

## **Final Appropriate Assessment Conclusion Statement by Licensing Authority in support of the Appropriate Assessment of Aquaculture in Ballyness Bay SAC (Site Code: 01090)**

This Conclusion Statement outlines how it is proposed to licence and manage aquaculture activities in the above Special Area of Conservation (SAC) – Natura 2000 site - in compliance with the Habitats Directives. Aquaculture in this Natura Site will be licensed in accordance with the standard terms and conditions as set out in the aquaculture licence templates. These are available for inspection on the Department's website at

<http://www.agriculture.gov.ie/seafood/aquacultureforeshoremanagement/aquaculturelicensing/>

Furthermore, the licences will also incorporate specific conditions so as to accommodate Natura requirements, as appropriate, in accordance with the principles set out in this document.

An Article 6 (Habitats) Assessment and, specifically, an Appropriate Assessment report relating to aquaculture in the Ballyness Bay SAC has been prepared by the Marine Institute on behalf of the Department of Agriculture, Food and the Marine. The Appropriate Assessment considered the potential ecological impacts of aquaculture activities on Natura features in the SAC.

In addition to the Ballyness Bay SAC, there are a number of other SACs and SPAs proximate to the proposed aquaculture activities and a screening was carried out on their likely interaction with the proposed aquaculture activities in Ballyness Bay.

The information upon which the Appropriate Assessment is based is the definitive list of applications for aquaculture (as there are no existing licences) available at the time of assessment.

### **Existing and proposed Aquaculture Activity in Ballyness Bay SAC**

Ballyness Bay is a large and very shallow estuarine complex, with extensive areas of sandflats which are exposed at low tide. No aquaculture operations currently operate in Ballyness Bay SAC. The Appropriate Assessment considered 20 applications for aquaculture operations which consisted of 14 for the cultivation of oysters only, 5 for the cultivation of oysters and clams and 1 for the cultivation of clams only. The number of sites being applied for has subsequently been reduced to 18 applications with two sites for oyster cultivation (T12/407A & T12/442A) withdrawn.

All applicants will use bag and trestle as the method of cultivation for oysters. Use of suspended wooden trays and ongrowing under mesh are the proposed methods of cultivation for clam. The profile of the aquaculture industry in the SAC, used in this assessment, was prepared by BIM and is derived from the list of licence applications received by DAFM and provided to the MI for assessment in August 2018.

### **SCREENING OF ADJACENT NATURA SITES FOR EX-SITU EFFECTS**

In addition to the Ballyness Bay SAC there are four other SAC sites proximate to the proposed activities including Horn Head and Rinclevan SAC (000147), Gweedore Bay and Islands SAC (001141) and the Tory Island Coast SAC (002259).

It was deemed that there are no *ex-situ* effects on Qualifying Features of the Tory Island Coast SAC therefore they were screened out from further assessment.

It was also deemed that there are no *ex-situ* effects on the Qualifying habitat Features in the Gweedore Bay & Islands SAC and the Horn Head and Rinclevan SAC. However, as the Gweedore Bay & Islands SAC is c. 3km from the Ballyness Bay SAC *Lutra lutra* (Otter) may migrate into the Ballyness Bay SAC and could interact with aquaculture activities this was carried forward for further assessment. Also as the Horn Head and Rinclevan SAC is adjacent to the Ballyness Bay SAC, Grey seal may migrate into the Ballyness Bay SAC and could interact with aquaculture activities therefore this was also carried forward for further assessment.

In addition, there are 7 SPA sites in the vicinity of Ballyness Bay SAC. The characteristic features of these sites were identified and a preliminary screening was carried out on the likely interaction with aquaculture activities based primarily upon the likelihood of spatial overlap. No spatial overlap was identified and the SPAs were excluded from further analysis.

### **CONSERVATION OBJECTIVES FOR BALLYNESS BAY SAC**

The Conservation Objectives for the Qualifying Interests for the SAC were prepared by NPWS (NPWS 2014a). The natural condition of the designated features should be preserved with respect to their area, distribution, and extent and community distribution. Habitat availability should be maintained for designated species and human disturbance should not adversely affect such species.

