



AP1/2014

Roaringwater Bay Aquaculture Licence Appeal

Technical Advisor's Report

Produced by

AQUAFACT International Services Ltd

On behalf of

Aquaculture Licences Appeals Board

AQUAFACT INTERNATIONAL SERVICES Ltd
12 KILKERRIN PARK
GALWAY
www.aquafact.ie
info@aquafact.ie
tel +353 (0) 91 756812
fax +353 (0) 91 756888

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1 Executive Summary

Description	Objection to the granting of Shellfish Aquaculture Licence in Roaringwater Bay for the cultivation of mussels, oysters, scallops, urchins and seaweed on longlines
Appeal Reference	AP1/2014
Licence Applications	T5/311 N1,N2, N3, N4, N5, N6 and N7
Department Reference Number	
Applicants	Colin Whooley
Minister Decision	10-year Aquaculture Licence and accompanying Foreshore Licence granted by the Minister on 17 th December, 2013
Appeal	
Type of Appeal	Appeal against the granting of a Shellfish Aquaculture Licence
Appellant	Tony Lowes, Friends of the Irish Environment
Observers	
Technical Advisor	AQUAFACT International Services Ltd.
Site inspection	

2 Appeals Details & Observer Comment/Submission

Date Appeal Received: 24th January 2014 Tony Lowes.

Table 2.1 lists the location licence under appeal as well as the identity of the applicant.

Table 2.1 Location and Applicants of Sites Appealed

Ref. Site No.	Applicant location Roaringwater Bay, Co. Cork
T5/311 N1, N2, N3, N4, N5, N6 and N7	Colin Whooley, Ballylinch, Baltimore, Co. Cork

2.1 Appeal Timeframe

Publication notice of the decision to grant the aquaculture and foreshore licences was published in The Southern Star on Saturday December 28th, 2013. The appeal was submitted within the statutory timeframe of one month from the date of the publication notice in the Southern Star as set out under Section 40 of the Fisheries (Amendment) Act, 1997.

Tony Lowes of Friends of the Irish Environment, submitted the appeal on 23rd January 2014. The appeal was received by ALAB on 24th January 2014.

2.2 Name of Appellant

Tony Lowes,
Friends of the Irish Environment,
Kilcatherine,
Eyeries,
Co. Cork.

2.3 Name of Observers

There have been no further submissions or observations since the appeal has been submitted.

2.4 Grounds for Appeal

AP1/2014

Substantive Issues

The appellant attests that the licensing authority failed to make available the details of the application after the decision to grant the licence had been taken. He states that the request for grid references for the licences was refused on January 22nd 2014 and that subsequent attempts to obtain the information was not facilitated.

The appellant claims that the Appropriate Assessment Habitats Directive Article 6 and the Ministerial Determination in relation to the EIS requirements for Shellfish Aquaculture Licensing only considered the individual impacts of the aquaculture licences and not the cumulative impacts, current and future, as required by the EU Directive 2011/92/EU and S.I. No. 93/1999 – European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999.

The appellant is critical of the lack of carrying capacity analysis of the bay and of what he sees as an arbitrary acceptable loss-of-habitat value of 15%. He states that it is against the purpose of the Habitats Directive to licence activities that result in the loss of features of interest.

The appellant states that the recommended buffer zones to be established to prevent impact on highly sensitive maërl and sea grass beds have not been implemented. He states that 'Regulation 5 Risk Assessment, Roaringwater Bay cSAC, Draft Risk Mitigation and Management Plan, September 2013' excludes traditional fisheries activities from zones in the bay to prevent impact on this habitat while allowing aquaculture activities in the same area. He also states that no study has been carried out on the cumulative impacts of aquaculture on the maërl habitats within the bay.

The appellant highlights the conservation objectives for the cSAC with regard to the harbour porpoise which state that the species range within the site should not be restricted by artificial barriers which may result in the permanent exclusion of harbour porpoise from part of its range within the site. The appellant contends that as harbour porpoise will avoid aquaculture long lines because of their awareness of them through echolocation, the longlines will effectively act as an artificial barrier contrary to the conservation objectives.

Non-substantive issues

There were no non-substantive issues in relation to this appeal.

2.5 Minister's Submission

Section 44 Part 2 of the Fisheries (Amendment) Act 1997 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'*.

The Minister has made no further submissions since the appeals were made.

2.6 Applicant Response

As per Section 44 Part 2 of the Fisheries (Amendment) Act 1997 which 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'*, all licence applicants were given the opportunity to reply in writing to the appeal against the granting of their licences.

In reply to the appeal, the applicant, Mr Colin Whooley, made a submission to the Board on 19th February 2014. In his reply, he highlights the fact that he is currently certified under the BIM Quality and Organic Mussel scheme, the standards of which are accredited to ISO65/ENV45011 and meet the requirements of the EU Organic regulations 710/2009/EEC. A copy of the applicant's Organic and Environmental Policy was supplied with the response to the appeal.

The applicant notes that the principle issues raised by the appellant refer to matters of national policy and not matters specific to the applicant's application. He states that the appellant's contention that the licensing process is inadequate with regard to compliance with *inter alia* the requirements of the Environmental Impact Assessment Directive, with the requirements of the Birds and Habitats Directive and certain other national and EU environmental regulations is a matter for the licensing authority and its advisors.

The applicant states that as the issues raised in the appeal are matters for the Department, it would be impossible for him as an individual applicant to demonstrate overall process compliance. Furthermore, it is the position of the applicant that if the appeal was upheld on the basis of lack of compliance with the aforementioned environmental regulations, then all of the other licences granted within Roaringwater Bay must also be considered deficient. In this case it is the applicant's argument that even though, under this outcome, these other licences have not been specifically appealed, they must ultimately also have their licences revoked.

The applicant attests that any other outcome in this situation would amount to invidious discrimination against him and his enterprise.

3 Consideration of Non-Substantive issues

There were no non-substantive issues in relation to this appeal.

4 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.

An oral hearing has been requested by the appellant and the requisite fee has been paid within the time stipulated.

5 Minister's file

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

Copy of Aquaculture Licence 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 the Minister

Copy of Notification to Applicant of Minister's Decision

Copy of Advertisement of Minister's Decision

Overview Map of sites in Roaringwater Bay

Copy of Conclusion Statement

Copy of Appropriate Assessment

Copy of Applicants response to concerns and objections.

6 Context of the Area

6.1 Physical Description

Roaringwater Bay, Co. Cork, is a wide shallow bay located on the southwest coast. The site includes the immediate coastline on the mainland from Long Island to Baltimore together with the whole bay and most of the islands. Bedrock is composed of a series of Devonian Old Red Sandstone reefs that run parallel to troughs of Devonian Carboniferous marine clastics in a north east/south west direction. These reefs emerge to form the islands on the south side of the bay and within the bay. Generally the coast is low-lying but the southern edge rises, in line with the hills behind Baltimore, to culminate in a summit of 160m on Cape Clear. The bay itself has a wide variety of reef and sediment habitats, subject to a range of wave exposures and tidal currents, and has been selected for three marine habitats listed under the EU Habitats Directive, i.e. large shallow inlets and bays, marine caves and reefs. The residence time as calculated by Kochmann *et al.* (2013) is approximately 6 days. Figure 6.1 illustrated the location of the licensed areas under appeal as well as the extent of Roaringwater Bay cSAC (IE000101) and the nearby Sheep's Head to Toe Head SPA (IE004156).

The Shellfish Designated area within the bay is 22.4km², with the contributing catchment of the shellfish area of 483.46km². There are three principal rivers entering the designated area – the Rathruane, the Bawnaknockane and the Lemawaddra. Additionally the Ilen River flows into Baltimore Harbour and a separate Shellfish Designated area of 8.5km².

There are approximately 16,407 people living in the catchment, with Skibbereen accounting for approximately 15% of the overall population, with a population of 2,338 (SPRP, 2010). Drimoleague, Baltimore, Skull, and Ballydehob are the main villages in the catchment.

