

**Appropriate Assessment Conclusion Statement by the Licensing Authority for
proposed aquaculture activities in the West of Ardara/Maas Road Special Area of Conservation
(SAC) (Site Code: 000197) (Natura 2000 site) – July 2019**

This Conclusion Statement outlines how it is proposed to manage/license potential aquaculture in the West of Ardara/Maas Road Special Area of Conservation (SAC) (000197) in compliance with the EU Habitats Directive. The aquaculture developments in this Natura 2000 site will, if approved, 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:

<https://www.agriculture.gov.ie/seafood/aquacultureforeshoremanagement/aquaculturelicensing/aquacultureandforeshorelicencetemplates/>. Furthermore, any proposed licences may incorporate specific conditions to accommodate Natura 2000 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 West of Ardara/Maas Road 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 2000 features in the SAC. In addition to the West of Ardara/Maas Road SAC, there are a number of other SACs and Special Protection Areas (SPAs) proximate to the proposed aquaculture activities and screenings were carried out on their likely interactions with aquaculture.

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

Description of the Aquaculture Projects

The projects involve the proposed licensing of seven new aquaculture sites and one existing site in Loughros Mór Bay and Gweebarra Bay, which fall within the West of Ardara/Maas Road SAC. Currently there is no aquaculture activity occurring within Loughros Mór Bay, however, there are three applications for shellfish cultivation in the intertidal area within the bay. Two of the applications relate to the cultivation of Pacific oysters on four sites using bags and trestles and one application involves the culture of Manila clams on two sites using a combination of trays during the nursery phase and netting on the seafloor for grow-out. There is some existing intertidal oyster trestle culture in Gweebarra Bay and there is also an application for the cultivation of Pacific oysters using bags and trestles in this area.

Potential Impacts on Natura 2000 sites with respect to Qualifying Interests and Conservation Objectives

West of Ardara/Maas Road SAC

Loughros Mór Bay and Gweebarra Bay are situated north of Ardara on the southwest coast of Co. Donegal and are designated as a Special Area of Conservation (SAC) under the Habitats Directive. The West of Ardara/Maas Road SAC is designated for the marine Annex I qualifying interest of Estuaries (1130), Mudflats and sandflats not covered by seawater at low tide (1140) and Large shallow inlets and bays (1160). The SAC is also considered an important site for Otter (*Lutra lutra*), Harbour Seal (*Phoca vitulina*) and Atlantic Salmon (*Salmo salar*).

Qualifying Interests of the SAC

The SAC is designated for the following habitats and species (NPWS 2015a), as listed in Annex I and Annex II of the Habitats Directive:

- 1130 Estuaries
- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1160 Large Shallow Inlets and Bays
- 1330 Atlantic Salt Meadows
- 1410 Mediterranean salt meadows (*Juncetalia maritimi*)
- 2120 Marram Dunes (White Dunes)
- 2130 Fixed Dunes (Grey Dunes)
- 2140 Decalcified Empetrum Dunes
- 2150 Decalcified Dune Heath
- 2170 Dunes with Creeping Willow
- 2190 Humid dune slacks
- 21A0 Machairs
- 3110 Oligotrophic waters containing very few minerals
- 4010 Wet Heath
- 4030 Dry Heath
- 4060 Alpine and Subalpine Heath
- 5130 Juniper Scrub
- 6210 Orchid-rich Calcareous Grassland
- 6410 *Molinia* Meadows
- 6510 Lowland Hay Meadows
- 7130 Blanket Bogs (Active)
- 7150 Rhynchosporion Vegetation
- 7230 Alkaline Fens
- 1013 Geyer's Whorl Snail (*Vertigo geyeri*)
- 1029 Freshwater Pearl Mussel (*Margaritifera margaritifera*)
- 1065 Marsh Fritillary (*Euphydryas aurinia*)
- 1106 Atlantic Salmon (*Salmo Salar*)
- 1355 Otter (*Lutra lutra*)
- 1365 Common (Harbour) Seal (*Phoca vitulina*)
- 1395 Petalwort (*Petalophyllum ralfsii*)
- 1833 Slender Naiad (*Najas flexilis*).

The constituent marine community types identified in the broad Annex I feature - 1130 Estuaries and 1140 Mudflats and sandflats not covered by seawater at low tide are:

- Sand with amphipods, polychaetes and *Tellina tenuis* community complex;
- Estuarine sand with oligochaetes community complex (no spatial overlap with aquaculture).

The Large shallow inlets and bays (1160) were subsequently excluded from further consideration of aquaculture interactions. The West of Ardara/Maas Road SAC is designated for the Otter (*Lutra lutra*). This species is listed in Annex IV (a) of the Habitats Directive and is afforded strict protection. The SAC is also designated for the Annex II species - Harbour Seal (*Phoca vitulina*) and Atlantic Salmon (*Salmo salar*).

