

Appropriate Assessment Conclusion Statement by Licensing Authority for aquaculture activities in North Inishowen Coast Special Area of Conservation (SAC) (002012), and Trawbreaga Bay Special Protection Areas (SPA) (004034) (Natura 2000 sites)

This Conclusion Statement outlines how it is proposed to licence and manage aquaculture activities in the above Natura 2000 sites in compliance with the EU Birds and Habitats Directives. Aquaculture in these Natura sites will be licensed in accordance with the standard licence 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/fisheries/aquacultureforeshoremanagement/aquaculturelicensing/>.

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

An Appropriate Assessment report relating to aquaculture in the North Inishowen Coast SAC and Trawbreaga Bay SPA has been prepared by RPS/Atkins Ecology for the Marine Institute on behalf of the Department of Agriculture, Food and the Marine. This Appropriate Assessment assessed the potential ecological impacts of aquaculture activities on Natura features in both the SAC and the SPA.

In addition to the North Inishowen Coast SAC there are a number of other SACs proximate to the proposed aquaculture activities and a screening was carried out on their likely interaction with aquaculture.

There are also two other SPAs located within 15 kms of Trawbreaga Bay SPA, namely Malin Head SPA (004146) and Inishtrahull SPA (004100). These adjacent SPAs were also considered because of their proximity to Trawbreaga Bay and the potential use of aquaculture areas by birds for which these SPAs have been designated.

A further five SPAs Fanad Head SPA (004148); Greers Isle SPA (004082); Lough Foyle (IE004087) & Lough Swilly (004075); Horn Head to Fanad Head SPA (004194)) are located beyond the 15 km search area recommended by guidance, but are included due to potential interchange that may occur between the sites as a result of the mobile nature of birds.

The information upon which the Appropriate Assessment is based is the definitive list of applications and extant licences for aquaculture available at the time of assessment. This information was provided by the Department of Agriculture, Food and the Marine.

Aquaculture activity in the SAC and SPAs

Current aquaculture activities within the SAC/SPA occur at Trawbreaga Bay, focusing primarily on the cultivation of the Pacific oyster *C. gigas* in bags and trestles on the intertidal habitat.

North Inishowen Coast SAC (002012)

North Inishowen Coast SAC is a large site located on the north Donegal coast. The dominant habitats in the SAC are intertidal sand and mudflats. The site is also designated for Otter (*Lutra lutra*).

Qualifying Interests (SAC)

The SAC is designated for the following habitats and species (NPWS 2014a), as listed in Annex I and Annex II of the Habitats Directive:

- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1220 Perennial vegetation of stony banks
- 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts
- 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)
- 21AO Machairs (*priority habitat in Ireland)
- 4030 European dry heaths
- 1014 Narrow-mouthed Whorl Snail *Vertigo angustior*
- 1355 Otter *Lutra lutra*

Conservation Objectives for North Inishowen Coast SAC

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

Trawbreaga Bay SPA (004151)

Trawbreaga Bay SPA includes a very large area of intertidal habitat sheltered within the bay, with some narrow tidal creeks which develop into wider subtidal channels towards the mouth of the bay. Areas of terrestrial habitat include saltmarsh, coastal beach, dune, grassland, shingle banks and coastal cliffs. The SPA also includes Glashedy Island and the waters surrounding it, west of Doagh Isle. The SPA has a total area of 1,549 ha. Around 80 % of the bay area is exposed at each low tide with intertidal sediment composed mainly of a mix of mud and sand flats with some stony/rocky substrates. Green algae mats occur on open flats and *focus* ssp. Seaweeds grow on the stones.

Qualifying features

The Special Conservation Interests (SCIs) of the Trawbreaga Bay SPA include non-breeding populations of Barnacle Geese and Light-bellied Brent Geese. In addition, both breeding and non-breeding elements of the Chough population are also taken as Special Conservation interests.

Both Barnacle Geese and Chough are largely terrestrial (supratidal) with limited use of intertidal areas. Light-bellied Brent Geese utilize both intertidal and shallow subtidal habitats; with birds on occasion also roosting in deeper subtidal waters.

SCIs from other neighbouring SPAs were also considered. These include species which also have an SCI designation for Trawbreaga Bay; and species for which Trawbreaga Bay is not designated, but which could possibly occur within the bay.

The wetlands habitat contained within Trawbreaga Bay SPA and the waterbirds that utilize this resource are an additional Special Conservation Interest.

