

OHara, Mary

From: McManus, Catherine <Catherine.McManus@marineharvest.com>
Sent: Thursday 3 November 2016 14:34
To: Alab, Info
Cc: Feenstra, Jan C
Subject: Your Ref. AP2/1-14/2015
Attachments: Resp to ALAB Qs 031116.pdf

Dear Mary,

I refer to your letter dated October 6th 2016 regarding the appeal against the decision by the Minister for Agriculture, Food and the Marine to the conditions/grant of Aquaculture licence to Bradan Fanad Teo. t/a Marine Harvest Ireland, Kindrum, Fanad, Letterkenny, Co. Donegal on site Ref: T05/555 for the cultivation of Atlantic Salmon; *Salmo salar*, on a site on the foreshore at Shot Head, Bantry Bay, Co. Cork.

Please note attached, details of additional information sought on 6 questions from ALAB. Please contact me if you require any further clarification.

Best regards

Catherine McManus

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Mary O'Hara
 Secretary to the Board
 Aquaculture Licences Appeals Board
 Kilminchy Court
 Dublin Road
 Portlaoise
 Co. Laois.

02.11.2016

RINMORE

Your Ref. AP2/1-14/2015
Site Ref: T05/555 Shot Head. Bantry Bay, Co. Cork.

Re. Appeal against the decision by the Minister for Agriculture, Food and the Marine to the conditions/grant of Aquaculture licence to Bradan Fanad Teo. t/a Marine Harvest Ireland, Kindrum, Fanad, Letterkenny, Co. Donegal on site Ref: T05/555 for the cultivation of Atlantic Salmon; *Salmo salar*, on a site on the foreshore at Shot Head, Bantry Bay, Co. Cork.

Dear Ms O' Hara,

I refer to your letter dated October 6th last requesting additional information in relation to this application. Please note the following response numbered 1 to 6 in accordance the queries raised.

1. Salmonids and freshwater pearl mussel in Dromagowlane River.

The Trafrask River (also known as the Dromogowlane River) and its tributaries enter Bantry Bay at the head of Trafrask Harbour, some 2.5km by sea N of the Shot Head salmon farm site, licence granted by the Minister T05/555, now under appeal, at its closest. Approximately 1km upstream from the sea, to the north of the R572 road, the river splits, with a tributary, the Leitrim More River, running westerly. The Trafrask River then runs roughly NE for about 300m, before it splits again with another tributary, the Curragh River, running NE, whilst the Trafrask River runs in a more northerly direction. There are numerous other, smaller tributaries higher up the system which, by and large, drain the foothills of the Caha Mountains, SAC 000093. Much of the lower Trafrask River runs to the sea through raised blanket bog, protected by the Trafrask Bog NHA 002371. The Curragh River drains from raised blanket bog at Leahill, protected by NHA 002417, whilst a further tributary of the Curragh River drains the only lake in the system, Lough More; see Figures 1 and 4.

Although all protected areas within 25km of the proposed Shot Head site were highlighted in the Shot Head EIS, the Trafrask River itself was not considered in respect of environmental impacts from the proposed site because it is not recognised as a National Salmon River. Consequently angling the river is not subject to annual byelaws and standard statistics are not collected and published regarding its salmonid stocks or the conservation limits to be applied to their exploitation. A search for data on the rivers around Bantry Bay at the time indicated that, with the exception of the five National Salmon Rivers around the Bay, (all of which were considered in depth), there was very little information available on other, smaller rivers, including the Trafrask by the date of EIS submission, five years ago, in 2011.

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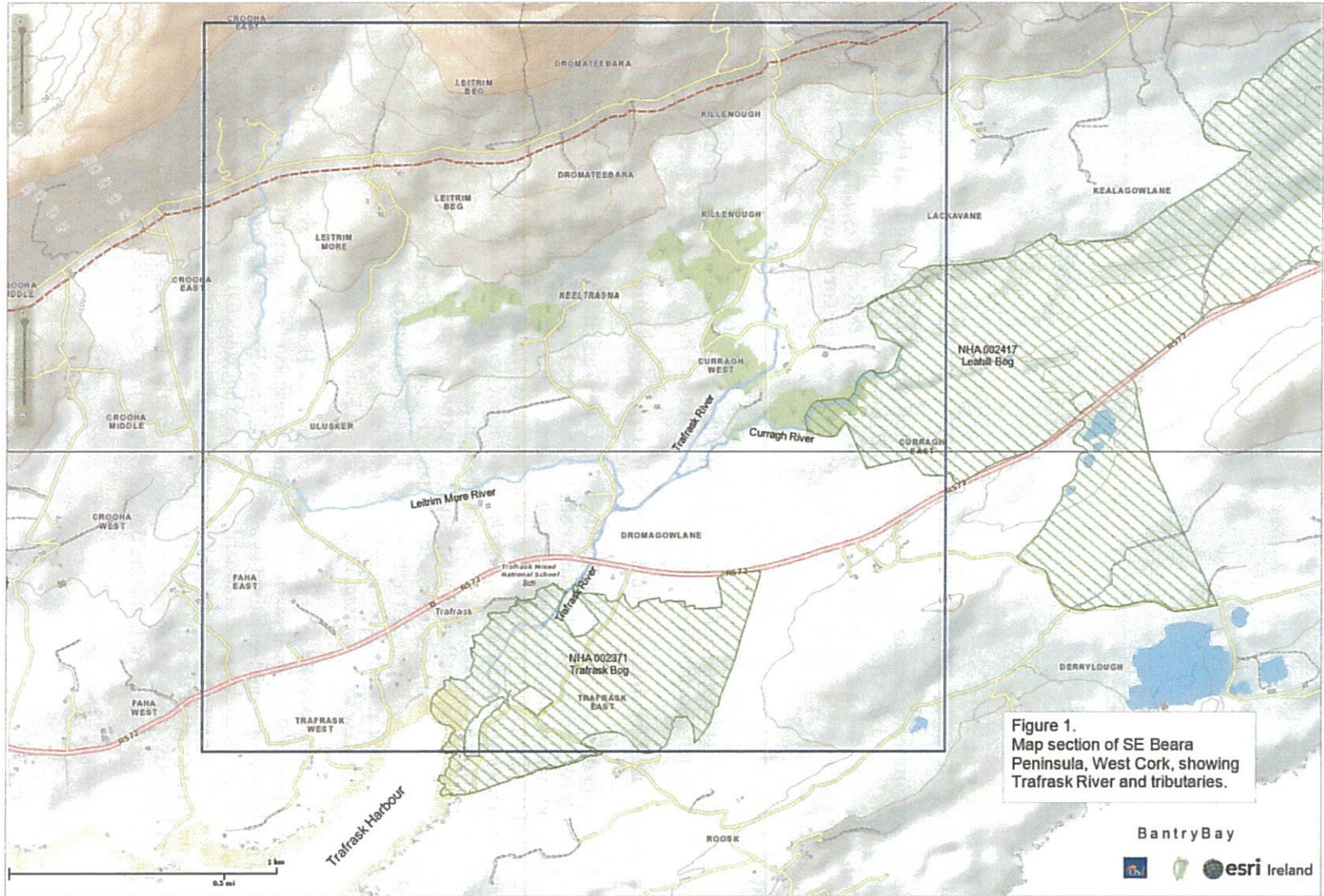