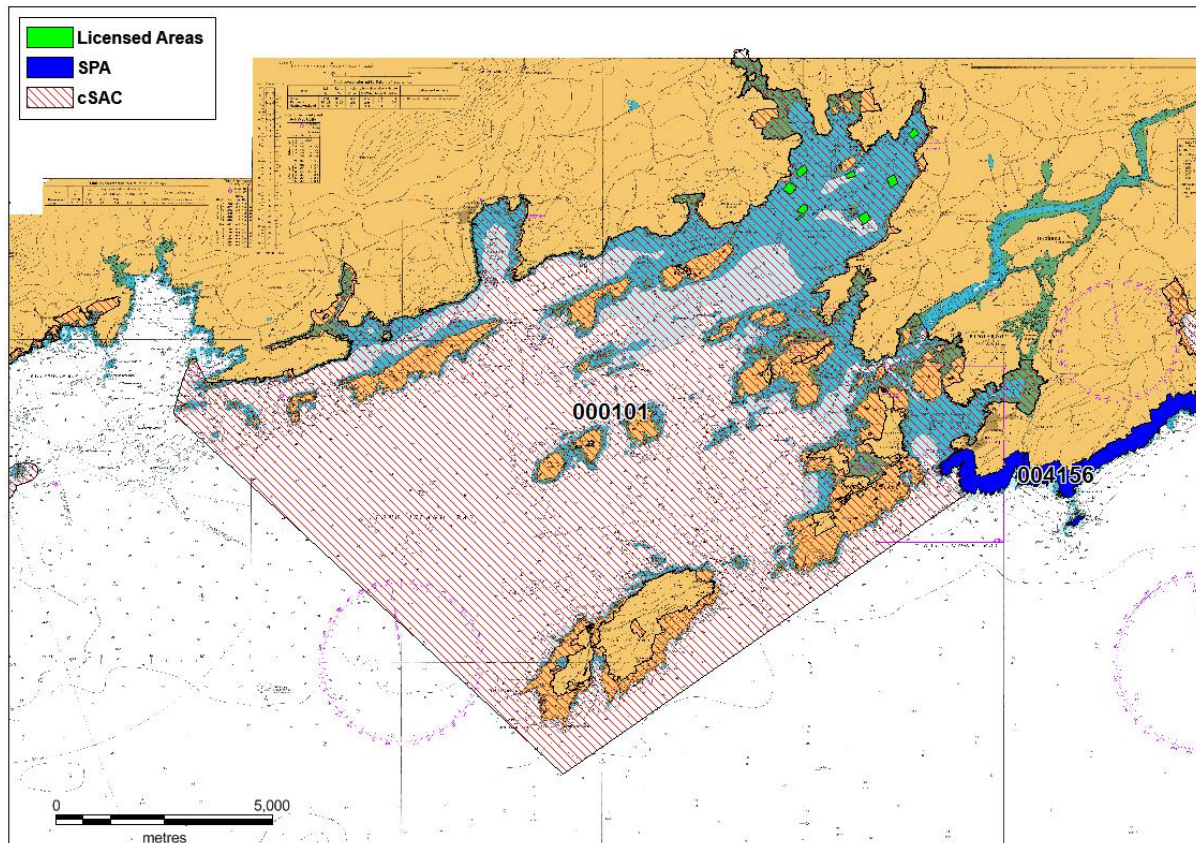


Figure 6.1 Roaringwater Bay cSAC. Aquaculture licensed areas under appeal.

6.2 Resource Users

Aquaculture Activity

Aquaculture is practised in a number of locations within the cSAC with approximately 80 aquaculture sites existing or under appeal. A large proportion of the aquaculture is conducted in the inner bay where mussel cultivation (on long lines) occurs and both the Ilan Estuary and Sherkin Island where oyster culture occurs. Mussel spat are also collected on ropes seaward of the mussel grow-out areas. The licence application that is the subject of this appeal is for the cultivation of mussels, oyster, scallops, urchins and seaweed on long lines.

Inshore Fishing

There is a diverse range of fishing activities within the Bay. There is an intensive autumn pot fishery for shrimp. Lobster and crab are fished throughout the year and crayfish and demersal fish are targeted with tangle nets and gill nets in the outer bay and beyond. Scallop are fished in the upper part of the Bay in winter and spring. Demersal trawling occurs in the outer part of the Bay throughout the year and there is sporadic mid-water trawling for pelagic fish. Line fishing for mackerel and pollack is common in summer.

Angling Activity

The River Ilen is noted for salmon and sea trout angling. Sea-angling in Roaringwater Bay, because of the difficulty of access from the shore, is generally carried out in small boats. It is particularly popular in the Baltimore area with shark, bass, monkfish, triggerfish, tope and other species caught. There are some suitable sites for shore fishing for bass and flounder at Ballydehob.

Tourism

No statistics were available for this specific area; however, Fáilte Ireland reported 1,228,000 visitors to Cork city and county in 2012 with associated revenue of 399 million Euros (Fáilte Ireland, 2013). Schull Planetarium had 962 visitors in 2012 (Fáilte Ireland, 2014).

Popular visitor locations in the area include Skibbereen, Mizen Head, Schull, Bantry and Baltimore for a range of activities including sightseeing, golfing, festivals, sea angling, river fishing, kayaking, cycling/walking tours, whale watching, bird watching, surfing, sailing etc.

Various roads around Roaringwater Bay are identified as scenic routes due to their view of the bay (CCC, 2009) and the area is part of the Wild Atlantic Way driving route.

Leisure users of the water body and surrounding area

Carbery Isle Ferries conducts guided tour cruises of the islands of Roaringwater Bay as well as whale and dolphin spotting cruises and sea angling charters.

There are regular year-round ferry services to the islands of Sherkin and Cape Clear from Baltimore's ferry pier and to Heir (or Hare) Island from Cunnamore Pier.

Heir Island Sailing School operates from the island and is accessed from Cunnamore pier by ferry.

Aquaventures is a dive school in the area which runs diving courses, guided tours, boat charter, sea-angling and whale and dolphin watching tours of the bay.

Cape Clear Bird Observatory is located in the North Harbour of the Island and is Ireland's only active Bird Observatory. The island is accessed by ferry from Baltimore and Schull. The observatory offers wildlife courses including Beginners Birding to Seabirds and Migration.

Agricultural Activity

Farming in the area is mostly small scale, low-density sheep and cattle farming.

6.3 Environmental Data

Water Quality

Roaringwater Bay is a designated shellfish area and must comply with the Shellfish Directive (2006/113/EC) and the Quality of Shellfish Waters Regulations 2006. Figure 6.2 below shows the Roaringwater Bay Shellfish Area as well as the licensed areas under appeal.

