Technical Advisors Report

Leo Bolger Licence Appeal Review

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Executive Summary

Description:	Application to cultivate native oysters and sea urchins using a combination of shallow tanks and bottom culture, also entailing the hand harvesting of seaweed as feed for the sea urchins
Licence Application	Site T05/570
Appeal Reference	AP1/1/2013 AP1/2/2013 AP1/3/2013
Department Reference Number	AQ
Applicant	Leo Bolger
Minister Decision	Granted Licence AQ 13th December 2012
Appeal	
Type of Appeal	
Appellant(s)	- Dunmanus Bay Marine Association - Fishermens Inshore Saltwater Heritage Ltd (FISH) - Daniel Spring & Co Solicitor for and on behalf of Mr. Robert Putz
Observers	None
Technical Advisor	RPS
Site Inspection	tbc

1 Appeals Details & Observer Comments/Submissions

Date Appeal Received: 18th January 2013 – **Dunmanus Bay Marine Association**
18th January 2013 – **Robert Putz c/o Daniel Spring & Co Solicitors**
18th January 2013– **Fishermens Inshore Saltwater Heritage Ltd (FISH)**

Location of Site Appealed: Proposed location at Dunmanus Bay, Co.Cork

1.1 Appeal Timeframe

A public announcement with details of the Aquaculture and Foreshore application was published in the Southern Star on 30th June 2012. Objection letters were sent by the following appellants within the 4 week timeframe:

25th July 2012 – **Dunmanus Bay Marine Association**
26th July 2012 – **Fishermens Inshore Saltwater Heritage Ltd (FISH)**

Following the public notice in the Southern Star on December 20th 2012 detailing the decision to grant the Aquaculture and Foreshore licence (REF: T05/570) to Mr. Leo Bolger of Dunbeacon, Durrus, Co. Cork, the Department of Agriculture, Food and the Marine received appeals from the following appellants on the dates outlined:

18th January 2013 – **Dunmanus Bay Marine Association**
18th January 2013 – **Robert Putz c/o Daniel Spring & Co Solicitors**
18th January 2013 – **Fishermens Inshore Saltwater Heritage Ltd (FISH**)

1.2 Name of Appellants

Table 1: Details of Appellants

Appeal AP1/1/2013	Appeal AP1/2/2013	Appeal AP1/3/2013
Dunmanus Bay Marine Association Kilcrohane West Cork Co.Cork	**Fishermens Inshore Saltwater Heritage Ltd (FISH)** Goleen West Cork	**Robert Putz** c/o Daniel Spring & Co Solicitors 50 Fitzwilliam Square Dublin 2

1.3 Name of Observers

No observations outside of appellants and applicant response

1.4 Grounds for Appeal

1. **Dunmanus Bay Marine Association - AP1/1/2013**

Representing Ahakista Community Council, Barley Cove Beach SAC, Fishermens Inshore Saltwater Heritage Ltd, Goleen Community Council, Kilcrohane Development Association, Mizen Head Visitor Centre and Muintir Bhaire Community Council. The Association functions to protect and preserve Dunmanus Bay as an unspoilt marine Environment. The appeal is signed by the three directors of the association.

The appeal is presented on the following grounds:

i. **Indicative wording of site location in original public notice placed in 'The Southern Star' was incorrect, and/or misleading**. *Grounds for this Point of Appeal:* The Public Notice identified the location of the site as being "on an area of the foreshore at Dunmanus, Co. Cork". The appellants state that this phrase implies a site within the general area of Dunmanus Pier and Harbour on the south side of the Bay, and served to mislead against the true location of the site on the north side of the bay, where sea urchin aquaculture sites do not currently exist. Supporting documents to this point of appeal also identify that the subsequent notice to grant the licence stated the site to be "on the foreshore in Dummanus Bay, Co. Cork", and that this discrepancy between the notice of licence application and grant provides as an admission

of error. It is also noted that previous application notices clearly stated Dunmanus Bay.

ii. **Details of application were not in Garda station for the fully specified time.** *Grounds for this Point of Appeal:* Application documents was only available for the last few days of the period, with supporting documents to the appeal pertaining that maps were not made available to the public in Bantry Garda station until 21st July 2012

iii. **Misleading information and omissions contained in the recommendations to the Minister.** *Grounds for this Point of Appeal:*

- The recommendation to the Minister does not sufficiently represent the number of objections inferred by taking into account the position of the Association as representative of the seven aforementioned community organisations, and thus objections submitted under the association represents a much greater number of objections.

- The appeal point set out above within Paragraph (i) is re-iterated.

- The Association is in consultation with Failte Ireland and other tourism and community groups to promote Dunmanus Bay as an unspoilt tourism destination and a key focal point within 'The Wild Atlantic Way', and will rely on its reputation as an unspoilt coastal and marine environment for eco-tourism. The licence appellant states that the granting of this aquaculture licence will jeopardise this.

2. Fishermens Inshore Saltwater Heritage Ltd (FISH) - AP1/2/2013

FISH Ltd. is a company consisting solely of fishermen from the locality. The appeal is signed by three persons with an underwriting note that in the instance of this appeal, FISH Ltd represents all fishermen using Dunmanus Bay.

The appeal is presented on the following grounds:

i. **Affects upon established long term fishing grounds and safe mornings, and threats to wild fisheries.** *Grounds for this Point of Appeal:* The site area is a long established fishing ground and a location for landing and safe storm moorings for generations. The proposed aquaculture installations and activity will cause a marine hazard, preventing passage of boats over and

adjacent to concrete tanks in this shallow inlet by other boats, thus preventing shrimp and crab fishing. The introduction of intensive bivalve filter feeders will affect the food chain at this location, taking from food sources for the delicately managed scallop fishery.

ii. **Invalid public consultation process.** *Grounds for this Point of Appeal:* The same issues as identified in 1(i) and 1(ii) by Dunmanus Bay Marine Association.

iii. **Impact of aquaculture activity in the area.** *Grounds for this Point of Appeal:* Fishermen of the locality practice in a sustainable manner and disagree with the SFPA on the impact of aquaculture upon local fisheries.

iv. **Insufficient flushing of detritus from the site by natural hydrogeological processes.** *Grounds for this Point of Appeal:* The generation of detritus resulting from the proposed activity will not be sufficiently offset by natural processes as flushing would be non existent in the sheltered inlet at which the site resides. This issue was not addressed in the pre-screening EIA statement.

v. **Site access and physical damage resulting from installation of concrete tanks.** *Grounds for this Point of Appeal:* Piers at Ahakista and Durrus cannot be considered as safe moorings. Concrete tanks will cause damage to the benthic habitats when being transported to and placed/arranged upon the substrate. Not addressed in pre-screening EIA.

3. Daniel Spring & Co Solicitor for and on behalf of Mr. Robert Putz - AP1/3/2013

Mr. Putz owns a number of exclusive holiday homes in the area attracting c.2,500 visitors to the annually, employing up to 30 people during high season. With 9 of these holiday homes in Dunmanus Bay, he is also a landowner in the Dunmanus Bay area.

The appeal is presented on the following grounds:

i. **Conflict between the aquaculture activity and the unspoilt natural beauty of the area, which it is hoped will act as the turnkey aspect upon which to market the locality for tourism.** *Grounds for this Point of Appeal:* Proposal to promote Dunmanus Bay area in conjunction with Failte Ireland has recently passed through the public consultation phase. The proposed sea

urchin and oyster farm will cause significant damage to the sensitive location, undermining the aforementioned plans to promote tourism in the area.

ii. **Grant of licence is contrary to stringent terrestrial planning conditions applied by Cork County Council and An Bord Pleanàla.** *Grounds for this Point of Appeal:* Planning authorities place stringent conditions upon permissions in the area and the proposed aquaculture activity is contrary to the established planning practice in the area.

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 appear to be enclosed FROM the Minister OR any other party in light of appeals.

The Minister responded to the consultation submissions on the subject of the location in the Public Notice. Given the documentation available and maps supplied in relation to the application, the omission of the word 'Bay' in relation to the identification of the location as Dunmanus Bay was viewed as non substantive.

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* ', below is a representation summary of the response from the applicant regarding objections.

The following is a response from the applicant Leo Bolger, Dunbeacon, Durrus, Co. Cork, addressing the objections to his licence application T5/570 to cultivate Sea Urchins (*Paracentrotus lividus)* and Native Oysters (*Ostrea edulis*), and also the Foreshore Licence to gather seaweed at the same location in Dunmanus Bay.

The applicant categorised the more significant points raised by the appellants and endeavoured to respond accurately. The various points are:

i The application notice failed to provide accurate information,

ii The proposed facility will spoil the natural beauty of the area,

iii The proposed facility will compromise the natural peace and serenity of the area surrounding the Air India Monument,

vi The proposed facility will restrict basic access, vastly occupy fishing grounds, hinder safe mooring activity and threaten swimming and recreational activity,

v The proposed facility will pose a threat to the nearby Natura 2000 sites, and

vi The proposed facility is close to designated shellfish waters

Each of the issues was addressed as part of an Environmental Impact Assessment Screening process. The EIA screening process established that the proposed facility would not return adverse impacts for the following points briefly detailed below:

i The application notice failed to provide accurate information

The applicant stresses that the wording used in the notice was actually composed by personnel in the Department of Agriculture, Food & Marine. Furthermore if there were any confusion about the exact location of the proposed facilities, the maps detailing the exact point of activity, as prepared by Engineers on behalf of the applicant, were available to be viewed along with corresponding files in the local Garda stations in Durrus and Bantry.

ii The proposed facility will spoil the natural beauty of the area

The applicant maintains the facility shall not jeopardise the aesthetic quality of the area. The applicant has selected concrete tank enclosures, a media similar to the natural rock environment, and one that is not hazardous to the marine environment. These shallow tanks will only be partly visible at low tide plus they will be covered extensively by seaweed.

iii The proposed facility will compromise the natural peace and serenity of the area surrounding the Air India Monument

The applicant states that facility will not in any way interfere with the annual memorial proceedings at the Air India Memorial site. There will be no excessive noise generated during operations as animals are fed and harvested without the use of machines. Furthermore the proposed area is located a safe distance from the memorial monument and cannot be seen.

iv The proposed facility will restrict basic access, vastly occupy fishing grounds, hinder safe mooring activity and threaten swimming and recreational activity.