Figure 1.
Map section of SE Beara
Peninsula, West Cork, showing
Trafrask River and tributaries.

- Trafrask River IE_SW_21_2287 (seaward end)
- Leitrim More River IE_SW_21_5365
- Trafrask River IE_SW_21_6692 (upstream)
- Curragh River IE_SW_21_5465

Similarly, the coastal water body Outer Bantry Bay IE_SW_170_0000 is classified as being of High Ecological Status and is also considered to be at little risk of deterioration.

High Ecological Status as indicated is likely to have some influence on salmonid stocks in the river and also positive influence on the status of pearl mussel populations, if present. However, there is still very little empirical data available on the status of either salmonid stocks or *Margaritifera* stocks in the Trafrask system.

In order to provide answers to Questions 1a and 1b, opinions and data have been sought from Dr Evelyn Moorkens, recognised *Margaritifera* authority; David Millard BIM Officer for West Cork and Kerry; Clare Heardman, NPWS Ranger for West Cork; Michael McPartland, Chief Environmental Officer for Inland Fisheries Ireland (IFI), Southwest River Basin District (SWRBD); Tim Moore, IFI Officer for SWRBD and Dr Eugene Ross, Lecturer, Institute of Technology Tralee (ITT). Responses have been given as follows:-

- a) All parties consulted confirm that the Trafrask River is a very small system by any standard and it is referred to as the "Trafrask Stream" in WFD documentation. However the system is known to support small breeding populations of both *Salmo trutta* (brown trout if resident and sea trout if migratory) and *Salmo salar*. Note that, of these two species only *Salmo salar*, and in its juvenile freshwater phase, is protected, as a Habitats Directive Annex II species. However, neither the Trafrask system nor any other river around Bantry Bay has been so designated as a result of the presence of juvenile salmon. The only coastal SAC around Bantry Bay including a river is the Glengarriff Harbour and Woodland SAC 000090. Whilst this contains both *Salmo salar* and *Margaritifera margaritifera*, which is protected under Annexes II and V of the Habitats Directive and is mentioned in the Site Synopsis, it is understood that the presence of these protected species was not the reason for this site being granted SAC status (see NPWS website).

Tim Moore, IFI officer for the SWRBD, has stated that he walked the Trafrask system looking for salmonid nursery areas in 2012 and located two redds. These were close together and, it is believed, were *Salmo trutta* redds and in the Curragh River.

Michael McPartland, IFI Environmental Officer for the SWRBD, stated that the Trafrask River is not one of the 141 or so designated National Salmon Rivers in Ireland so IFI has not carried out any catchment-wide electro-fishing on it. Therefore specific information on salmonid densities in the Trafrask are not available. However Mr McPartland also stated that he personally spot-electro-fished the river approximately 3 years ago, associated with an IFI school visit to the Trafrask National School. He recalls that salmon, sea trout and brown trout were present in the river but cannot add any further detail. That all three species should be brought to the surface by electro-fishing a single spot would seem to suggest a healthy presence of salmonids in the river.

Local NPWS Ranger Clare Heardman also states that she is aware of the river supporting migratory salmonids but none of the parties consulted were aware of the existence of any angling catch or effort data record for the system. It is thought most likely that angling is infrequent and spasmodic; by local anglers and that no catch or effort data has been recorded or maintained.

To some degree, water quality will influence the density and migratory habits of salmonid fish in small river systems such as the Trafrask. High Ecological Status indicates that this river exhibits its natural, historical oligotrophic (low nutrient) status. As a result, food to support large populations of resident fish is limited, but such conditions will often support small populations of anadromous stocks of either or both Atlantic salmon (*Salmo salar*) and sea trout (*Salmo trutta*). However, despite a natural paucity of food organisms, a small population of resident brown trout (*Salmo trutta*) can also be expected to be present. It is now well established that this population is likely to be plastic in that, if the numbers of anadromous *Salmo trutta* returning to breed diminishes in any season, some previously resident juvenile stock will smoltify and become anadromous and, thereby, contribute to the stability of the sea trout run.

Bantry Bay supports five National Salmon Rivers (the Adrigole, Glengarriff, Owvane, Coomhola and Mealagh; see Figure 2) as well as a number of smaller rivers with unmonitored wild salmonid populations. Some ten years after the banning of the driftnet fisheries nationally in 2006, 100% of Bantry Bay's National Salmon Rivers are open for angling for the 2016 season, of which four (80%) are fully open and one (20%), the Adrigole, is open for Catch and Release angling only. On a national basis, 44% of all National Salmon Rivers are closed, 22% are open for Catch and Release angling only and only 34% are fully open. Clearly these rivers, of all categories, are in both salmon farming and non-salmon farming areas. Whether a river is open or closed under the angling bye laws is based on its conservation status, as calculated by the Standing Scientific Committee and advised to the Minister. In that salmon have been farmed constantly in Bantry Bay for almost forty years, it is notable that the number of National Salmon Rivers open for angling in the bay is so far above the national average, for all areas, both with and without salmon farms. This should rightly lead to questions as to the reality of the alleged impacts of salmon farming on wild salmonid stocks, at least in this bay.

It is submitted that the Shot Head EIS and the RPS dispersion study commissioned by Marine Harvest Ireland provide persuasive evidence that the status of the wild salmonid stocks in the Trafrask River system would not be affected by the operation of a salmon farm at Shot Head.

