



**Report Supporting Appropriate Assessment of Aquaculture in Slieve
Tooney/Tormore Island/Loughros Beg Bay SAC (Site 000190)**

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1. Introduction

1.1. Overview

An application for an extensive aquaculture licence for intertidal trestle culture of pacific oyster (*Crassostrea gigas*) at a 1.03 ha site (T12/565A) in Loughros Bay County Donegal (See **Figure 1-1**) was lodged with the Department of Agriculture, Food and the Marine on 19 February 2020. The application area directly overlaps with the Slieve Tooley/Tormore Island/Loughros Beg Bay Special Area of Conservation (**Site 000190**) and therefore the application must be subject to Appropriate Assessment (**AA**) screening and potentially full AA under Article 6(3) of the Habitats Directive (EC Directive 92/43/EEC).

Site 000190 is largely designated for terrestrial qualifying interests but spans coastline from Glen Bay just North of Malin Head northwards to Loughros Beg Bay (see **Figure 1-2**) on the northwest coast of Ireland. The conservation features of Site 000190 are the Annex II species:

- 1014 Narrow-mouthed Whorl Snail, *Vertigo angustior*
- 1355 Otter *Lutra lutra*
- 1364 Grey Seal *Halichoerus grypus*

And the Annex I habitats:

- 1230 Vegetated sea cliffs of the Atlantic and Baltic coast
- 2110 Embryonic shifting dunes
- 2120 Shifting dunes along the shoreline with (white dunes)
- 2140 Decalcified fixed dunes with *Empetrum nigrum*
- 2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)
- 4060 Alpine and Boreal heaths
- 7130 Blanket bogs (* if active bog)

Details on the Conservation Objectives for all conservation features of Site 000190 are provided on the National Parks and Wildlife Services (**NPWS**) protected sites web page¹.

The purpose of this report is to consider if the activities associated with intertidal cultivation of *C. gigas* in the application area are likely to significantly impact on the conservation features of the Site

¹ <https://www.npws.ie/protected-sites/sac/000190>

000190 and adjacent Natura 2000 sites. If these activities are considered likely to adversely affect conservation features, they would have to be carried forward for full AA and considered on a cumulative basis with other aquaculture activities and other likely disturbing activities (e.g. fisheries).

Figure 1-1: Application Area T12/565A in Loughros Bay and Adjacent Licensed Aquaculture Sites

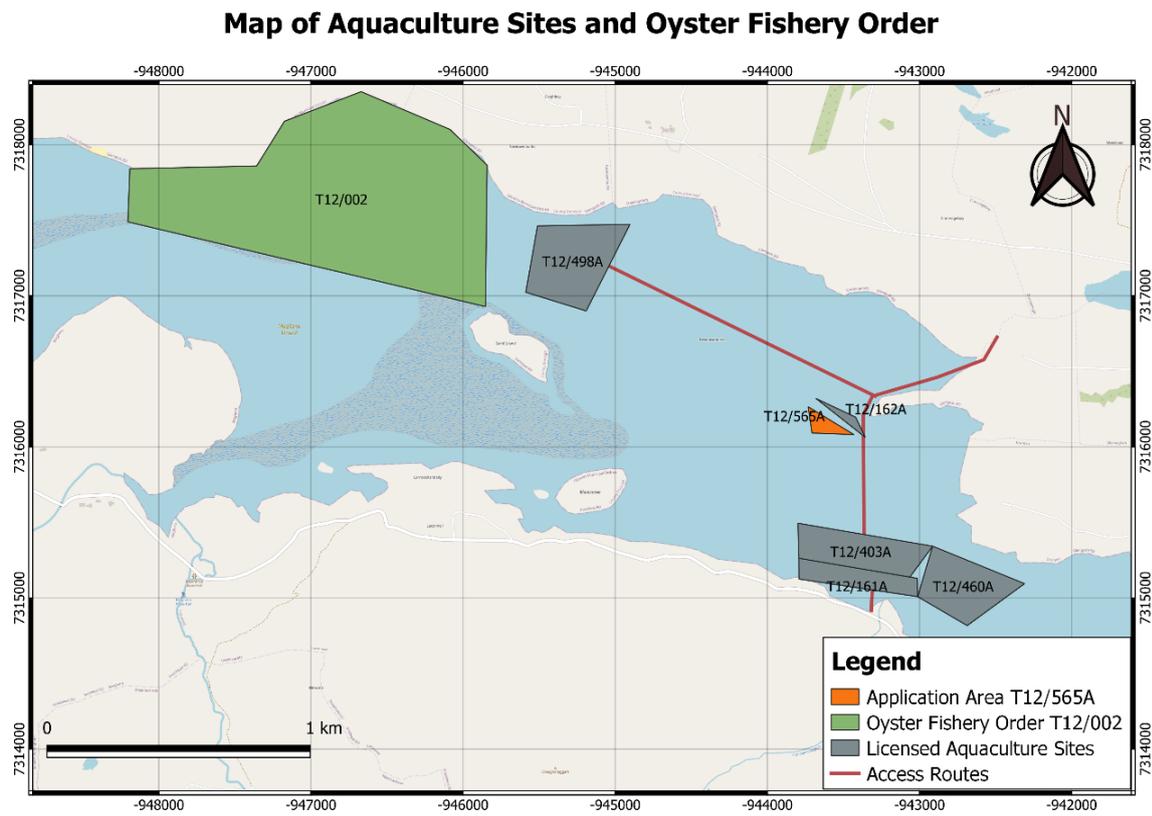
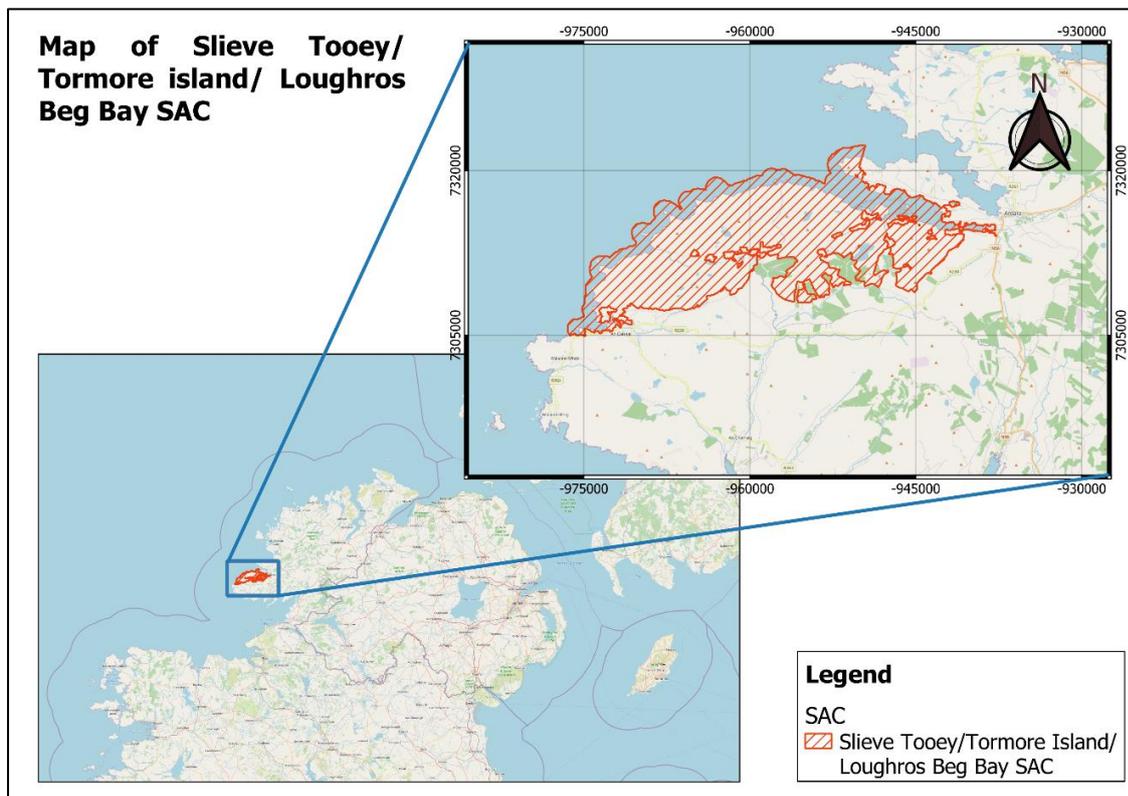