Conservation Objectives for Trawbreaga Bay SPA

The overall conservation objective for these SCI species (Barnacle Goose, Light-bellied Brent Goose and Chough) is to maintain or restore the favourable conservation status of the species (NPWS, 2014a). The favourable conservation conditions are defined by various attributes: (i) population trend, and (ii) distribution. In respect of population trend, the target is the long term, stable or increasing populations of the species specified. With regard to distribution, there should be no significant decrease in the range, timing or intensity of use of areas by the SCI species, other than that occurring from natural patterns of variation.

Wetlands and waterbirds

The conservation objective for wetlands and waterbirds is to “maintain the favourable conservation condition of the wetland habitat at Trawbreaga Bay SPA as a resource for the regularly-occurring migratory waterbirds that use it”. The favourable conservation condition of the wetland habitat is defined by a single attribute “habitat area” and target “the permanent area occupied by the wetland should be stable”.

None of the activities being assessed (aquaculture) will cause any change in the permanent area occupied by the wetlands habitat.

The Appropriate Assessment

The function of the Appropriate Assessment is to determine if the ongoing and proposed aquaculture activities are consistent with the Conservation Objectives set for these Natura sites. In the case of SPAs, also those neighbouring sites where there is the potential usage of aquaculture areas by birds for which these SPAs have been designated. The NPWS provides guidance on the interpretation of the Conservation Objectives which are, in effect, management targets for habitats and species in the sites. The assessment of aquaculture activities was informed by this guidance, which is scaled relative to the anticipated sensitivity of habitats and species to disturbance by the proposed activities.

Screening

North Inishowen Coast SAC

A screening exercise resulted in five habitat features and one species being excluded from further consideration by virtue of the fact that no spatial overlap of the culture activities was expected to occur. The habitats/species excluded from further consideration were (1220) Perennial vegetation of stony banks; (1230) Vegetated sea cliffs of the Atlantic and Baltic coasts; (2130) Fixed coastal dunes with herbaceous vegetation (grey dunes); (21A0) Machairs (*priority habitat in Ireland); (4030) European dry heaths; and (1014) Narrow-mouthed Whorl Snail *Vertigo angustior*.

Within the North Inishowen Coast SAC the qualifying habitats/species considered subject to potential disturbance and carried forward for further consideration in the Appropriate Assessment were:

- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1355 Otter – *Lutra lutra*

Of the four constituent community types recorded within the qualifying interest of Mudflats and sandflats not covered by seawater at low tide (1140) two were shown to have no overlap with aquaculture activities and were excluded from further analysis – Fine to medium sand with *Eurydice pulchra* community complex and *Zostera*-dominated community.

The following community types were carried forward for further analysis:

- Muddy sand to coarse sediment with *Pygospio elegans* community complex
- Sand with *Angulus tenuis* and *Scoloplos (Scoloplos) armiger* community complex.

Screening of Adjacent SACs

In addition to the North Inishowen Coast SAC there are a number of other SAC sites proximate to the proposed activities. As it was deemed that there are no ex situ effects and no effects on features in adjacent SACs all qualifying features of the adjacent SAC sites were screened out.

Screening

Trawbreaga Bay SPA

A screening exercise was carried out to screen out SCI species that did not show any potential spatial overlap with effects from any of the proposed aquaculture activities being assessed. This was undertaken across all SPAs being assessed.

All of the SCI species for Trawbreaga Bay SPA were carried forward for full Appropriate Assessment. The remaining SPAs were addressed as follows:

- Inishtrahull SPA (004100) – this site is designated for the Barnacle Goose, Shag and Common Gull. The potential impacts on Shag and Common Gull were screened out on the basis of distance etc; the Barnacle Goose was considered in full.
- Malin Head SPA (004146) & Fanad Head SPA (004148) are designated for breeding populations of Corncrake; both were screened out (proposed aquaculture activities at Trawbreaga Bay will not negatively impact on Corncrake either directly or indirectly through loss of prey/habitat).
- The qualifying interests of Greers Isle SPA (004082) are Sandwich Tern, Black-headed Gull and Common Gull – potential impacts were screened out. Due to the proposed scale, distance from Greers Isle and the possible influence of trestles as fish attracting devices – it is very unlikely that the intertidal oyster culture would have a negative impact on Sandwich Tern from

the Greers Isle colony. In relation to the Black-headed Gull recent studies suggest that during the breeding season terrestrial habitat use and prey items dominate. Thus, it is very unlikely that Black-headed Gull from the Greers Isle colony would be affected by aquaculture activities at Trawbreaga Bay. As for the Common Gull, recent studies of Irish breeding Common Gull colonies suggest that during the breeding season terrestrial habitat and prey items dominate. Overall, due to the proposed scale of oyster cultivation and the distance from Greers Isle it is unlikely that intertidal oyster culture would have a negative impact on the Common Gull from the Greers Isle colony.