In respect of the Freshwater Pearl Mussel, *Margaritifera margaritifera*, the majority of rivers around inner Bantry Bay contain populations of this species, defined by NPWS, as either lying "(in part) within SAC, other nature conservation sites or in the wider countryside. Those populations within SAC were not considered of sufficient quality to warrant designation for the species and detailed restoration objectives, targets, plans or measures are unlikely to be developed. However, the potential effects of any plans, developments or activities on the populations, including the potential to cause 'environmental damage' as per the Environmental Liability Directive and Regulations, must be determined. The NPWS holds some detailed information on the distribution and abundance of freshwater pearl mussels in a small number of these catchments." These areas are shown in the map, also published by NPWS, in Figure 3. It is noted that, at the date of this response, little has been done by way of "SEA, EIA or other ecological assessment" to thoroughly assess the status of the *Margaritifera* stocks in the Trafrask system.

Clare Heardman has stated that she surveyed sections of the river for *Margaritifera* on a present or absent basis in 2002 and found pearl mussels to be present. The NPWS record states the coordinates for her observations to be 85400E 49800N. Bearing in mind the accuracy of GPS in 2002, this could refer either to the Curragh River or the Trafrask River, near the point of their confluence; see Figures 3 and 4.

Dr Eugene Ross carried out a rapid assessment survey of *Margaritifera* in a number of Irish Rivers, including the Trafrask, which he surveyed in 2008. His report and supporting information was kindly supplied by NPWS following completion of a Data Request Form. This data is to be treated as confidential because of the endangered (Red Book) status of the species and its protection under Annex V of the Habitats Directive, which protects against exploitation.

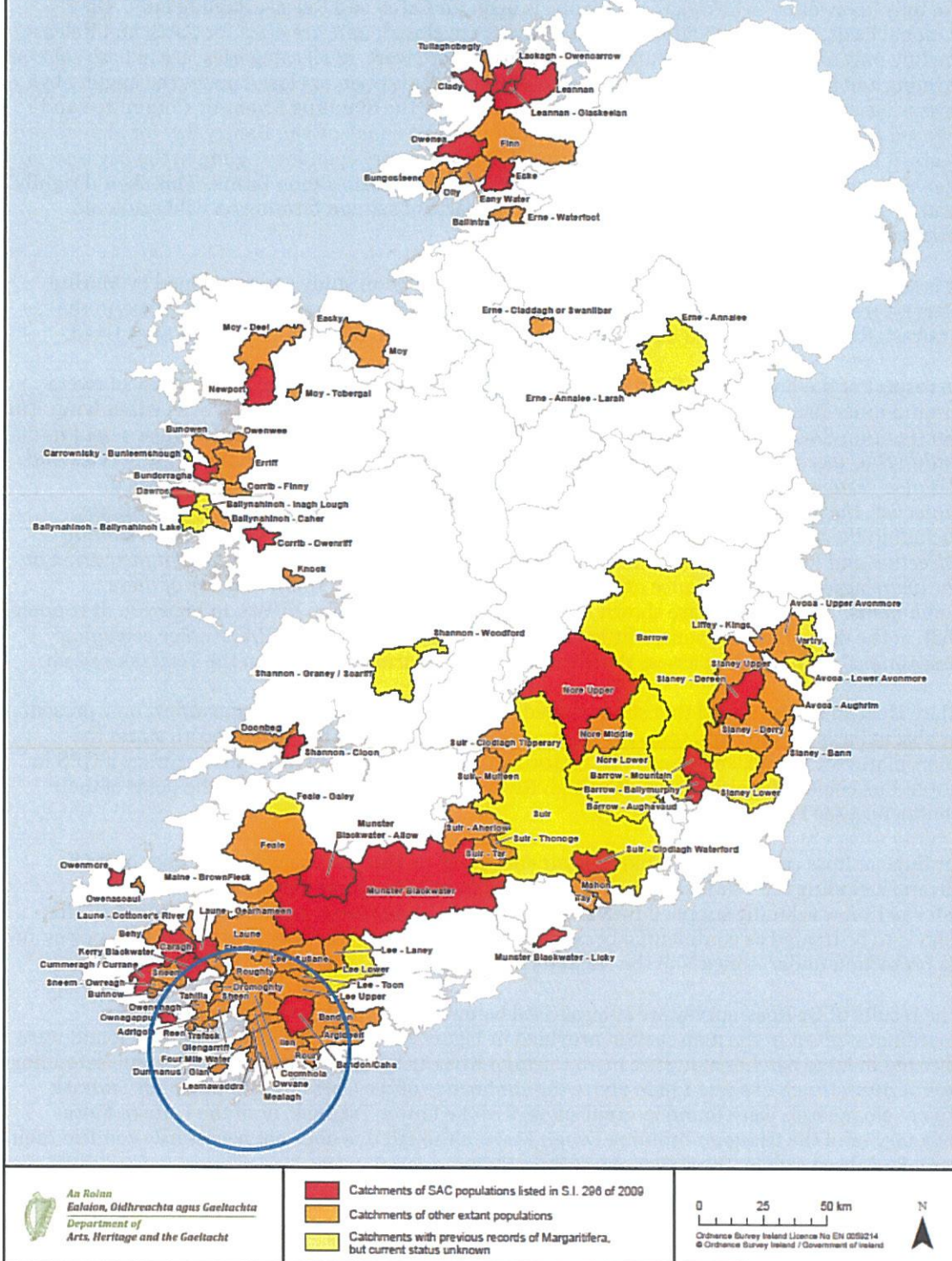
The results of Dr Ross' survey are summarised below and are illustrated in Figure 4. The coordinates given in the map section provided in Figure 4 suggest that all the mussels found were situated in large patches along the main Curragh River tributary of the Trafrask system, extending over a river stretch of some 1.5km above the confluence of the Curragh with the main Trafrask River. No mussels were found in rapid surveys of the Lower Trafrask, or of the Leitrim More tributary or of the tributary draining Lough More, although this does not necessarily confirm their complete absence from these sections of the system.

¹ *Margaritifera* Sensitive Areas Version 06, October 2014 Explanatory text Áine O Connor, NPWS updated October 2014.

² Ross, E.D. (2009a) *Rapid Assessment of Margaritifera margaritifera (L.) populations in Ireland: Rivers assessed in 2008*. Unpublished report to National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin. Pages 75-81 provided.