Figure 1-2: Slieve Tooley/Tormore Island/Loughros Beg Bay Special Area of Conservation (Site 000190)



1.2. Legislative Context

Articles 3 - 11 of the European Community (EC) Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (**Habitats Directive**) provide the legislative means to protect habitats and species of Community interest through the conservation of an EU-wide network of protected sites known as Natura 2000 sites.

The Habitats Directive was originally transposed into Irish law by the *European Communities (Natural Habitats) Regulations, 1997* (S.I. No. 94 of 1997). The 1997 Regulations were subsequently revoked and replaced by the *European Communities (Birds and Natural Habitats) Regulations 2011*, as amended (herein referred to as the 2011 Birds and Natural Habitats Regulations). Natura 2000 sites are referred to as European sites in the 2011 Birds and Natural Habitats Regulations. The terms Natura 2000 sites and European sites are synonymous. The term Natura 2000 sites is used in this report. Natura 2000 sites include SACs which are designated under the Habitats Directive and Special Protected Areas (**SPAs**) which are designated under EC Directive EC 79/409/EEC (**Birds Directive**).

SACs are designated due to their significant ecological importance for habitats and species protected under Annex I and Annex II respectively of the Habitats Directive and while SPAs are designated for the protection of populations and habitats of bird species protected under the Birds Directive. The specific named habitats and/or (non-bird) species for which an SAC or SPA are selected are called the 'Qualifying Interests', of the site. The specific named bird species for which a SPA is selected is called the 'Special Conservation Interests'. However, in practice, the common terminology of Qualifying Interest applies also to Special Conservation Interest. This report focuses on Annex I habitats and Annex II species of the Habitats Directive. The term Qualifying Interest is used throughout.

Under Article 6(3) of the Habitats Directive any plan or project likely to significantly affect the integrity of a Natura 2000 site must be subject to an AA. AA focuses on the likely significant effects of a plan or project on a Natura 2000 site and considers the implications for the site in view of its' conservation objectives. Every Natura 2000 site has Conservation Objectives which are set out by the National Parks and Wildlife Service (**NPWS**), a competent authority for the management of Natura 2000 sites in Ireland. The AA process also must consider any plan or proposal in combination with other activities that have the potential to significantly affect the integrity of the Natura 2000 site.

DAFM is the aquaculture licensing authority under the Fisheries (Amendment) Act (1997) and determines applications for new aquaculture licences and applications for renewal of existing aquaculture licences. DAFM is also the competent authority responsible for undertaking AA of aquaculture licence applications. The AA in this report is part of an ongoing programme of AA of aquaculture activities in Ireland, as agreed with the EU Commission in 2009, and will eventually cover

all aquaculture activities in all Natura 2000 sites. DAFM is responsible for licencing of aquaculture in Ireland. As part of this process DAFM must determine if the proposed aquaculture activities individually or in-combination with other activities are likely to significantly impact the Conservation Status of Qualifying Interests and the integrity of Site 000190. DAFM must base its' determination on an AA and is also responsible for ensuring that an AA is carried out

1.3. Appropriate Assessment Process

The requirements for AA derive directly from Article 6(3). Article 6(3) outlines the decision-making tests for considering plans and projects that may have a significant effect on a Natura 2000 site. No definition of the content or scope of AA is given in the Habitats Directive, but the concept and approach are set out in EC guidance (EC, 2018). The Guidance on *Appropriate Assessment of Plans and Projects in Ireland* document published by the Department of Environment, Heritage and Local Government (DEHLG) in 2009 (DEHLG, 2009) sets out how AA of plans or proposals in Natura 2000 sites in Ireland should be carried out in alignment with EC guidance. In 2021 the Office of the Planning Regulator (OPR) published a practice note on AA Screening (OPR, 2021). The practice note provides guidance on how a planning authority should screen an application for planning permission for appropriate assessment

DEHLG (2009) promotes a four stage process to complete the AA. The four stages are:



Stage 3 and Stage 4 are not applicable here. The key procedures involved in completing the first two stages of the AA process are described in below.