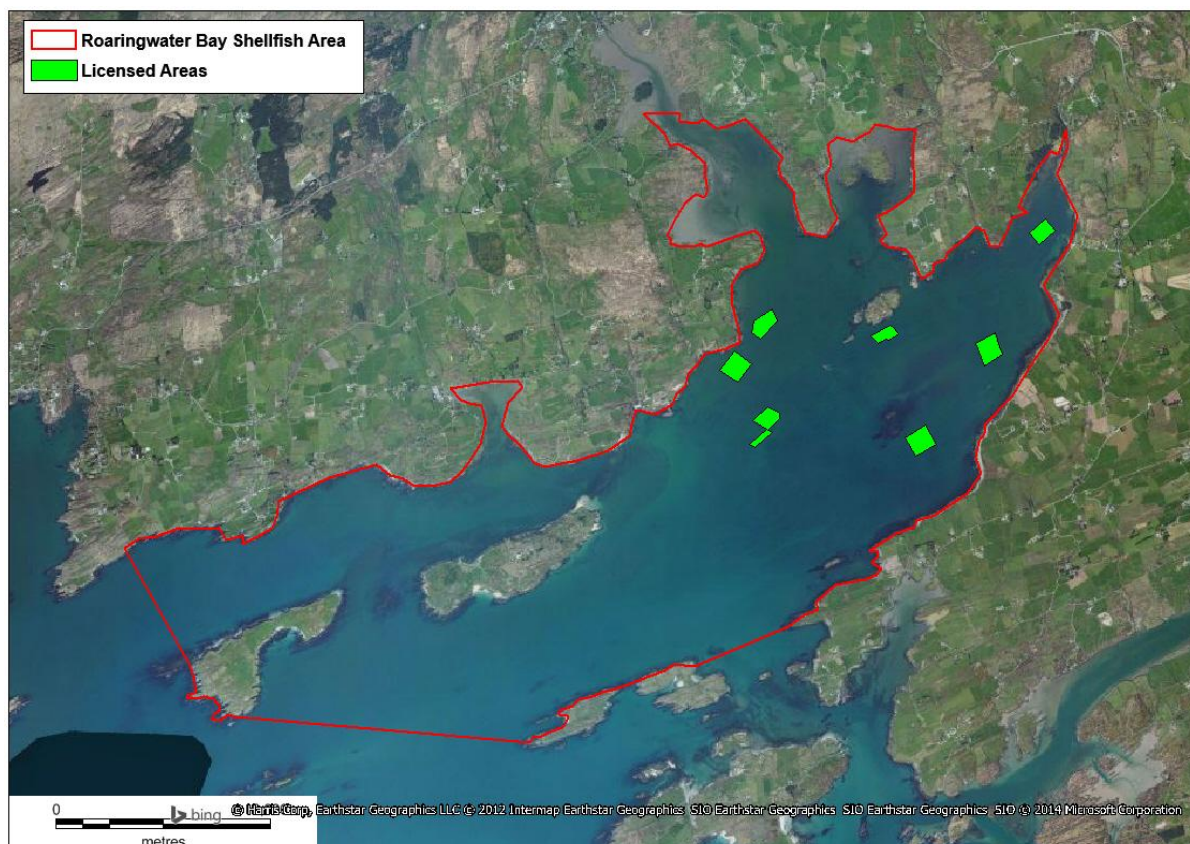


Figure 6.2 Roaringwater Bay Shellfish Designated Area.

6.4 Statutory Status

6.4.1 Natura 2000 Designations

Roaringwater Bay and Islands is designated a candidate Special Area of Conservation (cSAC) (site code: IE000101). The cSAC encompasses the majority of the bay and extends to west of Castlepoint (south of Toormore) and east to Baltimore. Bordering the cSAC to the east is Sheep's Head to Toe Head SPA (site code: IE004156). Table 6.4 lists the Qualifying Interests and other features of interest of these Natura 2000 sites.

Table 6.1 Natura 2000 sites and their Qualifying Interests in the vicinity of Roaringwater Bay (NPWS, 1996; NPWS, 2011a).

Natura 2000 site	Qualifying Interests	Other features of interest
Roaringwater Bay and Islands cSAC (IE000101)	Large shallow inlets and bays [1160] Reefs [1170] Vegetated sea cliffs of the Atlantic	Hairy Bird's-foot-trefoil (<i>Lotus subbiflorus</i>) Birds-foot (<i>Ornithopus perpusillus</i>)

Natura 2000 site	Qualifying Interests	Other features of interest
	and Baltic coasts [1230] Harbour porpoise (<i>Phocoena phocoena</i>) [1351] Otter (<i>Lutra lutra</i>) [1355] Grey seal (<i>Halichoerus grypus</i>) [1364] European dry heaths [4030] Submerged or partly submerged sea caves [8330]	Spotted Rock-rose (<i>Tuberaria guttata</i>) Pale Dog-violet (<i>Viola lactea</i>) Lanceolate Spleenwort (<i>Asplenium obovatum</i> subsp. <i>lanceolatum</i>) Lesser Centaury (<i>Centaureum pulchellum</i>) Sharp-leaved Fluellen (<i>Kickxia elatine</i>) Little-robin (<i>Geranium purpureum</i>) Deptford Pink (<i>Dianthus armeria</i>) Black guillemot (<i>Cephus grille</i>) Great black-backed gull (<i>Larus marinus</i>) Herring gull (<i>Larus argentatus</i>) Shag (<i>Phalacrocorax aristotelis</i>) Sponge (<i>Tethyspira spinosa</i>) Yellow Feathers (<i>Gymnangium montagui</i>) Lytocarpia myriophyllum Hydroid (<i>Tamarisca tamarisca</i>) Red Sea Fingers (<i>Alcyonium glomeratum</i>) Ginger or Chocolate Tiny anemone (<i>Isozoanthus sulcatus</i>) Red alga (<i>Phyllophora sicula</i>) Red alga (<i>Spyridia filamentosa</i>) Maërl (<i>Lithophyllum dentatum</i>) Maërl (<i>Lithothamnion corallioides</i>) Maërl (<i>Phymatolithon calcareum</i>) Eel grass (<i>Zostera marina</i>) Sea pea (<i>Lathyrus japonicas</i>)
Sheep's Head to Toe Head SPA (IE004156)	Peregrine (<i>Falco peregrinus</i>) [A103] Chough (<i>Pyrrhocorax pyrrhocorax</i>) [A346]	

The Conservation Objective for Roaringwater Bay and Islands cSAC is to maintain a favourable conservation condition of its Qualifying Interests according to the following targets (NPWS, 2011a):

Large shallow inlets and bays

- Habitat area: The permanent habitat area (estimated as 12.809ha) is stable or increasing, subject to natural processes.
- Community extent: The extent of the *Zostera*-dominated and maërl-dominated communities should be conserved, subject to natural processes.
- Shoot density: The quality of *Zostera*-dominated communities should be conserved, subject to natural processes.
- Community structure: The quality of maërl-dominated communities should be conserved, subject to natural processes.

- Community distribution: The following communities should be conserved in a natural condition: Muddy sand with bivalves and polychaetes community complex; mixed sediment community complex; Shallow sand/mud community complex.

Reefs

- Habitat distribution: The distribution of reefs should remain stable, subject to natural processes.
- Habitat area: The permanent habitat area is stable, subject to natural processes.
- Community structure: The following reef community complexes should be maintained in a natural condition: Exposed to moderately exposed intertidal reef; Exposed to moderately exposed subtidal reef below 20m; Sheltered reef.
- Community extent: The extent of *Laminaria*-dominated communities should be conserved, subject to natural processes.
- Community structure: The biology of *Laminaria*-dominated communities should be conserved, subject to natural processes.

Harbour porpoise

- Access to suitable habitat: Harbour porpoise range within the site should not be restricted by artificial barriers to site use.
- Disturbance: Human activities should occur at levels that do not negatively affect the harbour porpoise.

Otter

- Distribution: No significant decline.
- Extent of terrestrial habitat: No significant decline. Area calculated as 171ha above high water mark; 3ha along river banks/around ponds.
- Extent of marine habitat: No significant decline. Area mapped and calculated as 1562ha
- Extent of freshwater habitat:
No significant decline. Length mapped and calculated as 0.74km
- Couching sites and holts: No significant decline
- Fish biomass available: No significant decline
- Barriers to connectivity: No significant increase.

Grey seal

- Access to suitable habitat: Species range within the site should not be restricted by artificial barriers to site use
- Disturbance: Human activities should occur at levels that do not negatively affect either species
- Breeding behaviour: The breeding sites should be maintained in a natural condition
- Moulting behaviour: The moult haul-out sites should be maintained in a natural condition.
- Resting behaviour: The resting haul-out sites should be maintained in a natural condition

- Population composition: The grey seal population occurring within this site should contain adult, juvenile and pup cohorts annually

Submerged or partly submerged sea caves

- Distribution: The distribution of sea caves occurring in the site should remain stable, subject to natural processes.
- Community structure: Human activities should occur at levels that do not adversely affect the ecology of sea caves at the site.

6.4.2 Protected Species

Cetacea

All Cetacea are protected under the EC Habitats Directive which requires them to be maintained at a favourable conservation status. All Cetacea are listed on Annex IV of the Directive with harbour porpoise *Phocoena phocoena* and bottlenose dolphin *Tursiops truncatus* also listed on Annex II of the same directive. In addition, Cetacea are protected through inclusion in the 5th Schedule of the Irish Wildlife (Amendment) Act 1976-2005. Harbour porpoise *Phocoena phocoena* are also listed on the OSPAR List of Threatened and Declining Species and Habitats.

