Draft Appropriate Assessment Conclusion Statement for aquaculture activities in Great Island SAC (Site Code 001058) and Cork Harbour SPA (Site Code: 004030)

1, Appropriate Assessment Process

1.1 This draft Conclusion Statement outlines how it is proposed to licence and manage aquaculture activities in the above Special Area of Conservation (SAC) and Special Protection Area (SPA) in compliance with the EU Birds and Habitats Directives.

1.2 Aquaculture projects in these Natura 2000 Sites will, if approved, be licensed in accordance with the standard terms and conditions as set out in the aquaculture licence templates.[1] The licences will also incorporate specific conditions to accommodate Natura requirements, as appropriate.

1.3 The Appropriate Assessment reports for aquaculture in the SAC and SPA have been prepared by the Marine Institute and Atkins Ecology/respectively, on behalf of the Department of Agriculture, Food and the Marine. These Appropriate Assessment Reports[2] assessed the potential ecological impacts of aquaculture activities on Natura features in both the SAC and SPA.

1.4 In addition to the Great Island SAC and Cork Harbour SPA 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 aquaculture.

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

2. Description of the Aquaculture Activities

2.1 The predominant existing/proposed aquaculture activity is the cultivation of the Pacific oyster *Crassostrea gigas* predominantly on trestles in intertidal areas.

[1] http://www.agriculture.gov.ie/seafood/aquacultureforeshoremanagement/aquaculturelicensing/

[2] CorkHarbourSPAAAReport030719.pdf (archive-it.org), GreatIslandSACAAReport030719.pdf (archive-it.org)

2.2 There are currently two proposed applications for bottom mussel cultivation Cork Harbour. A large site (total area of 903ha) covering most of the East Harbour zone and bottom mussel cultivation was proposed, located partly within the SAC/SPA. Following concerns about the scale of the site, the application was split into two separate sites with a sizeable reduction in scale (110 ha and 185ha respectively).

2.3 In addition, there are four areas within Cork Harbour covered by Fishery Orders. Whilst these orders do not come under the remit of the Department of Agriculture, Food and the Marine, they are included as part of the in-combination assessment.

3. The Special Area of Conservation

3.1 The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel.

3.2 The core Conservation Objectives are that the natural condition of the designated features should be preserved with respect to their area, distribution, and extent and community distribution and that habitat availability should be maintained for designated species and human disturbance should not adversely affect such species. 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.

4. Appropriate Assessment Screening of the Special Area of Conservation

4.1 An initial screening exercise resulted in the following habitat feature being excluded from further consideration by virtue of the fact that no spatial overlap or likely interaction

with the culture activities was expected to occur; Atlantic salt meadows (*Glauco-Puccinellietellia maritimae*) (1330).

4.2 A full assessment was carried out on the likely interactions between existing and proposed culture operations and the feature Annex 1 habitats of 1140 Mudflats and Sandflats not covered by seawater at low tide. The likely effects of the aquaculture activities (species, structures, access routes) were considered in light of the sensitivity of constituent habitats and species of the Annex 1 habitat 1140 Mudflats and Sandflats not covered by seawater at low tide. The Annex 1 1140 constituent community considered was limited to 'Mixed sediment to sandy mud with polychaetes and oligochaetes community complex'.

5. SCREENING OF ADJACENT Special Areas of Conservation

5.1 The nearest SACs to the Great Island Channel SAC, are the Ballymacoda (Clonpriest and Pillmore) SAC (Natura 2000 Site Code IE000077) and the Courtmacsherry Estuary SAC (Natura 2000 Site Code IE001230). The former is 24.6km east and the latter is 54.6km southwest of the Great Island Channel SAC and as a result were screened out.

6. Findings of the Appropriate Assessment Report in respect of Great Island Special Area of Conservation

6.1 Intertidal oyster aquaculture activities overlap the community type listed under the habitat feature of Mud and sandflats not covered by seawater at low tide (1140), Mixed sediment to sandy mud with polychaetes and oligochaetes community complex.

6.2 The spatial overlap of licensed oyster trestle culture activities with this community types is 0.25% and consequently, adverse impacts of activities occurring at oyster cultivation sites within the Qualifying Interests of (1140) Mud and sandflats not covered by seawater at low tide can be discounted. In summary, it is concluded (based primarily upon the spatial overlap and sensitivity analysis) current intertidal oyster aquaculture activities individually and in-combination do not pose a risk of significant disturbance to the conservation habitats (1140 and constituent marine community type) in the Great Island Channel SAC.