Conservation Objectives for West of Ardara/Maas Road SAC

The Conservation Objectives for the qualifying interests of the West of Ardara/Maas Road SAC (Site Code: 000197) were identified in NPWS (2015a). 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. The objective for these species is to maintain various attributes of their populations including population size, habitats quality and distribution.

Screening of Adjacent SACs

There are three other SAC sites proximate to the proposed aquaculture activities, as follows:

- Rutland Island and Sound SAC (002283)
- Slieve Tooley/Tormore Island/Loughros Beg Bay SAC (000190)
- Termon Strand SAC (001195).

A preliminary screening was carried out on these adjacent Natura 2000 sites to establish the likely interaction with aquaculture activities based primarily upon the likelihood of spatial overlap. With the exception of the Harbour Seal (*Phoca vitulina*), a designated species for the Rutland Island and Sound SAC, the Otter (*Lutra lutra*) and Grey Seal (*Halichoerus grypus*) which are designated species for the Slieve Tooley/Tormore Island/Loughros Beg Bay SAC, it was deemed that there are no ex situ effects and the qualifying features of the adjacent SAC sites were screened out.

The Appropriate Assessment report concluded that the Otter and Harbour Seal are resident and that the Grey Seal may migrate into the West of Ardara/Maas Road SAC and could interact with aquaculture activities. These species are, therefore, included as features to be considered in the Appropriate Assessment of aquaculture activities at this Natura 2000 site.

Screening of Adjacent SPAs

There are eight SPA sites considered proximate to the West of Ardara/Maas Road SAC, as follows:

- Derryveagh and Glendowan Mountains SPA (004039)
- Illancrone and Inishkeeragh SPA (004132)
- Inishkeel SPA (004116)
- Lough Nillan Bog SPA (004110)
- Roaninish SPA (004121)
- Sheskinmore Lough SPA (004090)
- West Donegal Coast SPA (004150)
- West Donegal Islands SPA (004230).

A preliminary screening was carried out on these adjacent Natura 2000 sites to establish the likely interaction with aquaculture activities based primarily upon the likelihood of spatial overlap. Loughros Mór Bay has been observed to be used by the Greenland White-Fronted Goose from the Sheskinmore Lough SPA. This species was carried forward for further assessment. It was deemed that there were no further spatial overlaps or likely interactions with proposed aquaculture activities within the West of Ardara/Maas Road SAC and the remaining adjacent SPA sites were screened out.

The Appropriate Assessment

The function of the Appropriate Assessment is to determine if the proposed aquaculture activities are consistent with the Conservation Objectives for the Natura 2000 site or if such activities will lead to deterioration in the attributes of the habitats and species over time and in relation to the scale, frequency and intensity of the activities. NPWS (2015b) provide guidance on interpretation of the Conservation Objectives which are, in effect, management targets for habitats and species in the SAC. This guidance is scaled relative to the anticipated sensitivity of habitats and species to disturbance by the proposed activities. Some activities are deemed to be wholly inconsistent with long term maintenance of certain sensitive habitats while other habitats can tolerate a range of activities. For the practical purpose of managing sedimentary habitats, a 15% threshold of overlap between a disturbing activity and a habitat is given in the NPWS guidance. Below this threshold, disturbance is deemed to be non-significant. Disturbance is defined as that which leads to a change in the characterising species of the habitat (which may also indicate change in structure and function).

Screening

The likely interaction between aquaculture activities and the conservation features of the designated habitats and species of the West of Ardara/Maas Road SAC were considered. A screening exercise resulted in 26 habitat features and species being excluded from further consideration in the assessment as none of the proposed aquaculture activities overlap or likely interact with the particular features or species.

Within the West of Ardara/Maas Road SAC, the qualifying habitats/species considered subject to potential disturbance and carried forward to full assessment were:

- Estuaries (1130)
- Mudflats and sandflats not covered by seawater at low tide (1140)
- Atlantic Salmon (*Salmo salar*) (1106)
- Otter (*Lutra lutra*) (1355)
- Common (Harbour) Seal (*Phoca vitulina*) (1365).

Of the two constituent community types recorded within the qualifying interests 1130 and 1140, 'Estuarine sand with oligochaetes community complex' was shown to have no spatial overlap with the proposed aquaculture activities and was excluded from further analysis. However, an overlap was shown between the proposed aquaculture activities and the specific marine community type of 'Sand with amphipods, polychaetes and *Tellina tenuis* community complex' and this was therefore carried forward to full assessment. The likely effects of the aquaculture activities (species, structures, transport routes) were also considered in light of the sensitivity of this community type.

The Grey Seal (*Halichoerus grypus*) (1364) which is a designated species for the adjacent Slieve Tooley/Tormore Island/Loughros Beg Bay SAC and the Greenland White-Fronted Goose (*Anser albifrons flavirostris*) (A395) which is a designated species for the adjacent Sheskinmore Lough SPA were also considered subject to potential disturbance and carried forward to full assessment.

