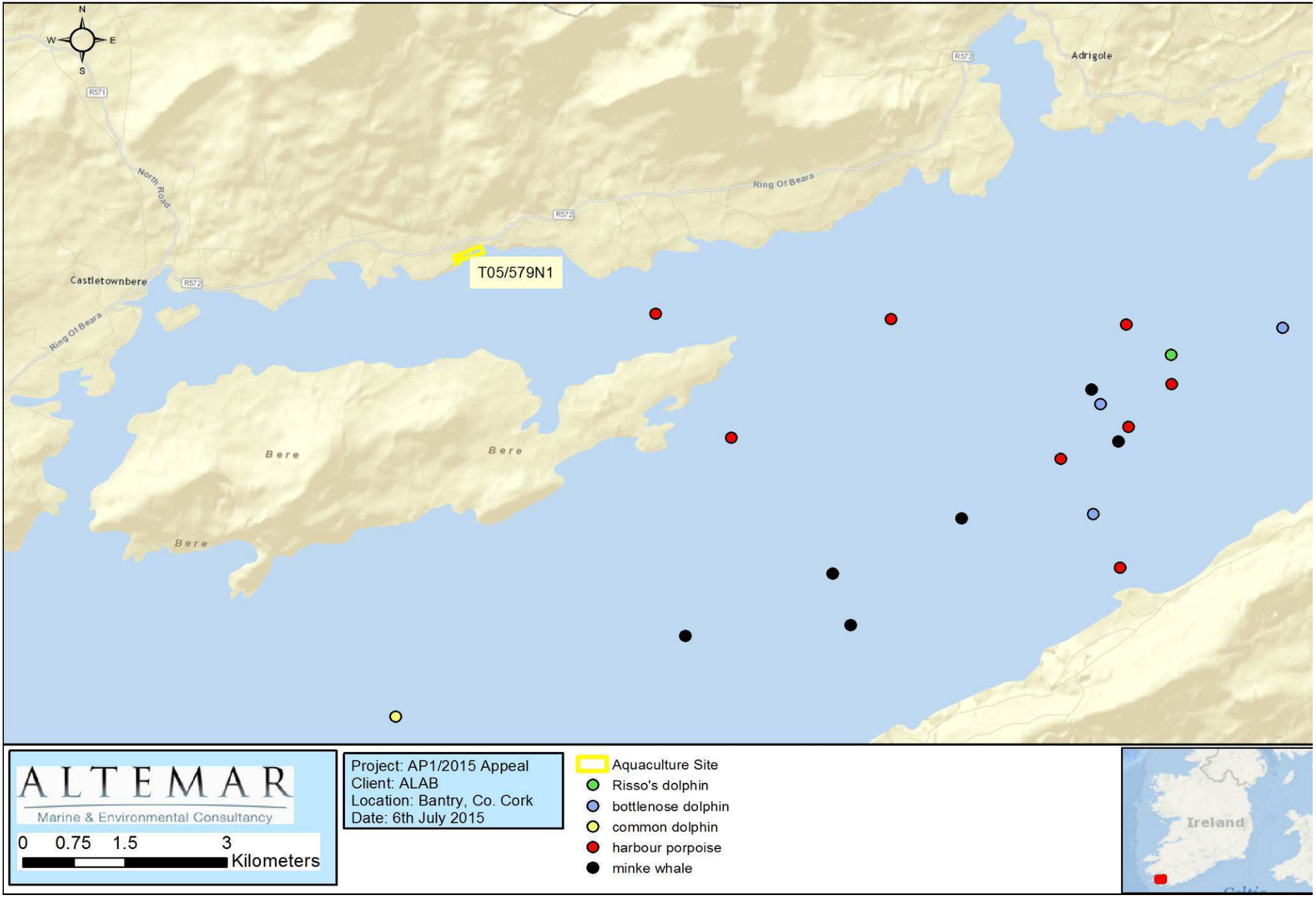


Figure 17. Irish Whale and Dolphin Group Cetacean Sightings in the vicinity of the proposed aquaculture site.

