Appropriate Assessment Conclusion Statement by Licensing Authority for aquaculture activities in Dungarvan Harbour Special Protection Area (SPA) (site code 004032), including consideration of the Helvick Head to Ballyquin SPA (site code 004192) and the Mid-Waterford Coast SPA (site code 004193))

This Conclusion Statement outlines how it is proposed to licence and manage aquaculture activities in the above Natura sites in compliance with the EU Birds Directive. 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/fisheries/aquacultureforeshoremanagement/aquaculturelicensing/ 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 Appropriate Assessment of aquaculture in Dungarvan Harbour has been carried out by Atkins Ecology for the Marine Institute on behalf of the Department of Agriculture, Food and the Marine. The Appropriate Assessment (Article 6 (3)) of aquaculture assessed the potential ecological impacts of aquaculture activities on Natura features in and adjacent to the Natura sites in Dungarvan Harbour. These adjacent SPAs were also considered because of their close proximity to Dungarvan Harbour and the potential usage of aquaculture areas by birds from these SPAs. 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.

Atkins Ecology was also commissioned by the Marine Institute to carry out tidal cycle monitoring of waterbird numbers and distribution at Dungarvan Harbour to determine the importance of one particular area (i.e. the Whitehouse Bank) for a number of bird species relative to the other sections of the Dungarvan SPA. This study was carried out in late 2014 and early 2015.

Dungarvan Harbour Special Protection Area (SPA) (site code 004032)

All existing and proposed aquaculture activity in Dungarvan Harbour involves suspended oyster cultivation using bags and trestles in the intertidal zone. The licensed sites and application areas are all in a single contiguous block on the Whitehouse Bank.

Qualifying Features:

The Special Conservation Interests (SCIs) of the Dungarvan Harbour SPA include non-breeding populations of Light-bellied Brent Goose, Shelduck, Red-breasted Merganser, Great Crested Grebe, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank and Turnstone. In addition, the wetland habitats contained

within Dungarvan Harbour SPA are identified to be of conservation importance for non-breeding (wintering) migratory waterbirds. Therefore the wetland habitats are considered to be an additional Special Conservation Interest - (NPWS, 2012).

Conservation Objectives for Dungarvan Harbour SPA (site code 004032)

The Conservation Objectives for the above species are to maintain their favourable conservation condition, which are defined by there being stable or increasing long-term population trends and no significant decrease in numbers or range of areas used within Dungarvan Harbour. Both attributes cited in the Conservation Objectives, i.e. population number and distribution, must be considered separately and will have equal weighting / importance.

The wetland habitats within the Dungarvan Harbour SPA and the waterbirds that utilise this resource are an additional SCI (the wetlands and waterbirds SCI). The conservation objective for this SCI is to maintain its favourable conservation condition, which is defined by there being no significant decrease in the permanent area occupied by wetland habitats.

The SCIs of the Helvick Head to Ballyquin SPA include breeding populations of Cormorant, Peregrine, Herring Gull, Kittiwake and Chough. The SCIs of the Mid-Waterford Coast SPA include breeding populations of Cormorant, Peregrine, Herring Gull and Chough. The Conservation Objectives for these species are to maintain their favourable conservation condition. NPWS have not defined site-specific attributes and targets to define the favourable conservation condition of these species for these SPAs.

Appropriate Assessment

The function of the Appropriate Assessment is to determine if the ongoing and proposed aquaculture activities are consistent with the Conservation Objectives for the sites. The National Parks and Wildlife Service (NPWS) provide guidance on interpretation of the Conservation Objectives which are, in effect, management targets for habitats and species in the sites. The assessment of activities was informed by this guidance, which is scaled relative to the anticipated sensitivity of the habitats and species to disturbance by the proposed activities.

The Appropriate Assessment process is divided into a screening stage and Appropriate Assessment proper. The assessment begins by screening out those activities which are deemed incapable of having any significant impact. This is based on a desktop review of existing information, combined with the results of a detailed study of waterbird distribution in the outer part of Dungarvan Harbour that was carried out as part of a wider study of the effects of intertidal oyster cultivation on the spatial distribution of waterbirds (Gittings and O'Donoghue, 2012).

Where relevant, it identifies information gaps that may affect the reliability of the conclusions of the Appropriate Assessment.