Stage 1: Appropriate Assessment Screening

Stage 1 AA Screening is the process that addresses and records the reasoning and conclusions in relation to whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of the site's Conservation Objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 AA. Screening should be undertaken without the inclusion of mitigation. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no effect.

Stage 2: Appropriate Assessment

This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. This stage requires a targeted scientific examination of the plan or project and the relevant Natura 2000 sites, to identify and characterise any possible implications for the site in view of the site's Conservation Objectives, taking account of in-combination effects. If the assessment is negative, then recommendations on mitigation measures or on licensing decisions will be made.

1.4. Structure of this Report

The AA process followed in this report adheres closely with DEHLG (2009) and OPR (2021) guidance and follows worse-case scenario principles as it is assumed that cultivation activities are ongoing at all of the existing licenced sites and that the access routes mapped by the MED and the DAFM are in use (see **Figure 1-1**).

The report considers the following:

- **Section 2 - Stage 1: Appropriate Assessment Screening**

AA Screening is undertaken to identify potential likely significant effects to Qualifying Interests of Natura 2000 sites. Where the screening exercise cannot exclude on the basis of objective information, the Qualifying Interest would have to be brought forward for further consideration in a Stage 2 AA.

This AA screening process which has followed relevant DEHLG (DEHLG, 2009) and OPR (OPR, 2021) guidance has drawn on information from a number of sources, the principal sources are outlined below:

- Conservation Objectives for Site 000190²
- Conservation objectives supporting document- marine species³

² https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000190.pdf

³ [https://www.npws.ie/sites/default/files/publications/pdf/Slieve%20Tooey%20Tormore%20Island%20Loughros%20Beg%20Bay%20SAC%20\(000190\)%20Conservation%20objectives%20supporting%20document%20-%20Marine%20habitats%20\[Version%201\].pdf](https://www.npws.ie/sites/default/files/publications/pdf/Slieve%20Tooey%20Tormore%20Island%20Loughros%20Beg%20Bay%20SAC%20(000190)%20Conservation%20objectives%20supporting%20document%20-%20Marine%20habitats%20[Version%201].pdf)

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- Site Synopsis for Site 000190⁴

2. Stage 1: Appropriate Assessment Screening

2.1. Intertidal Aquaculture in Site 0001190

Intertidal Oyster Cultivation

There are currently five licenced sites for intertidal trestle cultivation of *C. gigas* in Loughros Beg Bay:

- T12/498A (8.84 ha);
- T12/162A (0.58 ha);
- T12/403A (6.78 ha);
- T12/161A (3.13 ha); and
- T12/460A (6.7 ha).

The total area encompassed by these existing sites is 26.03 ha. There are also 2.25 km of access routes to these existing sites. These sites will be operational during periods of low tide. During these times vehicles such as tractors are used to access the trestles. These activities are carried out in daylight hours only. The proposed site T12/565A has an area of 1.03 ha and would also be accessed via existing access routes and activities would also be restricted to daylight hours only.

In general, trestle cultivation uses steel table-like structures arrayed in double rows with wide gaps between the paired rows to allow for access. Trestles used are made from steel and typically between 3 m in length, are approximately 1 metre in width and stand between 0.5 and 0.7 metre in height. In general, oyster farms are positioned between mean Low Water Spring and mean Low Water Neap, allowing on average between two and five-hours exposure depending on location, tidal and weather conditions. The trestles hold typically hold six High Density Poly Ethylene mesh bags approximately 1m by 0.5m by 10cm, using rubber and wire clips to close the mesh bags and to fasten them to the trestles.

Oyster Fishery Order

There is also a 65.74 ha Oyster Fishery Order (**OFO**) on the north shore of outer Loughros Bay (T12/002). Oyster production in Ireland is also permitted through OFOs (under the 1959 Fisheries Act,

⁴ <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000190.pdf>

Part XIV, Ch. 3) or through extensive aquaculture licences (under the Fisheries (Amendment) Act, 1997 and its associated Regulations). OFOs are currently administered by the Department of the Environment, Climate and Communications (**DECC**). Through OFOs permanent rights of access are given to a co-operative or group to cultivate oysters within the OFO although the Minister may revoke orders in certain circumstances while aquaculture licences are awarded for 10 year periods. Typically, cultivation activities in OFOs involve the placement of oysters in an uncontained fashion on the seabed with after a nursery phase in the intertidal zone, with periodic sampling and final harvesting carried out using oyster dredges. Although authority is delegated, fishermen also require a dredge licence from Inland Fisheries Ireland (**IFI**) and an appropriate primary fishing licence from DAFM. The dredge licence is issued to applicants on an annual basis. Under current arrangements between Ireland and the EU Commission, regarding the implementation of the Habitats Directive, fisheries within SACs that are subject to secondary licencing (in this case the dredge licence) are regarded as projects or plans and come under the scope of Article 6.3 of the Directive and are subject to AA to assess whether the activities will have any adverse effect on the integrity of the site(s) in view of the Conservation Objectives set for its Qualifying Interests (as defined by the NPWS).

There are no cultivation activities occurring in T12/002 however, for the purposes of this assessment it is assumed that cultivation activities are occurring in this OFO so that worst case scenario principles are followed for this AA screening exercise.