6.3 In addition, the contained subtidal cultivation of native oysters does not pose a significant risk to the Conservation Objectives of marine benthic habitat features for which the SAC is designated.

6.4 The risk posed by the introduction of seed stock (e.g. ½ grown oysters or seed) from outside of the jurisdiction cannot be discounted. The risk of successful Pacific oyster reproduction in Great Island SAC (and Cork Harbour) posed by the culture of non-triploid (reproductively sterile) oysters cannot be discounted on the basis of the area having long residence times and large intertidal areas.

6.5 There are two Oyster Fishery Orders within the North Channel. The Fishery Order overlaps with 9.62% of habitat 1140 and 9.62% of the constituent marine community types 'Mixed sediment to sandy mud with polychaetes and oligochaetes community complex'.

6.6 The relaying of oysters on the seabed may alter the infaunal community in terms of number of individuals and number of species present. Cork Harbour has an estimated residence time of 21 days. A long residence time (21 days or more) has been identified as a risk factor that could contribute to the successful reproduction of non-native Pacific Oyster (Crassostrea gigas). This risk is further exacerbated if the oysters are uncontained on the seafloor where removal of all stock is not possible in the event of successful spawning or an epizootic. Based upon experience elsewhere, the introduction of '½ grown' or 'wild' oyster or mussel seed stock into aquaculture plots (both within and proximate to the SAC) from outside of Ireland does pose a clear risk of establishment of non-native species in the SAC.The culture on non-sterile Pacific oysters (in contained systems and sub-tidally un-contained on the seafloor) in the SAC presents as risk of successful reproduction and recruitment of this species within the SAC.

6.7 Mixed sediment communities have high level of resistance and resilience to the pressure resulting from an oyster dredge. The low frequency of dredging (once every 3 years) will reduce the risk from this activity to this community type further.

6.8 Pressures resulting from intertidal aquaculture activities are primarily localised compaction of sediment along access routes. It was, therefore, concluded that given the pressure resulting from point discharge location 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 or negligible.

6.9 Based on the level of overlap (less than the 15% threshold) and the resilience of the community types (and associated species) with oyster bottom culture and dredging, significant disturbance could be discounted for the following constituent habitat of Qualifying Interests (1140) Mudflats and sandflats not covered by seawater at low tide: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex. In addition, as oyster trestles are considered non-disturbing they will have no in-combination effect with other activities. Consequently, in-combination effects of fisheries with intertidal trestle aquaculture activities on designated habitats (and constituent community types) can be discounted.

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

7. The Special Protection Area

7.1 Cork Harbour SPA comprises a number of discrete sections scattered around Cork harbour and includes one section (the Ringabella Estuary), which is located outside the harbour proper. However, several of the Special Conservation Interest (SCI) species, particularly those associated with subtidal habitats, make significant use of areas outside the SPA and, for some of these species, the majority of their habitat is outside the SPA. Therefore the area of interest is defined as comprising of the entire tidal habitat within Cork Harbour.

7.2 The conservation objectives for the wintering populations of SCIs in Cork harbour are to maintain their favourable conservation condition. The SCIs are: Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Cormorant, Grey Heron, Little Grebe, Great Crested Grebe, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Curlew, Blacktailed Godwit, Bar-tailed Godwit, Dunlin, Redshank, Black-headed Gull, Common Gull and Lesser Black-backed Gull.

7.3 The conservation objective for the Common Tern breeding population in the Cork Harbour SPA is to maintain its favourable conservation condition. The favourable conservation condition of this population is defined by the following attributes: breeding population abundance, productivity rate, distribution of breeding colonies, availability of prey biomass, barriers to connectivity, and disturbance at the breeding site. Site specific conservation objectives have not yet been prepared for The Gearagh SPA. However, it can be assumed that the attributes and targets listed for SCIs in Cork Harbour SPA also apply to Mallard, the SCI of The Gearagh SPA.

8. Appropriate Assessment Screening of the Special Protection Area and Adjacent Special Protection Areas

8.1 Four of the aquaculture sites are within, or partly within, the Cork Harbour SPA, while another three aquaculture sites that are outside the SPA are also included in the assessment. Therefore, the assessment covers all the aquaculture sites in Cork Harbour. In addition, following a screening exercise, Special Conservation Interests (SCIs) from two other SPAs are included in this assessment. These SPAs are: Courtmacsherry Bay SPA and The Gearagh SPA.

