

Loughros Beg Natura Screening-September 2016

Screening Matrix for Shellfish Culture in Loughros Beg Bay, Co. Donegal.																																									
Brief description of the project or plan	<p>Oysters (<i>Crassostrea gigas</i>) are currently grown at two licenced sites in Loughros Beg Bay with applications to grow oysters for a further 5 sites in the bay. Oysters are triploid (sourced from a hatchery in France) and are grown in bags on trestles. There are two main access routes for the operators in the area to the sites. One from Mullanacarry on the south shore (directly onto a licenced site) and one at Shannagh which is the most commonly used access point. Access is by tractor across intertidal sand flats. The locations of the sites are shown in Figure 1.</p> <table border="1"> <thead> <tr> <th>ID</th> <th>Species</th> <th>Culture Method</th> <th>Status</th> <th>Area (ha)</th> </tr> </thead> <tbody> <tr> <td>T12/161A</td> <td>Oysters</td> <td>Bag and Trestle</td> <td>Licensed</td> <td>3.2</td> </tr> <tr> <td>T12/162A</td> <td>Oysters</td> <td>Bag and Trestle</td> <td>Licensed</td> <td>0.6</td> </tr> <tr> <td>T12/460A</td> <td>Oysters</td> <td>Bag and Trestle</td> <td>Application</td> <td>6.7</td> </tr> <tr> <td>T12/403A</td> <td>Oysters</td> <td>Bag and Trestle</td> <td>Application</td> <td>6.8</td> </tr> <tr> <td>T12/431A</td> <td>Oysters</td> <td>Bag and Trestle</td> <td>Application</td> <td>10.1</td> </tr> <tr> <td>T12/417A</td> <td>Oysters</td> <td>Bag and Trestle</td> <td>Application</td> <td>8.2</td> </tr> <tr> <td>T12/498A</td> <td>Oysters</td> <td>Bag and Trestle</td> <td>Application</td> <td>8.8</td> </tr> </tbody> </table>	ID	Species	Culture Method	Status	Area (ha)	T12/161A	Oysters	Bag and Trestle	Licensed	3.2	T12/162A	Oysters	Bag and Trestle	Licensed	0.6	T12/460A	Oysters	Bag and Trestle	Application	6.7	T12/403A	Oysters	Bag and Trestle	Application	6.8	T12/431A	Oysters	Bag and Trestle	Application	10.1	T12/417A	Oysters	Bag and Trestle	Application	8.2	T12/498A	Oysters	Bag and Trestle	Application	8.8
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Brief description of the Natura 2000 site:	<p>Loughros Beg Bay is within the Slieve Tooley /Tormore Island/Loughros Beg Bay SAC (Site Code: 0190) (Figure 2). This site is designated for the following species and habitats:</p> <ul style="list-style-type: none"> • 1014 Narrow-mouthed Whorl Snail, <i>Vertigo angustior</i> • 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts • 1355 Otter <i>Lutra lutra</i> • 1364 Grey Seal <i>Halichoerus grypus</i> • 2110 Embryonic shifting dunes • 2120 Shifting dunes along the shoreline with(white dunes) • 2140 Decalcified fixed dunes with <i>Empetrum nigrum</i> • 2150 Atlantic decalcified fixed dunes (Calluno-Ulicetea) • 4060 Alpine and Boreal heaths • 7130 Blanket bogs (* if active bog) <p>Loughros Beg Bay is also proximate to a number of Natura sites (Figure 2):</p> <ul style="list-style-type: none"> • Lough Nillan Bog (Carrickatlieve) SAC • Rathlin O'Birne Island SAC • Slieve League SAC • West Of Ardara/Maas Road SAC • Sheskinmore Lough SPA • Lough Nillan Bog SPA
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	<ul style="list-style-type: none"> • Inishduff SPA • Inishkeel SPA • Rathlin O'Birne Island SPA • Roaninish SPA • West Donegal Coast SPA <p>One Natura 2000 site found directly proximate to Loughros Beg Bay is the West Donegal Coast SPA (Site Code: 04150).</p> <p>West Donegal Coast SPA is designated for the following species:</p> <ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>) • Cormorant (<i>Phalacrocorax carbo</i>) • Shag (<i>Phalacrocorax aristotelis</i>) • Peregrine (<i>Falco peregrinus</i>) • Herring Gull (<i>Larus argentatus</i>) • Kittiwake (<i>Rissa tridactyla</i>) • Razorbill (<i>Alca torda</i>) • Chough (<i>Pyrrhocorax pyrrhocorax</i>) <p>On the basis of distance from the aquaculture sites in Loughros Beg Bay and no obvious interactions between aquaculture activities and the conservation features of the sites, the following Natura sites can be screened out from further consideration at this stage.</p> <ul style="list-style-type: none"> • West Of Ardara/Maas Road SAC • Lough Nillan Bog (Carrickatlieve) SAC • Rathlin O'Birne Island SAC • Slieve League SAC • Sheskinmore Lough SPA • Lough Nillan Bog SPA • Inishduff SPA • Inishkeel SPA • Rathlin O'Birne Island SPA • Roaninish SPA
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Assessment criteria	
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.	Oyster (<i>Crassostrea gigas</i>) culture is carried out using bags and trestles in the intertidal zone. Depending upon the size of stock, the number of oysters in each bag will vary with lower numbers in bags with larger oysters. The trestles are arranged in rows along the shore and spaced accordingly to maximise water movement between the structures and consequently, among the oysters in the bags. Triploid oysters will be used at all sites. Given the very large intertidal extent in the bay resulting in short residence times and the fact that triploid (non-reproducing) oysters are used, the risk of recruitment of <i>C. gigas</i> is considered low. Transport routes into and out of the site will experience disturbance ^{1, 2} This disturbance is typically confined to a fixed route and hence, area which