2.2. Identification of Relevant Natura 2000 Sites and Qualifying Interests

A key consideration as to whether or not an activity is likely to interact with a Qualifying Interest is whether or not there is connectivity between the Qualifying Interest and the sources of potential impacts associated with the activity.

A Natura 2000 site could be at risk of negative *in situ* (within the site) and *ex situ* (beyond the site) effects where a Source-Pathway-Receptor (S-P-R) link exists between the activity and the Qualifying Interest[s] of the site.

There is potential that the proposed aquaculture activities may interact with Qualifying Interests of Site 000190 and cause negative *in-situ* effects. The assessment of the potential for interaction of proposed aquaculture activities with the Qualifying Interests of Site 000190 are presented in **Section 2.2.1**.

There is also potential that the proposed aquaculture activities may interact with Qualifying Interests of adjacent and distant Natura 2000 Sites (SACs and SPAs), potentially resulting in negative *ex-situ*

effects for those Qualifying Interests. The assessment of the potential for interaction of aquaculture activities with the Qualifying Interests of adjacent and distant SACs is presented in **Section 2.2.1.2**.

2.2.1. Screening of Qualifying Interests of Site 000190

2.2.1.1. Annex I Habitats in Site 000190

The Annex I habitats for which Site 000190 is designated are listed in **Table 2.1**. The proposed activities at site T12/565A will be spatially restricted to that site and the access routes to it. It is noteworthy that studies have shown that direct spatial overlap between Annex I habitats and intertidal oyster trestle cultivation activities is required for negative effects to arise⁵⁶. It is also noteworthy that there is no direct spatial overlap between site T12/565A and any of the Annex I habitats listed in **Table 2.1** which means there no feasible pathway for interaction or negative effects. The spatial distribution of most of the habitats listed in **Table 2.1** are provided in the Conservation Objectives document for site 000190⁷. The most proximal of the habitats to Site T12/565A are the dune habitats which lie approximately 2 km to the west on a small headland on the southern shore at the narrowest point of the inner bay. Given the significant distance between the proposed activities and the Annex I habitats of Site 000190 any potential interaction and potential negative effects can be **screened out**.

Table 2-1: Annex I Habitats Designated within Site 000190.

Group	Qualifying Interest	Objective	Targets
Coastal habitats	Vegetated sea cliffs of the Atlantic and Baltic coasts	Maintain Favorable Conservation Condition	There are a number of conservation targets for this species and these are detailed in the Conservation Objectives Document for this site ⁷
	Embryonic shifting dunes		
	Shifting dunes along the shoreline with (white dunes)		
	Decalcified fixed dunes with <i>Empetrum nigrum</i>		
	Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)		

⁵ Forde, J., Francis, X.O., O'Carroll, J.P., Patterson, A. and Kennedy, R., 2015. Impact of intertidal oyster trestle cultivation on the Ecological Status of benthic habitats. Marine Pollution Bulletin, 95(1), pp.223-233.

⁶ O'Carroll, J.P., Quinn, C., Forde, J., Patterson, A., Francis, X.O. and Kennedy, R., 2016. Impact of prolonged storm activity on the Ecological Status of intertidal benthic habitats within oyster (*Crassostrea gigas*) trestle cultivation sites. Marine Pollution Bulletin, 110(1), pp.460-469.

⁷ https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000190.pdf

Group	Qualifying Interest	Objective	Targets
	Alpine and Boreal heaths		
	Blanket bogs (* if active bog)		

2.2.1.2. Annex II Species in Site 000190

Narrow-mouthed Whorl Snail *Vertigo angustior*

Maps of the spatial distribution of the three Annex II species listed in **Table 2-2** are provided in the Conservation Objectives Document for this site⁵. The Narrow-mouthed Whorl Snail *Vertigo angustior* has been found to inhabit terrestrial habitats in the southwest corner of Site 000190 approximately 19 km from the application area at site T12/565A. Given the significant distance between identified Narrow-mouthed Whorl Snail *Vertigo angustior* habitat and the proposed activities, there is no feasible pathway for interaction between the two and negative effects **can be screened out**.

Table 2-2: Annex II Species Designated within Site 000190.

Group	Qualifying Interest	Objective	Targets
Marine Mammal	Otter <i>Lutra lutra</i>	Maintain Favorable Conservation Condition	There are a number of conservation objectives aimed at maintaining habitat extent, connectivity between foraging areas, integrity of couching sites and holts and maintenance of fish biomass
Marine Mammal	Grey Seal <i>Halichoerus grypus</i>		Targets are identified that focus on a wide range of attributes with the ultimate goal of maintaining breeding sites, moult haul-out sites, resting haul-out sites, managing disturbance and managing the number of artificial barriers.
Terrestrial Mollusc	Narrow-mouthed Whorl Snail <i>Vertigo angustior</i>		There are a number of conservation targets for this species and these are detailed in the Conservation Objectives Document for this site ⁷

Marine Mammals

The risk of negative interactions between aquaculture activities and aquatic mammal species is a function of:

1. The location and type of structures used in the culture operations – is there a risk of entanglement or physical harm to the animals from the structures?
2. The schedule of operations on the aquaculture sites – is the frequency such that they can cause disturbance to the animals?

Otter Lutra lutra

Intertidal aquaculture activities are likely to be carried out in daylight hours. The interaction with otter is likely to be minimal given that otter foraging is crepuscular - occurs at dawn and dusk. It is unlikely that the proposed activities pose a risk to otter populations of Site 000190. Otters are quite tolerant of human disturbance and are often recorded in urban areas.