Figure 3.
Margaritifera Sensitive Areas

- Version 06, July 2014 -



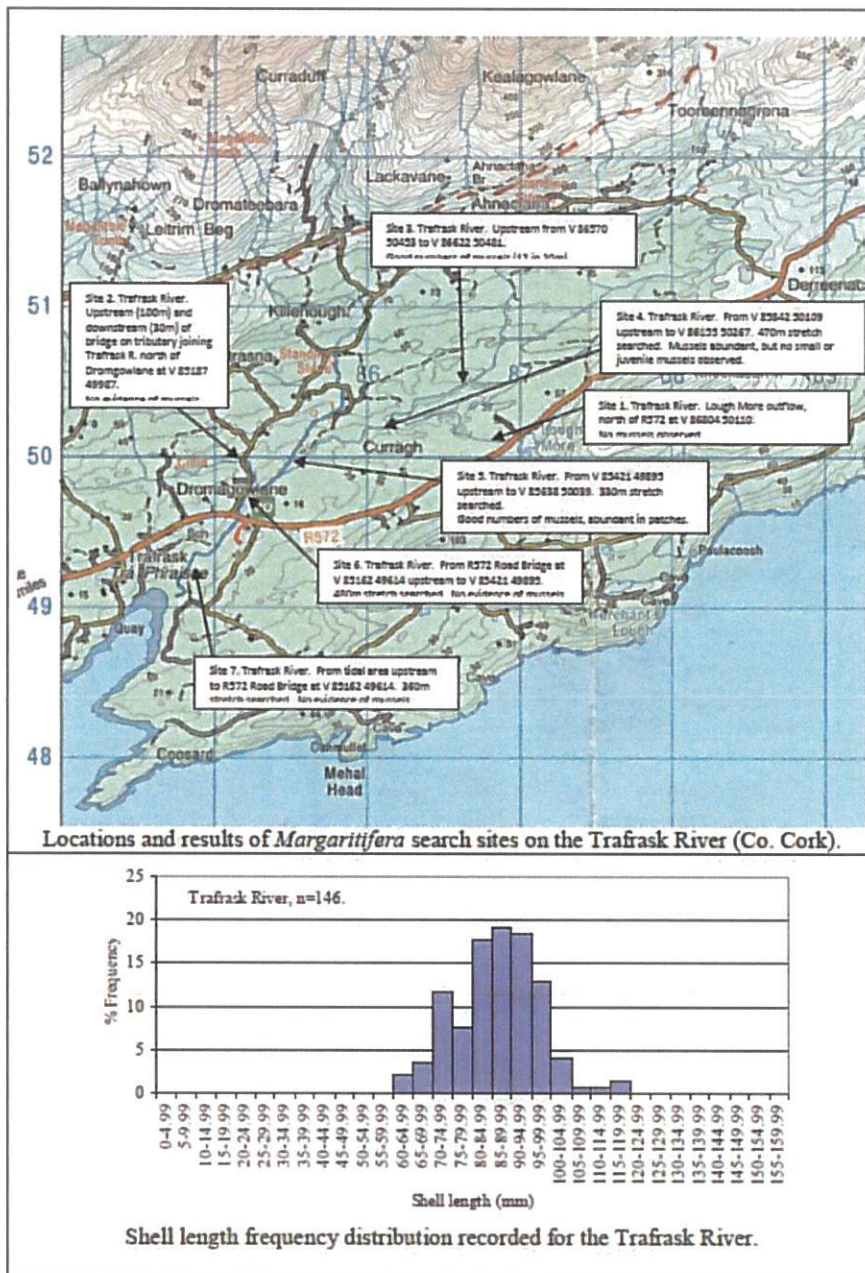


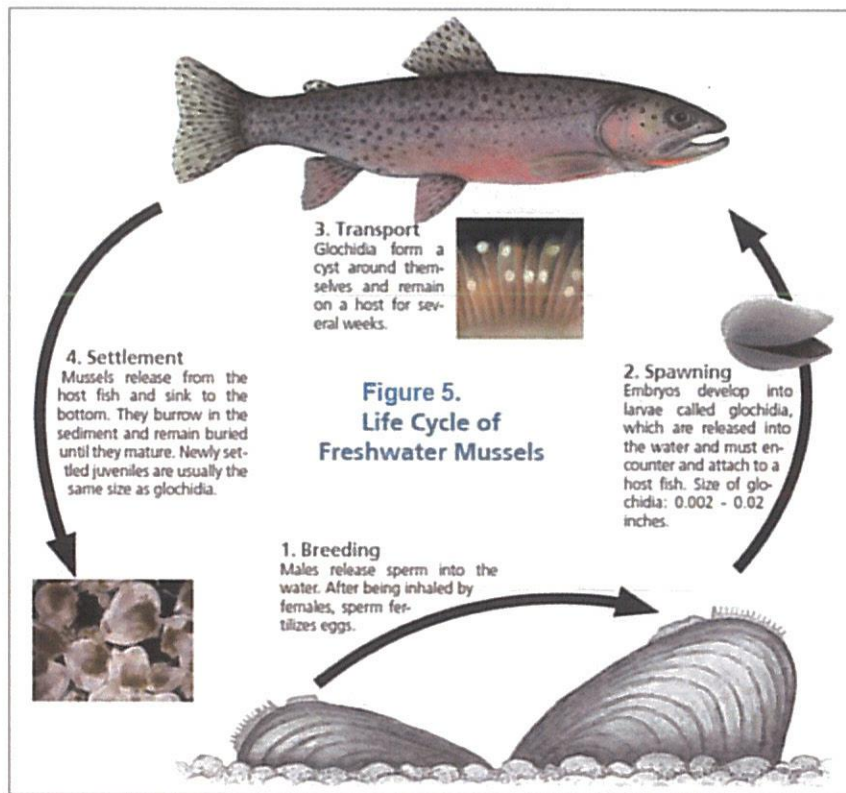
Figure 4. Summary of localities of *Margaritifera margaritifera* in The Trafrask River system and frequency distribution of shell length of specimens sampled. Abstracted from Ross, E.D. (2009a) Rapid Assessment of *Margaritifera margaritifera* (L.) populations in Ireland: Rivers assessed in 2008. Unpublished report to National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin. Pages 75-81 provided.

Dr Ross found the size of the population and its high density notable in the sections surveyed, although he notes the shell length frequency distribution of a sample of 114 individuals to be in the range of 60 to 120mm. This suggests an absence of juveniles and therefore an absence of recruitment to the population in recent years. This was confirmed by his analysis of a single 0.25m² quadrat sample, which, whilst containing a dense pollution of adult specimens, yielded no juveniles at all.