Screening

Dungarvan Harbour SPA:

Several Special Conservation Interest (SCI) species were screened out from further assessment because they have a neutral / positive response to intertidal oyster cultivation (Curlew, Redshank and Turnstone) or they are not considered to have any significant spatial overlap with the aquaculture plots in Dungarvan Harbour (Shelduck, Lapwing and Black-tailed Godwit).

Oystercatcher

Whilst the screening indicates that the Oystercatcher has a neutral / positive response to oysters on trestles, it also finds that the removal of such trestles could result in a negative impact, if the trestles in question are providing a food resource to the Oystercatchers on site.

The Conservation Objectives define the favourable conservation condition of the wetlands and waterbirds SCI at Dungarvan Harbour purely in terms of habitat area. Intertidal oyster cultivation has not, and will not, cause any change in the permanent extent of wetland habitat. Therefore, it also finds that intertidal oyster cultivation is not likely to have any significant impact on this SCI and it has been screened out from any further assessment.

Helvick Head to Ballyquin SPA:

The Helvick Head to Ballyquin SPA is around 2 km from the intertidal oyster cultivation area at their nearest points. Therefore, there is potential for birds from the SPA populations to occur within the licensed area, if the habitat conditions are suitable.

Two of the SCI species (Kittiwake and Chough) are unlikely to have any spatial overlap with aquaculture activities in Dungarvan Harbour.

The SPA populations of the other three SCI species (Cormorant, Peregrine and Herring Gull) could have spatial overlap with aquaculture activities in Dungarvan Harbour and have been fully appropriately assessed. This assessment concluded that the intertidal oyster cultivation in Dungarvan Harbour is unlikely to cause significant impacts to the populations of Cormorant, Peregrine and Herring Gull in the Helvick Head to Ballyquin SPA.

Mid-Waterford Coast SPA:

The Mid-Waterford Coast SPA is around 6 km from the intertidal oyster cultivation area at their nearest points. Therefore, there is potential for birds from the SPA populations to occur within the licensed area, if the habitat conditions are suitable.

One of the SCI species (Chough) is unlikely to have any spatial overlap with aquaculture activities in Dungarvan Harbour, as it feeds in terrestrial habitats and does not utilise intertidal or subtidal habitats.

The SPA populations of the other three SCI species (Cormorant, Peregrine and Herring Gull) could have spatial overlap with aquaculture activities in Dungarvan Harbour and have been fully appropriately assessed. This assessment concluded that the intertidal oyster cultivation in Dungarvan Harbour is unlikely to cause significant impacts to the populations of Cormorant, Peregrine and Herring Gull in the Mid-Waterford Coast SPA.

Aquaculture Activity in the Dungarvan Harbour SPA

Intertidal oyster cultivation in Dungarvan Harbour:

The intertidal oyster cultivation in Dungarvan Harbour began in the mid-1980s. There are in excess of 200 hectares licensed for intertidal oyster cultivation and additional applications for licences in the region of 75 hectares. The licensed sites and application areas are all in a single contiguous block spanning the lower intertidal and upper subtidal zone on Whitehouse Bank in the Outer Sandflats zone.

Three access routes are used to access the aquaculture sites, from the slip at Moat at the southern end of Whitehouse Bank, from the car park at the southern end of the Cunnigar and from the Cunnigar around 500 m north of the car park. The licences will include appropriate conditions that tractors and other vehicles adhere to approved access and egress routes. This is in order to minimise disturbance to habitats / species and that any journeys taken can be kept to a minimum.

Findings and Recommendations of the Article 6(3) Appropriate Assessment

Light-bellied Brent Goose

The current and proposed future extent of intertidal oyster cultivation is not likely to cause significant impacts to the Dungarvan Harbour population of the Light-bellied Brent Goose. However, it is also noted that any reduction / removal of trestles would need to be assessed for the potential for negative impact to the Light-bellied Brent Goose due to evidence of their grazing on the attached algae. While intertidal oyster cultivation may have contributed to the loss of a seagrass (Zostera) bed (which is a preferred food choice for the Light-bellied Brent Goose), it is difficult to be definitive in this regard, as Zostera has also declined in the Western Bay where no

oyster farming takes place. Oyster culture does not appear to have affected the long-term population trends of the Brent Goose.

Any reduction in the level of current trestle cover as a consequence of licensing decisions would have to take account of its likely impact on Light-bellied Brent Goose.