A pathway for negative effects on otters from the proposed activities can be ruled out on the basis that the activities will not lead to any modification of the following:

- Extent of habitat (terrestrial, marine and/or freshwater habitat).
- The activity involves net input rather than extraction of biomass so that no negative impact on the essential food base (fish biomass) is expected
- The number of couching sites and holts or, therefore, the distribution, will not be directly affected by activities.
- Shellfish production activities are unlikely to pose any risk to otter populations through entrapment or direct physical injury.
- The oyster culture structures are raised from the seabed (0.5m -1m) and are oriented in rows, thus allowing free movement through and within the site.
- Disturbance associated with tractor and foot traffic at oyster cultivation sites could potentially affect the distribution of otters at the site. However, the level of disturbance is likely to be very low given the likely encounter rates will be low dictated primarily by tidal state and in daylight hours.

For the reasons listed above negative *in-situ* effects on otter of the proposed activities can be **screened out**.

Grey Seal Halichoerus grypus

The proposed activities must be considered in light of the following important conservation measures for the Grey Seal *Halichoerus grypus*:

- Access to suitable habitat – artificial barriers should not restrict access;
- Disturbance – frequency and level of impact; and
- Seal Sites – Breeding sites, Moulting sites, Resting sites must not be obstructed or disturbed.

Restriction to suitable habitats and levels of disturbance are important pressures that must be considered to ensure the maintenance of favourable conservation status of the grey seal and implies that the seals must be able to move freely within the Site 000190 and to access locations considered important to the maintenance of a healthy population. They are categorised according to various life

history stages (important to the maintenance of the population) during the year. Specifically, they are breeding, moulting and resting sites. It is important that seal access to these sites is not restricted and that disturbance, when at these sites, is kept to a minimum. If located within approximately 200 m of a seal sites, structures used in trestle cultivation of oysters can form a physical barrier to seals.

The Conservation Objectives document for Site 000190 contains a map which displays the distribution of seal haul out sites. This map is included in **Figure 2-1** in this report for reference. It can be seen that that seal sites are located along the more exposed shores of Site 000190 and not in the inner bay. Site T12/565A is approximately 4 km from the nearest seal site. Given the distance between seal sites and the proposed activities there is no pathway for interaction between the two which could result in negative *in-situ effects*. On this basis, negative effects on *Grey Seal Halichoerus grypus* can be **screened out**.

2.3. Risk of Introduction of Non-native Species

The establishment of non-native species as a wild population in an area can be a potential risk associated with bivalve aquaculture largely due to the moving of stock (seed, juvenile or adults) into aquaculture sites. In this instance, there are two potential causes of non-native introduction and establishment; the movement into Site 000190 of the cultured species, *C. gigas*, and the movement of other species that might 'hitchhike' along with *C. gigas* moved into the Site 000190.

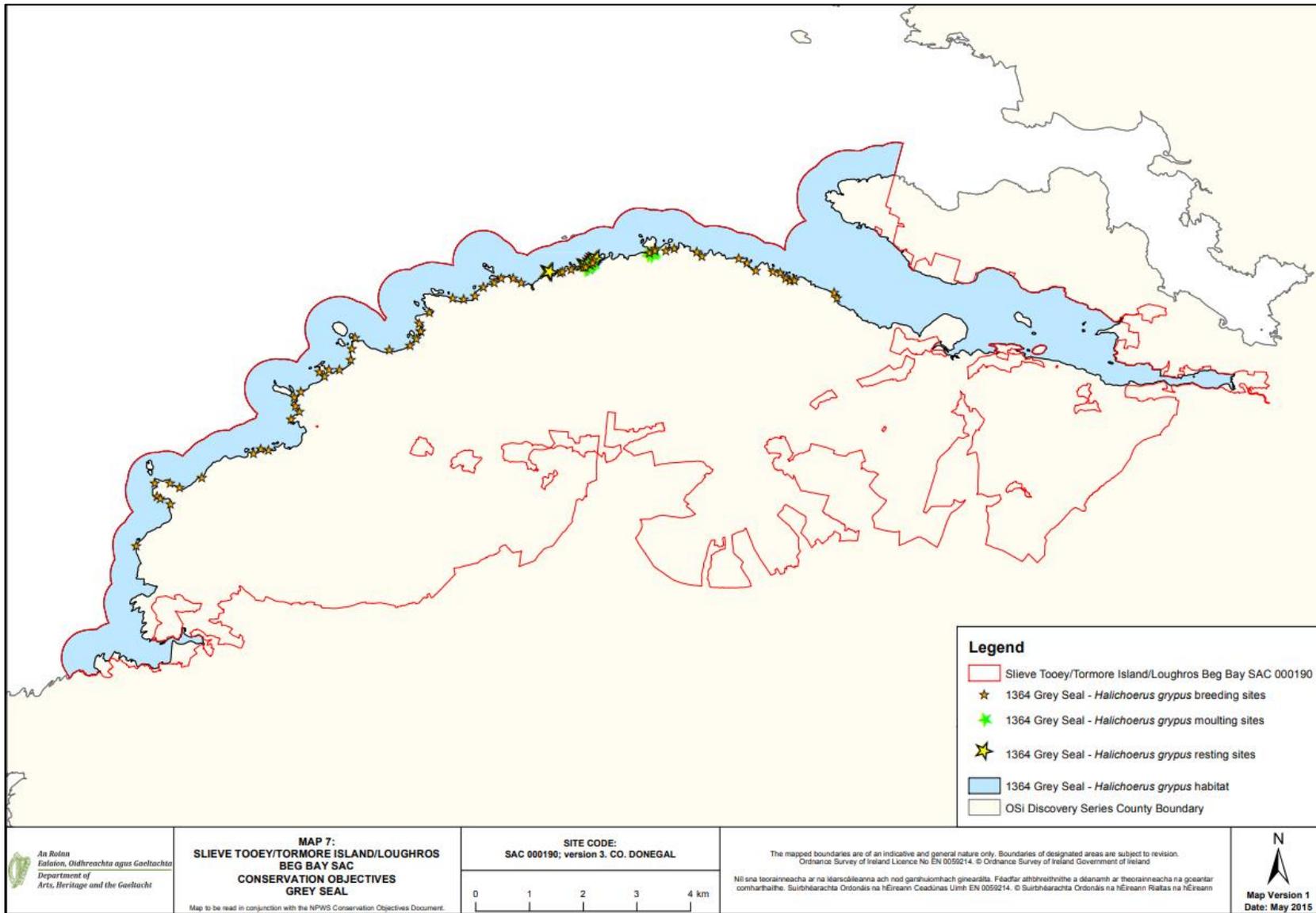
2.3.1. Screening of Risk of Establishment of Wild Populations of Non-native Species

Application T12/565 states that oyster seed will be sourced from a hatchery in France. The movement of hatchery seed is managed in a way that significantly minimises the risk that 'hitchhiker' non-native species will be introduced along with the oyster seed.