None of the proposed aquaculture activities overlaps or is likely to interact with the following features or species, and, therefore, the following habitats and species were excluded from further consideration in the appropriate assessment:

- Embryonic shifting dunes [2110]
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]
- Humid dune slacks [2190]
- *Vertigo geyeri* (Geyer's Whorl Snail) [1013]

Furthermore, all proposed aquaculture application sites do not overlap with the Annex I habitat Estuaries [1130] and this habitat was also excluded from further analysis.

After an initial screening exercise the following qualifying habitats/species were considered subject to potential disturbance and, therefore, carried further in the assessment:

- 1140 Mudflats and sandflats not covered by seawater at low tide
- 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

The constituent communities of habitat 1140 considered in the appropriate assessment were coarse sediment to sandy mud with oligochaetes and polychaetes community complex and Mobile sand community complex.

## **ASSESSMENT OF THE EFFECTS OF AQUACULTURE PRODUCTION ON THE CONSERVATION OBJECTIVES FOR HABITAT FEATURES IN THE BALLYNESS BAY SAC.**

A full assessment was carried out on the likely interactions between proposed culture operations and the Annex 1 habitat (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes) and the Annex 1 habitat (1140) Mudflats and sandflats not covered by seawater at low tide. It was found that it is unlikely that the activities proposed will reduce the overall extent of permanent habitat within the feature (1140) Mudflats and sandflats not covered by seawater at low tide. The habitat area is likely to remain stable.

Based upon the scale of spatial overlap of proposed intertidal aquaculture activities (including access route activity) and the relatively high tolerance levels of the habitats and associated species, the general conclusion is that proposed intertidal culture activities are non-disturbing to the Qualifying Interest - 1140 and its constituent community types.

Overlap between an access route and coastal habitat designated as Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] occurs from Magheraroarty Pier. The access route follows an established track through the dunes system at Magheraroarty. While it is acknowledged that the access routes proposed will follow (for the most part) existing paths (currently subject to vehicular and pedestrian traffic), the licensing of aquaculture activity at this site could lead to additional risk of erosion and degradation of this dune habitat [2130]. The risk of damage from vehicular traffic to dune habitat (2130) in Ballyness Bay therefore, cannot be discounted.

### **Intertidal Clam Culture**

It is proposed to culture the Manila Clam (*Ruditapes philippinarum*) on-bottom in intertidal areas. Clam culture may result in more chronic and long-term changes in community composition which were considered during the assessment process. High density clam culture may result in exclusion of native fauna and build-up of sedimentary material as a consequence of the netting. In addition, the harvest method employed using modified dredges attached to tractors is considered highly disturbing to all sedimentary marine community types.

### **Intertidal Oyster Cultivation**

Published literature (Forde *et al.*, 2015; O'Carroll *et al.*, 2016) suggests that the presence of bags on trestles is considered non-disturbing to the community type Coarse sediment to sandy mud with oligochaetes and polychaetes community complex. The sensitivity of the community type Mobile sand community complex is unknown given the wide variation in species composition and sedimentary characteristics that comprise this community type (NPWS 2014b). While some characteristics of this community type match those described and investigated in Forde *et al.* (2015) and O'Carroll *et al.* (2016) others are quite different. In particular, areas where there are very 'soft' mobile sands with impoverished communities would appear to be sensitive to the placement of trestles and even foot traffic among the trestle rows. On this basis, it is assumed that intertidal shellfish culture has the potential to disturb this community type.

The access routes used in intertidal areas, presumably by virtue of persistent compaction of the sedimentary habitats, are considered disturbing (De-Grave *et al.*, 1998; Forde *et al.*, 2015; O'Carroll *et al.*, 2016). For the Qualifying Interests 1140 the spatial overlap of the access routes with the

constituent community type of Mobile sand community complex is 0.59% and for Coarse sediment to sandy mud with oligochaetes and polychaetes community complex is 1.2%

#### **Introduction of non-native species**

Oyster culture may present a risk in terms of the introduction of non-native species as the Pacific oyster (*Crassostrea gigas*) itself is a non-native species. The risk of Pacific oysters naturalising in Ballyness Bay cannot be discounted.

While there is minimal risk associated with the introduction of hitchhiker species with hatchery reared oyster seed; a risk of alien species introductions presents if '½-grown' or 'wild' seed originating from another jurisdiction (e.g. Britain, France) is introduced to the sites. However, it is noted that hatchery seed will only be used in the bay so the risk posed by the transfers of other sources of stock can be discounted.