Dr Ross concludes that his 2008 survey indicates a sizeable population of *Margaritifera* in the Trafrask system for the size of the river but that their conservation status is uncertain. In particular the apparent absence of recruitment in recent years, although typical of many Irish populations, is worrying and requires further investigation.

- b) Whilst the response your Question 1a makes it clear that both migratory and resident salmonids and *Margaritifera* are extant in the Trafrask system, there is no indication from any source as to the size of salmonid populations present. The conservation status of the National Salmon Rivers in the locality is indicative that salmonid stocks are currently relatively healthy around Bantry Bay.

The presence of salmonids in freshwater pearl mussel waters is an important consideration because juvenile salmonids act as vector hosts, for both the development and dispersal of mussel Glochidia Larvae, see Figure 5.



It must be borne in mind that the Trafrask system is small and is classified as oligotrophic. As such is unlikely to support a large salmonid population. However *Margaritifera* is a long-lived species (up to 100 years with a maximum shell length of about 150mm) and remains fertile until of considerable age. In consequence a small, stable salmonid population is all that is required to sustain a healthy population. That this has been historically successful is indicated by the mussel populations present, although the last records date from 2008.

It is submitted that the absence of juveniles in the local *Margaritifera* population is more likely to be associated with ecological conditions in the system than to be due to the absence of salmonid hosts. Ross refers to habitat conditions in the Trafrask as follows in his Rapid Assessment report to NPWS:-

"Generally good with the exception of the stretch downstream from the R572 Road Bridge at V 85162 49614, where heavy growths of filamentous algae were present in unshaded areas. Light growth of filamentous algae was recorded in Site 6 (immediately upstream of R572 Road Bridge) and significant growths of macrophytes (up to 80% cover) were observed in unshaded areas of Site 3 (note also that cattle had access to the river in this locality). Locations with high mussel densities were generally heavily shaded.

The catchment had little in the way of intensive forestry or intensive agriculture, particularly on the southern side of the catchment, where land use consisted mainly of rough grazing on moorland.

EPA data for 2003 indicates continuing satisfactory water quality with a Q Value of 4-5 recorded at the R572 Road Bridge, and in relation to WFD assessment, the Trafrask River is expected to achieve good (note not high status) status by 2015."

Figure 6 shows the four water bodies within the Glengarriff WMU that make up the Trafrask River system. It should be noted first that the only one of these four water bodies was assessed in the current SWRBD reports is the Trafrask River 2287. The three upstream water bodies are not assessed at all but achieve their High Ecological Status by extrapolation from the downstream "donor" water body (i.e. 2287). In addition, of the numerous Quality Elements (QE) that should be assessed in fully defining Ecological Status (ES; see SI 272 2009), only Macroinvertebrates have been quantified at this stage.

It is evident from Ross' report and elsewhere that there are a number of potential impactors on the system that may not impinge on downstream Macroinvertebrates but which may have resulted in other QE results that could have contributed to a poorer overall ES (since it is the lowest QE that dictates ES) and certainly could have impacted on Pearl Mussel recruitment, as they do in other Irish Pearl Mussel waters. These include river sections with high macrophyte and filamentous algae cover, both indicative of elevated nutrients, rough grazing and direct cattle access to river sections with Pearl Mussel, both potential sources of elevated suspended solids and the numerous un-sewered houses within the catchment (there are a total of 461 within the Glengarriff WMU) which may also result in some pollution reaching the river.

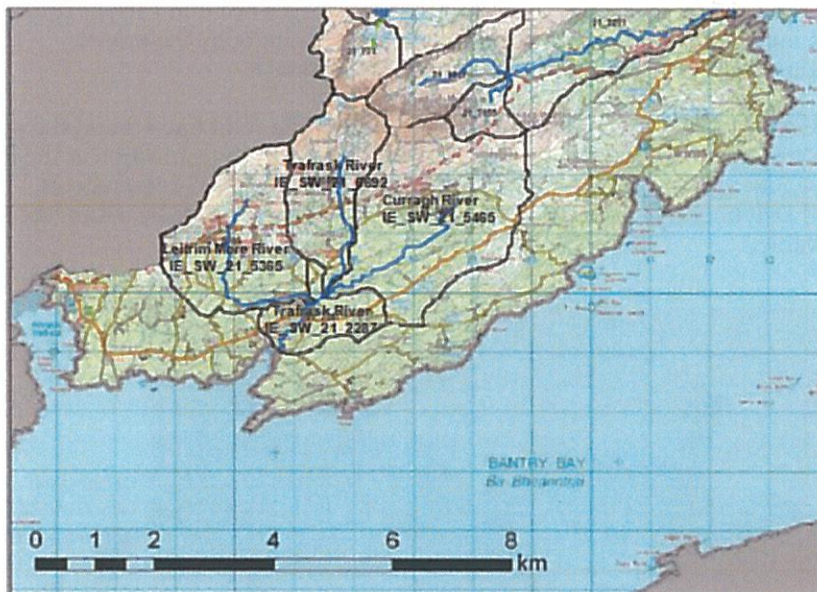


Figure 6.
Section of Glengarriff Water Management Unit map showing the four water bodies that contribute to the Trafrask River system.

2. Wellboat discharges

Deltamethrin dosage and treatment is described in the Shot Head EIS Volume 1, Section 5.1, and EIS Volume 2, SOP 29142 on Page 153 and in the RPS Report on Water Quality Modelling for Bantry Bay IBE0744_RO7_Revision 3, provided to ALAB.

The well boat MV Grip Transporter, which will be used for Alphamax[®] treatment in Bantry Bay if required, has two 600m³ well tanks. These would require a total dose of 120ml of Alphamax[®], containing 1,200µg (1.2mg) of Deltamethrin, per tank, per treatment. The well boat tanks have the combined capacity to treat 100 tonnes of fish per treatment. Thus the total biomass of fish for treatment is material to the total dosage of Alphamax[®] to be used. Alphamax[®] treatment is applied on a 24-hour-day basis and generally pens are treated consecutively. Well boat treatment uses less medication than in-pen treatment because the fish can be held in good condition at higher densities for the treatment duration.