The environmental conditions in Loughros Beg Bay are not considered to be suitable for the settlement and subsequent establishment of *C. gigas* because; *C. gigas* larvae require high water residency times within a waterbody (low rates of water circulation and replenishment), in the order of 20 days, to have time to settle. Loughros Beg Bay is almost fully flushed during each tidal cycle with the only water remaining during most low-tides being a freshwater channel.

Given the well managed movement of stock into the site and the natural characteristics of the site it is highly unlikely that non-native species could be established as a wild population as a result of the proposed aquaculture activities. On this basis the potential negative effects of non-native species on Site 000190 **can be screened out**.

Figure 2-1: Map Excerpt from Conservation Objective Document for Site 000190 Displaying Seal Sites

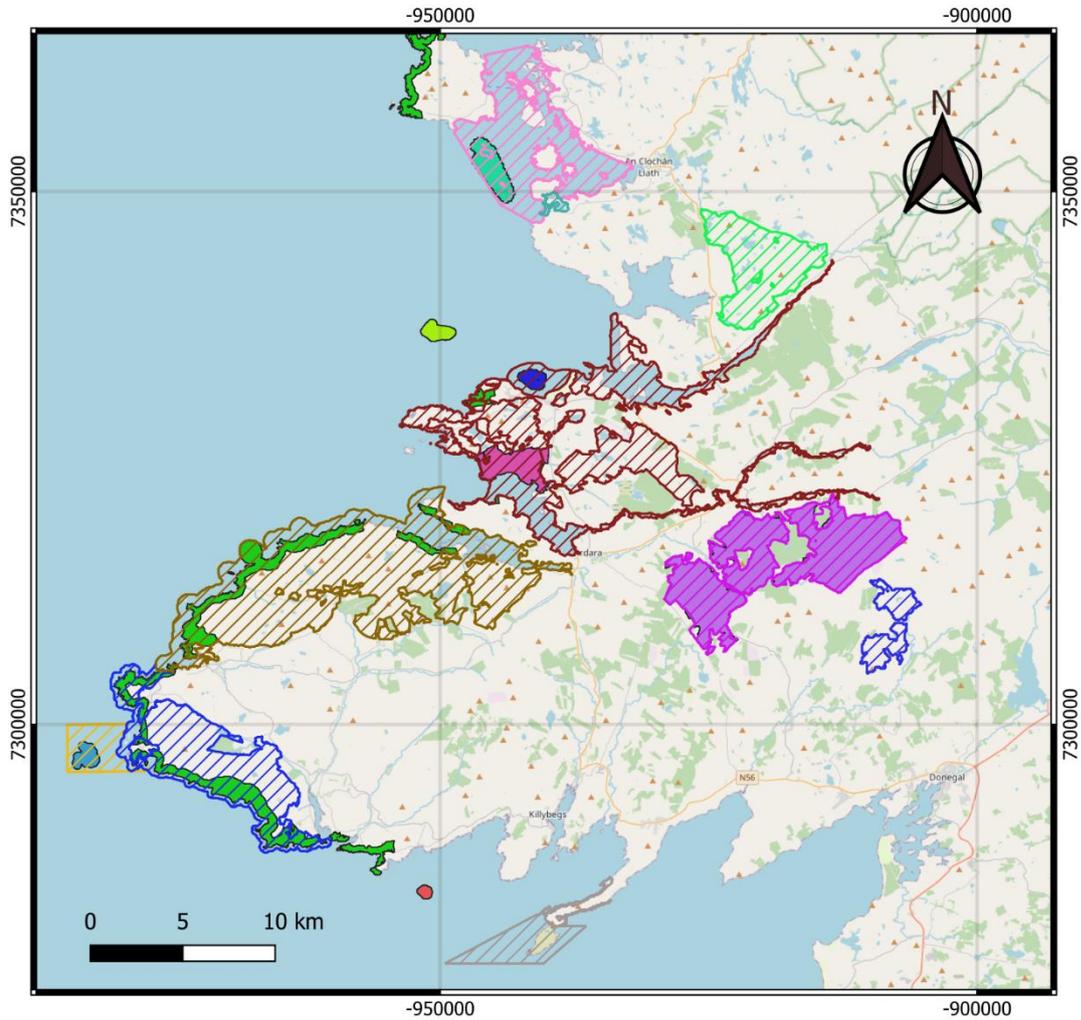


2.3.2. Screening of Qualifying Interests of Adjacent Natura 2000 Sites

A total of ten SACs and eight SPAs lie within 20 km of application area T12/565A (See Figure 2-2).

Figure 2-2: Map of SPAs and SACs within 20 km of Application Area T12/565A.