In relation to the Manila clam (*Ruditapes philippinarum*), this species has been in culture in Ireland since 1984 and, to the best of our knowledge, no recruitment in the wild has been recorded.

#### **ASSESSMENT OF THE EFFECTS OF AQUACULTURE PRODUCTION ON THE CONSERVATION OBJECTIVES FOR OTTER *LUTRA LUTRA* (OTTER) IN THE GWEEDORE AND ISLANDS SAC.**

Shellfish culture operations are likely to be carried out in daylight hours. The interaction with the otter is likely to be minimal given that otter foraging is primarily crepuscular. It is unlikely that these culture types pose a risk to otter populations from the Gweedore Bay and Islands SAC.

On the basis of location and timing of activities, the proposed levels of licensed shellfish culture are considered non-disturbing to otter conservation features in the Gweedore Bay and Islands SAC.

#### **ASSESSMENT OF THE EFFECTS OF AQUACULTURE PRODUCTION ON THE CONSERVATION OBJECTIVES FOR *HALICHOERUS GRYPUS* (GREY SEAL) IN THE HORN HEAD AND RINCLEVAN SAC.**

All of the proposed aquaculture production activities within Ballyness Bay SAC are confined around low water and are located in shallow and sheltered areas. All of the proposed aquaculture production activities within Ballyness Bay SAC are >10km from the documented breeding, moulting and resting sites of the grey seal in the Horn Head and Rinclevan SAC and therefore, are unlikely to impact on the attributes relating to the site.

Notwithstanding, seals have been observed to haul-out within Ballyness Bay in particular, on a large sand bank in the centre of the Bay. Given that there are currently no aquaculture operations in Ballyness Bay, it is not certain that the introduction of significant levels of aquaculture operations will not impact on the site use by these Annex II species, in particular at those locations proximate to the haul-out location. Therefore, the risk posed by the proposed aquaculture activities in Ballyness Bay to seal conservation features cannot be discounted.

## **ASSESSMENT OF IN-COMBINATION EFFECTS OF AQUACULTURE, FISHERIES AND OTHER ACTIVITIES**

There are no fishing activities within Ballyness Bay SAC and therefore, there are no likely in-combination effects.

### **Pollution Pressures**

There are a number of activities which are terrestrial in origin that might result in impacts on the conservation features of the Ballyness Bay SAC. Primary among these are point source discharges from domestic sewage outfalls distributed along the harbour and municipal urban waste water treatment plants. The pressure derived from these point sources may impact upon levels of dissolved nutrients, suspended solids and some elemental components e.g. aluminium in the case of water treatment facilities.

### **Conclusion**

Pressures resulting from aquaculture activities are primarily disturbance to sediments as a consequence of compaction of sediment along access routes and preparation of sites and harvest of clam sites. It was, therefore, concluded that given the pressure resulting from point discharge locations such as the urban waste-water treatment and/or combined sewer outfalls would likely impact on physico-chemical parameters in the water column any in-combination effects with aquaculture activities are considered to be minimal.

## **OVERALL APPROPRIATE ASSESSMENT FINDINGS**

The Appropriate assessment makes the following conclusions in relation to interactions with shellfish culture:

- Based upon the scale of spatial overlap of proposed intertidal aquaculture activities (including access route activity) and the relatively high tolerance levels of the habitats and associated species, the general conclusion is that proposed intertidal culture activities are non-disturbing to the Qualifying Interests 1130 and 1140 and their constituent community types.

Notwithstanding the conclusions noted in relation to Annex 1 habitat 1140, it should be noted that the nature of the community type, Mobile sand community complex is such that there are likely to be locations where the sediments are extremely mobile (and soft) thus making them unsuitable for aquaculture operations.

- The report highlights the overlap of access routes with the habitat - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] which does appear to present a risk of erosion and habitat degradation. Specifically, the risk arises from the additional traffic likely to occur on existing tracks as a result of the need to access the sites.
- In relation to interactions between aquaculture operations and seal use of the site, the risk of disturbance cannot be discounted. The Bay, to date, has had very little aquaculture operations and therefore, the seals will have had little opportunity to habituate to the activities. Also of note, where there is no specific barrier to access (e.g. tidal channel), the seals are more likely to be disturbed.