The applicant states that he does not have the authority to restrict access and suggests the site will remain accessible through private land or by sea.

Regarding concerns over possible threats to fishing grounds and safe moorings, the area used for structures will only occupy less than two thirds of the 4.62Ha site. Given the coverage of such a small proportion of the area in the vicinity of the site the coverage is not significant enough to compromise the ecological or hydrodynamics dynamics for other local cultivations or fishing activity.

Regarding the concerns over the selected site hindering periwinkle collection, the licence only covers sea urchins and oysters. The collection of periwinkles or other species will not be interfered with.

With regard to safe moorings, the applicant states that these are available at both Durrus and Ahakista piers and in the unlikely event of fish landings, the same foreshore area is still available and will remain unchanged.

The proposed facility should not pose any threat to swimming and other leisure related activities as the immediate sheltered area and shoreline consists of a sand – muddy sand bottom which is not a suitable area for such activities.

iv The proposed facility will pose a threat to the nearby Natura 2000 sites

Designated areas considered nearby are Reen Point SAC & Owens Island NHA, both located approximately 700 metres and 500 metres from the proposed area, respectively (nearest point). The applicant stresses that neither of the qualifying features for which these sites are designated will be compromised due to:

- The significant distance between the farm and these designated sites
- Low noise levels generated from the farm that would otherwise disturb nesting birds on Owens Island NHA

- No associated production or discharge from the farm which could alter the existing conditions of the designated sites in any way
- Confirmation by local National Parks & Wildlife personnel stating the proposed activity would not be a cause for concern for both of the designated sites

vi The proposed facility is close to designated shellfish waters

The applicant states that the Sea urchin (*Paracentrotus lividus)* is in fact an echinoderm and not categorised under the Shellfish Water Directives.

Regarding the Native Oyster (*Ostrea edulis*), the production of these bivalves is not the primary goal but their existence on site will prove more useful as a bio filter. There has been no history of disease associated with this species in the region.

Regarding seaweed requirements for the urchin feed, there is excess seaweed material available from local mussel farmers which would otherwise be discarded. Other sources are from beach cast material within the foreshore area and natural growth on the cultivation tanks. All seaweed material will be hand collected. No weed will be gathered outside the area and therefore no interference is anticipated to any other location.

Neither aquaculture nor shellfish waters legislations precludes the licensing of aquaculture facilities in non-designated areas. Furthermore, the nearest area of shellfish designated waters is over 5km east of this proposed site.

2 Consideration of Non-Substantive Issues

Each issue raised by all five appellants are considered substantive.

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:

- Copy of Application Form;
- Copy of Aquaculture Licence with maps, charts, co-ordinates and drawings;
- Copy of Foreshore Licence;
- Copy of E.I.A Screening Assessment;
- Copy of Submission to Minister;
- Copy of Applicants response to concerns and objections;
- Copy of Notification to Applicant of Minister's Decision;
- Copy of Advertisement of Minister's Decision; and
- Overview Map of sites in Dunmanus Bay

(See above copies in Deptartment File)

5 Context of the Area

5.1 Physical descriptions

Dunmanus Bay is a long narrow bay of the Atlantic Ocean, situated between Mizen Head in the south and Bantry Bay to the north and is entered 4 miles north of Mizen Head between Three Castle Head and Sheeps Head, a distance of about 3.5 miles. The bay extends for a distance of 12 miles inland in an easterly direction up to the small village of Durrus at the head of the bay in Dunbeacon Harbour (Figure 1).

The Bay is located at the latitude and longitude coordinates of 51.551944 and -9.720278. The largest islands within the bay are Carbery, Furze, Horse and Cold Islands. The north side of the bay is populated with several villages and a gentle shoreline. It is out of the main tidal flow with no significant river flowing into it apart from the Durrus River draining into the bay at Durrus. The immediate area is little frequented by vessels. The nearest village, Ahakista, is located approximately 1km northwest of the site, and the Natura 2000 sites,

Owen's Island proposed NHA and Reen Point Shingle SAC , are located 500m and 700m west and east of the proposed site, respectively.

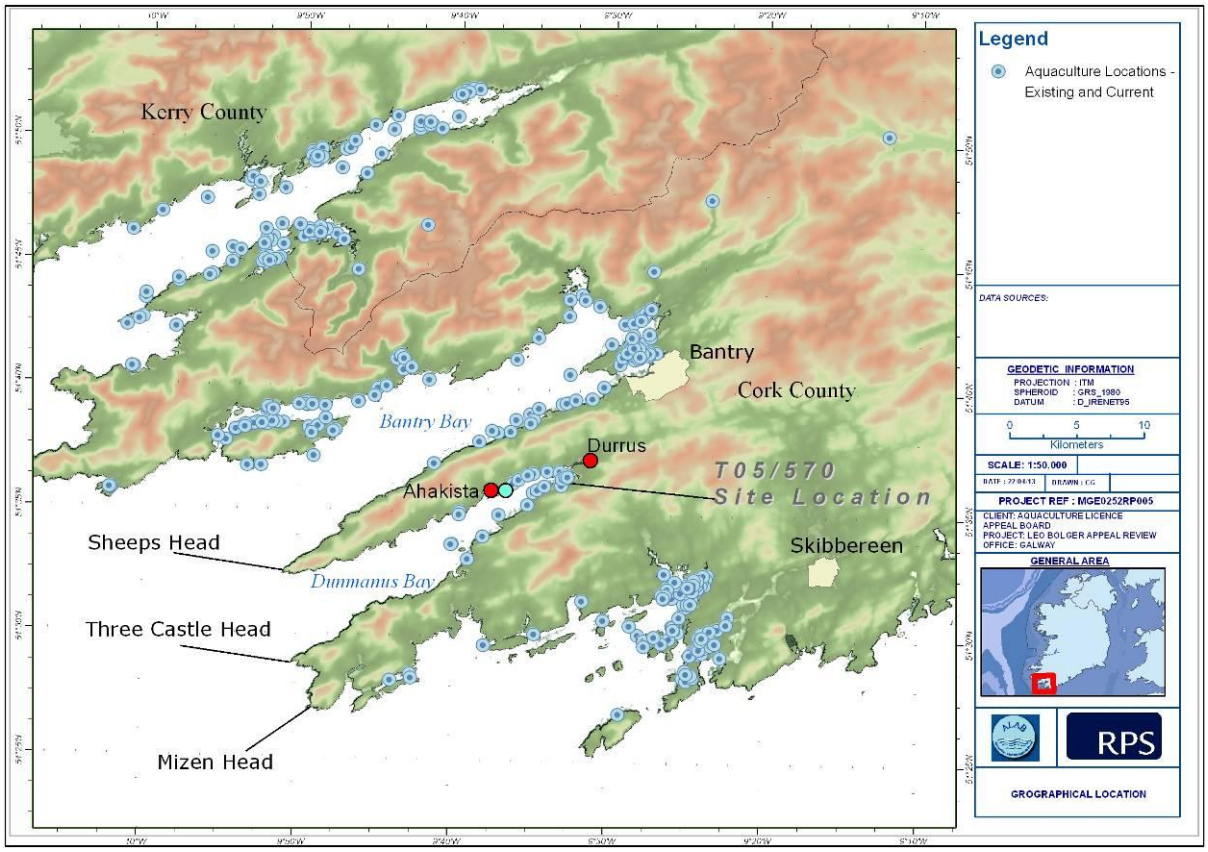

Figure 1: Context of the Aquaculture Location

The area has a mild, moist, Atlantic climate, with strong winds, especially during winter months. Rainfall is high, fed for much of the year by low pressure weather systems over the Atlantic, and dry spells are infrequent. The Meteorological Service (Fitzgerald and Forrestal, 1996) record the annual rainfall average at the nearest station (Durrus G.S.) as 1486 mm for the period 1961-1990.

The proposed farm site (Figure 2 and 3) is located on the more upper reaches of the bay on the Northern peninsular section. The site falls within the Glanlough Electoral Division which had a population of 180 in 2011. Ahakista is the closest village to the site, approximately 1km to the north west. The potential for increased settlement in this village area is constrained by the fluctuating topography, the sensitive nature of the landscape and the inadequacies of the local road network (Bantry Local Area Plan., 2011). There are two main freshwater inputs to the bay, at Durrus and Dunmanus. The wider context of the site (as depicted in Figure 2), has a population of circa (c.) 6,476 (CSO, 2011).

Figure 2: Dunmanus Bay context within which Site T05/570 is located. Demographics by Electoral Division and primary freshwater inputs also shown.