Map of SACs and SPAs within 20km of Application Area T12/565A



Legend

SACs within 20 km

-  Gannivegil Bog SAC
-  Lough Nillan Bog (Carrickatlieve) SAC
-  Meenaguse/Ardbane Bog SAC
-  Rathlin O'Birne Island SAC
-  Rutland Island And Sound SAC
-  Slieve League SAC
-  Slieve Toey/Tormore Island/Loughros Beg Bay SAC
-  St. John's Point SAC
-  Termon Strand SAC
-  West Of Ardara/Maas Road SAC

SPAs within 20 km

-  Illancrone and Inishkeeragh SPA
-  Inishduff SPA
-  Inishkeel SPA
-  Lough Nillan Bog SPA
-  Rathlin O'Birne Island SPA
-  Roaninish SPA
-  Sheskinmore Lough SPA
-  West Donegal Coast SPA

2.3.2.1. Qualifying Interests of Adjacent SACs

Adjacent Terrestrial SACs Designated for Active Bogs

Of the 10 SACs within 20 km of the application area T12/565A three are fully terrestrial and designated for their active bog habitats only:

- Gannivegil Bog SAC;
- Lough Nillan Bog (Carrickatlieve) SAC; and
- Meenaguse/Ardbane Bog SAC.

Therefore, there is no pathway for the qualifying interests of the above SACs to interact with the proposed activities. On this basis, negative *ex-situ* effects on the Qualifying interests of these SACs as a result of the proposed activities can be **screened out**.

Adjacent SACs with Designated Annex I Coastal Habitats and Marine Habitats

The remaining seven SACs within 20 km of Site 000190 contain designated Annex I Coastal Habitats and Marine Habitats:

- Rathlin O’Birne island SAC;
- Rutland Island and Sound SAC;
- Slieve League SAC;
- St John’s Point SAC;
- Termon Strand SAC; and
- West of Ardara/ Mass Road SAC

Given that:

1. Close direct spatial overlap between the proposed activities and Annex I habitats is required for a pathway to interaction and potential negative effects^{5,6}; and
2. The significant distance between the application area T12/565A and all identified adjacent SACs (the closest being West of Ardara/ Mass Road SAC at 1.6 km);

no pathway exists for interactions to occur and therefore in *ex-situ* negative effects on Coastal and Marine Habitats of Adjacent Natura 2000 sites can be **screened out**.

Adjacent SACs with Designated Annex I Species

Of the nine SACs within 20 km of Site 000190, two have Qualifying Interests that are Annex I marine species; Rutland Island and Sound SAC and West of Ardara/ Mass Road SAC. Rutland Island and Sound SAC is designated for Annex I species the harbour seal *Phoca vitulina* and West of Ardara/ Mass Road SAC is designated for the Annex I species Atlantic salmon *Salmo salar*, Otter *Lutra lutra* and the harbour seal *Phoca vitulina*.

Salmo salar – ex situ effect screening

Atlantic salmon are anadromous species which hatch and develop for a short while in freshwater, grow and spend most of their lives in seawater and eventually return to their original river to spawn. It is unlikely that any salmon spawned in rivers leading into the West of Ardara/ Mass Road SAC would utilise Loughros Beg Bay. If any salmon did pass through this area either foraging or migrating upstream to spawn the oyster trestles would not act as a barrier to their passage. For this reason, the potential adverse effects of the proposed activities on salmon of adjacent SACs can be **screened out**.

Otter – ex-situ effects screening

It is possible that certain individuals in the otter populations in Site 000190 and the West of Ardara/ Mass Road SAC utilise both sites as the two are proximal by land and sea and otter are capable of swimming across areas of open water and travelling multiple kilometres over land.

The conservation objectives for otter in both Site 000190 and West of Ardara/ Mass Road SAC are identical except for the specific values for size of habitats to be maintained. This means that the screening procedure will be the same for both sites.

The potential effects of the proposed activities on otter have already been screened in **Section 2.2.1.1**. To avoid repetition, the screening exercise is not repeated here. In summary, the proposed activities were found not to have the potential to negatively impact otter in Site 000190 and therefore effects on otter of adjacent SACs are also **screened out**.

Grey Seal – ex-situ effects screening

Cronin et al. (2011)⁸ investigated grey seal movement on Ireland's continental shelf. Of the total of 529 foraging trips recorded, the furthest foraging trip was 511km. Therefore, out of the abundance of caution all ten SACs in Irish waters designated for Grey Seal (1364) are considered here:

- Blasket Islands SAC⁹ (Site code: 002172);
- Duvillaun Islands SAC¹⁰ (Site code: 000495);
- Horn Head and Rinclevan SAC¹¹ (Site code: 000147);
- Inishbofin and Inishshark SAC¹² (Site code: 000278);
- Inishkea Islands SAC¹³ (Site code: 000507);
- Lambay Island SAC¹⁴ (Site code: 000204);
- Roaringwater Bay and Islands SAC¹⁵ (Site code: 000101);
- Saltee Islands SAC¹⁶ (Site code: 000707);
- Slieve Tooley/Tormore Island/Loughros Beg Bay SAC¹⁷ (Site code: 000190); and
- Slyne Head Islands SAC¹⁸ (Site code: 000328).

The conservation objectives for grey seal across all SACs are identical. This means that the screening procedure will be the same for all sites.

⁸ Cronin, M.A., Jessop, M.J. and Del Villar, D., 2011 Tracking grey seals on Ireland's continental shelf Report to National Parks and Wildlife Service, Department of Arts, Heritage and Gaeltacht November 2011 Coastal and Marine Research Centre University College Cork Ireland

⁹ NPWS (2014) Conservation Objectives: Blasket Islands SAC 002172. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002172.pdf

¹⁰NPWS (2013) Conservation Objectives: Duvillaun Islands SAC 000495. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000495.pdf

¹¹ NPWS (2014) Conservation Objectives: Horn Head and Rinclevan SAC 000147. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000147.pdf

¹² NPWS (2015) Conservation Objectives: Inishbofin and Inishshark SAC 000278. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000278.pdf

¹³NPWS (2015) Conservation Objectives: Inishkea Islands SAC 000507. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000507.pdf

¹⁴ NPWS (2013) Conservation Objectives: Lambay Island SAC 000204. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000204.pdf

¹⁵ NPWS (2013) Conservation Objectives: Roaringwater Bay and Islands SAC 000101. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000101.pdf

¹⁶ NPWS (2011) Conservation Objectives: Saltee Islands SAC 000707 and Saltee Islands SPA 004002. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000707.pdf

¹⁷ NPWS (2010) Conservation Objectives: Slieve Tooley/Tormore Island/Loughros Beg Bay SAC 000190. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000190.pdf

¹⁸ NPWS (2012) Conservation Objectives: Slyne Head Islands SAC 000328. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000328.pdf

The potential *in-situ* effects of the proposed activities on grey seal have already been screened out in **Section 2.2.1.1**. To avoid repetition, the screening exercise is not repeated here. In summary, the proposed activities were found not to have the potential to negatively impact grey seal in Site 000190 and therefore effects on grey seal of adjacent SACs are also **screened out**.