Individual treatments, using the MV Grip Transporter well boat, take place over a four-hourly cycle per 100 tonne batch of fish to be treated, during which the actual treatment time is 40-45 minutes, the balance of the period being taken up with pumping the fish in and out of the tanks (2 hours) and flushing the used treatment out of the tanks with fresh seawater (1 hour) at the end of each four-hour cycle. The worst case scenario adopted for the dispersion model provided by RPS is for treatments to be completed every four hours consecutively around the clock until the total Maximum Allowable Biomass (MAB) of 2,800 tonnes of fish has been treated; i.e. over 112 hours (4.67 days). Calculations are also carried out on the basis of the flushing of the entire dose of Deltamethrin at the end of each treatment, taking no account of any adsorption during the treatment period.

Note that it is the intention that the entire process is carried out alongside the fish pens, such that the treatment is flushed from the well boat next to the pen that has just been treated, that is within the licensed area and within the 100m EQS limit boundary.

The Deltamethrin EQS is defined as a water column concentration of Deltamethrin of 2ng/l, 100m from the treatment site, 24 hours after treatment completion (SI 466 2008).

The number and temporal spacing of treatments means that discharges occur at various times through the tidal cycle, including slack water, which is all taken account of by the model. Therefore the simulation results are independent of the initial tidal state.

Figure 5.40 from the RPS Report is reproduced below as Figure 7. The solid line around the pens denotes the 100m EQS limit boundary. It can be seen that Deltamethrin concentration at the EQS point lies between the 0.8ng and 2.0ng contours, and therefore meets the EQS requirement. Dilutions of the flushed Deltamethrin beyond the EQS limit boundary therefore lie within the safe range, below the EQS value.

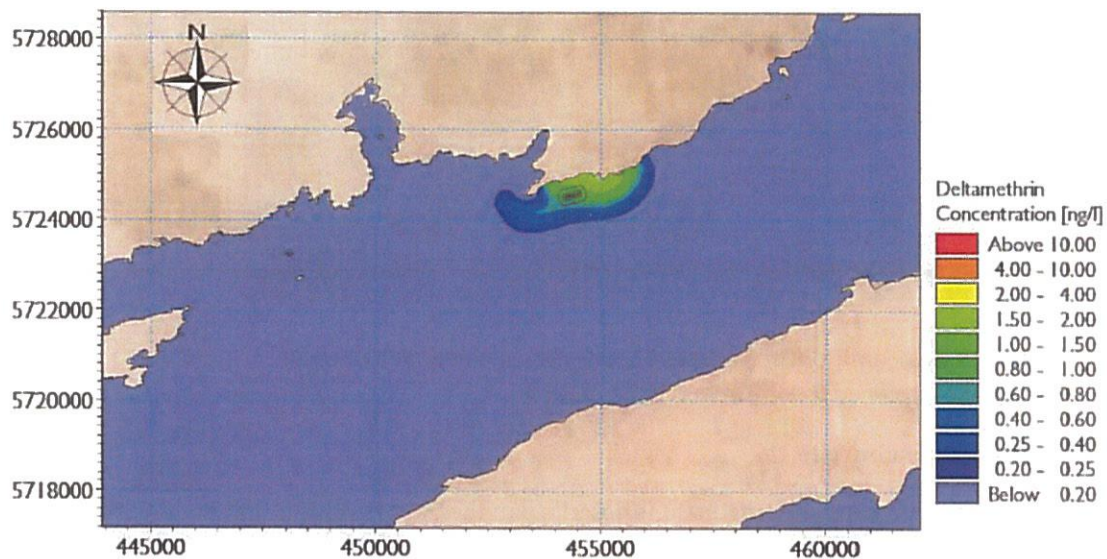


Figure 7. Deltamethrin concentration 24 hours post-treatment at the Shot Head site

It should be noted that since MHI took over the management of the two existing salmon production sites in Bantry Bay (Ahabeg and Roancarrig) in 2008 to the present day, a total of 2 Alphamax[®] treatment treatments have been administered to salmon stocks in almost 8 years. The hydrography of Bantry Bay is such that minimises the opportunities for Sealice infestation of salmon stocks thus requiring very few Sealice treatments.

3. Provision on information on the suitability of the cage and mooring system for the Shot Head site.

- a) MHI wishes to bring it to ALAB's attention that under the initiative which has been in gradual development by the Marine Engineering Division of the Aquaculture and Fisheries Management Division of the Department of Agriculture Food and the Marine (MED of AFMD of DAFM) finfish farm applications will now not reach the point of final specification and certification of the installation to be deployed until sometime after a final licence approval has been granted. This is explained in the Protocol for Structural Design of Marine Finfish Farms, issued by the Department in April 2016, which is appended to this document.

Section 1 of the protocol defines the basis of certification of the system prior to installation. The design information to be provided at the licence application stage, prior to the granting of the licence, is as described in Section 2 of the Protocol. This information has all been submitted to DAFM in good faith by MHI for the MHI Shot Head site as part of the licence application and internal consultation processes. It is assumed that ALAB has inspected this information. Thus "specific details on the cage and mooring system intended to be used", required by ALAB's Question 3a is not currently available. This was explained in outline in Section 3.3.2 of the Shot Head EIS. If Shot Head receives a licence, it is likely to be the first Irish site to go through this specification and certification process prior to deployment.

- b) Systems similar to that which will be used at the Shot Head site, if it receives a licence, have been in use on other exposed MHI sites in Ireland, notably at the Clare Island Smolt Site, Licence No. T10/58/4, the Portlea site, Licence No T10/58/8 and at Deenish Island, Licence No. T6/202; see Figure 8 for wave climate comparisons.
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Figure 8
Across Ireland comparison of storm waves by site.

Notes.

1. Data for sites 8 and 12 from old wave ray analysis method (1999); require revision.
2. Sites 1 and 2 never licensed; too exposed; Site 3 licensed but then rescinded; too exposed.
3. Sites 5 and 7 licence applications in process. All other sites currently licensed.