¹ James Forde J., F.X. O'Beirn, J.O'Carroll, A. Patterson, R. 2015. Impact of intertidal oyster trestle cultivation on the Ecological Status of benthic habitats. Marine Pollution Bulletin. 95:223-233

² J. P.J. O'Carroll, C. Quinn, J. Forde, A. Patterson, F. X. O'Beirn, R. Kennedy. 2016. Impact of prolonged storm activity on the Ecological Status of intertidal benthic habitats within oyster (*Crassostrea gigas*) trestle cultivation sites. Marine Pollution Bulletin 110:460-469

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	are clearly defined in the licence conditions.
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:	
size and scale;	There are no direct impacts (spatial overlap) from the culture operations on any of the features of the SAC [0190] or on those in any Natura sites proximate to the culture sites.
Distance from the Natura 2000 site or key features of the site:	<p>The activities in question occur within Loughros Beg Bay which is within the Slieve Tooley /Tormore Island/Loughros Beg Bay SAC (site code: 0190) is adjacent to the West Donegal Coast SPA and is proximate to a number of Natura sites identified above (see Figure 2). On the basis of distance from the aquaculture sites in Loughros Beg Bay and no obvious interactions between the aquaculture activities and the conservation features of the sites, the following Natura sites can be screened out from further consideration at this stage.</p> <ul style="list-style-type: none"> • West Of Ardara/Maas Road SAC • Lough Nillan Bog (Carrickatlieve) SAC • Rathlin O'Birne Island SAC • Slieve League SAC • Sheskinmore Lough SPA • Lough Nillan Bog SPA • Inishduff SPA • Inishkeel SPA • Rathlin O'Birne Island SPA • Roaninish SPA
Resource requirements (water abstraction etc.):	Oysters are filter feeders and they feed upon suspended particulate matter. They selectively ingest phytoplankton and other organic material (e.g. small zooplankton and bacteria) and dispose of inorganic and larger organic matter in pseudofeces, which is excreted into the water column. Typically the fecal and pseudofecal pellets will fall to the sea floor and may cause localised organic enrichment and/or sedimentation. The level of enrichment is a function of, <i>inter alia</i> , water depth current speed, density of culture, the quantity of suspended particulate matter in the water column, or a combination of these. The shellfish production activities do not use any resources required by the qualifying features within the Natura 2000 sites.
Emissions (disposal to land, water or air):	<p>The only emissions arising from the shellfish production are the solids faeces and pseudofaeces and dissolved nitrogenous material (ammonium), which are excreted into the water column. Typically the fecal and pseudofecal pellets will fall to the sea floor beneath the structures and therefore, result in no direct or indirect impact on the qualifying interests within the Natura 2000 sites.</p> <p>Intertidal oyster sites are accessed via vehicle (tractors) along designated routes through the shore. As a consequence, noise and pollution, e.g., as a result of a fuel spill may present a risk to features of adjoining Natura</p>

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	sites. The risks are not considered significant at current or proposed levels. Impacts would be localised and minor. Also, licence conditions specify that vehicles and vessels used in the conduct of aquaculture operations must maintain strict operation and safety standards, such that risks associated with noise, spills and emissions are minimised and/or mitigated.
Excavation requirements:	There is no excavation or similar activities associated with the aquaculture activities.
Transportation requirements:	The produced oysters are transported offsite on predefined access routes and more widely using the existing national road network with no obvious impact on the adjoining Natura 2000 sites.
Duration of construction, operation, decommissioning:	None
Other:	None