Harbour porpoise are a qualifying interest for Roaringwater Bay and Islands cSAC. The Conservation Objectives for this species within this cSAC is to maintain their favourable conservation condition, which is defined by the following targets:

- Access to suitable habitat: Harbour porpoise range within the site should not be restricted by artificial barriers to site use
- Disturbance: Human activities should occur at levels that do not negatively affect the harbour porpoise

Figure 6.3 shows the cetacean species recorded by the Irish Whale and Dolphin Group (IWDG) over the last ten years in the vicinity of Roaringwater Bay and Islands cSAC. Verified records obtained from the IWDG website www.iwdg.ie include 86 sightings of bottlenose dolphin *Tursiops truncatus*, 1362 of common dolphin *Delphinus delphis*, 311 harbour porpoise, 21 unidentified dolphin species, 16 unidentified dolphin species (possibly harbour porpoise *Phocoena phocoena*, 10 killer whale *Orcinus orca*, 2 unidentified whale species, 65 fin whales *Balaenoptera physalus*, 7 humpback whales *Megaptera novaeangliae*, 5 unidentified large whale species and 104 minke whale *Balaenoptera acutorostrata* within Roaringwater Bay and Islands cSAC within the last 10 years.

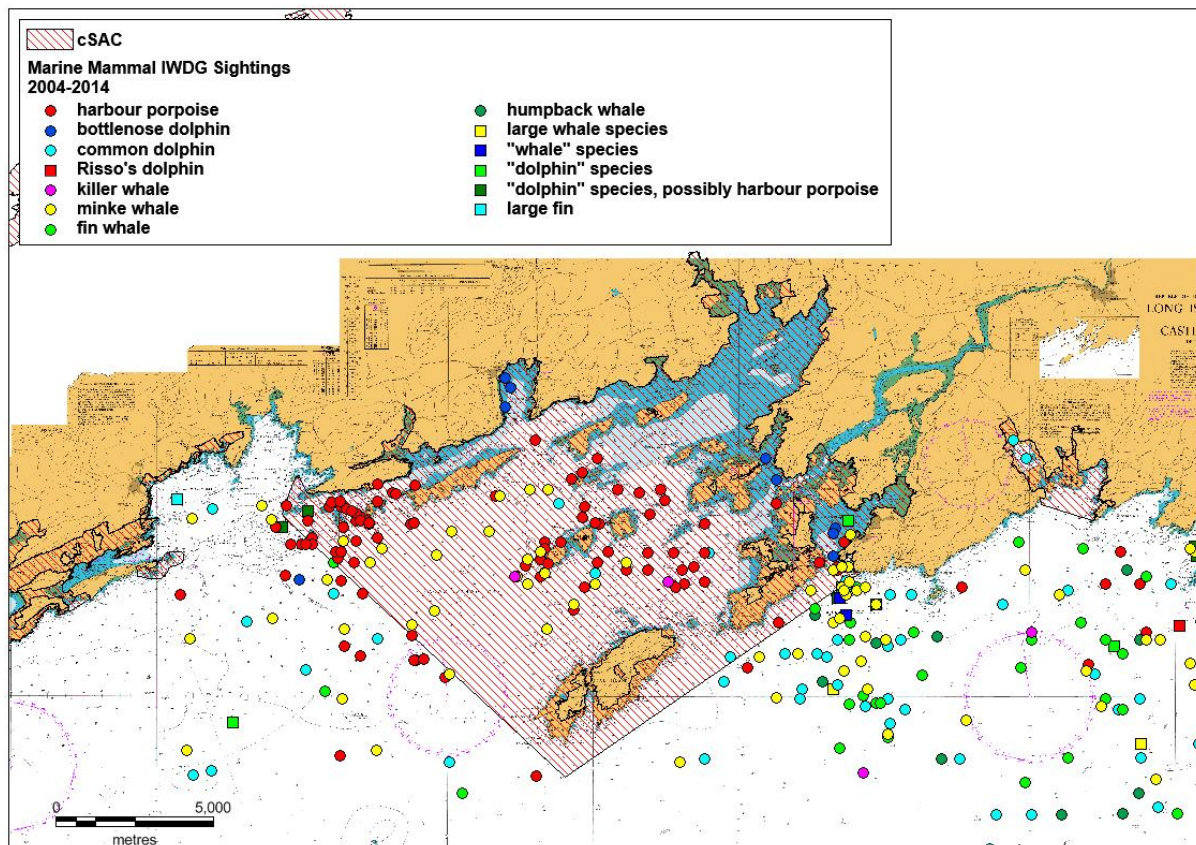


Figure 6.3 Cetaceans recorded by the IWDG in the vicinity of Roaringwater Bay 2004-2014.

Leeney, 2007 shows additional observations of common dolphin and harbour porpoise (maximum count: 5) recorded by vessels of opportunity, the majority occurring just off the northwest coast of Cape Clear Island and between Cape Clear and Sherkin Islands.

Seals

Both grey seal *Halichoerus grypus* and harbour seal *Phoca vitulina* are protected under Annex II of EC Habitats Directive and the Irish Wildlife (Amendment) Act.

Grey seal are a qualifying interest for Roaringwater Bay and Islands cSAC. The Conservation Objectives for this species within this cSAC is to maintain their favourable conservation condition, which is defined by the following targets:

- Access to suitable habitat: Species range within the site should not be restricted by artificial barriers to site use
- Disturbance: Human activities should occur at levels that do not negatively affect either species
- Breeding behaviour: The breeding sites should be maintained in a natural condition
- Moulting behaviour: The moult haul-out sites should be maintained in a natural condition.
- Resting behaviour: The resting haul-out sites should be maintained in a natural condition

- Population composition: The grey seal population occurring within this site should contain adult, juvenile and pup cohorts annually.

Grey seal are known to breed, moult and rest on various islands within the bay. Breeding sites include Castle Island, the Calf Islands and Cape Clear Island. Moulting sites include Mannin Island, Carrigvigliash Rocks and Calf Island East. Resting sites include Illaun Crubeen, Mannin Island, Carrigvigliash Rocks, Inishleigh, Calf Island Middle and Cape Clear.

Roaringwater Bay is also an important site for harbour seals with maximum counts 74, 95 and 66 in the years 2009, 2010 and 2011 respectively. Sites such as Aghillaun (a small island adjacent to the mouth of the Ilan River) and the Creeveens (within Ballydehob Bay) are of local importance as haul-out sites for this species (NPWS, 2012).

Otters

Otter *Lutra lutra* is protected under the Irish Wildlife Acts (1976 & 2000) and is also listed on Annexes II and IV of the EU Habitats Directive. The Annex II listing requires Member States to designate SACs for the protection of the species and as such otter is a qualifying interest of Roaringwater Bay and Islands cSAC.

Seagrass

The EU Habitats Directive (92/43/EEC) recognises *Zostera* beds as a characteristic component of five Annex I habitats in. In addition, *Zostera* seagrass beds are included in the OSPAR list of Threatened and/or Declining Species and Habitats. Seagrass *Zostera marina* dominated communities at 4-6m depth are widespread within Roaringwater Bay with the most extensive occurring in the upper bay, south west of Carrigvigliash Rock. In general, *Zostera* communities occur on muddy sand with shell fragments.

Maërl

The red coralline algae known as maërl is an important species which is listed on Annex I of the EU Habitats Directive. Large communities dominated by maërl species are present in Roaringwater Bay and include the largest community of the rare maërl species *Lithophyllum dentatum* recorded in Ireland. *Lithophyllum dentatum* occurs in the sheltered areas, north of the Carrigvigliash Rocks. Southwest of these rocks, the bed-forming species *Lithothamnion corallioides* and *Phymatolithon calcareum* are present (NPWS, 2001; NPWS, 2011a,b). Other maërl communities also occur. Maërl may co-occur with seagrass *Zostera marina* beds with a good example in Horseshoe Bay, Sherkin Island.