Exposure order	Site	Location	Frequency years	Storm direction°	Significant wave height H0 m	Wave period Tm sec	Most exposed end of site
1	Doonbeg Bear Island	Outer Bantry Bay	1:50	210°	13.90	15.45	E
			1:1		9.40	13.20	
2	Tralong	South coast	1:50	210°	9.04	12.44	S
			1:1		6.06	10.70	
3	Binnaweelmore	Lough Swilly	1:50	345	7.10	9.08	N
			1:1		4.53	10.96	
4	Smolt site Clare Island	Outer Clew Bay	1:50	285°	6.18	14.20	W
			1:1	270°	4.46	12.17	
5	Shot Head	Bantry Bay	1:50	240°	4.86	15.82	E
			1:1		3.29	12.84	
6	Portlea site Clare Island	Outer Clew Bay	1:50	285°	4.41	14.33	E
			1:1		2.96	12.04	
7	Kidney Rock	Kenmare Bay	1:50	255°	4.12	14.29	W
			1:1		3.25	12.82	
8	Deenish Island	Kenmare Bay	1:50	248°	3.90	15.20	E
			1:1		3.10	15.20	
9	Doonagh Point	Kenmare Bay	1:50	255°	3.79	14.15	W
			1:1		3.05	12.73	
10	Roancarrig	Bantry Bay	1:50	210°	2.80	12.00	E
			1:1		2.00	10.50	
11	Dooanmore	Lough Swilly	1:50	15°	2.86	9.19	N
			1:1		2.22	8.16	
12	Inishfarnard	Kenmare Bay	1:50	280°	2.20	15.20	W
			1:1		1.70	15.20	
13	Anny Point	Lough Swilly	1:50	345°	1.83	10.33	N
			1:1		1.46	8.67	
14	Waterfall	Bantry Bay	1:50	90°	1.00	-	E
			1:1		<1.00	-	

- c) This question is also explained in the Protocol for Structural Design of Marine Finfish Farms, issued by the Department in April 2016, which is appended to this document. Section 3 of the Protocol explains how the detailed design and certification process will now follow the granting of the licence for finfish aquaculture sites, including the provision of a Detailed Design Statement and Detailed Design Drawing Requirements.

Section 4 of the protocol states required Design Conditions, whilst Sections 5 to 8 of the Protocol requires the use of load modelling to predict the estimated loadings and design analysis of the various components of the proposed system.

Sections 9 and 10 of the Protocol set out the circumstances under which a review of the Structural Design shall be required and the maintenance of Structural Design Records for the installation.

The issuing and implementation of this Protocol broadly follows the terms of the Standards now established in both Norway and Scotland regarding the structural design and performance of fin fish net pen systems and their components, which are already used by Marine Harvest Ireland.

4. The use of Emamectin Benzoate (Slice®) at Shot Head.

Since this application of an aquaculture and foreshore licence at Shot Head was made in 2011, Marine Harvest Ireland has developed an Integrated Pest Management (IPM) strategy for controlling Sealice on its farms. This strategy relies on a combination of medicinal and non-medicinal management interventions in conjunction with regular monitoring and fallowing of sites. The IPM attached to this response letter details the strategy for Shot Head specifically and Bantry Bay in general.

It should be noted that since MHI took over the management of the two existing salmon production sites in Bantry Bay (Ahabeg and Roancarrig) in 2008 to the present day, a total of 4 Slice® treatments have been administered to salmon stocks.

5. Sea bed impacts in respect of the requested change in licence conditions to accommodate four additional cages.

The revised layout and position of pens can be varied without impacting on the Maximum Allowable Biomass (MAB) of 2,800 tonnes on site. The requested increase in pen numbers will not increase the inputs or outputs from this MAB. Rather, the resulting waste outputs will be more diffuse in nature and the resulting footprint will be more diffuse and at lower concentrations than described in the EIS and accompanying dispersion model.

6. The presence of a potentially harvestable population of *Nephros norvegicus* population within the licenced area.

The Marine Institute reported to DAFM on the Marine Harvest Ireland Application for a Salmon Farm Development at Shot Head, Bantry Bay, Co. Cork in January 2014. Amongst other things, the report commented on the fishery information provided in the Shot Head EIS, leading to Question 6, above, from ALAB. In response to these comments, it is argued that, as it is understood by MHI, the local shellfish landing data given in the EIS are not considered to greatly underestimate local catches, based as they are on all landing data by port as collected by local fishery officers and reported to the SFPA, from whom the data was obtained. It is noted that the Institute do not provide revised or alternative data.

It is further noted that the Marine Institute comments that their advice regarding shell fishing activities in the bay are not based on high resolution empirical data, because this is not available. In addition, Vessel Monitoring Data, reporting of which has been compulsory for vessels of 12-15m in length since September 1st 2013 (postdating the submission of the Shot Head EIS by 2.5 years) were not available for their assessment (although Figure 2 in the MI report shows such data for the period 2006-2012). Instead the MI says that they have based their opinion on "Expert information and survey data", the method also employed to provide this information for the Shot Head EIS.

The expert opinion used for the EIS was that only one vessel potted seasonally and with any regularity for prawn (*Nephrops norvegicus*) within the proposed Shot Head site up to the EIS date, although other vessels potted in a wider area, along the north and south shores of the bay. The same vessel also potted seasonally for shrimp in the same area.

The view expressed in the EIS was based on the fact that the area of exploitation within the proposed site area is small for both species, mainly as a result of the limited area of suitable substrate type within the site. This is indicated in Figure 1 in the MI report, reproduced here as Figure 9 and in Figure 10, taken from the ground-truthing survey conducted as part of the archaeological survey of the site.

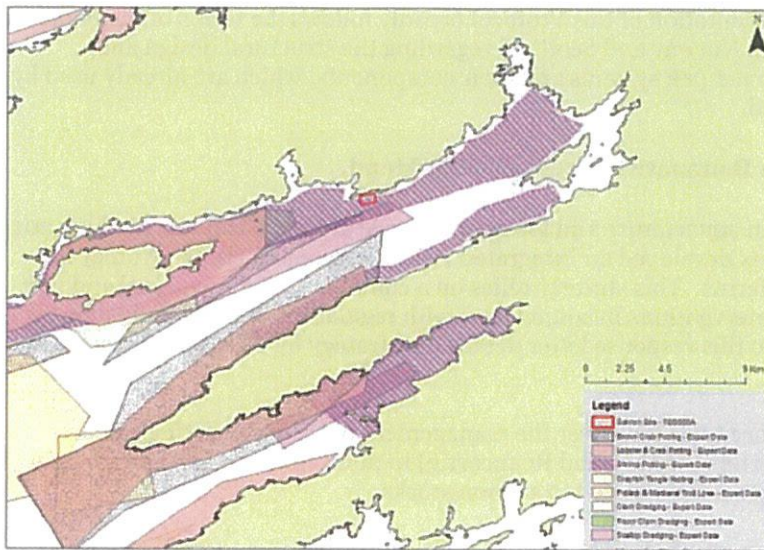


Figure 9.
Distribution of small-scale coastal fisheries (Vessels <12m) in Inner Bantry Bay (source Marine Institute).