Findings and Recommendations of the Appropriate Assessment of Aquaculture

Aquaculture and Habitats:

Habitat Area: It is unlikely that the proposed activities will reduce the overall extent of permanent habitat within the feature Estuaries (1130) and Mudflats and sandflats not covered by seawater at low tide (1140). The habitat area is likely to remain stable.

Some activities (e.g. access routes) might result in long-term change to these community types, but no potentially disturbing activity (individually or combined) extends beyond 15% of the community types. Combined activities (clam culture and access routes) overlap with 0.65% and 0.78% of habitat features (1130) Estuaries and (1140) Mudflats and Sandflats not covered by seawater at low tide, respectively. The proposed cultivation sites extend over 7.3% of the marine community type, Sand with amphipods, polychaetes and *Tellina tenuis* community complex, but disturbing activities only overlap with 0.69% of this marine community type.

The proposed aquaculture activities will be unlikely to have any detrimental impact on the habitat conservation features (habitat area and community distribution) for the West of Ardara/Maas Road SAC on the basis that aquaculture activities which might be considered potentially disturbing to Annex I habitat conservation features occur below the 15% threshold.

Based upon the scale of spatial overlap of proposed aquaculture activities and the relatively high tolerance levels of the habitats and associated species, the general conclusion is that the proposed activities would be considered non-disturbing to the Annex I habitats 1130 Estuaries and 1140 Mudflats and sandflats not covered by seawater at low tide and their constituent community types.

Aquaculture and Species:

Otter (*Lutra lutra*): The West of Ardara/Maas Road SAC and the Slieve Tooley/Tormore Island/Loughros Beg Bay SAC are designated for the Otter (*Lutra lutra*). The interaction of aquaculture activities with the Otter is likely to be minimal given that shellfish culture operations are likely to be carried out in daylight hours and Otter foraging is primarily crepuscular. The Appropriate Assessment report found that the proposed shellfish culture activities are likely to be non-disturbing to the Otter.

Harbour Seal (*Phoca vitulina*): The West of Ardara/Maas Road SAC and the Rutland Island and Sound SAC are designated for the Harbour Seal (*Phoca vitulina*). The Harbour Seal may migrate from Rutland Island and Sound SAC into the West of Ardara/Maas Road SAC and interact with aquaculture production activities within the SAC.

The six applications for shellfish cultivation within the West of Ardara/Maas Road SAC are located in inner Loughros Mór Bay and do not present a barrier to movement for seals to the haul out locations, into and out of the bay. These proposed shellfish culture areas are located more than 700 metres from any identified Harbour Seal site and while interaction is possible, aquaculture activities should be tailored to minimise negative interactions. Given the distance, it is concluded that aquaculture activities are likely to be non-disturbing to the Conservation Objectives for the species within the West of Ardara/Maas Road SAC and the Rutland Island and Sound SAC. In Gweebarra Bay, the existing and proposed aquaculture activities are located more than 400 metres from the closest Harbour Seal site. This distance is also considered non-disturbing to the seal within the relevant SACs. Notwithstanding the lack of likely disturbance to haul-out locations, the location of proposed structures across the inner part of Loughros Mór Bay may present a barrier to seal movement and should be considered further.

Atlantic Salmon (*Salmo salar*): The West of Ardara/Maas Road SAC is designated for the Atlantic Salmon (*Salmo salar*). The Appropriate Assessment report concluded that the proposed aquaculture activities are likely to be non-disturbing to the Conservation Objectives for Atlantic Salmon within the West of Ardara/Maas Road SAC taking into account the intertidal nature of the structures to be used in the proposed culture activities.

Grey Seal (*Halichoerus grypus*): The Slieve Tooley/Tormore Island/Loughros Beg Bay SAC, located to the south of the West of Ardara/Maas Road SAC is designated for the Grey Seal (*Halichoerus grypus*). The Appropriate Assessment report concluded that the proposed levels of shellfish culture within the West of Ardara/Maas Road SAC are considered non-disturbing to the site specific Conservation Objectives within the Slieve Tooley/Tormore Island/Loughros Beg Bay SAC for the Grey Seal.

Greenland White-Fronted Goose (*Anser albifrons flavirostris*): The Sheskinmore Lough SPA which is adjacent to the West of Ardara/Maas Road SAC is designated for the Greenland White-Fronted Goose (*Anser albifrons flavirostris*). Studies have found that Greenland White-Fronted geese forage and roost within Loughros Mór Bay. It would appear that foraging is confined to the south shore primarily and that roosting occurs on a reef outcropping towards the mouth of the bay. The goose roosting site is approximately 300 metres from the closest proposed aquaculture operation. Furthermore, and on the basis of GPS tagging, the roost site is occupied primarily at night which is outside of operational times for the proposed aquaculture operations. On the basis of these factors it is unlikely that the proposed aquaculture operations will result in disturbance to the Greenland White-Fronted geese originating from the Sheskinmore Lough SPA.