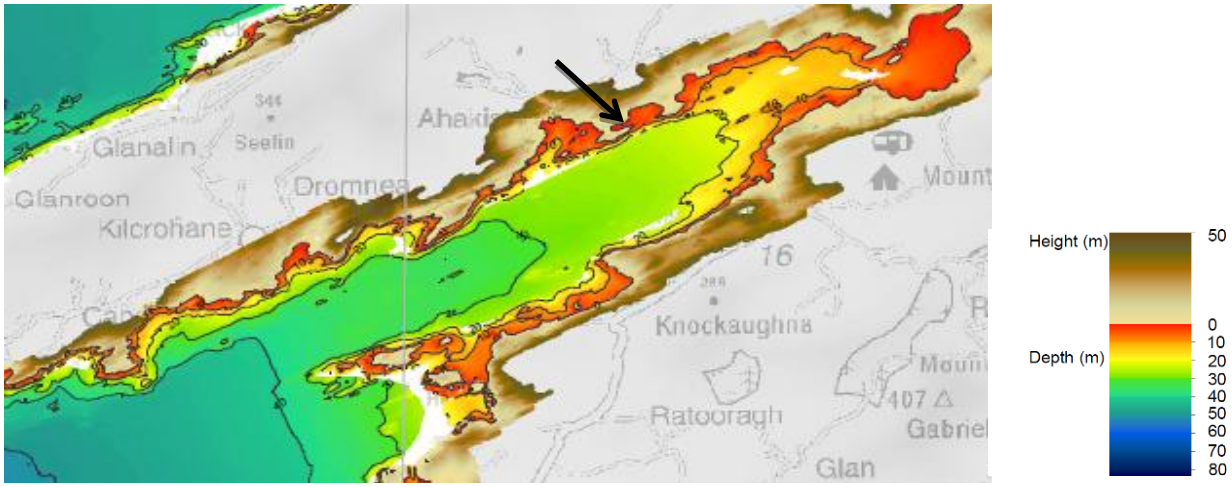

Figure 3: Extract from INFOMAR Bathymetry map of Bantry and Dunmanus Bay, site indicated with arrow. (Marine Institute 2009

5.2 Resource Users

Aquaculture– At present there are only two licenced aquaculture operators in Dunmanus Bay, comprising of 6 licenced sites; 5 mussel and 1 oyster, all within the Shellfish Protection Area (Figure 4). Fifteen previously licenced operations have now expired and the most recent application 'Dunmanus Bay Mussels Ltd' licence was refused in 2012. (See map included in Department file).

The inner estuary area of Dunmanus is a designated Shellfish Water of 1.3km^2 with a catchment area of 94.8km^2. This is a much smaller proportion of Designated Shellfish Water area compared with other Bays within the south west region which have multiple shellfish areas, or are almost entirely designated as shellfish areas (e.g Kenmare River). Site T05/570 is, at its closest point approximately 4km from the Designated Shellfish Waters, but falls within the catchment area (Dunmanus Inner Shellfish Area Pollution Reduction Programme).

Angling and Inshore Fishing Activity – Dunmanus is a well renowned spot for inshore fishing particularly for Pollack, wrasse, dogfish, flounder, conger, dab and wrasse. Areas around the Bay offer good small boat fishing (see Table 2) for wrasse, Pollack and conger. The pristine area of the Bay plays host to a sustainably managed shrimp, prawn and scallop stock management area. Local restaurants and eateries avail of local stock, providing added value to the tourism trade. There have been initiatives to identify the area name as a brand representing wild seafood. The area selected for the proposed facility covers a section of a sustainably managed site for crab and shrimp fishing as well as periwinkle harvesting.

Tourism and Leisure Uses – West Cork is a well established tourist location and this is largely as a result of the high quality coastal landscape and environment. Tourism contributes significantly to the economic activity of the county with Dunmanus Bay being considered to be of particular landscape (seascape) value with abundant wildlife. The famous Sheep's Head walkway, an 88km route which circles the whole of the Sheep's Head, traverses through the attractive of the attractive and important coastal tourism villages/town, from Bantry to Sheep's Head at the end of the peninsula and back through Kilcrohane, Ahakista and Durrus.

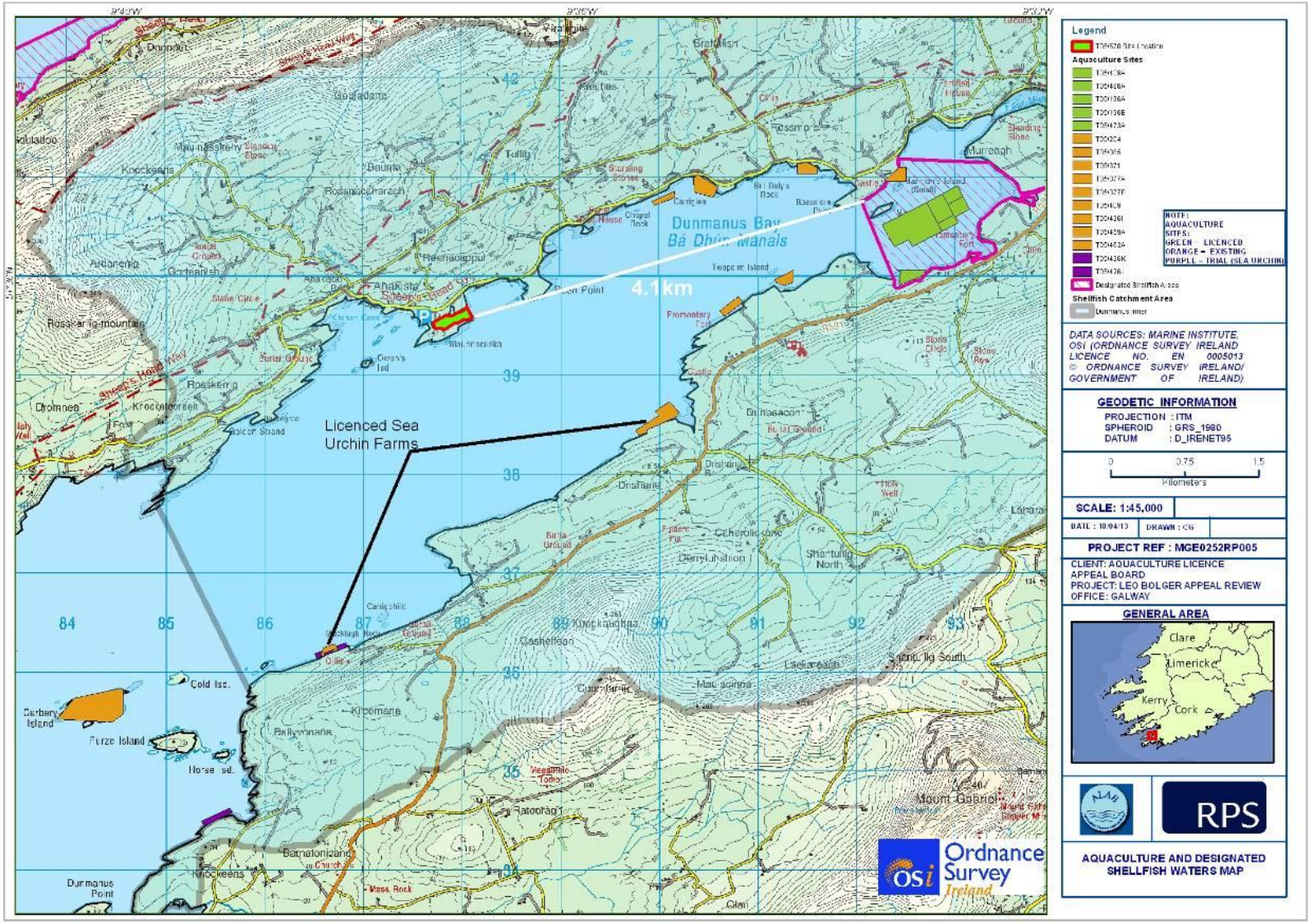

Figure 4: Aquaculture and Designated Shellfish Waters Map

These village, and the tourism industry here in general, are reliant upon maintenance of the unique and high quality natural and built environment. Indeed, the Bantry Local Area Plan, within which the proposed farm is located, recognises that objectives directed towards conservation of the natural and built environment must be respected not only for their own sake, but as a result of their importance to this sector of the economy. Figure 5 shows the site location from the nearest public vantage point.

Figure 5: View of the site T05/570 embayment from the adjacent L4704 road (Google Maps)

Ahakista is the nearest village to the proposed site, located 1km north of the site within the Electoral District of Glanlough. The village is an important hub of tourist activity with various leisure & boating activities offered, acting as a popular stop off point on the Sheeps Head route. Summer festivals welcome an increased number of visitors as well and visitors also frequent the nearby Air India monument, which is located c. 136m from the site at the closest point (Figure 10). Scuba diving activities, fishing and various leisure craft activities are popular tourist activities within the Bay.

Table 2: Piers most relevant to site T05/570, usage in 2006 (Cork County Council Western Division 2008)

Port no.	Name	Townland	Number of vessels - 2006 (conservative)estimates	Use, in order of importance
62	Ahakista	Reenacappul	8 to 9 small fishing boats plus local and leisure usage	Fishing, tourism
64	Durrus	Clashadoo	3 to 4 aquaculture users plus local traffic	Fishing
66	Dunmanus	Dunmanus E	a no of small pot fishermen, leisure and local use	Communications, tourism, fishing

Agricultural Activity

Dependency upon agriculture in the area is of a lesser extent than typically occurs in rural Ireland. Fishing and tourism are more important sources of employment, and indeed these are earmarked within the Bantry Local Area Plan as two areas which can foster an increased range of employment.

5.3 Environmental Data

5.3.1 Site Location

The site is located in the north side of Dunmanus Bay, within a small embayment. Information on exact site characteristics have not been provided under the application, and a site survey would be required to obtain specific site conditions. However, it is known that the 4.62 Ha sub-tidal site (Figure 4 and 6), bounded by rocky outcrops to the east and enclosed by coarse sand and gravel to the west along the shore line. The site is of relatively even, shallow bathymetry, circa 2-3 metres (Figure 3 and 7). The bay is out of the main tidal flow with no significant rivers flowing into it and is little frequented by vessels.