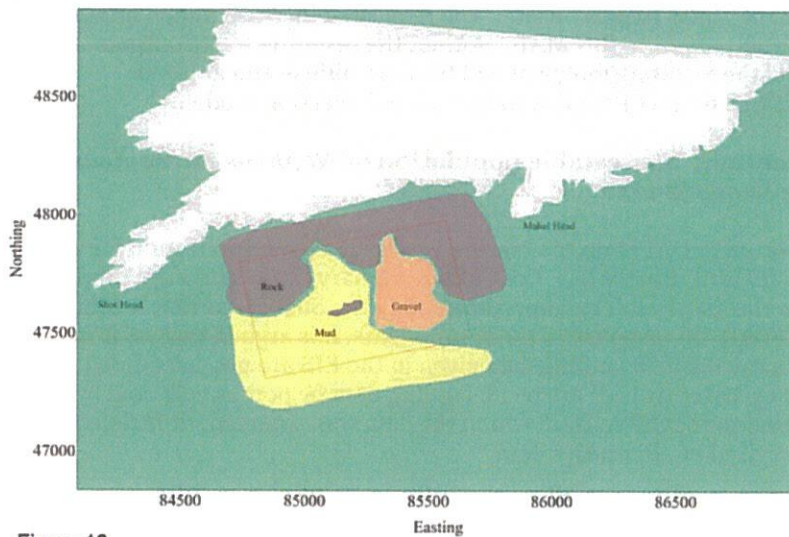


Figure 10.
Substrate type distribution map within the area surveyed at the site; taken from analysis of data collected during the archeological survey of the site area.

Figure 9 shows the area, cross-hatched, described in the figure key as the area where shrimp are potted in the locality. Expert opinion provided to MHI is that this is also the broad area within which prawn (*Nephrops norvegicus*) are potted and trawled, on soft, fine sand and mud substrate. It can be seen from Figure 9 that only about half of the proposed site area is within the cross-hatched zone. Figure 10 shows that this is because the area is further limited by a harder gravel substrate to the east of the site area and by a rocky substrate, much of it covered by macro algae, to the north. It is submitted that these substrate types provide no suitable habitat for either prawns or shrimps.

In fact the suitable area is further limited by the extent of a rocky ridge, running broadly east-west and rising to a maximum height of about 12m from the seabed, in the middle of the site. This was also identified by the ROV surveys conducted at the site, as reported in the EIS and was confirmed at the time by the Infomar shaded relief bathymetry map shown in Figure 20 of the EIS. In fact, the pen grid proposed for the Shot Head site lies immediately over this outcrop, its peak lying a considerable distance beneath the cones of the pens.

MHI maintains its view that the frequency of *Nephrops* burrows within the site area as identified by ROV, combined with the limit to the area of suitable substrate at the site, where access is also restricted by a rocky outcrop at the site centre, does not indicate a significant area for either prawn or shrimp exploitation by potting. This matches well with the expert observation made to MHI that only one vessel potted this area on occasion in the period leading up to the completion of the Shot Head EIS.

It is further observed that, in terms of suitable substrate for potting, only in the areas to the north and south of the bay east of Roancarrig Rocks, exclusion of the area at the Shot Head site only reduces the total area available for potting by approximately 0.5%; see Figure 11. In addition to this there are further suitable potting and trawling areas west of Roancarrig Rocks and further west along the southern shore of the bay; see Figure 9.

It is submitted that a loss of a maximum of 0.5% of potting resource to the proposed salmon farm represents a reasonable sharing of the available resource between the proposed farm and other local stakeholders.

There are further mitigations to consider in this respect. A salmon farm site boundary does not in any way represent any proprietary right on the part of the operator of the farm. It is reasonable and normal for pot men to pot within the site area right up to the mooring grid and this frequently occurs on the existing MHI salmon farm sites in Bantry Bay. It is a matter of record that, on occasion where gear has been lost due to entanglement with pen moorings, this has been replaced by the farm operator. Finally, settled solids, in particular in this case, where organic deposition is projected to remain well within sustainable levels, even at worst case³, these will supplement food sources for benthic epifauna and infauna, including shrimps and prawns.

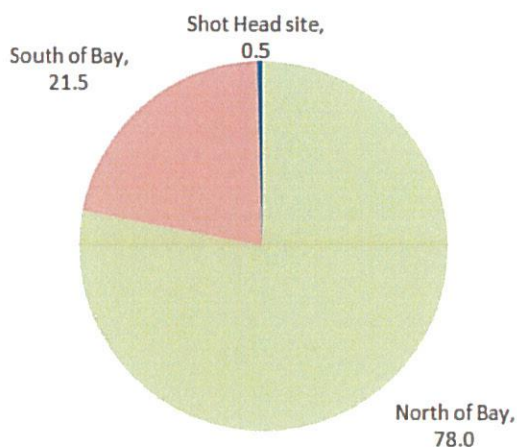


Figure 11. Percentage breakdown of prawn and shrimp potting area shown in Figure 10, to the east of Roancarrig Rocks.

The Marine Institute provides an opinion on trawling and dredging activity (including the prawn fishery) in the vicinity of the Shot Head site from Page 9 of its Report to the Department of Agriculture Food and the Marine. This makes it clear both graphically and verbally that trawling and dredging do not overlap the site area. This confirms the expert opinion provided to MHI and also ROV images which both suggest lack vessel activity in the site area itself. As much as anything else, this is because of the inshore bathymetry and location of the site, which leaves little room for vessel manoeuvre inshore between Shot Head and Mehal Head.

³ See RPS report IBE0744_R07_Rev03, RPS Group Belfast, provided to ALAB.

It is submitted that, whilst there may be some *Nephrops* in the southern half of the site area proposed for the Shot Head site, the density is low and suitable habitat limited in area by other bathymetric features, including unsuitable gravel and rocky substrates. Bearing this in mind, the area in question is not considered to constitute a commercially valuable resource, borne out by the observation that pots were only set there on occasion by a single vessel at the time of the Shot Head application. In all events, the area in question is <0.5% of the total area of suitable substrate in inner Bantry Bay and, as such, represents a reasonable sharing of the available resource between the proposed salmon farm and other stakeholders in the area.

Please contact me if you have any additional queries.

With regards,



Catherine McManus
TECHNICAL MANAGER