Atlantic Salmon

The Atlantic salmon *Salmo salar* is listed in Annexes II and V of the EU Habitats Directive as a species of European importance. Atlantic salmon occur within the River Ilen, which is a medium sized spate river which runs through Skibbereen. The Ilen is a good salmon angling location with good runs of spring salmon. Sea trout also occur in the River Ilen.

Avifauna

Roaringwater Bay and Islands cSAC has an important population of chough *Pyrrhocorax* as well as several pairs of peregrine falcons *Falco peregrinus*, both of which are listed on Annex I of the EU Birds Directive and are qualifying interests for Sheep's Head to Toe Head SPA (site code: IE004156), south of Baltimore.

Pearl Mussel

The freshwater pearl mussel *Margaritifera margaritifera* is a highly threatened animal, recently categorised as critically endangered across Europe. Owing to its threatened status and dramatic decline, the freshwater pearl mussel is listed on Annex II and Annex V of the Habitats Directive. The status of the species across the EU was assessed in 2007 and found to be bad throughout. In Ireland, all populations of the species were considered unfavourable-bad. The main cause of the poor status and the ongoing decline of the species across Ireland and Europe is sedimentation and enrichment (eutrophication) of its habitat (www.npws.ie). Pearl mussels are found in the Ilen and Leamawaddra rivers.

European eel

The European eel *Anguilla anguilla* is a species under threat, in recent decades, this species has undergone a dramatic decline throughout its range and is listed on Annex II of CITES (Convention on International Trade in Endangered Species).

According to EU legislation, EC1100/2007 Ireland has drawn up national eel management plans at river-basin level and must allow 40% of adult eels to escape from inland waters to the sea, limit fisheries, make it easier for fish to migrate through the rivers and restock suitable inland waters with young eel.

The European eel is known to reside in the Ilen River and Caol River (CRFB, 2009).

6.4.3 Statutory plans

Cork County Council's Bantry Electoral Area, Local Area Plan, August 2011 and Draft Cork County Development Plan 2013 have no specific plans regarding aquaculture in the county or in Roaringwater Bay (CCC, 2011; CCC, 2013). However, the council does mention in general terms the support for further growth and development of this industry in areas such as Bantry, Ballydehob and Heir Island and their support for the use of existing port facilities for catching and processing fish.

Other schemes mentioned in the Local Area Plan include a new water and sewerage scheme in Schull which should be complete from 2014-2016. Cork County Council also have plans to commence Skibbereen (River Ilen) Flood Relief Scheme by late 2014 and will take two years to complete.

6.4.4 Water Quality Status

Roaringwater Bay is a designated shellfish area, with the area covering 22.4 km² and is situated east of Coosheen Point on the mainland to the northwest of Castle Island, and from the southeast of Castle Island west to the northwest of Skeamwest to Skeam East and on to the westerly point of Cunnamore, north of Coolim and Goose Island.

The contributing catchment of the shellfish area is 483.46 km² in area. There are three main rivers entering the designated area, the Rathruane, the Bawnaknockane and the Leamawaddra.

Article 5 of the Shellfish Directive (2006/113/EC) and section 6 of the Quality of Shellfish Waters Regulations (S.I. No. 268 of 2006) require the development of Pollution Reduction Programmes (PRPs) for designated shellfish areas in order to support shellfish life and growth and to contribute to the high quality of directly edible shellfish products. Shellfish PRPs relate to bivalve and gastropod molluscs, including oysters, mussels, cockles, scallops and clams.

Waterbodies designated as shellfish areas are strictly monitored for pH, temperature, colouration after filtration, suspended solids, salinity, dissolved oxygen, petroleum hydrocarbons, organohalogenated substances, dissolved metals, faecal coliforms, substances affecting the taste of shellfish and saxitoxin (produced by dinoflagellates).

The 2013 classification of shellfish production areas in Ireland classified Roaringwater Bay (from Cousnaganniv Point to Frolic Point) live bivalve production as 'Class A' for the purposes of EC Regulation 854/2004. Monthly samples of each species are taken from every production area and tested for *E. coli* in one of the Marine Institute's contracted national laboratories. The results from these analyses are used to classify the area according to criteria set down in EU regulation 854/04. The Sea Fisheries Protection Authority has issued the 2013 Classification of Shellfish Production Waters. Areas from which live bivalve molluscs are harvested for human consumption are classified as being Class A, B or C depending on the quality of the waters from which they are taken. Shellfish harvested from Class A areas may be marketed for direct human consumption, product harvested from Class B or C areas require further purification or treatment before being placed on the market. (www.sfpa.ie).

There are five urban waste water treatment plants within the catchment area (Ballydehob, Baltimore, Drimoleague, Schull and Skibbereen). Three of these are designated 'at risk' due to insufficient plant capacities for current and projected future loads.

There are two known significant combined sewer overflows (CSO) within the catchment. Both are situated in close proximity to the shellfish area at Baltimore and Schull. Monitoring in this shellfish area does not indicate any water quality issues which are likely to be associated with CSOs and therefore they are unlikely to be affecting shellfish water quality in this shellfish area.

There are three water treatment plants in the catchment (Schull, Baltimore and Skibbereen) and all have been designated as 'at risk' of impacting their surrounding water environment. However, monitoring does not indicate any water quality issues which are likely to have arisen from these plants and therefore it is unlikely that they are affecting shellfish water quality in this shellfish area.

In addition, according to the Shellfish Pollution Reduction Characterisation Report for Roaringwater Bay (2010), there are 4,993 onsite sewage treatment systems in the catchment and their density is much higher than the national average. The risk to surface waters and groundwaters from pathogens and phosphorus is high throughout the catchment as is the likelihood of inadequate percolation. Many of these systems are therefore located in hydrologically unsuitable conditions. Many are located in coastal regions, in the vicinity of the shellfish area. Other factors which affect the likelihood of these systems to impact surface and groundwaters are whether suitable types of systems are selected, whether they are installed correctly, whether they are properly maintained and whether they are situated close to the designated shellfish area or to ditches, drains, watercourses, wells or boreholes. It is therefore likely that a substantially smaller number than the total number of systems in the catchment are posing a risk to surface and groundwaters. However, monitoring in this shellfish area does not indicate any water quality issues which are likely to be associated with this source. Therefore, these systems are unlikely to be affecting shellfish water quality in this shellfish area (SPRP, 2010).

There are five Section 4 licensed industries in the catchment but none of them have been deemed to be 'at risk' and none of them is a likely source of the faecal contamination and elevated chromium levels indicated by shellfish and WFD monitoring. Therefore, even though one of them is discharging directly into the shellfish area, they are unlikely to be affecting shellfish water quality in this shellfish area.

Over 75% of the area of this catchment is farmed land and the estimates of livestock density and fertiliser usage are high compared to the national averages. The EPA's diffuse model risk assessment, which investigates the relationship between catchment attributes (percentages of diffuse land cover including agriculture), water chemistry and ecological status, highlights several diffuse risk areas in the catchment. Also, the wet soils in the catchment and the high slopes in the upper reaches could result in agricultural runoff in these areas. However, monitoring in this shellfish area does not indicate any water quality issues which are likely to be associated with agriculture and therefore agriculture is unlikely to be affecting shellfish water quality in this shellfish area.

Ecological water quality status

Roaringwater Bay has been assigned 'Moderate' water quality status in the SW Region River Basin Management Plan. Key pressures include point source waste water treatment plants as well as activities related to agriculture within the catchment. These are the primary source of nutrient enrichment to water bodies while a number of septic tanks located within the water management unit are in areas of very high or extreme risk (Source – SW Region, River Basin Management Plan (CCC, 2011)). Additional pressure on water quality in this SAC could arise from rural and urban settlement provided for in Cork County Development Plan 2009 and the Skibbereen EA Local Area

Plan 2011 (Baltimore and Oilean Chléire). The EPA has assigned an ecological risk score of 1a to this coastal waterbody, indicating that it is at risk of not achieving a 'Good' status (Data from the EPA ENVISION website <http://gis.epa.ie/Envision/> accessed 08/05/2014).