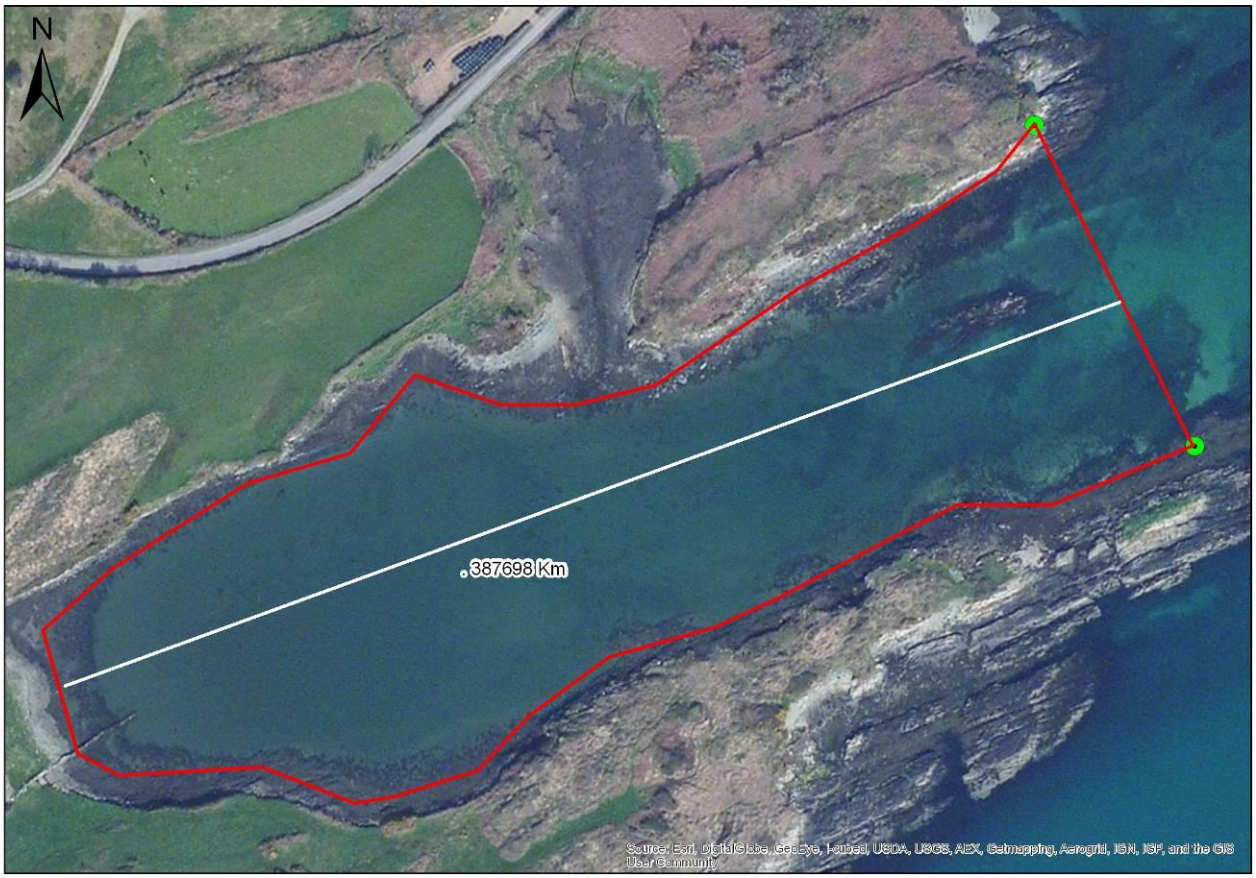

Figure 6: Aerial view of Site T05/570 (outlined in red)

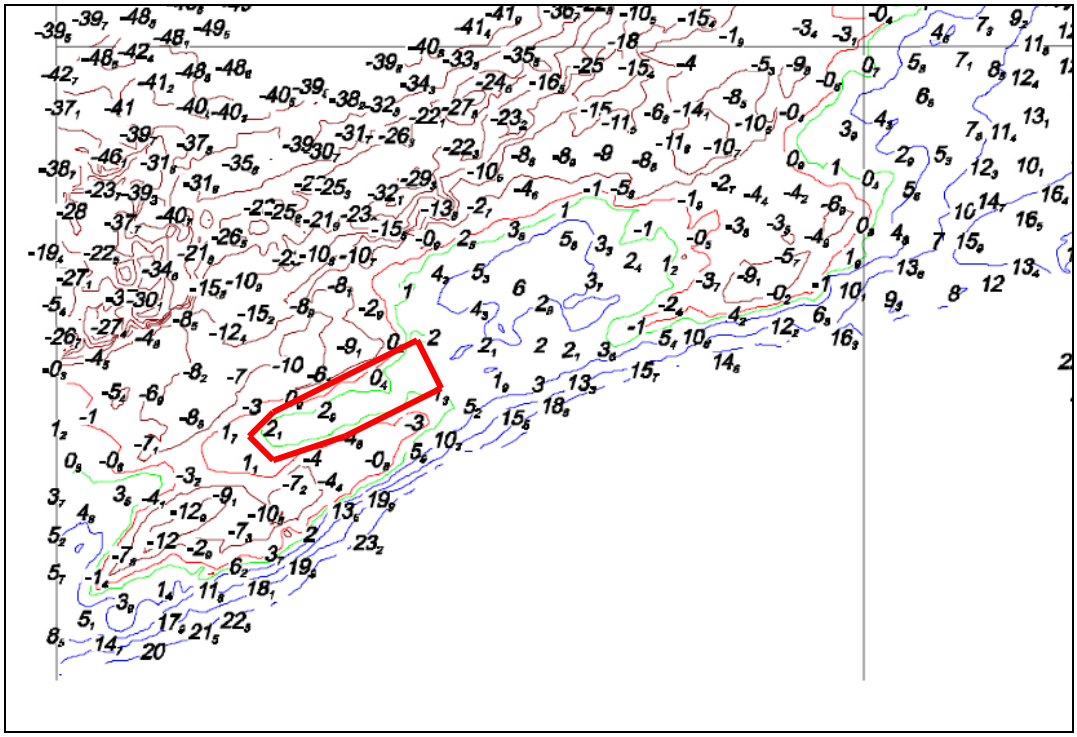

Figure 7: Extract from INFOMAR Bathymetry Map for Dunmanus Bay, site T05/570 is shown in red (Marine Institute 2006).

EIA Screening did not identify any data records on surface water quality, benthic faunal analysis, microbial parameters or general water chemistry. The site does not fall within any Natura 2000 sites, but is located c.360 - .390 metres south west of Reen Point Single SAC (See section 5.4.1 for further details). This SAC is located within an outcropping of land to the south west of the site.

5.3.2 Water Quality

No site specific data on water quality was available at this present time. The Shellfish Pollution Reduction Programme for the Dunmanus Inner Shellfish Area notes that there are 976 on-site waste water treatment systems in the catchment, a higher density than the national average. Whilst there are a smaller number located within the coastal region of the catchment, the risk to surface waters from pathogens and phosphorus is high throughout the catchment. Estimated nitrogen fertiliser usage in the catchment is also higher than the national average, which is important to consider in conjunction with the potential increased nitrogen outputs from sea urchin farming at site T05/570.

Biotoxin levels monitored within the surface water of bay weekly by the Marine Institute effective since November 2011.This has been requested from the Marine Institute but is unavailable at this time**.**

Water chemistry and biota results from 2008–2010 are available only for the inner bay area, closest point over 250m east of the proposed site. The secondary Waste Water Treatment Plant (WWTP) at Durrus has a design capacity of 700 P.E. and a loading of less than 500 P.E. An application for a certificate of authorisation as made by Cork County Council by December 2009 pursuant to the requirements of the Waste Water Discharge (Authorisation) Regulations, 2007 (Dunmanus Inner Shellfish Area Pollution Reduction Programme). At present, the Durrus Wastewater Treatment Plant discharges to Dunmanus Bay. According to the South Western River Basin District Plan, the overall status of these 'Transitional and Coastal Waters' is presently unassigned. The existing wastewater treatment facilities in Durrus will need to be improved and upgraded as the population expands in order to ensure water quality is of good status by 2021 (Bantry Electoral Area Local Area Plan 2011).

Bathing Water quality is not yet monitored by the EPA within Dunmanus Bay. The nearest location assigned 'good' Bathing Water quality status was in Barley Cove, an area located approximately 12km southwest of the proposed activity.

5.3.3 Benthic Habitats

Habitat data and species data for the site is not currently available. The area is outside Sheep's Head cSAC. This sheltered shallow inlet habitat is however composed mainly of mud / fine sand benthic habitat, with smaller amounts of coarse sand to gravel and rock along the bounding shorelines. The site has not been subject to the NPWS of Marine Institute habitat mapping programmes. Table 3 presents results from physical assessments performed on the proposed area in 2009. Seabed classification of the areas adjoining the site can be seen in Figure 8.