Red-breasted Merganser and Great Crested Grebe

Intertidal oyster cultivation is not likely to cause significant impacts to the Dungarvan Harbour populations of Red-breasted Merganser and Great Crested Grebe.

Golden Plover

The Appropriate Assessment found no evidence that the development of oyster cultivation at Dungarvan Harbour has affected the long term population trend of the Golden Plover and further monitoring in 2014/2015 supported this finding. The 2014/2015 field surveys did not find evidence of consistent use by the Golden Plover of the sector to the north of the existing trestle block. The Monitoring Report indicates that the available evidence suggests that roosting Golden Plover would not be negatively impacted by the placing of trestles in this area.

Knot, Bar-tailed Godwit, Grey Plover and Dunlin

The Assessment found that intertidal oyster cultivation is potentially having negative displacement impacts on four of the Special Conservation Interest (SCIs) of the Dungarvan Bay SPA: namely, Knot, Bar-tailed Godwit, Grey Plover and Dunlin.

Bar-tailed Godwit & Knot

Intertidal oyster cultivation may be causing some displacement impacts to the Bar-tailed Godwit and Knot (based on the observed displacement of birds that occurs when the tideline reaches the area occupied by trestles). It is possible that this displacement from Whitehouse Bank may be due to factors unrelated to the presence of oyster trestles, such as the exposure of suitable habitat elsewhere. The 2014/2015 bird monitoring programme suggests that the proximal cause of bird movements off Whitehouse Bank is the exposure of mudflats in the Inner harbour, rather than the tide-line reaching the trestle zone. Both species demonstrate favourable conservation status on site; birds displaced from Whitehouse Bank currently appear to be accommodated elsewhere within the SPA. Given their favourable conservation status and adequate alternative habitat availability, the risk posed by oyster trestles at Whitehouse Bank to the Bar-tailed Godwit and Knot is considered to be low.

Grey Plover & Dunlin

Intertidal oyster cultivation is likely to be causing displacement impacts to the Grey Plover and Dunlin. The Grey Plover demonstrates intermediate conservation status (which is deemed unfavourable) and the Dunlin demonstrates unfavourable conservation status in Dungarvan Harbour. NPWS (2012), however, indicates that these are species whose populations are declining at both site level and all-Ireland level; therefore, there is a potential for factors at a larger spatial scale to be influencing the observed trend at site level. In the context of the conservation objectives, an important consideration is whether the site impacts would prevent recovery of the site population in the event that the national population recovered. The 2014/2015 bird monitoring programme does suggest that it is possible that alteration to the configuration of trestles in the southern section of Whitehouse Bank may be causing displacement of the Grey Plover. This reinforces the need for ongoing monitoring and adaptive management of this area and consideration is being given to the re-opening of tidal breaks through appropriate reconfiguration of trestles.

Cumulative Impacts

The Appropriate Assessment considered the potential cumulative impacts of the combined effects of intertidal oyster cultivation in combination with other activities within the SPA (including horse riding, beach recreation, water-based recreation, hand collection of shellfish and bait digging (human activities), and effluent discharge).

Human Activities

There is an extensive and complex literature on the impacts of disturbance from human activities on waterbirds in intertidal and shallow subtidal habitats. It is difficult to use this literature to make specific predictions about the nature and extent of potential disturbance impacts as the effects of disturbance vary between species and, within species, vary between sites and within sites. However, in general, with beach walks, and / or other activity, when access is mainly along the shoreline, disturbance impacts, while causing local (a few hundred metres) displacement of birds, does not appear to affect the large-scale distribution of birds across sites or survivorship. Disturbance in the intertidal zone will generally have greater impacts. Where disturbance rates are high and/or concentrated areas of species food resources are affected. This may cause significant impacts to large-scale distribution and / or survivorship. However, some studies of shellfish gathering in the intertidal zone have concluded that it does not affect waterbird populations.

The main concentration of activity in the intertidal is on the Ballyrandle Sandflats. Walkers along the Cunnigar are unlikely to cause much disturbance as they rarely venture away from the upper shore, but horse riding across Whitehouse Bank may cause significant disturbance impacts.

Boat activity will generally not affect waterbirds in intertidal and shallow subtidal activity. However, some types of recreational watersports activities can occur in very shallow waters and have been observed to cause disturbance to waterbirds. These activities will mainly take place around the high tide period but may cause disturbance to feeding waterbirds in intertidal and shallow subtidal habitat on ebb / flood tides.