- Lough Foyle (IE004087) & Lough Swilly (004075) are designated for a diverse range of wintering waders and wildfowl as well as breeding Sandwich Tern and Common Tern in the case of Lough Swilly. The former were screened out on the basis of distance, site usage etc; while the potential for impact on Sandwich Tern and Common Tern were screened out. Due to the proposed scale, distance from the Inch breeding colony in Lough Swilly and the possible influence of trestles as fish attracting devices – it is very unlikely that the intertidal oyster culture would have a negative impact on Sandwich Tern Breeding at Lough Swilly SPA. Common Tern tends to feed closer to their colony – it would seem very unlikely that Common Tern from the Inch colony at Lough Swilly feed in Trawbreaga Bay.
- Horn Head to Fanad Head SPA (004194) - Barnacle Geese at this site were considered in full. This site is also designated for Chough. Chough favour coastal grassland and no impact from inter-tidal aquaculture is predicted. Other SCI species were screened out.

In-combination effects of aquaculture and other activities

The Appropriate Assessment considered the cumulative impacts of the combined effects of the aquaculture and other activities within the SPA, notably seaweed harvesting, a proposed onshore aquaculture shed, residential and recreational developments, hand collection of shellfish, bait digging and effluent discharge.

Findings and Recommendations of the Appropriate Assessment of Aquaculture

North Inishowen Coast SAC

- Existing and proposed cultivation and access route activity was shown to overlap with 5.88% of the qualifying interest ‘Mudflats and sandflats not covered by seawater at low tide’ (1140). As this value is below the 15% overlap threshold adverse impact on the qualifying feature can be discounted.
- While the existing and proposed cultivation sites extend over 17.54% and 2.75% of the constituent community types ‘Muddy sand to coarse sediment with *Pygospio elegans*’ community complex and ‘Sand with *Angulus tenuis* and *Scoloplos (Scoloplos) armiger*’ community complex, published literature suggests that aquaculture activities occurring at trestle culture sites are not considered disturbing. The total spatial overlap of the access routes on the above community types is 2.86% and 3.04% respectively (access routes used in inter-tidal areas are

considered disturbing). Given that these values (individually and combined) are less than the 15% overlap threshold significant adverse impacts of activities on these community types can be discounted.

- Accordingly, the current levels of aquaculture activities, including access routes, do not pose a risk of significant disturbance to the conservation of the habitat feature of Mudflats and Sandflats not covered by seawater at low tide (1140) or the constituent community and community complexes of ‘Muddy sand to coarse sediment with *Pygospio elegans*’ community complex, and ‘Sand with *Angulus tenuis* and *Scoloplos (Scoloplos) armiger*’ community complex.
- In one instance, the proposed aquaculture activity at site T12/492A, the risk of significant disturbance cannot be dismissed as the hydrodynamics of the inner part of the bay (and subsequently, the structure of the constituent community types) may be impacted by the scale of the proposed operation.
- The risk of establishment of non-native oyster species is considered low in Trawbreaga Bay. Long residence times (>21 days) and large intertidal areas are factors contributing to the successful recruitment of oysters in Irish bays. Heavy macroalgal cover is a potential factor governing recruitment, with higher cover resulting in lower recruitment. Oyster cover in the SAC does not fulfill these criteria in that residence time is approximately 10 days and there is heavy cover of macroalgae in intertidal areas. However, Trawbreaga Bay effectively flows into the broader Lough Swilly presenting a risk to the Lough Swilly SAC. Any licences issued will contain a recommendation that triploid oysters continue to be used in North Inishowen Coast SAC in order to minimize any risks to Lough Swilly SAC.
- The main aspect of the culture activities that could potentially impact Otter (*Lutra lutra*) is the physical presence of trestles that may restrict Otter access to certain habitats. Given the nature of the structures and the likely timing of activities the risk of disturbance to Otter features posed by aquaculture is considered low.

Trawbreaga Bay SPA

- Due to the proposed scale of oyster cultivation; the lack of any significant use of the intertidal habitat by the Chough; and the separation of known foraging, roosting or nesting sites, from the proposed oyster cultivation, negative impact on the Chough using Trawbreaga Bay is considered unlikely.
- Barnacle Geese are in favourable conservation status with a growing population in Trawbreaga/Malin (NPWS, 2014a). The Trawbreaga flock would appear to be closely linked with the wider Malin flock and should be considered as a single unit. Barnacle Geese are not a qualifying interest of the neighbouring Malin Head SPA. The species is primarily a land-based bird, foraging terrestrially while roosting can occur on sandbanks, saltmarsh and offshore islands. As Barnacle Geese do not feed in the inter-tidal area the placement of trestles would not result in any direct loss of foraging grounds. While there is evidence for

intertidal roosting, observed flocks have been small and ample alternate intertidal habitat exists to accommodate such day-time roosting