Bathing water quality

There are no specific bathing waters within Roaringwater Bay. The nearest bathing areas are Barley Cove near Mizen Head and Tragumna, East of Lough Hyne. Both these sites have good bathing water quality and the latter was a Blue Flag Beach in 2013 (See <http://splash.epa.ie/#>).

6.5 Man-made heritage

According to the Archaeological Survey of Ireland, there are numerous sites of archaeological interest located around the coast of Roaringwater Bay and on the islands within the Bay. These include tower remains on Castle Island; burial ground, bullaun stone and miner's complex on Horse Island; cross and burial ground on Skeam West; promontory fort on Calf Island East; mass rock and holy well on Hare Island; cup-marked stone, Franciscan priory, barracks and more on Sherkin Island; stone row, leper hospital, fulacht fia, megalithic passage tomb and more on Cape Clear

There are numerous shipwrecks within the area these include:

- Illyrian: A steamer which sank in 1884 on the eastern side of Cape Clear Island (51°26'N; 09°29'W). Wreckage is very broken up with remains mostly consisting of a large anchor and two boilers.
(http://www.divesitedirectory.co.uk/dive_site_ireland_cork_baltimore_wreck_illyrian.html accessed 08/05/2014).
- Stephan Whitney: A wreckage south-west of Calf Island.
- Huntress: A timber trawler which sank in 1996, 1km North of Calf Island.
- Enoch Bonner: Sank in 1917, 500m north of Cape Clear Island.
- A Spanish trawler which sank west of Cape Clear Island.
- Nestorian: Sank in 1917, south-west of Cape Clear Island. The remains of which are well spread out close to the cliffs south of the Bill of Cape.
- Hourtien: A trawler which sank in 1931, 2km south-east Cape Clear Island.
- Malmanger: A 5600 ton boat sank in 1917, 4km south of Baltimore
(<http://www.baltimorediving.com/map.htm> accessed 08/05/2014).
- Mystique: A fishing vessel sunk to the north of Calf Island East
(<http://diving.ie/roaringwater-bay-west-cork/> accessed 08/05/2014).
- Alondra: A steam ship lost on 29/12/1916 near Kedge Island, Baltimore (51°27'40"N; 09°20'44"W).
- Dido: A barque which sank in 1883 near Kedge Island (51°28'N; 09°19'W). However, very little remains except for a few anchors and a lengths of metal
(http://www.divesitedirectory.co.uk/ireland_cork_baltimore.html accessed 08/05/2014).

- Memphis: A steam ship lost near Dunlough Bay Mizen Head Co Cork in 1896. Very little wreckage remains.
- Irada & Bohemian: There are remains of several steamers and coasters north of the Mizen Head. These include the Irada which sank in 1908 and the Bohemian which sank in 1887. Wreckage remains of these, albeit with very little structure (<http://www.tempoweb.com/diveireland/mizen.htm> accessed 08/05/2014).

The Department of Arts, Heritage and the Gaeltacht (DAHG) raised no objections to the development from an underwater archaeological perspective.

7 Section 61 Assessment

7.1 Site Suitability

Long line aquaculture has been licensed within this area of Roaringwater Bay since the early 1990s. The sites under appeal (T5/311 N1 – N7) have been granted a licence for 10 years for the cultivation of mussels, oysters, scallops, sea urchins and seaweeds on ropes and long lines. The boundaries of the licensed areas were redrawn prior to the current licensing phase and the sites reconfigured to improve navigation, farming operations, safety, visual impacts and to reduce the impact on sensitive habitats. Figure 7.1 outlines the licensed sites under appeal in Roaringwater Bay.



Figure 7.1 Location of the Licensed Sites under appeal in Roaringwater Bay.

The Department's Engineering Division has stated that it has no objection to the granting of the licences advertised. However, in accordance with engineering recommendations, the licensee will be allowed an eighteen month period subsequent to licensing to reposition the relevant long lines within the reconfigured site.

An Taisce raised a number of specific concerns with regard to the licence applications:

- They had concerns about the culture of scallops as a secondary species with the mussels as the primary species. Additionally they raised concerns about the impact of seabed harvesting techniques for the scallops.

The Department's response to this is that given that mussel culture is considered to have a greater impact on the seabed than scallops (due to the greater density of the culture organism) the Appropriate Assessment considered that mussel longline culture would be the 'worst case scenario' in order to assess the applications. In response to the issue of seabed harvesting, the Department clarified that the scallops would be grown in suspended culture on ropes and that this concern would not be applicable.

- It had concerns that extensive mussel and seaweed culture could have an impact on the biodiversity and ecosystem functioning of the bay through the overconsumption of plankton.

The Marine Institute is strongly of the view that given the short residence time in Roaringwater Bay (calculated by modelling to be approximately 6 days), impacts of shellfish culture on pelagic resources is not likely to be a significant impact on the conservation features of the cSAC.

- It had concerns about the potential risk that the successful reproduction of Pacific Oysters might present in the bay.

The Department cite a survey by Kochmann *et al* (2013) that investigated the feral populations of pacific oyster throughout Ireland. It stated that it was noteworthy that none were found within Roaringwater Bay even though oysters have been cultivated in the bay since 1980. This it proposed was as a result of the hydrological and morphological characteristics that facilitate pacific oyster settlement stating that the 6 day residence time of water in the bay was much less than the 21 days required for increased risk of settlement. However, in order to further mitigate any risks, licence conditions stipulating the use of triploid oysters in the bay and the sourcing of ½ grown seed from within the jurisdiction were added to the licence.

7.2 Other Uses

As highlighted in Section 6.2, there are numerous other users operating within Roaringwater Bay including inshore fisheries, cruising vessels and various leisure activities. The licensed sites have been operating within the current area since the 1990s. The management of Roaringwater Bay by the CLAMS and the operation of a navigational safety management plan have ensured that the proposed sites have had minimal impact on most other users of the area over the last decade. In addition, the site boundaries have been redrawn and the sites reconfigured to maintain/widen the existing navigation channels following advice from the Marine Survey Office. It is the Department's position that public access to recreational and other activities can be accommodated by this project

The Marine Survey Office stated it had no objection to this development from a navigational point of view, neither had the Commissioner of Irish Lights.

The Sea Fisheries Protection Authority had no comment to make with regard to the licensed sites.

7.3 Statutory Status

Roaringwater Bay is part of the Roaringwater Bay and Islands cSAC (cSAC 000101) Natura 2000 designated site. Additionally the Sheep's Head to Toe Head SPA (site code: IE004156) is located south of Baltimore, Co. Cork.

Concerns raised by the appellant with regard to the Statutory Status of the cSAC

Cumulative Impact

It is the appellant's assertion that the Ministerial Determination in relation to the EIS requirements for Shellfish Aquaculture Licensing considered only the individual Aquaculture Licence applications and not the cumulative impact as a whole (as required by the EU Directive 2011/92/EU and S.I. No. 93/1999 – European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999).

The appellant also questions lack of a carrying capacity analysis. He states that "instead of assessing the carrying capacity, an arbitrary 15% threshold was established which is based on the Irish authorities view that since it requires a 25% loss to reach and unfavourable conservation status, a 15% loss is acceptable". The appellant makes a point that it is against the purpose of the Habitats Directive to license activities that result in a loss of features of interest.

The National Parks and Wildlife Service (NPWS) within the Department of Arts, Heritage and the Gaeltacht (DAHG) are the body responsible for conservation site designation and protection, and nature conservation legislation. As stated within their publication 'Roaringwater Bay and Islands SAC Conservation Objectives-supporting document' (NPWS, 2011b), an unfavourable conservation status of an Annex I habitat is defined (by the European Commission's Article 17 reporting framework) as a **disturbance** of greater than 25%. The DAHG therefore takes the view that licensing of activities likely to cause **continuous disturbance** of each community type should not exceed an approximate area of 15%. The assertion by the appellant that a 15% **loss** is deemed acceptable by the Department is mistaken.