5.6 Statutory Plans

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

2014 Cork County Development Plan

The Cork County Development Plan 2014 was adopted by the Members of Cork County Council on the 8th December 2014 and came into effect on 15th January 2015.

The 2014 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 wellbeing of rural coastal communities and the economic wellbeing 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.”

5.8 Water Quality Status

The WFD water quality status of this coastal water body i.e. 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 (16/07/2017) and plotted (Figure 18). The closest National Monuments were the following:

500m- 1km from the proposed site.

CO115-066 Class: Boulder-burial (60m from the site)

Description: In rocky mountain pasture, on terrace of S-facing slope, overlooking Bear Haven to S. Large flat topped boulder (2.4m x 2.55m; 0.61m T) rests on six support stones, three of which have pad stones. Known locally as "mass rock", near by is Mass House (CO115-067).

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.

CO115-066 Class: Mass-house

Description: Beneath rock face, along slight terrace of S-facing slope, in rocky mountain pasture. Rectangular structure (9.9m N-S; c. 2.4m E-W) with N end built up against rock face; S end open; side wall (max. H 1.2m; Wth 1.4m) of dry stone construction. Cross wall across N end probably to make animal shelter. Locally known as "penal church", field known as "pairc an tseipéil", nearby boulder burial (CO115-066---) known as "mass rock".

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.

CO115-038001- - Class: Standing stone

Description: On lower slopes of Slieve Miskish Mountains with commanding view over Bantry Bay to S. Rectangular stone aligned E-W (H 0.95m; 0.7m x 0.35m). Boulder burial (CO115-03802-) 150m to WSW. (O'Brien 1970, 15).

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.

CO115-038002- - Class: Boulder-burial

Description: On narrow rocky ledge at S foot of Holly Hill overlooking Bear Haven. Flat-topped slab (3.3m x 2.7m; T 0.3m) resting above four support stones. (O Nualláin 1979, 91, no. 19)

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.