9. Findings of the Appropriate Assessment Report in respect of Cork Harbour Special Protection Area

9.1 The small scale of the oyster trestle cultivation activity covered by this assessment, and the location of three of the five sites in areas of the harbour that do not hold high concentrations of intertidal/shallow subtidal waterbirds, mean that no significant displacement impacts are likely to occur. There is a possibility of disturbance impacts to Common Tern roosts on Spike Island. Any such impacts are unlikely to be significant, but

further information about Common Tern usage of the Spike Island and about the intensity of husbandry activity would be required to definitively assess this potential impact.

9.2 The original target production level for the bottom mussel culture sites in the East Harbour indicates that high levels of husbandry and harvesting activity will be involved in the cultivation of these sites. These activities have the potential to cause significant disturbance impacts to Redbreasted Merganser, Cormorant and Great Crested Grebe roost sites located within the aquaculture sites. These are primarily night roost sites but the Great Crested Grebe roost sites are also sometimes occupied during the day. There is also potential for displacement impacts to foraging Redbreasted Mergansers, which could prevent re-occupation of the East Harbour zone in the event of a recovery of the Cork Harbour Redbreasted Merganser population. Smaller scale displacement impacts to foraging Cormorant and Great Crested Grebe are also possible. Wigeon, Mallard and Oystercatchers using shoreline feeding areas and/or roost sites around the edge of the aquaculture site could also be affected by disturbance from the activity.

9.3 SCI species Wigeon and Mallard are potentially sensitive to negative impacts from oyster trestle cultivation from the mussel fishery in the East Harbour aquaculture sites. However displacement impact from full occupation of the Rossmore Fishery Order along with the North Channel aquaculture sites is effectively negligible at 0.4% - 0.6%.

9.4 The re-opening of the oyster fishery in the Brick Island Fishery Order would have the potential to have significant cumulative impacts in combination with potential disturbance impacts to Redbreasted Merganser from the mussel fishery in the East Harbour zone, although the major impact would be from the Brick Island Fishery Order. Reopening of the oyster fishery in the East Harbour Fishery Order would cause additional boat activity to that involved in the mussel fishery and may, therefore, increase the cumulative impacts on the Cork Harbour Redbreasted Merganser population. Re-opening of the oyster fishery in the Brick Island Fishery Order would have the potential to have significant cumulative impacts on the Cork Harbour Oystercatcher population in combination with potential disturbance impacts to Oystercatcher from the mussel fishery in the East Harbour zone. Reopening of the oyster fishery in the East Harbour Fishery Order would cause additional boat activity to

that involved in the mussel fishery and may, therefore, increase the cumulative impacts on the Cork Harbour Oystercatcher population.

10. Management/Mitigation Measures

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

- In order to mitigate the risk of introduction of alien species into the SAC as a result of aquaculture activities all movement of stock in and out of the Great Island Channel SAC should adhere to relevant legislation and follow best practice guidelines. Adherence to such practice is included in the licence conditions.

- The Appropriate Assessment found that the risk posed by the culture of the pacific oyster, *Crassostrea Gigas,* uncontained on the seabed could not be discounted. Accordingly, the licensing of sub-tidal oyster culture is subject to the condition that triploid seed be used in a contained fashion only in licenced aquaculture areas.

- Licence conditions requiring all vessel activities will take place during daylight hours (before 1 hour before sunset and 1 hour after sunrise) will apply.
- It is proposed that should the application for bottom culture mussels be granted, a condition in the licence would be inserted to curtail any fishing activity within 1.5 hours of dusk to avoid potential disturbance to Cormorant, Red-breasted Merganser and Great Crested Grebe roost sites.

11. Conclusion

The Licensing Authority concludes that in general from a Natura 2000 perspective, given the conclusions and recommendations of the Appropriate Assessment process, the risk of significant disturbance from the proposed aquaculture activities cannot be discounted. However, subject to the implementation of the mitigation measures referenced above and conditions relation to the non-disturbance to specific roost sites of Cormorant, Great Crested Grebe and Red Breasted Merganser, the Licensing Authority is satisfied that the applications sites T05/522A and T05/522B can be considered for licensing.

July 2021