## **BIRDS/HABITATS ISSUES RAISED DURING THE AQUACULTURE LICENSING PROCESS FOR SITES IN THIS SAC/SPA**

A number of issues relevant to the Appropriate Assessment were raised during the aquaculture licensing consultation process. These issues have been considered by the Department and its scientific advisors and are addressed below:

### **1. Traffic disturbance**

#### **Comment:-**

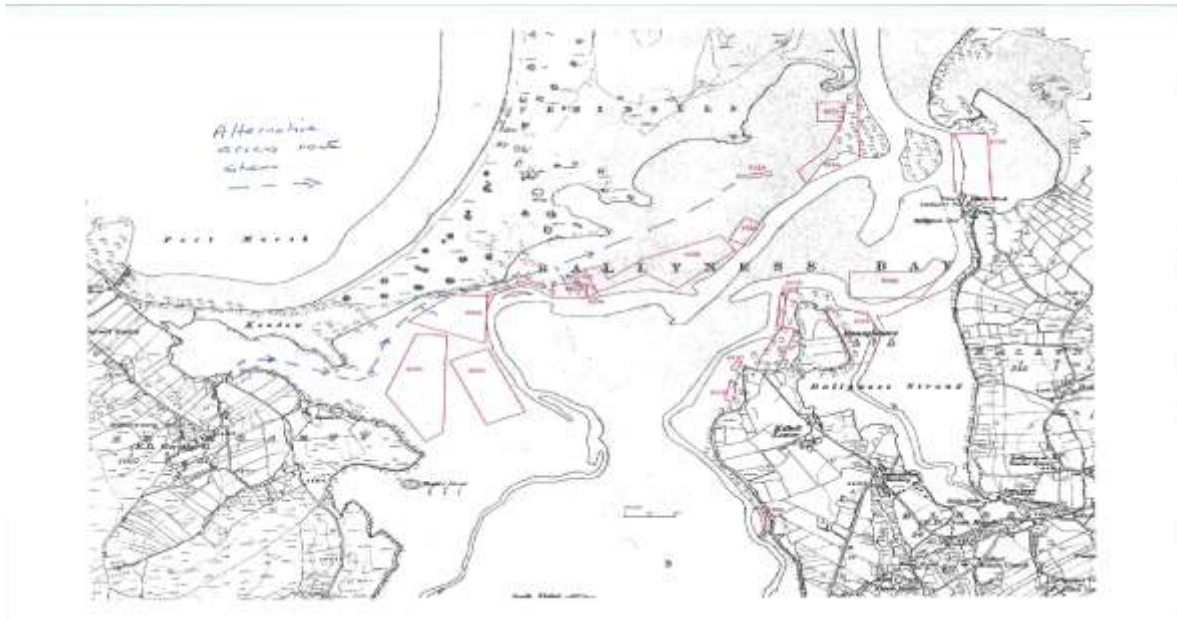
- “- The increased traffic which would result from licensing of all the aquaculture applications poses a serious risk to fixed coastal dune habitats [2130]
  - *A licence condition requiring strict adherence to the identified access routes over intertidal and nearshore habitat in order to minimise species/habitat disturbance will be included.*
  - this condition will be entirely ineffective and does not address the risk posed. The risk arises due to the level of traffic, and has nothing to do with adherence to the existing track.
  - Before these sites can be licenced the relevant authority must be certain that there will be no significant impact on the qualifying habitat, and it is obvious from the AA report that the licensing authority do not currently possess the necessary information to reach this conclusion. As such we submit that licencing cannot proceed without contravening Article 6(3) of the Habitats Directive.
  - the licensing authority cannot proceed with licensing any of the proposed aquaculture applications without contravening both the Habitats Directive and the Aarhus convention.”