The Appropriate Assessment for aquaculture activities in Roaringwater Bay (Marine Institute, 2013) was carried out by the Marine Institute (MI). In this they define **disturbance** as 'that which leads to a change in the characterising species of the habitat (which may also indicate change in structure and function). Such disturbance may be temporary or persistent in the sense that change in characterising species may recover to a pre-disturbed state or may persist and accumulate over time'.

The MI determined the significance of the potential impact on the constituent habitats of this cSAC in relation to spatial overlap, disturbance and the persistence of disturbance, as outlined below:

- The disturbance of habitat depends on the sensitivity of the characterising species to aquaculture activity.
- If the activities are persistent (high frequency, high intensity) and the receiving habitat has a low resilience to the activity (i.e. the characterising species of the habitats are impacted)

then such habitats could be said to be persistently disturbed. If activities are infrequent but resilience is low and recovery rates are low (i.e. high sensitivity) then such habitats may also be persistently disturbed.

- In the case of habitat, **disturbance** of less than 15% of the habitat area is deemed to be insignificant (NPWS, 2011b).

The effect of this disturbance is deemed significant when cumulatively they lead to long term change in communities greater than 15% of the area of any constituent community listed.

It was determined by the MI in the Appropriate Assessment that the only habitat that approached that 15% overlap threshold was within the Shallow Sand/Mud Complex where the cumulative impact of mussel grow-out and demersal trawling were deemed to have a combination overlap of 14.3%. This is below the 15% threshold for significant effects adopted by the DAHG. The species characterising this community complex are typically infaunal with short generation times and exhibiting a high degree of tolerance to sedimentation and organic enrichment. The duration of the activity is year round and the period for which the licence is granted is ten years. The MI acknowledges that there is a risk of chronic enrichment of the seafloor especially when including the cumulative impact of other mussel lines in close proximity (p. 106 of Appropriate Assessment). However, as the infaunal community complex have a high resilience to this type of pressure, the impact on them is determined to be a disturbance and not a loss and therefore the 15% threshold is applicable and has been adhered to.

Whilst a specific ecological carrying capacity model was not developed for the appropriate assessment, it has been shown, by the application of the 15% disturbance threshold, that there will be no significant changes to ecological processes, species, population or communities in Roaringwater Bay from aquaculture and fishing activities and therefore the carrying capacity has not been exceeded.

Location of maërl and mussel lines

The appellant states that the recommended buffer zones to be established, to prevent impact on highly sensitive maërl and sea grass beds, have not been implemented.

Prior to the relicensing of the aquaculture sites within Roaringwater Bay, a survey of long lines indicated there was some dislocation of long lines relative to the site boundaries. This was attributed to a number of factors including mapping inaccuracies, initial orientation of the sites not being in harmony with the prevailing winds and other factors. Following a general meeting between the Aquaculture and Foreshore Management Division, Engineering Division and the operators, it was decided to reconfigure the sites in Inner Roaringwater Bay. The principles behind the reconfiguration include the retention or a negligible increase (0.5%) in the aquaculture area as previously licensed and maintenance or widening of the existing navigation channels. In addition to this, the proximity of activities to sensitive habitats e.g. maërl and seagrass, would be considered and a buffer zone

with a minimum distance of 30 meters would be introduced between the mapped maërl/seagrass areas and the aquaculture sites.

The habitat maps for Roaringwater Bay cSAC presented in the Conservation Objectives and supporting documents (NPWS, 2011a; 2011b) were established following several surveys of the area, particularly using 2007 diver observations and dropdown camera data (MERC, 2007). These habitat areas are illustrated below in Figure 7.2.

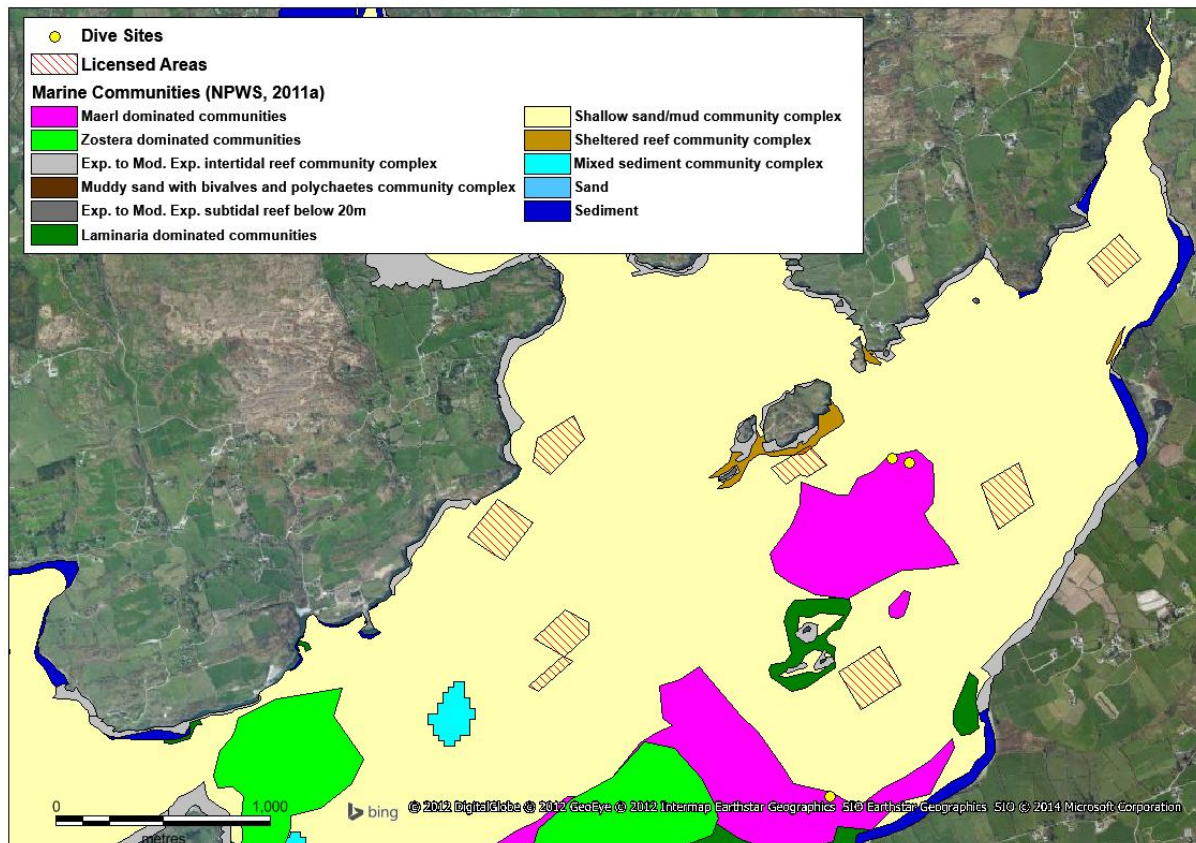


Figure 7.2 Habitat maps of Roaringwater Bay (NPWS, 2011a; 2011b).

The appellant cites the ‘*Survey of sensitive subtidal communities*’ (MERC, 2007) in Roaringwater Bay where dive surveyors recorded long lines in position over maërl beds and with evidence of siltation occurring. Two particular dives are highlighted where long lines were situated within 5 meters of the maërl beds and where the level of siltation/sedimentation could be seen to decrease with increasing distance from the mussel line. The coordinates of these two dive transects have been plotted and are presented (as yellow dots) in Figure 7.2 above. These dive transect locations illustrate the close proximity of the long lines to the maërl beds at the time of the survey. Figure 7.2 also illustrates that licensed sites were located well away from any seagrass beds.

However, it is because of the drifting of long lines outside of their licensed sites and their close proximity to the sensitive habitats of seagrass and maërl beds that the decision was taken to reconfigure and to redraw the boundaries of the licensed sites to create a 30m buffer zone. The

illustrations of the licensed sites presented within the AA were the original boundaries prior to the creation of a 30m buffer zone and, as the appellant states that he did not have access to the grid references for the sites, the issue of overlap with the maërl habitat had been addressed.

The appellant maintains that the location of the maërl and seagrass does “not accord with the known location of the maërl beds provided in a separate document, the ‘*Maërl and Seagrass beds [Regulation 5 Risk Assessment, Roaringwater Bay SAC, Draft Risk Mitigation and Management Plan, September 2013]*’”.