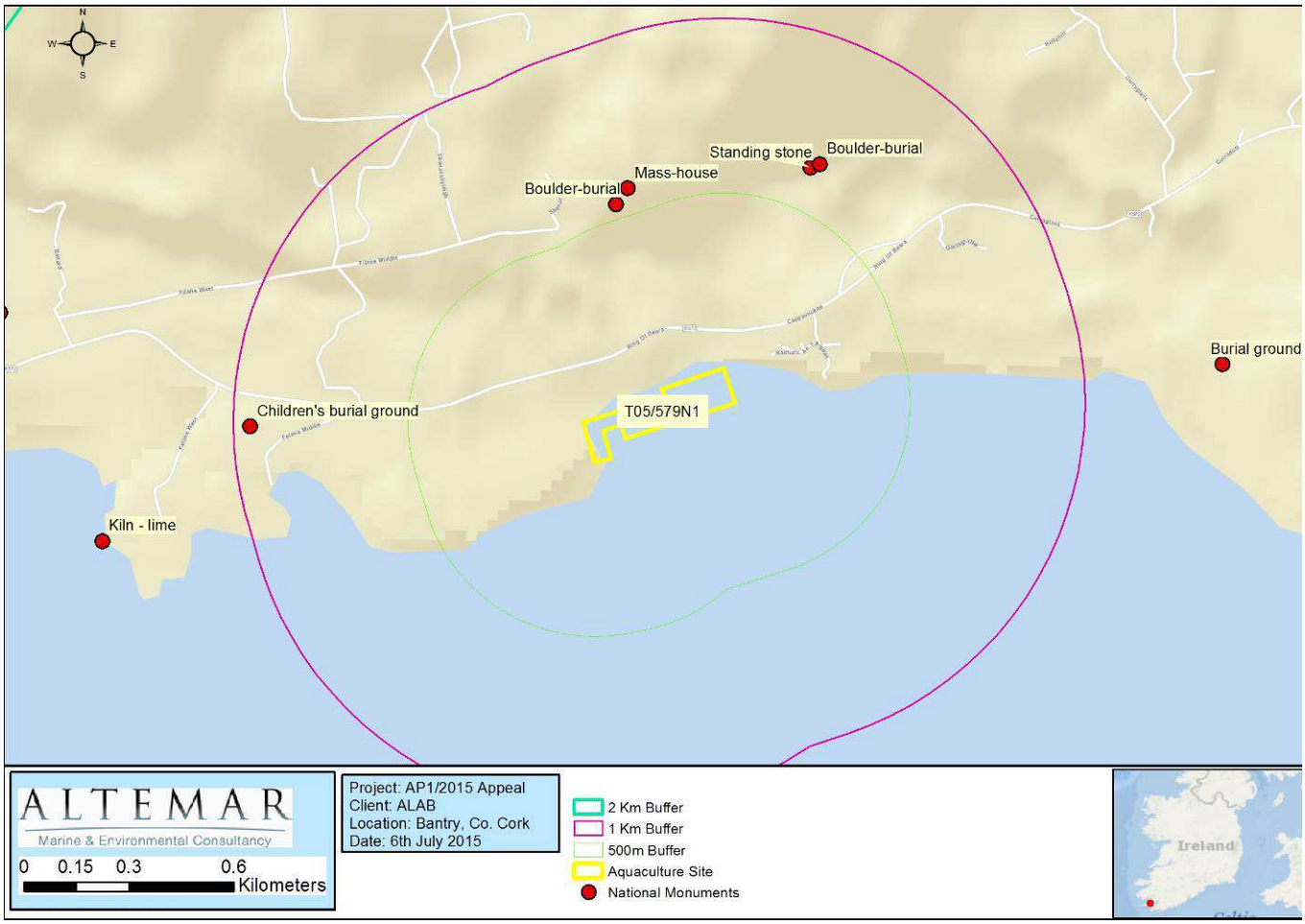


Figure 18. National Monuments in the vicinity of the proposed Aquaculture site.

It should be noted that an small old pier is located immediately to the north of the site. The presence of this small pier made of rock, increases the access restrictions on the site. As a result there could be a temptation to remove it to improve access. It is not a National Monument but is a feature of historical interest, as such should be retained.

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 native oyster (*Ostrea edulis*) is already present on site, though in small numbers.
2. The area appears solid under foot and is likely to support trestles and workers.
3. There is sufficient physical space on the intertidal for oyster trestles. However, the extent of the subtidal element of the site is significantly more than indicated by the applicant and this questions the feasibility of the proposed farm.
4. The proposed development will not significantly impact on NATURA 2000 sites or species and is not close to National Monuments in the area.

The site under appeal ***is not*** suitable for the intended purpose for the following reasons:

1. It was stated by the applicant that "The site of the proposed aquaculture is intertidal i.e. at low tide there is a lack of water depth at the site. We estimate that at a mean low water level there is a depth of water of approximately 1m at the southernmost section of the site." The latter statement may be correct due to the presence of small islands on the southern boundary. However, the extent of the intertidal area across the site is much smaller than the

applicant perceives/has indicated. OSI data and the applicant's own drawings (Plate 1) indicate a substantial subtidal element on site. As can be seen from Figure 10 the tidal height calculations taken during the site visit confirms the large subtidal element. The entire width of the site is subtidal in the mid-section. The applicant intends to farm the site including the areas where running moorings and scallop were found. This is clearly not feasible as sections of the site are up to 2.0m below chart datum. Approximately 65% of the site is intertidal and as a result all trestle areas indicated by the applicant are not workable.