#### **Response:-**

*The Department in conjunction with its scientific and engineering advisors have considered the comments and as outlined in the draft conclusion statement have also considered alternative routing. The alternative routing as stated in the draft conclusion statement will avoid the overlap of proposed access routes with Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]. Access routing from the south of the Bay rather than from the grey dune [2130] area represents an addition of approximately 1 km of access track (or 0.85 ha) on the Qualifying Interest 1140 (Mudflats and sandflats not covered by seawater at low tide) and on the community type Mobile Sand Community Complex. This represents total aquaculture access related coverage of 0.81% of the Qualifying Interest 1140 and 0.74% of the Mobile Sand Community Complex. Taking account of these revised values and habitat utilisation by the aquaculture sites themselves, the total spatial overlap will be below the threshold for disturbance of 15%.*

*It has been decided following these consultations, that the new route as shown in Figure 1.1 below which was assessed and referenced in the draft conclusion statement will be implemented in relation to all sites to be licensed on the west side of the Bay, that had proposed routes which overlapped with the grey dunes habitat .*

*As stated all licences granted will contain a condition requiring strict adherence to the identified access route in order to minimise species/habitat disturbance.*



**Figure 1.1**

## **2. Grey Seals**

### **Comments:-**

“- The introduction of aquaculture into Ballyness Bay poses a serious risk to Grey Seals.

- while we welcome the decision to refuse licensing of site T12-508A, which is closest to the seal haul out area, the risk to the Grey Seals applies to the licensing of all of the aquaculture applications, as outlined above ‘it is not certain that...significant levels of aquaculture operations will not impact on the site use by these Annex II species.

- while site T12-508A posed the greatest risk, the conclusions reached in the AA document indicate that it is the aquaculture activity in general which poses a risk, and this cannot be discounted.”

### **Response:-**

*It must be noted that the use of the term ‘serious risk’ was not used in the AA report. While it is noted that the species observed at the haul-out location in Ballyness Bay was not defined and could have been the Common Seal or the Grey Seal the conclusions of the report are based upon experience at other seal locations. Where seals do not have to share space (i.e., sandbank) with other activities, there tends to be acclimation and less likelihood of disturbance. It is considered the greatest risk will originate from activities at the proposed aquaculture site identified. The management measures proposed are appropriate.*

## **3. Mobile sand community**

### **Comments:-**

“The sensitivity of the community type Mobile sand community complex is unknown given the wide variation in species composition and sedimentary characteristics that comprise this community type. In particular, areas where there are very ‘soft’ mobile sands with impoverished communities would

appear to be sensitive to the placement of trestles and even foot traffic among the trestle rows. On this basis, it is assumed that intertidal shellfish culture has the potential to disturb this community type.”

- highlight that these habitats are by definition mobile, and mapping of these will be subjective and unreliable considering the habitats are in constant flux. As such, a large degree of uncertainty remains, and licencing of oyster trestles within a habitat which is constantly in flux puts this community type at risk of disturbance.
- without the necessary degree of certainty of suitability of these sites for supporting oyster trestles, the licencing authority should not proceed with licencing in this Bay.

**Response:-**

*The quote attributed to the AA Report above is incomplete and should read:- “The sensitivity of the community type Mobile sand community complex, is unknown given the wide variation in species composition and sedimentary characteristics that comprise this community type (NPWS 2014b). **While some characteristics of this community type match those described and investigated in Forde et al (2015) and O’Carroll et al (2016) others are quite different.** In particular, areas where there are very ‘soft’ mobile sands with impoverished communities would appear to be sensitive to the placement of trestles and even foot traffic among the trestle rows. On this basis, it is assumed that intertidal shellfish culture has the potential to disturb this community type.”*

*It is clear that in the inner parts of the bay (at proposed culture sites), there are extremely stable sedimentary habitats representative of this community complex that are suitable for trestle culture and sufficiently resilient to disturbance.*

*Based on the AA Report which noted “Mobile sand community complex is such that there are likely to be locations where the sediments are extremely mobile (and soft) thus making them unsuitable for aquaculture operations.” The Department’s Engineering Division have clearly identified any such areas and excluded those from licencing.*

**4. Screening Out of SPAs**

**Comments:-**

“The Appropriate Assessment screens out a number of SPAs on the basis of no spatial overlap. However, the following SPAs - Falcarragh to Meenlaragh SPA (site code 004149), Inishbofin, Inishdoeey and Inishbeg SPA (site code 004083) and Horn Head to Fanad Head SPA (site code 004194) lie within the 15km zone of impact (DEHLG, 2010) of Ballyness Bay. No rationale is given as to how or why potential detrimental interactions between the conservation features of these SPAs and aquaculture activities within Ballyness Bay were ruled out. It is therefore recommended that a more thorough and complete consideration of these SPAs and their conservation features be documented in order to complete this appropriate assessment process.”