Introduction of non-native Species

The proposed oyster and clam culture may present a risk in terms of the introduction of non-native species such as the Pacific oyster (*Crassostrea gigas*) and the Manila clam (*Ruditapes philippinarum*). However, the risk of successful establishment of the Pacific oyster in the West of Ardara/Maas Road SAC is considered low as the residence time in Loughros Mór in particular is likely to be short given the bay is predominantly intertidal and empties on an ebbing tide. The Manila clam (*Ruditapes philippinarum*) has been cultured in Ireland since 1984 and there does not appear to be any recruitment in the wild. The operations are totally reliant on hatchery seed and are fully contained at all stages of the production cycle. The risk of naturalisation of the Manila clam is therefore also considered to be low.

In-combination effects of Aquaculture and other activities

There are no known applications for a fishery, a Classified Production Area, or proposed fishery plans for the West of Ardara/Maas Road SAC. On this basis, there are not likely to be any in-combination impacts between fishery and aquaculture activities.

There is a draft net fishery for salmon in Loughros Mór Bay. This fishery occurs if there are a surplus of salmon stock in the Rivers Owenea and Owentocker. On the basis of licences being issued for the fishery it would assume that it will not impact on salmon conservation features and therefore, there is not likely to be any in-combination impact with aquaculture on salmon conservation features. As there are no significant interactions noted between proposed aquaculture operations and other Natura features (seals and/or birds) there are unlikely to be any other in-combination effects to assess.

There are point source discharges from domestic sewage outfalls distributed around the bays which may result in impacts on the conservation features of the West of Ardara/Maas Road SAC. The pressure arising from point discharge location such as urban waste-water treatment and/or combined sewer outfalls would likely impact on physico-chemical parameters in the water column. The potential pressure from aquaculture activities relates primarily to the localised compaction of sediment along access routes, therefore any in-combination effects with aquaculture activities are considered to be negligible.

Summary of Management Actions and Mitigation Measures that will be implemented as a consequence of the Findings in the Appropriate Assessment Process and following Observations received during the Statutory and Public Consultation Process (should Licensing occur in the West of Ardara/Maas Road SAC)

Taking account of the recommendations of the Appropriate Assessment process, as well as additional technical/scientific observations, the following measures will be taken in relation to any proposed licensing of aquaculture in this Natura 2000 site:

- It is considered that certain trestle-based aquaculture sites could impact Harbour Seal habitat use in the West of Ardara/Maas Road SAC. While the majority of the area proposed for aquaculture activities appears to be located high in the intertidal zone, there are some lower shore areas that may be utilised by the Harbour Seal. If licensing occurs, the relevant sites will be reduced in order to prevent a barrier to seal movement.
- There are concerns that the proposed trestle-based aquaculture in Loughros Mór Bay could impact the hydrology of the inner bay where a restricted water flow may occur. This presents a risk to the water exchange with an associated impact on benthic communities upstream from the proposed activities. If licensing occurs, the footprint of these sites will be reduced in order to prevent an impediment to water flow.
- All aquaculture licences are subject to standard licence conditions, which cover, among other things, any further actions that may be required in the event of deterioration in the conservation status of species/habitats/birds at site level that is directly attributable to shellfish culture operations.
- Licence conditions requiring strict adherence to the identified access routes over intertidal habitat in order to minimise habitat disturbance will apply.
- Licence conditions requiring that the Source of Seed must be approved by the Department of Agriculture, Food and the Marine will apply.
- Licence conditions requiring that Triploid Oysters be used for any oyster culture to be carried out in the West of Ardara/Maas Road SAC will apply.
- Licence conditions requiring full implementation of the measures set out in the draft Marine Aquaculture Code of Practice prepared by Invasive Species Ireland. Licensees will be required to prepare Contingency Plans for the approval of the Department of Agriculture, Food and the Marine which should identify, inter alia, methods for the removal from the environment of any non-target species introduced as a result of aquaculture operations.
- 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.

Conclusion

The Licensing Authority is satisfied that, given the conclusions and recommendations of the Appropriate Assessment process, the implementation of the above measures will mitigate certain pressures on Natura 2000 features.

From a Natura 2000 perspective, consideration can be given to the proposed licensing of aquaculture activities in conjunction with a reduction in the footprint of a number of the sites and subject to other licensing criteria and considerations.

Accordingly, the Licensing Authority concludes that the proposed licensing of certain aquaculture activities, along with specific management actions and mitigation measures, is not likely to have a significant effect on the integrity of the West of Ardara/Maas Road SAC.

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