2. A trestle layout submitted by Cronin Millar to ALAB in August 2015 (Plate 1) indicated a 5m internal buffer from the site boundary within the aquaculture site (Figure 18), with no development on the western portion of the DAFM aquaculture licence area. According to the applicant (11th January 2016) the area of the site was revised during the application process. Based on this layout, it also appears that the applicant intends to place trestles over a small island in the SW of the site which is also not feasible.
3. In relation to access, it was stated by Cronin Millar (11th January 2016) that "The Appellant does not currently have clarification with regard to the ownership of the public road which currently serves the site and a number of houses." Following the provision of additional information on access from the applicant, the proposed access route was examined on the Land Registry website (www.landdirect.ie). A burden is noted in relation to this access route possibly indicating a public right of way. It is considered that vehicular access to the site appears to be restrictive. In addition clearance of vegetation along this road may be necessary to provide improved access.
4. As seen in figure 10 an old pier is located at the mid section of the site where the subtidal element extends across the site. This forms a considerable pinch point for tractor and trailer access to the majority of the site, due to the presence of the pier and subtidal area. It is likely that all vehicular traffic managing the eastern section of the site (approx. 80% of the workable area would have to pass through a narrow 6-10m gap on the uppershore outside the aquaculture site, where pedestrian traffic is most likely. Given the road access and in-site restrictions it would be seen that installation and maintenance of the site by boat as indicated by the applicant, would help alleviate this problem and that access from land would be restrictive. It was stated that "The appellant can fully access the site from a floating barge if required. Access via the road would not be required in this case" (11th January 2016). This would be seen as a necessity. It was also indicated by the applicant in previous communication that he intends to use tractors and trailers. The applicant also stated that fairways will be 4m between trestles to allow for tractor and trailer access.

5. The intertidal areas of the site appear to have been formed as part of a small delta from the Owgarrif River which flows through the site (Figure 9). There is significant freshwater input in to the site by two rivers and the presence of a distinct zone *Ulva intestinalis* on the upper shore indicates that freshwater has an impact of the biodiversity of the site. However, the site is not enclosed and has good access to highly saline water at the mouth of Bantry Bay.

As a result, in calm conditions, low salinities may be observed onsite particularly in the uppershore areas where significant freshwater input was noted.

6. Though no boats were observed on site at the time of the site visit, existing running moorings are present in the subtidal element of the site. The proposed trestle layout submitted in August 2015 would eliminate access to these moorings in the subtidal element of the site.

6.2 Existing/Potential beneficial Uses

Tourism/Recreation/Leisure

The proposed aquaculture site is located beside the R572 which is part of the Wild Atlantic Way. It is 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." The proposed aquaculture site will not be visible from the R572. However, it is beside the Berehaven Lodge accommodation and the site is used locally for access. There are areas where the aquaculture site borders tall rocks and the placement of trestles against these rocks would impede access along the shore. A 5m buffer between the trestles and the site boundary has been indicated by the applicant which should provide sufficient access. However, care should be taken in the placement of trestles to allow access on the shore as the site is used by children who do not know the area and poor placement of trestles could result in people being trapped by the incoming tide.

The proposed aquaculture site may impact negatively, but not significantly, on the scenic landscape.

Fishing/ Harvesting

The primary objection and reason for the refusal for the granting of this licence is in relation to the potential impact of this site on fisheries and harvesting. A walkover assessment was carried out to determine the level of Chart Datum in relation to the site boundary. The level at which Chart Datum was located at it is important to evaluate the distribution of marine organisms and species of fisheries importance. It was found that the vast majority of the site was intertidal, and as a result would be difficult to fish, except for only the smallest of inshore boats at high tide. In addition, the subtidal areas of the site had a poor diversity of species. Two king scallop were noted in one area of the site but, it is felt that even though this area may have been once a productive area for scallop, based on discussions, it has been completely overfished possibly by people with nets at low tide. The moorings in this area would inhibit the use of fishing gear such as dredges. As a result it is felt that the subtidal elements of the site are currently not an important fishery area.

Access should be maintained to the moorings on site with sufficient manoeuvring space for both access and safe mooring of boats. As a result subtidal elements of the site should not utilised. The

proposed site layout submitted by the applicant would not impede access to the pier on the SW corner of the site. However, if the full site, as provided by the Department, was utilised access to this pier would be impeded.