Shellfish gathering is a more intensive activity in Dungarvan Harbour, particularly in the main shellfish gathering area in the mixed substrata and eulittoral rock biotopes on the Ballyrandle Sandflats, where it was recorded on each count day during the trestle study (with a mean of five gatherers per count day). As the shellfish resource (periwinkles) is of limited extent, shellfish gathering may, therefore, be causing some level of resource depletion.

Effluent discharge

Organic and nutrient inputs to estuaries increase productivity and may increase food resources for waterbirds. Therefore, adverse impacts to waterbirds might be expected to be caused by declines in organic and nutrient inputs associated with improvements in wastewater treatment. There are a number of studies that document the effects of organic and nutrient loading from effluent discharges on the benthic fauna and typically the zones affected by individual discharges are restricted to within a few hundred metres of the outfall. The available evidence on the effects of nutrient reductions on estuarine waterbird populations is limited but, to date, no significant impacts have been reported. One study (Alves *et al*., 2012) has reported localised (within 100 m) association between wastewater inputs and bird distribution; in this study the outfalls discharged in the intertidal zone and streams of sewage ran across the intertidal habitat.

At Dungarvan Harbour, raw sewage was discharged into the harbour via a marine outfall at Abbeyhole until the opening of a new wastewater treatment plant in 2008 with discharge of treated effluent into the outer bay at Ballynacourty Point. Therefore, it is possible that the reduced nutrient loading in the Inner Harbour since 2008 may cause reductions in food supply for waterbirds. Based on the available research evidence, any such impacts are likely to be restricted to the immediate vicinity of the outfall location: i.e., the extreme western end of the Ballyrandle Sandflats and the western side of the northern end of the Cunnigar. The western end of the Ballyrandle Sandflats has a narrow intertidal zone and is partially isolated from the main sandflat area by the mixed substrata biotope area, while the intertidal zone on the western side of the northern end of the Cunnigar is also relatively narrow and has limited exposure periods.

The NPWS BWS in 2009/10 took place only a short time after the cessation of the Abbeyhole discharge and should, therefore, still reflect any influences that the nutrient input at Abbeyhole was having on waterbird distribution. The flock map data show no obvious association of any of the SCI species with the above areas. Therefore, there is no evidence to indicate that the cessation

of the discharge of raw sewage at the Abbeyhole outfall will cause significant reductions in food supply for any of the SCI species, and it is not necessary to consider potential in-combination effects with intertidal oyster cultivation.

Proposed Licensing

The Minister is proposing to licence oyster operations which are located on the northern section of the Whitehouse Bank in Dungarvan Harbour. The history of usage of different areas of Whitehouse Bank for aquaculture is an important consideration in determining appropriate management actions. There has been continuous and consistent operation of oyster culture in the northern section of the Bank for many years while, in contrast, there has been lesser coverage and considerable variation in the use of the southern section of the Bank, over the same time period. Focusing relevant and appropriate management actions, for example, the implementation of buffer strips to allow free movement with the tide for some bird species, on the southern section of the Bank would therefore seem to be a reasonable approach. The implementation of buffer strips in the northern section would be impractical given the extent of trestle coverage in this area.

The proposed licensing encompasses the following sites on the Whitehouse Bank: T4/4A and 4B, T4/14A, T4/14/1A, T4/17A and 17B, T4/18B, T4/20/1A, T4/21, T4/23A and 23B, T4/32, T4/32/1, T4/38, T4/57, T4/59A, T4/66, T4/129A and 129B. All aquaculture licences are subject to standard licence conditions, which cover, among other things, any further actions that might be required in the event of deterioration of conservation status of species/habitats at site level that is directly attributable to shellfish culture operations.

Licensing determinations on the remaining applications in this SPA will follow in due course following a full evaluation of the results of the 2014/2015 bird monitoring programme. The Conclusion Statement will be updated, as appropriate.

Conclusion

The Minister is satisfied that, given the conclusions and recommendations of the Appropriate Assessment process, the proposed licensed activities are not likely to have a significant effect on the integrity of Dungarvan Harbour SPA, (including consideration of the Helvick Head to Ballyquin SPA and the Mid-Waterford Coast SPA).