Table 3: Elements of the proposed area were retrieved from 'Infomar Data Charting' 2009

Water Depth	Sediment Class	Sediment type	Particle size analysis (%)	Sediment type 300m SE & SW of proposed area	Land height surrounding proposed inlet area (m)
0 -15m	1	Sand – Muddy Sand	Mud – 42.367 Sand – 57.632	Muddy – Fine Sand	0 – 10m

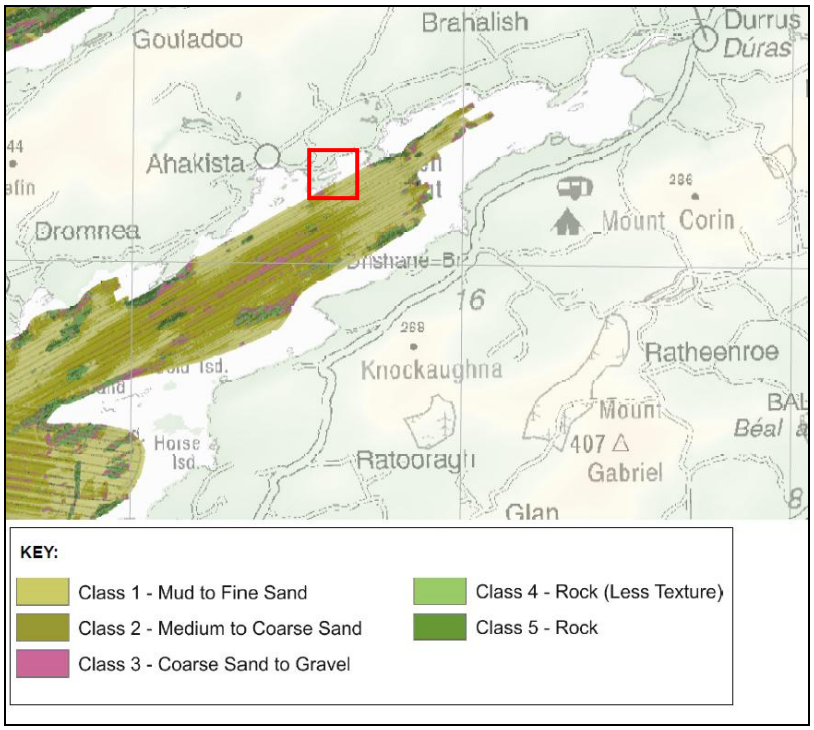

Figure 8: Extract from INFOMAR Seabed Classification map of Bantry and Dunmanus Bay, site T05/570 is contained within red box (Marine Institute 2011).

Areas identified for seaweed collection may have a localised and temporary detrimental effect due to the reduction of coverage and food sources for marine invertebrates. Seaweed collection is anticipated to be predominately strand and mussel culture biofoul which will have no impacts. Harvesting of seaweed should be subject to a defined management plan to allow natural replenishment.

5.3.4 Biotoxicology

Biotoxin levels have been monitored within the surface water of the Bay on a weekly basis by the Marine Institute since November 2011. An update from the Marine Institute of the current status of biotoxin levels has been requested, but is unavailable tat this time.

In June 2012, Domoic Acid (ASP) concentrations have been observed to increase in samples of *M. edulis* submitted from Dunmanus and Kenmare Bays. In early May and June 2012, Dunmanus Bay (CK-DB-DI) was closed due to levels above regulatory limits (Report 12-20a and 12-23a). As of the 20th June 2012 concentrations are currently below the regulatory level (20th June Update 2012 issued by Phytoplankton and Toxicology Data services, Marine Institute).

Dinophysis spp,. Pseudo-nitzschia seriata complex and *Karenia mikimotoi* have all been recorded in the Bay from May toJuly 2012.Biotoxin levels monitored within the surface water

of bay weekly by the Marine Institute effective since November 2011. Data unavailable at present.

Since February 2013 the weekly testing notice has been in effect in Dunmanus Bay due to ASP toxin producing species identified in the south west.

5.4 Statutory Status

While the proposed aquaculture site does not fall directly within any protected site, but there are a number of Natura 2000 sites in proximity, which are detailed in Table 4. Mapping of these sites and other protected sites can be seen in Figure 9.

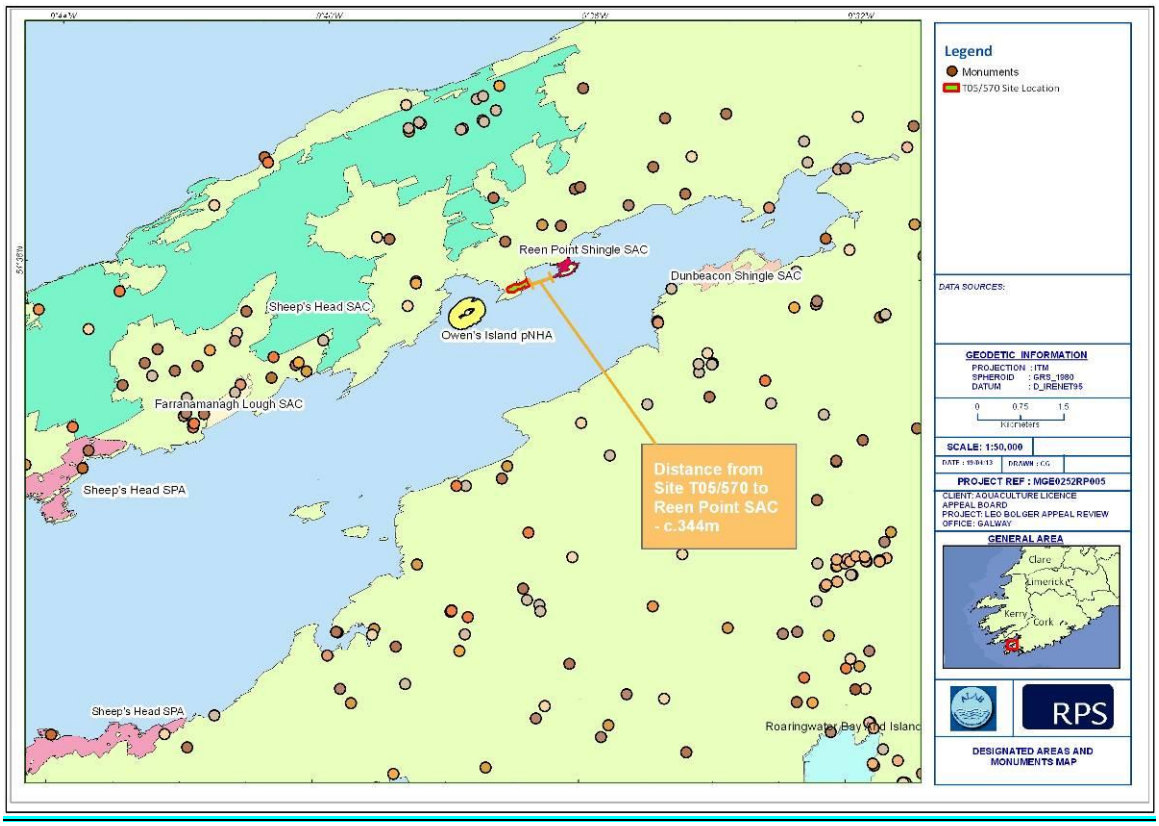

Figure 9: Special Areas of Conservation, Special Protections Areas (SPA), proposed National Heritage Areas and National Monuments

5.4.1 Nature Conservation Designations

Table 4 identifies the designated sites for conservation in the vicinity of the application.

Table 4: Natura 2000 sites nearest to the proposed aquaculture operation and features for which they are designated.

Natura 2000 site	Qualifying features (EU Importance)
Sheep's Head SAC (000102)	-*Geomalacus maculosus* (Kerry slug) -Northern Atlantic wet heaths with *Erica tetralix* (cross leaved heath) -European dry heaths
Reen Point Shingle SAC (002281)	- Coastal lagoons - Perennial vegetation of stony banks - Mediterranean salt meadows (*Juncetalia maritimi*) - European dry heaths
Dunbeacon Shingle SAC (002280)	-Perennial vegetation of stony banks
Sheep's Head SPA (004156)	-*Falco peregrinus* (breeding) – (Peregrine falcon) -*Pyrrhocorax pyrrhocorax* (Red-billed Chough)
Owen's Island pNHA	-Seabird Nesting sites

5.5 Dunmanus Bay Species Records

5.5.1 Cetaceans

Table 5 lists the cetacean species (identified for under Annex IV of the Habitats Directive) recorded in the vicinity of the application site.

Table 5: List of cetacean species recorded by the Irish Whale and Dolphin Group within areas engulfing the proposed aquaculture facilities. Results are obtained from 2007 – 2012 surveys, where available.

Location	Date	Specie	Number of individuals
Dunmanus Bay	June 2012	Common Dolphin (*Delphinus delphis*)	25
	August 2011	'Whale species'	2
	August 2011	Medium whale specie	1
	July 2011	Minke whale (*Balaenoptera*	2

		acutorostrata)	
	August 2010	Minke Whale (*Balaenoptera acutorostrata*)	1
	June 2010	'Whale species'	1
	May 2010	Minke Whale (*Balaenoptera acutorostrata*)	1
	September 2009	'Whale species'	1
	March 2009	'Whale species'	1
	September 2008	Common Dolphin (*Delphinus delphis*)	100
	September 2008	Minke whale(*Balaenoptera acutorostrata*)	3
	September 2008	Minke whale*(Balaenoptera acutorostra*ta)	2
	June 2008	Bottlenose dolphin	15
	September 2007	Common Dolphin (*Delphinus delphis*)	15
Areas south of Ahakista (500m – 1km from proposed area)	October 2007	Bottlenose dolphin (*Tursiops spp*)	5
	July 2007	Bottlenose dolphin (*Tursiops spp*)	6
	September 2005	Harbour porpoise(*Phocoena phocoena*)	2

5.5.2 Birds

The mud/ fine sand mix intertidal inlet located near the proposed area will likely provide habitat or feeding grounds for passing waders.. Cormorants (*Phalacrocoracidae* spp), Little egret (*Egretta garzetta*) & Curlew (*Numenius arquata*) (recently in smaller numbers) all use the general area as it is an optimum foraging site for burrowing invertebrates, bivalves & eelgrasses.