In relation to periwinkles dense aggregations were noted on site, but only in a very small area of the site, away from the influence of the freshwater input. In the appellant's communication it was stated that he "would have no objection to the legal and authorised harvesting of periwinkles at the sites." The site will obstruct an area where dense aggregations of periwinkles were found. The size class distribution indicated that these are harvested, primarily due to the lack of larger mature periwinkles.

In relation to impact on fisheries the following should also be noted:

a) Communication (20/1/2015) from David Millard Regional Development Officer, BIM, to the appellant following a site visit states: "I would observe that the area seems eminently suitable for intertidal oyster cultivation, I did not observe evidence of any substantial competing inshore fishery activity which might be discommoded by the presence of a bag and trestle oyster farm and furthermore this kind of activity would not adversely affect any existing fishery."

b) Communication (23/1/2015) from Mr. Huan Tan, Fisheries Development Regional Officer following site visit: "The proposed site and aquaculture operation would, in my opinion, not overlap or interfere with or displace any inshore commercial fishery in the specific area or wider harbour area" …. "including the commercial hand gathering of molluscan and bivalve shellfish".

c) As can be seen from Figure 6 the site is quite constrained by the presence of other aquaculture installations and it would be difficult to see how larger fishing vessels would get access to the area. Marine Institute data indicates that there is no fishing in this area.

d) The site is predominantly intertidal at the mouth of the Owgarriff River. As a result it would be difficult to see how ever inshore boats would have good access to the eastern section of the site. However, the subtidal area behind the two small islands may have had potential at one stage for scallop, but this area has been completely overfished, possibly from shore. The presence of 3 running moorings and the constrained nature of the site would make dredging for scallop difficult. Outside this area the subtidal areas within the site was predominantly gravelly which would not be an ideal habitat for scallop.

e) Species diversity in the subtidal area was poor with only limited numbers of species being present, and these were not in such numbers that would prove to be important in fishery terms.

f) High densities of shrimp, were not noted at this site. During the subtidal survey 3 shrimp were noted. No prawns (*Nephrops norvegicus*) or their burrows, velvet crabs (*Necora puber*) or starfish species were noted. Shrimp may occur in the area in higher abundance and feed on the fine particulates coming down the rivers. However, the impact on these species by

the presence of an oyster farm would be negligible as they would still have the ability to feed in and around the trestles in the intertidal and subtidal.

g) There was no evidence of any fishing activity on site e.g. pots.

The proposed aquaculture site will not significantly impact on harvesting users or the fisheries of the area. **The proposed site would not "considerably restrict wild fisheries". However, it would restrict access to existing moorings on site.**

6.3 Statutory Status

As previously outlined "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 wellbeing of rural coastal communities and the economic wellbeing of the county. This plan also recognises the important role aquaculture can play in the diversification of rural areas." In addition, the proposed aquaculture site will not be visible from the "Wild Atlantic Way" as it is behind a treeline. As a result there should be no impact on scenic views.

The proposed aquaculture site does not have the potential to impact on the statutory status of the area.

6.4 Economic Effects

The scale of the proposed aquaculture is relatively small and would only be expected to benefit the applicant and several individuals who would work on the farm and not the community at large. The proposed site is likely to have a **non-significant positive effect** on the local economy of the area.

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 would not be expected. The nearest conservation site is 3.51km from the proposed site and there are no species of conservation importance recorded in the literature, including the National Biological Data Centre and NPWS data. However, it would be expected that otter may frequent the site.

It is likely that there will be a ***no significant impact*** on the qualifying interests of NATURA 2000 sites, Annex species or habitats.