This plan was drafted to manage the potential physical damage to sensitive habitats that unplanned fishing activities in the area could have. It is proposed under this plan to establish an exclusion zone around these sensitive habitats where the use of dredges, shrimp potting, bottom trawl, beam trawl and bottom otter trawling gear would be prohibited. As the sensitive habitats in question occur in a mosaic pattern within the bay, the regular boundaries provide a defined exclusion zone that encompass the habitats with a margin for error. As the 30m buffer zones have been established for the licensed sites already, the sites can occur within the exclusion zone without impacting the habitat in question.

Harbour Porpoise

The appellant has raised concerns on the impact of the aquaculture long lines within the licensed areas on the harbour porpoise.

The Conservation Objectives (section 6.4.2 above) specify that the range of the harbour porpoise within the site should not be restricted by artificial barriers to the site. The Appropriate Assessment states that there is unlikely to be any negative interaction between the porpoises (or dolphins) and rope mussel structures because their use of echolocation will preclude a collision risk. In addition, the AA states that harbour porpoise occur in higher densities in the outer part of the bay distant from the proposed licensed activity and that the level of activity in relation to mussel culture is relatively low.

Thus, it is the position of the appellant that as the harbour porpoise are aware of and will avoid the long line structures, these structure therefore constitute an artificial barrier, prohibited by the conservation objectives in the designated area.

The Irish Whale and Dolphin Group submitted an assessment of sea-fishing and aquaculture in Roaringwater Bay with respect to the harbour porpoise within the cSAC and the strict protection of its habitat (Berrow & O’Brien, 2013). While it had much to say on the impact of sea fishing, particularly pelagic trawling on the harbour porpoise, the IWDG consider the impact of aquaculture on the harbour porpoise to be minimal or non-existent. It does not consider aquaculture as a significant issue regarding the management of harbour porpoise in the cSAC. It further states that mussel aquaculture could, in fact have a beneficial effect through acting as a fish aggregating device or by acting as a limited no-take zone.

7.4 Economic Effects

The licensed areas under appeal currently employ one full time and two part time staff with the scope for increased employment should market conditions improve. The impact of this is considered beneficial but not significant.

7.5 Ecological Effects

The licence sites under appeal were pre-screened by the EIA Screening group in order to consider on a case by case basis whether the proposed aquaculture developments were likely to have a significant impact on the environment. The EIA Pre-Screening Assessment concluded that the environmental effects from the proposed activity will be minimal and not significant and that an Environmental Impact Assessment is not required. It is the opinion of the technical advisors that the EIA Pre-Screening Assessment and the Article 6 Assessment sufficiently assessed the potential impacts of the proposed aquaculture activities on the environment and that an EIS was not required in this instance.

7.6 General Environmental Effects

Results of the Shellfish Waters Directive do not indicate any water quality issues in the vicinity of the proposed licensed areas.

The production of faeces and pseudofaeces by mussels and the impact of the deposition of same on the seafloor is likely to be minimal. This is because the sites are well flushed and build up of excess organic matter with subsequent reduction in oxygen is considered unlikely.

The implementation of proper waste management procedures will ensure the removal of any old ropes, floatation devices and other material associated with the cultivation process. Amounts of discarded shells will be small and build up of excess on site will not be permitted.

Emissions associated with the husbandry and harvesting of shellfish from boats and other machinery are not expected to have a significant effect.

There is likely to be no significant general environmental effects as a result of the proposed granting of licences.

7.7 Effect on Man-made heritage

While there are numerous shipwrecks within Roaringwater Bay and the surrounding waters, as previously stated in Section 6.5, The Department of Arts, Heritage and the Gaeltacht (DAHG) raised no objections to the development from an underwater archaeological perspective.

8 Section 61 Conclusions

Site Suitability

The sites under appeal are suitable for shellfish culture in Roaringwater Bay for the following reasons:

- (1) Long line shellfish culture has been carried out successfully in this area since the early 1990s
- (2) The site is located in a Shellfish Designated Area and its classified production area status is 'Class A' meaning that shellfish produced do not need to be purified prior to human consumption
- (3) The short residence time of water in the bay means that the potential for establishment of a wild population of pacific oysters is negligible

Other Uses

The proposed development has a non-significant impact on some of the possible other uses or users of the area for the following reasons:

- (1) As an existing development (licences in this area have been in operation since the early 1990s) the licensed sites have been operating without impact on commercial and leisure users of the harbour
- (2) The management of Roaringwater Bay by the CLAMS and the operation of a navigational safety management plan have ensured that the proposed sites have had minimal impact on other users of the area.

Statutory Status

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

- (1) The AA has established that there will be no loss of qualifying interest or sensitive habitats as a result of the proposed aquaculture activity.
- (2) A buffer zone of 30m has been established around the licensed sites in the bay in order to remove any potential impacts on the highly sensitive habitats of maërl and seagrass.
- (3) The AA has shown that the licenced sites overlie the 'Shallow Sand/Mud Community Complex' which is a habitat with high resilience and a high potential for recovery from disturbance caused by the aquaculture activity. This overlap is less than the 15% threshold deemed to be significant by DAHG.
- (4) The cumulative impact of the proposed aquaculture activities and demersal trawling is estimated at 14.3%, again below the 15% threshold deemed to be significant by DAHG.
- (5) The IWDG rated the impact of aquaculture on harbour porpoise in the area as negligible, with a potential positive impact on the population through long lines acting as a fish aggregation device

(6) The proposed sites are located within Roaringwater Bay Shellfish Designated Waters

Economic Effects

There will be a positive effect on the economy of the area for the following reasons:

The potential for over 1 full and 2 part time workers, as well as the potential for increased employment

Ecological Effects

There is a non-significant effect on the natural habitats, wild fisheries and fauna and flora of the area as a result of the proposed development. An EIA pre-screening assessment was carried out by the EIA screening group and it concluded that the environmental effects from the proposed activity would be minimal and not significant and that an Environmental Impact Statement would not be required for the proposed licence renewals.

General Environmental Effects

There are non-significant general environmental effects as a result of the proposed development for following reasons:

- (1) There are no significant effects on the general environment of the foreshore as a result of the proposed development provided proper waste management procedures are followed
- (2) The production of faeces and pseudofaeces by cultivation of mussels in suspension should not impact the benthic environment as the sites are well flushed and build up of excess organic matter with subsequent reduction in oxygen is considered unlikely.
- (3) There are likely to be no significant emissions from machinery used in harvesting and husbandry.

Man-made Heritage

There is no effect on the man-made heritage of value in the area as a result of the proposed licence applications. While there are numerous sites of man-made heritage in the environs of Roaringwater Bay and a substantial number of shipwrecks, the Department of Arts, Heritage and the Gaeltacht raised no objections to the development from an underwater archaeological perspective.

9 Recommendations

In accordance with Section 59 of the Fisheries (Amendment) Act 1997 and amendments the Technical Advisor recommends **granting** the licences for the site reference numbers T5/311, N1, N2, N3, N4, N5, N6 and N7 for the following reasons:

It is the opinion of the technical advisors that the EIA Pre-Screening Assessment and the Article 6 Assessment of Aquaculture and Fisheries in Roaringwater Bay adequately considered the potential impacts of aquaculture (both alone and in-combination with other activities) on the sensitive habitats within the designated area. An EIS was not required in this instance.

10 Conclusions

- The sites under appeal are suitable for shellfish and seaweed culture farming.
- The renewal of licences will have no *significant* impact on other uses of the area (recreational, agricultural, fishing *etc.*)
- The proposed licences have a *non-significant impact* on the statutory status of the area
- The proposed licences will have a *positive* effect on the economy of the area
- The proposed licences will have *no significant* effects on wild fisheries, natural habitat and flora and fauna populations
- There are no significant general environmental effects expected as a result of the licence renewals
- There are no effects anticipated on the man-made heritage of value in the area as a result of the renewal of the licences

In conclusion, we would advise to grant the licence applications under appeal.

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