Harbour Seal – ex-situ effects screening

Harbour Seal have been reported to take foraging trips of up 220km (Sharples et al., 2016)¹⁹. Although Site 000190 is not designated for harbour seal, other sites within the foraging range distance of the harbour seal from Site 000190 are designated for this species. Of the SACs designated for the harbour seal in Ireland, six SACs are located within the potential foraging range of the species and are considered here as part of the screening of *ex-situ* effects. The relevant SACs are:

- Ballysadare Bay SAC²⁰ (Site code: 000622) (*ca* 75 km south);
- West of Ardara/Maas Road SAC²¹ (Site code: 000197) (*ca* 3 km south);
- Donegal Bay (Murvagh) SAC²² (Site code: 000133) (*ca* 71 km southeast);
- Cummeen Strand/Drumcliff Bay²³ (Sligo Bay) SAC (Site code: 000627) (*ca* 70 km south); and
- Killala Bay/Moy Estuary SAC²⁴ (Site code: 000458) (*ca* 83 km southwest).

The conservation objectives for harbour seal are identical seal across all SACs and are also identical to the grey seal. This means that the screening procedure will be the same for both seal species across all sites.

The potential *in-situ* effects of the proposed activities on grey seal have already been screened out in **Section 2.2.1.1**. Given that the screening process is the same for harbour seal, to avoid repetition, the screening exercise is not repeated here. In summary, the proposed activities were found not to have

¹⁹ Sharples, R.J., Moss, S.E., Patterson, T.A. and Hammond, P.S., 2012. Spatial variation in foraging behaviour of a marine top predator (*Phoca vitulina*) determined by a large-scale satellite tagging program. PLoS one, 7(5).

²⁰ NPWS (2013) Conservation Objectives: Ballysadare Bay SAC 000622. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000622.pdf

²¹ NPWS (2015) Conservation Objectives: West of Ardara/Maas Road SAC 000197. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000197.pdf

²²NPWS (2012) Conservation Objectives: Donegal Bay (Murvagh) SAC 000133. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000133.pdf

²³ NPWS (2013) Conservation Objectives: Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 000627. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000627.pdf

²⁴ NPWS (2012) Conservation Objectives: Killala Bay/Moy Estuary SAC 000458. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000458.pdf

the potential to negatively impact harbour seal in Site 000190 and therefore effects on harbour seal of adjacent SACs are also **screened out**.

Adjacent SPAs

The effects the conservation features of proximal and distant SPAs are addressed generally as opposed to a site by site (SPA by SPA), species by species approach because:

- Of the very small size of the proposed intertidal oyster trestle cultivation site T12/565A (1 ha) and the size of all potential sites licensed for oyster aquaculture (26 ha) relative to potential foraging areas of relevant birds; and
- The lack of overlap between the proposed aquaculture activities and any SPAs.

There are eight SPAs within 20 km of the proposed aquaculture activities:

- Illancrone and Inshkeeragh SPA;
- Inishduff SPA;
- Inishkeel SPA;
- Lough Nillan Bog SPA;
- Rathlin O'Birne Island SPA;
- Roaninish SPA;
- Sheskinmore Lough SPA; and
- West Donegal Coast SPA.

There is no direct spatial overlap between the proposed site T12/565A and associated aquaculture activities and any area of any SPA. The most proximal SPA to site T12/565A is the West Donegal Coast SPA which is designated for 8 types of bird species:

- Fulmar (*Fulmarus glacialis*)
- Cormorant (*Phalacrocorax carbo*)
- Shag (*Phalacrocorax aristotelis*)
- Peregrine (*Falco peregrinus*)
- Herring Gull (*Larus argentatus*)
- Kittiwake (*Rissa tridactyla*)
- Razorbill (*Alca torda*)
- Chough (*Pyrrhocorax pyrrhocorax*)

Conservation objectives for these species are outlined in the conservation objectives document for that site²⁵. The foraging ranges of the qualifying interests of the West Donegal Coast SPA are extensive and while some individuals may utilise the proposed aquaculture area for feeding, the size of the proposed site (1 ha) in combination with other sites licenced for oyster cultivation in Loughros Beg Bay (26 ha) is not such that it could displace foraging birds to the extent that their conservation objectives cannot be met.

Similarly, given the distance between the proposed site T12/565A and other more distant SPAs and the size of the foraging ranges of designated bird species, an increase in intertidal oyster cultivation in Loughros Beg Bay of 1 ha is highly unlikely to result in displacement to the extent that conservation objectives cannot be met.

The proposed intertidal oyster trestle cultivation activities at site T12/565A will not adversely affect designated bird species of proximal or more distant SPAs and therefore the potential for negative adverse effects can be **screened out**.

2.4. Screening Conclusion

The screening assessment investigates the potential for intertidal oyster trestle cultivation activities to have significant adverse effects on the conservation interests of Site 0000190 and adjacent Natura sites.

The screening assessment has determined, in light of best available scientific data, that there is no potential for significant adverse effects of proposed aquaculture activities on the conservation features of Site 000190 or the conservation features of any other Natura 2000 site. All possible adverse effects on conservation features of Natura 2000 sites can be **screened out**.

²⁵ NPWS (2021) Conservation Objectives: West Donegal SPA 004150
https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004150.pdf