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	Migratory Fish Species including Atlantic salmon, sea trout and European eels.	The proposed location of the aquaculture site is in the estuarine element of the Owgarriff River. This is classed as "not considered a significant producer of salmonids". Also a waterfall is present as it enters Bantry Bay. It is likely that this would inhibit migratory fish species from entering the system. **No significant impact is foreseen**
Deposition/ accumulation of organic matter	Minor	Pseudofaeces may be released from the oysters but will cause minimal localised impact in the vicinity of the trestles if they are not removed by the current. **No significant impact is foreseen**
Altered water chemistry & reductions in nutrients	Phytoplankton	The site is located near the mouth of Bantry Bay where the water is predominantly marine and well mixed. It would be deemed to have a positive impact through the filter feeding. **No significant impact is foreseen**
Disturbance	Birds/Otters/ Seals/ Cetaceans	The site may initially cause disturbance to local wildlife species including seals, otters and birds. However, it is not thought to be significant. **No significant impact is foreseen**

6.6 General Environmental effects

An EIA screening assessment was included in the Ministerial file for T5/579 N1. "The screening assessment found that the proposed cultivation will have no significant effects on the qualifying interests of the Natura 2000 sites." It also stated that "the impact will be on the benthos and this will be localised and limited to the area directly beneath the trestles. The overall area involved is considered to be small. The area is well flushed and build up of organic matter is not considered likely. There will be no significant impact on other sensitive receptors e.g. air, water, cultural, heritage and visual amenity." In the Bantry Bay screening the Marine Institute stated that "none of the activities associated with the shellfish and finfish production in outer Bantry Bay will interfere with the key relationships that define the structure of the adjacent Natura 2000 sites." The proposed trestle layout submitted by Cronin Millar would have a smaller imprint than the larger site assessed by the Department. As a result it would be expected to have a smaller environmental impact.

6.6.1 Potential impacts

Having assessed the potential environmental impacts outlined above it is likely that the proposed site does not have the potential for significant impact on the environment, including the restriction of wild fisheries.

6.7 Effect on Man-Made Heritage

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

6.8 Section 61 Assessment Conclusions

A technical review was carried out by Altemar Ltd. in relation to an aquaculture licence appeal against the refusal by the Minister for Aquaculture, Food and the Marine to grant Aquaculture and Foreshore Licences to Dean Murphy for the cultivation of oysters using bags and trestles. The suitability of the place and waters at or in which the aquaculture site is proposed and the potential impact on wild fisheries were assessed.

It is concluded that the proposed site, as outlined in the documentation will not negatively impact on the visual landscape, heritage, ecology, harvesting and fisheries. However, the applicant has significantly underestimated the subtidal element of the site to such an extent that the proposed farm layout is impractical.

6.9 Confirmation re Section 50 Notices

There are no matters which arise in the Section 61 assessment which the Board ought to take into account which have not been raided in the appeal documents and it is not necessary to give notice in writing to any parties in accordance with section 50 (2) of the 1997 Act.

7.0 Screening for Environmental Impact Assessment

A pre-screening assessment was carried out and is seen in the Ministerial file. As stated in the Ministerial file this project is an Annex II project. As outlined in S.I. 468 of 2012. (2) An environmental impact assessment shall be carried out by the Board in respect of an appeal of-
(a) aquaculture of a class specified in Regulation 5(1)(i) and (ii) of the Application Regulations, or
(b) *aquaculture of a class specified in Annex II of the Council Directive which the Board determines would be likely to have significant effects on the environment*.

The technical advisor is of the view that the proposed aquaculture will not have significant effects on the environment by virtue of inter alia, its nature, size of location. As a result it should not be subject to an environmental impact assessment in accordance with S.I. 468 of 2012.

8.0 Screening for Appropriate Assessment

The screening assessment was carried out and found that the “proposed cultivation will have no significant effects on the qualifying interests of the Natura 2000 sites”. “The site is not located within a Natura 2000 site and is located 9.5km from the nearest boundary of Sheeps Head’s SAC.” This statement is incorrect as the nearest boundary to a SAC being Glanmore Bog approximately 4.5 km from the proposed site. This technical report would agree with the statement in the Ministerial file in that the proposed cultivation will have no significant effects of the Natura 2000 sites or species/habitats listed under the Annexes of the Habitats of Birds Directives.