- Proposed aquaculture site T12/492 is larger in scale than others in the bay and located close to areas highlighted as being used by Barnacle Geese at Magheranaul/Strath. Disturbance of Barnacle Geese at this location cannot be discounted. There is a potential for conflict from access points where there may be increased activity close to feeding birds and/or from increased levels of activity on the shoreline.
- The site conservation condition for Light-bellied Brent Goose at Trawbreaga Bay SPA has been assessed as favourable based on increasing population. However, looking solely at area of subsites; areas of intertidal habitat/subsite; and area of intertidal habitat under aquaculture there is a potential for displacement of marginally more than 5% with reference to two subsites. The current and proposed location of trestles with respect Light-bellied Brent Geese behavior and feeding ecology were therefore considered further. The favourable conservation status of the species; large area of suitable habitat; foraging opportunities provided by green algae on trestles and displacement of birds feeding in and around trestles during the course of routine maintenance all combine to determine how Light-bellied Brent Geese would be impacted by oyster cultivation. In reality displacement of birds is therefore likely to be much less than 5%. Accordingly, aquaculture activities, existing and proposed are not considered disturbing to Light-bellied Brent Geese.

Birds/Habitats issues raised during the aquaculture licensing process for sites in this SAC/SPA

A number of scientific 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:

- (i) **The potential impact on Barnacle Goose and Light Bellied Brent Goose at Trawbreaga Bay cannot be discounted**

Response: The risk of disturbance on Barnacle Goose and Light Bellied Brent Goose is noted and a number of subsequent recommendations / mitigation measures are identified in the AA report. It is also addressed in the 'Mitigation' section of this document.

- (ii) **Intertidal access routes that may be required to service seaweed harvesting have not been quantified.**

Response: Intertidal seaweed harvesting generally occurs in fringing reef areas. The access is directly to the sites and on foot from land which considered non-disturbing. Given that that seaweed harvesting is confined to

reef areas there will not be any in-combination effects from inter-tidal shellfish aquaculture (which is confined to sedimentary habitats)

- (iii) Recommendation T12/492 aquaculture plot be reduced and that specific licence conditions on number of visits to site and number of persons involved to minimise disturbance by accessing the site.**

Response: This is addressed in the 'Mitigation' section

- (iv) Recommendation that licence conditions be inserted restricting dogs in the vicinity of aquaculture activities.**

Response: It is a standard condition of aquaculture licence that pets (dogs) are not permitted to accompany operators on the shore.

- (v) As cumulative displacement of Light-bellied Brent Goose population by the proposed aquaculture footprint exceeds 5% the development should be reconsidered.**

Response: While the estimated displacement of Light-bellied Brent Goose does exceed 5% (specific value 5.71%) it is important to note that this estimate is extremely conservative. As pointed out in the AA report the actual displacement is likely to be much less. In addition, the neutral or positive relationship (represented by birds foraging on algae on oysters bags) of Light-bellied Goose to oysters trestles is noted.

- (vi) In-combination effects of the waste water were not fully considered**

Response: Information relating to water quality and other pressures were presented in the AA report. The outcome of EPA WFD monitoring has been added to the Annex II report.

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, the following measures are being taken in relation to licensing aquaculture in this SAC/SPA:

- A Licence condition requiring strict adherence to the identified access routes over intertidal habitat in order to minimise habitat disturbance;

- A Licence condition requiring full implementation of the measures set out in the draft Marine Aquaculture Code of Practice prepared by Invasive Species Ireland;
- The use of updated Aquaculture and Foreshore Licences containing terms and conditions which reflect the enhanced environmental protection now required under EU and National law;
- Given the potential impacts of the proposed aquaculture site (T12/492) on Habitats and the potential disturbance on Barnacle Geese, it is not proposed to license the footprint and scale of activity that has been applied for. Further consideration is being given to the possibility of licensing a significantly reduced footprint with appropriate licence conditions;
- Licences issued will contain a recommendation that triploid oysters continue to be used in North Inishowen Coast SAC in order to minimize any risks to Lough Swilly SAC.

Conclusion

The Licensing Authority is satisfied that, given the conclusions and recommendations of the Appropriate Assessment process, a decision can be taken in favour of licensing existing and proposed aquaculture operations in North Inishowen Coast SAC and Trawbreaga Bay SPA, subject to other licensing considerations.

Accordingly, the Licensing Authority is satisfied that the proposed licensing is not likely to significantly and adversely affect the integrity of North Inishowen SAC and Trawbreaga Bay SPA.