Local ranger Patrick Graham confirmed the recent presence of Peregrine Falcon (*Falco peregrinus),* Arctic Tern (Sterna *paradisaea*) and Chough (*Pyrrhocorax pyrrhocorax*) populations along the bay and inland areas engulfing the bay.

Comorants and Terns were recorded in recent survey observations (Table 6) from the pNHA(Proposed Natural Heritage Area) .Owen's Island pNHA is a designated nesting site for seabird populations.

Table 6: below present Summer survey results recorded from 2008 – 2012 on Owen's Island pNHA (rocks to the east)

Year	Cormorant individuals	Arctic Tern individual count	Common Tern individual count
2008	36	14	0
2009	27	6	0
2010	29	0	0
2011	No survey	0	0
2012	29		24

5.5.3 Harbour Seals – *Phoca vitulina*

The last nationwide Harbour Seal Survey in 2003 by National Parks & Wildlife Services (NPWS) revealed a total of 81 individuals recorded at various locations around Dunmanus Bay.

The most recent survey by NPWS carried out in August 2009 recorded a maximum number of 34 Harbour seals (*Phoca vitulina*) within Dunmanus Bay. The principal sites for Harbour seals were found in the inner reaches of the bay at Carraigphillip and Mucklagh Rocks, an area located over 6km southwest of the proposed site. In recent years 27 and 29 Harbour seals were recorded on 15th September 2007 and 18th September 2008 respectively. *Phoca vitulina* is assigned Annex II EU Habitats Directive classification status.

5.5.4 Otter - *Lutra lutra*

Otter colonies are reported to use this area although the area is not designated under EU legislation for this Annex II and Annex IV listed (EU Habitats Directive) species. Long established populations inhabit Cold Island, an area approximately 700m southwest of the proposed site (nearest point).

5.6 Statutory Plans

No specific plans are currently documented for Dunmanus Bay. However County Cork Biodiversity Action Plan 2009 – 2014 and the Bantry Electoral Area Local Area Plan 2011 are currently in place and considers all ecological areas of the entire county.

5.6.1 County Cork Biodiversity Action Plan 2009-2014

This Action plan incorporates policies, aims and actions' relating to biodiversity. The following summarises the aims of the Plan:

- To review biodiversity information for County Cork and to prioritise habitats and species for conservation action,
- To collect data and use it to inform conservation action and decision making,
- To incorporate positive action for biodiversity into local authority actions and policy,
- To raise awareness of County Cork's biodiversity and encourage people to become involved in its conservation, and
- To promote best practice in biodiversity management and protection.

5.6.2 Cork County Development Plan

It is an objective of the Planning Authority that landscape issues are an important factor in all land-use proposals. A pro-active view of development is advised whilst maintaining respect for the environment and heritage in line with the principle of sustainability (Cork CDP, Vol 1, Chapter 7).

With specific relevance to aquaculture, the Plan sets out to support and promote the sustainable development of the aquaculture sector to maximize its contribution to jobs and growth in coastal communities. It also recognizes that aquaculture harvesting and associated processing have the potential to provide an economically viable alternative to commercial fishing, having the capacity to aid sustainable rural diversification (Cork CDP, Chapter 5, Economy and Employment).

The Plan also identifies important scenic route profiles. Scenic routes 108 and 109 are the most relevant to site T05/570 and run along the local roads from Bantry to Kilcrohane, Ahakista and Clashadoo. Both have been assigned a 'Very High' overall landscape value (Table 7), with the key scenic qualities being Rugged Ridge Peninsulas.

Table 7: Scenic Route Profiles of relevance to site T05/570 (Cork CDP, Appendix B, Scenic Routes)

Scenic Route	Does Route Run Through or Adjoin Special Scenic Landscape	Does the Route adjoin a NHA, pNHA, cSAC a SPA or pSPA	Landscape Type(s) Route Runs Through	Overall Landscape Value	Main Features of Land Cover	Structures of Historic or Cultural Importance Visible from Route	Key Characteristics of Land Use	Is There a Sense of Remoteness as you Travel the Route?	Rural Character
S108	Yes	SAC Reen Point Shingle	Type 4 Rugged Ridge Peninsulas	Very High	Rock & vegetation	Tower at Kilcrohane & views of old warehouses	Agriculture & settlement	Yes	Prevalent
S109	Yes	pNHA & SAC Sheep's Head	Type 4 Rugged Ridge Peninsulas	Very High	Rock & vegetation	No Information Available	Agriculture & settlement	Yes	Prevalent

5.6.3 Local Area Plan – Bantry

Dunmanus Bay is considered in the Bantry Electoral Area Local Area Plan of 2011. The village area of Ahakista is most specifically relevant to the site T05/570.

The Bantry Electoral Area Local Area Plan makes particular reference to the economic strength of the Electoral Area characterised by the natural and coastal resources, in particular the fishing industry, aquaculture, agriculture and tourism are referenced, reflecting the support for these industries.

Ahakista is identified as being located in an area of scenic landscape with the highest natural and cultural quality, and areas of conservation interest and nation importance. The landscape is also identified as being likely to be fragile and vulnerable to change.

The coast road is an important tourist route, and contributes greatly to the scenic quality of the locality, to the benefit of both tourists and local residents. The road along which site T05/570 is adjacent, between Ahakista and Durrus is particularly sensitive, and it is recommended that new development should generally be resisted along this route. In particular it is suggested that no development should be permitted to the seaward side of this designated Scenic Route. An exception would be commercial premises within the area surrounding Durrus, or a small amount of equivalent small-scaled tourist related or local services. It is a specific objective to restrict development to the seaward side of the coast road between Ahakista and Durrus., although it is unknown if this development relates only specifically to landward structures, or also includes aquaculture development (Bantry LAP, 2011).

5.7 Non-Statutory Plans

5.7.1 Dunmanus Bay Sustainable Development Plan

There is a community action plan for the Dunmanus Bay area - Dunmanus Bay Sustainable Development Plan. The plan has been compiled by a local group which has called itself the Dunmanus Bay Marine Association comprising representatives from Ahakista Community Council, Barley Cove Beach SAC, Fishermens Inshore Saltwater Heritage Ltd, Goleen Community Council, Kikcrohane Development Association, Mizen Head Visitor Centre, Muintir Bhaire Community Council, and The Sheep's Head Way.

The Plan has been presented to the Coastal Management Committee of Cork County Council and the West Cork Development Partnership and comprises a general statement of community co-operation and promotion of the Bay as an undeveloped resource, with the focus on 'wild food' promotion. This comprises local and heritage inshore fisherman exploiting natural resources and the promotion of these products as wild food with an outline plan to attain location branding recognition to promote products. As a result they perceive a conflict with aquaculture and farmed seafood produce. Detailed plans have not been provided. The information that is provided is a summary or mission statement without any specific detail.

5.8 Water Quality Status

The four water categories of river, lakes, groundwater, transitional and coastal waters come under the EU Water Framework Directive (WFD), Directive 2000/60/EC. The objective of the WFD is to prevent any further deterioration in status of surface waters, groundwater and water dependent ecosystems and to restore polluted waterbodies to at least "good status" by 2015. The following results were obtained from 'EPA Water Quality In Ireland 2007-2009':

The Water Management Unit Report for Dumanus Bay identifies 5 separate rivers flowing into the bay at two points just north west of the site at Ahakista. All of these rivers are of a High Quality, and the majority of remaining freshwater river inputs to the bay are identified as Good Quality.

Ecological Water Quality Status of Coastal Waters in Dunmanus Bay have yet to be determined by the EPA. The nearest point of assessment was taken approximately 4km south of the proposed facility in Roaringwater Bay (at nearest point). Results returned coastal water quality as 'moderate' for this region and assigned a risk status of **1A** - '*at risk of not achieving good status by 2015'*.

Ecological Risk Status

Dunmanus Bay **- 2b:** Strongly expect to achieve good status by 2015.

5.9 Man-Made Heritage

According to the Archaeological Survey of Ireland there are several hundred National monuments, settlements and various heritage features occupying the land based areas of spanning Dunmanus Bay. The more significant features in close proximity to the proposed are considered below. =

RINGFORT - **ROSSNACAHERAGH**

Found in pasture on a south facing slope. Circular area enclosed by earthen bank with an approximate height of 2.15m. **Located 1km north of proposed area.**

RINGFORT - ROSSNACAHERAGH

Found in pasture on a southeast facing slope, Circular area enclosed by earthen bank with an approximate height of 1.35m. **Located 1km north of proposed area.**

STONE CIRCLE - GORTEANISH

Situated in an area of outcropping rock with dense furze and brambles, overlooking Dunmanus Bay to the south. The circle is incomplete: four erect and seven prostrate slabs indicate a circle of eleven stones. The internal measurement along the main axis, aligned NE-SW, is c. 7.5m. **Located 1.2km north of proposed area.**

BOULDER BURIAL - GORTEANISH

A large boulder measuring approximately 0.50m in height is located in the north west quadrant of a multiple-stone circle may be the cover-stone of a boulder-burial. No support-stones are visible. **Located 1.2km west of proposed area.**

Air India Monument and Memorial Garden- Ahakista

The Air India monument and memorial garden was opened in 1986 to commemorate the death of over 300 people in the Air India disaster of 1985. Its primary feature is the monument, which is a sundial located near the coastline. The site is at it closest point 136m north west of the proposed area, as shown in Figure 10.

Figure 10: Air India Memorial , Proximity to Site location

Section 61 Assessments

Section 61 of the 'Fisheries Amendment Act 1997' considers the following matters which the licencing authority shall have regard for when an application for an appeal regarding an aquaculture licence is being considered.