9.0 Technical Advisor's Evaluation of the Substantive Issues in respect of Appeal and Submissions/Observations Received.

Based on an evaluation of the substantive issues in respect of the Appeal and submissions/observations received it is concluded that the proposed aquaculture development will not "considerably restrict wild fisheries".

Subtidal Portion of the site

The underestimation of the subtidal element of the site is significant. The applicant has stated that the site is intertidal but, this is not the case. A significant portion of the site is subtidal. This substantial subtidal element puts into question the proposed farm layout and the viability of the production figures.

Access

Poor terrestrial/intertidal access to the eastern section of the site and doubts over the road access permissions would make the aquaculture site at the scale proposed impractical, necessitating the vast majority of access from the sea. The applicant has stated that this can be done. However, considerable difficulties would be foreseen in relation to this, due to the scale of the farm proposed, the ability to manage 2 sites by boat in close proximity, given weather and logistics restrictions. In addition, the proposed site would impact on existing moorings located in the subtidal area of the site.

Water Quality

The placing of oysters within the flow of the Owgarrif River, which has been deemed to be at "high risk to pathogens from subsoil discharges", may impact on the water quality class (B#) of this designated shellfish area due to the potential risk of pathogens entering the oysters on this site. This site is primarily used for mussels grown in deeper waters where there is less impact from freshwater influence. This is particularly important in warm settled weather then a halocline would be present in this relatively sheltered site with substantial freshwater input.

Harvesting

Harvesting of periwinkles would be restricted by the placement of trestles on site, primarily due to the restricted access to the general public in the harvesting area.

Tourism

The Berehaven Lodge Self-catering accommodation is located in close proximity to the proposed aquaculture facility. The Berehaven Lodge is based on renting accommodation to families. The proposed aquaculture site is located on the only beach beside this accommodation and would be seen as a safety concern.

Financial Viability

The initial licence application had a production level of 10 tonnes of oyster supporting 6 fulltime jobs, but this was later revised to 45 tonnes, following clarification. According to Renick (2015) the cost of wages is approximately 50 percent of production costs and on average the value per tonne in Ireland in 2014 was €4,210 (€40 million value/ 9,500 tonnes of production), but this can vary depending on market conditions. The cost of production per tonne of oyster in Ireland was between €3,103 - €4,522 (Renick, 2015). This would tend to indicate that based on the initial and revised production figures supplied, that the applicant would produce approximately €42,100 (initial production) and €189,450 (revised production) of oyster from the site. Based on (Renick, 2015) with labour costs (at 50%) would range from €1,551-€2,261 per tonne. Assuming that the applicant had the most efficient production system and the lowest labour cost of €1,551 this would indicate that the 6 full time workers would be paid €3,508 (€21,050/6) (initial production figures) and €15,787 (€94,725/6) (final production figures) per annum. However, the latter figure would be based on the applicant being able to produce €45 tonnes from the site, given the additional constraints outlined.

10.0 Recommendation of Technical advisor with reasons and Considerations

Having carried out an inspection of the proposed site, reviewed the appropriate literature and in accordance with Sections 59 & 61 of the Fisheries (Amendment) Act 1997, it is recommend **to refuse the licence for the site.**

11.0 Draft Determination

It is recommended to uphold the Ministers decision and refuse a licence for this site.

Technical Advisor: Bryan Deegan of Altemar Ltd.

Date: 05/01/2016

Note: Discrepancies were noted in relation to the site outline in the original Departmental shapefile and the revised site plan submitted by Cronin Millar. It should be noted that these discrepancies had no bearing on the guidance to refuse this application, as the main subtidal elements of the site are present in both site outlines and the issues noted pertain to both sites. The only exception to this was the access to the pier in the SW corner of the Departmental shapefile which is outside the proposed development site of the applicant.

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