**Response: -**

*It is noted that to date, 30+ Natura reports have been produced and the comment from DCHG in relation to SPA screening is the first time, to our knowledge, this Department have requested additional detail in relation to a screening exercise of proximate Natura sites. The Department scientific advisors concur that connectivity with regard to Natura sites is an important issue and this was considered when examining conservation objectives set for all proximate Natura sites.*



*It should be noted that particular focus on the SPA sites considered in Natura assessment reports are Species of Conservation Interest (SCI) that would exclusively use intertidal sand-flat/mud-flat habitats. Mud-flat and sand-flats are not typical feeding areas for many of the SCIs identified in the SPAs in question. These species as they are likely to feed in a diverse range of offshore or terrestrial (in the case of corncrake) habitats (Gittings and O'Donoghue 2012<sub>1</sub>). As such, many SCIs were considered unlikely to interact with the proposed activities. For those species that may utilise intertidal sedimentary habitats (i.e., gull species), it is the view of the MI that gull species will not rely to any great extent on the intertidal sandflats found in Ballyness Bay given alternative feeding habitat is available, e.g., terrestrial or open water—as is the case in this instance.*

*Furthermore, it should be noted, that the interaction with trestles by gull species was considered variable in the Gittings and O'Donoghue (2012) study, and at low abundance levels (up to 10) the predicted levels closely matched the observed levels (Gittings and O'Donoghue 2012), indicating little or no negative interaction. Given the low numbers of breeding pairs (i.e. 20) of Common Gulls found on Inishbofin, Inishdooney and Inishbeg SPA and that alternative habitat between these areas and the proposed culture sites can be found, we consider it unlikely that gulls that might attend the aquaculture areas in numbers that would result in adverse impact.*

*The Department based on all the above considerations does not see any need to revise the outputs or conclusions in the AA report underpinning the assessment process.*

#### **SUMMARY OF MITIGATION MEASURES AND MANAGEMENT ACTIONS THAT ARE BEING IMPLEMENTED AS A CONSEQUENCE OF THE FINDINGS IN THE APPROPRIATE ASSESSMENT REPORT**

Taking account of the recommendations of the Appropriate Assessment, as well as additional technical/scientific observations/further information, the following measures are being taken in relation to licensing aquaculture in this SAC:

- Sites T12/441B and T12/441C which were originally assessed as oyster and clam cultivation are now being processed as oyster cultivation only sites.
- On the basis of the Appropriate Assessment findings only Triploid seed will be licensed for use in the Bay.
- Source of seed and changes to source of seed to be approved by the Department of Agriculture, Food and the Marine in advance.
- Due to the proximity of the site and the fact that there is no specific barrier to access e.g. tidal channel between it and the Seal Haul out area it is proposed to not licence site T12-508A applied for on the same sand bank.
- Proposed sites where there is proximity to seal sites will be reduced where possible or not licensed to maintain a buffer between the aquaculture sites and the seal areas.
- To avoid the overlap of proposed access routes with Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]. The new access route shown above which was assessed in the AA and referenced in the draft conclusion statement will be implemented in relation to any sites to be licensed on the west side of the Bay, that had proposed routes which overlapped with the grey dunes habitat.

- Locations where the sediments are extremely mobile (and soft) thus making them unsuitable for aquaculture operations will be excluded from licensing.
- A Licence condition requiring strict adherence to the identified access routes over intertidal and nearshore habitat in order to minimise species/habitat disturbance will be included.
- A Licence condition requiring full implementation of the measures set out in the draft Marine Aquaculture Code of Practice prepared by Invasive Species Ireland (e.g. <http://invasivespeciesireland.com/cops/aquaculture>).
- The movement of stock in and out of the Ballyness Bay SAC should adhere to relevant fish health legislation.
- The use of updated and enhanced Aquaculture and Foreshore Licences containing terms and conditions which reflect the environmental protection required under EU and National law.

### **Proposed Licensing**

The Licensing Authority is satisfied that, given the conclusions and recommendations of the Appropriate Assessment process, the implementation of the above measures will mitigate pressures on Natura 2000 features. The Conclusion Statement will be updated, as appropriate.

### **Conclusion**

Accordingly, the Licensing Authority is satisfied that, subject to adoption of the above listed mitigation measures and management actions; aquaculture licensing is not likely to significantly and adversely affect the integrity of the Ballyness Bay SAC.

**November 2019**