6.1 Site Suitability

Section 61 of the 'Fisheries Amendment Act 1997' considers the following matters which the licencing authority shall have regard to when an application for an appeal regarding an aquaculture licence is being considered.

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

- The site is located in quite shallow waters and in a very sheltered location where flushing rates are not likely to be powerful within the inner sections of the inlet. However, if the site were to be moved further off shore it would likely encroach on fishing navigational corridors, occupy space for leisure activity and biologically impact on more sustainable fishing grounds

- The proposed operation is cultivated contained within concrete structures, and co-culture has been proposed to reduce any potential water quality issues.

- Naturally occurring phytoplankton and seaweed is abundance in this selected area. Native Oyster stocks used to remove excess phytoplankton to prevent potential blooms occurring. Seaweed is proposed to be used for urchin feed and oysters serves to remove Nitrogen produced by the urchins. Shellfish cultivation at this scale is not extensive enough to diminish naturally occurring seaweed and phytoplankton stocks.

- The size of the structures and scale of activity is not forecasted to significantly impact on the benthic environment therefore any organic loadings will be minimal and not significant enough to diminish available oxygen within the environment. Discarded shells and faeces build up will not be permitted on the site

- The proposed site is situated in a very remote location where population density is very low so the facility will not be visible by local receptors and will not impact seascape of the area. Furthermore the structure will only be visible during low water and will be covered with seaweed.

6.2 Existing/Potential beneficial Uses

Tourism/Recreation/Leisure

As stated in Section 5.2, angling and shore fishing, scuba diving, leisure craft activities etc originate from piers and beaches lining Dunmanus Bay, including Ahakista pier. However the specific area outlined for the licensed activity is not regarded as frequently used or advocated area for swimming and leisure related activities due to its shallow nature and mud/fine sand substrate.

A guiding principle within the Planning and Foreshore Licence process is that the public access to the coast and shoreline is to be maintained as much as possible, and that any plan would have to allow for continued access around the development. Durrus or Ahakista are identified as a tertiary hubs for marine leisure infrastructure, thus they should provide safe access to the water, as a minimum, for local and traditional users and small scale or passing marine leisure traffic (Cork County Council Western Division., 2008). The proposed farm would not have a detrimental impact upon tourism, recreation and leisure, and access to the site would not be restricted by the development; however recreation or navigational usage of the embayment would not be feasible after installation of the tanks.

Hosing statistics for the two areas in closest proximity to the site, Glanlouh and Durrus Electoral Divisions, show a high number of vacant houses at the time of census survey, 52% and 32% respectively. These vacant homes are modern or extended and therefore inferred as being holiday homes, and an indicator of a very high tourism and leisure value in the area surrounding the site. In line with this indicator, the value placed upon integrity of the coastline and the site in question is of upmost importance.

As previously identified within the Bantry Local Area Plan (5.6.3), development should be restricted on the seaward side of the coast road between Ahakista and Durrus due to its particularly sensitive nature. However, if the aquaculture operations at the site are appropriately managed so as to mitigate visual effects or any potential environmental degradation, the development could be classed as non obtrusive development. The visual

and noise impacts of proposed operations are anticipated to be very low and operations are predominantly non-mechanical.

The proposed development may have **slight and highly localised effects** upon tourism and leisure users of the area.

Fishing/ Harvesting

The site chosen is a productive periwinkle harvesting area and also covers shrimp and crab fishing grounds. There is no reason why these activities cannot continue as the area applied for only requires two thirds of the area space for concrete tanks. This is not a significant enough operation to hinder current fishing & harvesting activities relative to the expansiveness of the entire area used for that purpose. Both the aquaculture and collection operate by hand.

The Aquaculture & Foreshore Management Division ensures the efficient and effective management of Aquaculture licensing and Foreshore licensing in respect of Aquaculture related activities. If licensing conditions pertaining to this application are met, they should serve to reduce, avoid and minimise any damaging impacts to the environment and general area during operations at the facility. Appropriate monitoring protocol will therefore need to be put in place to establish water and sediment quality with particular emphasis on Nitrogen levels (naturally released by sea urchins)

If licensing requirements are met, and satisfy legislative standards, the proposed development is **not likely** to have a significant impact on the fishing/harvesting users of the area.

6.3 Statutory Status

The proposed development has a ***non-significant impact*** on the statutory status of the area for the following reasons:

- Aquaculture operations at the site should not convey interference to potential development plans or measures within the vicinity, in accordance with the Cork County Development Plan, Cork County Biodiversity Action Plan 2009 – 2014 and the Bantry Electoral Area Local Area Plan.

6.4 Economic Effects

The sea urchin is considered a delicacy and has a high commercial value. It is estimated that 80 per cent of the world's supply of urchins is consumed in Japan, and Japan imports from at least 13 countries on five continents. France is the main market for sea urchins in Europe.

Although sea urchins are not currently eaten locally, Ireland was a major European exporter of wild sea urchins in the 1970s and 1980s exporting several 100 tonnes of the animals every year. Today, those figures have experienced a drop to less than 10 tonnes per year. This situation may change in Ireland due to recent developments in farming practices.
This proposed facility in Dunmanus Bay will boast features recently developed by researchers at University College Cork. The innovative and efficient features of the proposed feeding system use only natural seaweed as a feed and remove the need for a complex feeding system. Sea urchin farming could be recognised as a viable and potentially lucrative contributor to Ireland's aquaculture sector and move a step closer to the worldwide markets.

Dunmanus Seafoods in the locality was Europes first commercial sea urchin operator and remain an important commercial producer of sea urchins in Europe). Hatchery-reared juveniles are grown to market size mainly by ranching and are then seeded to rock pools or sub-tidal areas (Kelly and Chamberlain., 2010), such as site T05/570.

Even though there is considerable potential to tap into the worldwide market as stated, the employment opportunities for the proposed venture would not be extensive at local level. Two full time employee equivalent are the only direct jobs associated with creation of the farm, being only slightly beneficial for the area as a whole at present. However, when considered alongside the wider sectorial context (e.g Dunmanus Seafood's), there is potential of the farm to help in development and promoting of Sea Urchin Aquaculture in Ireland. Granting of the licence could have more potential knock on positive socio-economic effects beyond the two full time jobs created and also acts to set a certain precedent in terms of encouraging future applications to farm sea urchins.

Therefore the proposed arrangement is likely to have a **non-significant positive effect** on the economy of the area.

6.5 Ecological Effects

6.5.1 Designated Sites

Tables 8 below presents nearby Natura 2000 sites, their qualifying features and any potential impacts on these qualifying features.

Table 8: Potential impacts posed on qualifying features listed for Natura 2000 sites near the proposed facility

Natura 2000 site	Qualifying features (EU Importance)	Potential impacts
Sheep's Head SAC (000102)	- *Geomalacus maculosus* (Kerry slug) - Northern Atlantic wet heaths with *Erica tetralix (cross leaved heath)* - European dry heaths	-Nature and distance of proposed activity will pose no impact on this land based specie -No impact expected due to location and distance of this feature - No impact expected due to location and distance of this feature ***No impact anticipated***
Reen Point Shingle SAC (002281)	-Coastal lagoons -Perennial vegetation of stony banks - Mediterranean salt meadows (Juncetalia maritimi) -European dry heaths	- No loss of SAC habitat where these features occur as a result of the proposed activity. ***No impact anticipated***
Sheep's Head SPA (004156)	-*Falco peregrinus* (breeding) – (Peregrine falcon) -*Pyrrhocorax pyrrhocorax* (Red-billed Chough)	Both species recorded within the vicinity of Dunmanus Bay. Activity in the area is generally seasonally confined. Proposed farming activity located over 4km south of this area. Noise levels will not be considerable enough to cause a disturbance at this distance. ***No impact expected***

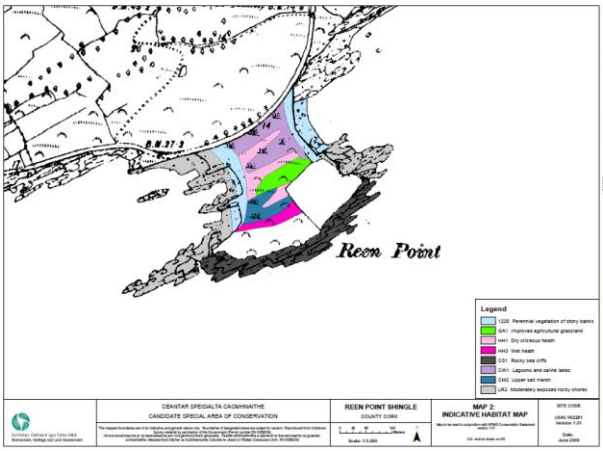

Figure 11 Habitats within Reen Point Shingle SAC to Reen Point SAC

Figure 12: Proximity of Farm location

Figure 13: View from the North-Western boundary of Reen Point SAC toward the proposed site (Google Maps)

The Natura 2000 site closest to the proposed aquaculture location is Reen Point Shingle SAC, (habitat types presented in Figure 8). Shingle and gravel banks (CB1), Moderately exposed rocky shores (LR2) and Rocky sea cliffs (CS1) are the qualifying features which are most exposed to any detrimental impacts arising from the aquaculture site. This is particularly if material generated on site is likely to be flushed toward the adjacent Reen Point Shingle SAC. (See Figures 11, 12 and 13).

There will be a ***no significant*** effect on the qualifying features listed for the above Natura 2000 sites as a result of the proposed operation

6.5.2 Flora and Fauna

Table 9 identifies biota in the area of the application and any potential impacts.

Table 9: Likely impacts of the proposed facility on marine biota

Source of Impact	Biota Impacted	Nature Of Impact
Deposition/ accumulation of organic matter	Benthic Invertebrates	In contrast to conditions observed under some salmon farms, no extensive mats of *Beggiatoa* bacteria or spontaneous outgassing are likely to occur. Faeces and shell deposition will be limited to the small footprint of the site and according to EIA screening assessment. Excessive build up on the site will not be permitted and should be monitored for. Therefore reduces the adverse impacts to benthic invertebrates. Benthic fauna likely to be present within these habitats include *Arenicola marina* (Lugworm) & *Nereidae spp* (Ragworm). If organic loading occurred within the production area the presence of opportunistic Polychaete species such as *Malacoceros sp*. and *Capitella sp.* would increase significantly impacting on available oxygen conditions. Seaweed collection is anticipated to be predominately strand and mussel culture biofoul. Harvested seaweed reduces coverage and food sources for marine invertebrates. This activity should be subject to a defined management plan to allow natural replenishment Adverse impacts are not anticipated as the operational approach, particularly containers, should serve to mitigate any effects and oysters cultivation will assist.
	Fish /Birds/Otters/Seals	No significant alterations to their habitat as a result of the proposed activity
	Benthic flora and fauna	Minor alteration of physical structure of the sediment within the proposed localised footprint area
	Cetaceans	Common dolphin is the most common cetacean visitor/inhabitant of Dunmanus bay. Harbour porpoise and Bottlenose dolphin populations have also been recorded around the Kitchen Cove area approximately 500m west of

		the proposed site. This specie can develop an intolerance to these conditions and negatively influence their regular occurrence in the area. The proposed operations are not in an area of regular use by these species
Altered water chemistry & reductions in Phytoplankton and seaweed abundance	Phytoplankton & Seaweed	High levels occur naturally in the area and shellfish cultivation at this small scale should not limit their growth or abundance
	Fish	Nitrogen release from sea urchins, if not controlled, can contribute to localised potential impacts. Phytoplankton levels should not be greatly impacted which could otherwise influence the food trophic system.
	Cetaceans	Nitrogen release from sea urchins, if not controlled, can pose adverse impacts. Phytoplankton levels should not be greatly impacted which could otherwise influence the food trophic system.
Installation of concrete tanks and boat usage	Benthic invertebrates	Compaction of sediments. Loss of habitat within small localised areas or change in substrate.
	Cetaceans	The potential for collision risk is low as dolphins are unlikely to frequent a shallow, muddy inlet. Minor temporary works with low chance of interaction.
	Birds/Seals/Otters	Slight potential of collision with vessels and installation machinery but unlikely. Only temporary works will occur during installation so noise levels not prolonged or significant enough to deter bird populations that occur on Owen Islands NHA (500m West) or passing seabirds. Noise associated with work vessels during operations are not considered significant and will be temporary. Operational impacts are non machinery and considered minor.

Minor and temporary impacts expected. Some biota are indentified as potentially impacted during the site development.

No significant operational impacts are identified.

6.6 General Environmental effects

An EIA Pre-Screening assessment was conducted on the area which concluded that the proposed activity would have minimal impact on the area and that there is no further requirement for an Environmental Impact Statement. The following issues were addressed in the document:

Waste Production – The cultivated shellfish will produce faeces and pseudofaeces. In this case the majority of any such material will be contained and subject to filter feeding by oysters. Oysters will produce faeces and pseudofaeces however the scale of cultivation is relatively minor. The potential for oxygen depletion is not considered as excessive build up will not be permitted. Discarded shell waste will be low and any excess will be removed.

Pollution – Emissions are likely to be released during husbandry and harvesting operations. However there will be no release of toxic substances to the air or water according to the EIA. No chemicals or hazardous wastes will be used during the production process.

Noise – There will be slight noise generated during the site installation and maintenance when process involves the usage of boats and other machinery. Minimal operational noise will be generated as animals are fed and harvested without the use of machines. It is unlikely that noise levels or physical presence will be significant. The area surrounding the proposed facility is not densely populated and so little scope for complaints from the community.

Fish and Fisheries – The effects upon fishing activity in the area through direct displacement will be extremely limited. The potential effects upon adjoining fisheries in the bay will depend upon the potential of the farm to effect the integrity of the water column and any potential interactions of the farmed species with native populations. These potential effects are not known with current data though anticipated to be negligible at this scale. Monitoring is recommended.

6.6.1 Potential impacts

The potential impact of any type of waste released into the water column from an aquaculture farm depends on the hydrographic conditions, bottom topography and geography of the area in question (Read & Fernandes., 2003). Whilst a good overview of the bathymetry/bottom topography and geography of the site context is known, exact conditions, particularly hydrodynamics and chemical status of the embayment are not known. A projection model of likely nutrient impacts on the water column as a result of the installation

of this facility is unavailable to determining the possible extent of environmental threat such an activity poses on this marine habitat.

Filter-feeding bivalve molluscs, such as the native oyster proposed for this installation, are an essential link between the bottom-dwelling aquatic communities and phytoplankton production in the water column. The oysters are water filters that directly remove particulate material thus reducing turbidity and both directly and indirectly removing nitrogen and other nutrients. (Shumway et al., 2003).

Seabed habitats may be subject to smothering or organic enrichment if site flushing is not suitable. Without hydrographic modelling evidence it must be assumed that there may be issues in this area. The applicant has identified a methodology for nutrient reduction by combined aquaculture. This is designed to limit the nutrient release from the urchin cultivation by combining with oyster culture. There is little available literature on this technique as a result, though it is supported by ongoing research in Ireland and other countries. It is recommended that the application be subject to monitoring as a result. The scale of the proposal is relatively small in comparison to similar operations elsewhere in the world.

No swab clearing of the site for predators (starfish) or other site preparation is anticipated.

It is evident that an impact of further development of aquaculture in the area presents conflict with other interests relying upon the integrity of maintenance of a high quality environment; particularly tourism/leisure recreational inshore fishing, and also inshore fisheries. While these impacts are not considered significant given the size and scale of this proposed aquaculture site, if a great enough level of further intensive aquaculture is sited within the Bay, cumulatively, they will have the potential to impact tourism, leisure and fishing.

Taking all of the above into account it is considered that the environmental effects are **not likely to be significant.** However, given the relatively novel nature of the proposed activity **water quality monitoring** is recommended. The conditions of the appealed licence should also be upheld.

6.7 Effect on Man-Made Heritage

There will not be any effects upon the man made heritage, due to their distance from the site, there is no potential for interaction.

In relation to the Air India monument, no direct effect upon integrity is anticipated but there is a potential small scale visual impact due to proximity of the site (~136m) located across the headland from the Monument (See Figure10)

It is considered most likely there will be ***no effects*** on the man-made heritage of value in the area as a result of the proposed operation.

7 Section 61 Assessment Conclusions

The proposed application does not identify any effects that would be detrimental to the surrounding area, designated features or other users.

The proposed operation is relatively small scale and the applicant has identified a novel co-culture proposal to mitigate any potential effects.

The proposed application for edible sea urchin culture represents an industry still in development. Literature on the potential impacts and issues is sparse, though there are a number of examples of operational urchin farms worldwide, and it represents a potential significant industry for European and Asian export markets.

The application has been made in reference to the ongoing research by Irish institutions. The site is suitable for such activities, and the operation has been developed with a view to reuse algal waste (biofoul and strand) supplemented with small scale hand collection to provide food product.

As a result the recommendation would be to approve the application, but that it be subject to modelling, particularly of water quality and where required sediment quality in the vicinity of the operations. The applicant should also be encouraged to report any related issues, such as escapees or treatment required during operations to a research facility or Departmental Representative.

8 Recommendations with Reasons and Considerations

In accordance with Section 59 of the Fisheries (Amendment) Act 1997 and amendments recommend to **grant** a licence for the site reference number T05/570 for the following reasons and considerations:

- The site under appeal ***is*** suitable for the intended purpose;
- The proposed development demonstrates ***no significant*** **impact** on the possible other users of the area;
- The proposed development demonstrates ***no significant*** **impact** on the statutory status of the area;
- The proposed development demonstrates ***no significant*** **impact** on the economy of the area;
- The proposed development demonstrates ***no significant*** **impact** on wild fisheries, natural habitat and flora and fauna populations provided effective controls and monitoring protocol is adhered to;
- There are **no significant** environmental effects identified as a result of the proposed development, assuming the conditions are enforced and monitoring is implemented; and
- It is considered most likely there will be **no effects** on the man-made heritage of value in the area as a result of the proposed operation.

The conclusions established above have been derived from limited scientific data available in relation to the industry as a whole and the techniques proposed, from discussions with local NPWS rangers and the EIA Pre Screening Report. No site visit has been undertaken.

There is no extensive research available on sea urchin aquaculture and appropriate experimentation is still needed to fully elucidate its effects. It is therefore recommended that the site be subject to additional monitoring, particularly with respect to chemical and biological analysis of water quality and sediments and water.

It is recommended that the results of this monitoring be developed for a predictive model with particular emphasis on likely Nitrogen levels released by *Paracentrotus lividus* (Edible Sea Urchin) and that this be evaluated before a licence renewal can be granted.

Further Key areas should be reported:

- More information on likely urchin disease and controls proposed;
- Recording of any escapees
- Faecal & Pseudo densities and removal methods (tank cleaning)

The proposed facility considered alone in a non cumulative manner (i.e without its potential to promote further sea urchin aquaculture development in the area) is not likely to have a significant impact on tourism, economic dynamics and surrounding Natura 2000 sites..

9 Draft Determination

- **It is recommended the decision to grant a licence for this site.**
- **It is recommended that monitoring be made a condition of the site.**
- **It is recommended that the conditions of the licence be upheld.**

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