Describe any likely changes to the site arising as a result of:	
Reduction of habitat area:	There is no reduction in habitat area within any of the Natura 2000 sites considered arising from the production activities.
Disturbance to key species:	<p>Otter: Shellfish culture operations are likely to be carried out in daylight hours. The interaction with the otter is likely to be minimal given that otter foraging is primarily crepuscular. It is unlikely that the proposed culture activities pose a risk to otter populations. Impacts can be discounted on the basis of the points below: The proposed activities will not lead to any modification of the following attributes for otter:</p> <ul style="list-style-type: none"> - Extent of terrestrial habitat, - Extent of marine habitat / freshwater habitat. - The activity involves net input rather than extraction of fish biomass from otter foraging areas 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 aquaculture activities. - Shellfish production activities are unlikely to pose any risk to otter populations through entrapment or direct physical injury. - The structures and activities associated with this form of 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 vessel and foot traffic 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. <p>Proposed and existing shellfish culture activities are likely to be non-disturbing to otter.</p> <p>Grey Seal: Grey Seal sites are identified in Figure 3. Conservation</p>

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	<p>Objectives for the species within the SAC (NPWS 2015) have been identified and relate primarily to the requirement to maintain various attributes of the populations including population size and the distribution of the species.</p> <p>Given the distance from the proposed aquaculture operations to the nearest identified locations for Grey Seal is 3.5km and the shallow and sheltered nature of the aquaculture locations it is unlikely that Grey Seal will access the sites during operational times. Therefore, the existing and proposed levels of shellfish culture within Loughros Beg Bay are considered non-disturbing to the grey seal.</p> <p>There is no spatial overlap or obvious interactions with the other species identified as a feature within the SAC Site 0190, i.e., 1014 Narrow-mouthed Whorl Snail, <i>Vertigo angustior</i>.</p> <p>West Donegal Coast SPA is designated for the following species:</p> <ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>) • Cormorant (<i>Phalacrocorax carbo</i>) • Shag (<i>Phalacrocorax aristotelis</i>) • Peregrine (<i>Falco peregrinus</i>) • Herring Gull (<i>Larus argentatus</i>) • Kittiwake (<i>Rissa tridactyla</i>) • Razorbill (<i>Alca torda</i>) • Chough (<i>Pyrhocorax pyrrhocorax</i>) <p>No spatial overlap with aquaculture activities (including access routes). The foraging range of the species identified in the COs is extensive and while some may utilise the aquaculture areas for feeding (which are proximate to a small portion of the SPA), it is unlikely the activities or structures used will impact on the conservation objectives and targets. For the most part the bird species will range beyond the scope or influence of the shellfish culture operations. Therefore, shellfish culture and associated activities considered in this report do not pose significant risk to the conservation features found in the West Donegal Coast SPA.</p>
Habitat or species fragmentation:	The coastal habitat features identified for Slieve Tooley /Tormore Island/Loughros Beg Bay SAC are presented in Figure 3. There is no spatial overlap with these habitat features and no likely interaction with shellfish culture structures or associated activities. Therefore, there is no habitat or species fragmentation within the Natura 2000 sites arising from the oyster production activities
Reduction in species density:	There is no reduction in species density within the Natura 2000 sites arising from the oyster production activities
Changes in key indicators of conservation value (water quality):	There are no changes in key indicators of conservation value within the Natura 2000 sites arising from the oyster production activities.
Climate change:	Given the nature and scale of the oyster production activities the contribution to climate change is insignificant.

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Describe any likely impacts on the Natura 2000 site as a whole in terms of:	
Interference with the key relationships that define the structure of the site:	None of the activities associated with the production of oysters in Loughros Beg Bay harbour will interfere with the key relationships that define the structure of Site 0190 or any adjoining Natura 2000 sites.
Interference with key relationships that define the function of the site:	Given the shellfish culture activity does not spatially overlap with any Natura Habitat features, and there is no likely interaction with the conservation features (coastal habitats and species – see above).
Provide indicators of significance as a result of the identification of effects set out above in terms of:	
Fragmentation:	None identified
Disruption:	None identified
Disturbance:	None identified
Change to key elements of the site (e.g. water quality etc.):	None identified

Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	There are no elements of the existing or proposed aquaculture operations that present risk to conservation features of the Slieve Tooley /Tormore Island/Loughros Beg Bay SAC. There is a single Oyster Fishery Order (OFO) location within Loughros Beg Bay (Figure 4). This site is towards the outer part of the bay and is 2km from the closest seal haul out site. However, there is no profile of activities for the site and the operators/owners of the site have been dissolved on the Companies Registration Office since 2002. In addition, local communications have indicated that the site has not been used for more than 20 years. On this basis, there are no likely in-combination effects with the OFO to consider.
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Finding of no significance effect report:	
Name of project or plan:	Shellfish Aquaculture activities in Loughros Beg Bay, Co. Donegal
Name and location of Natura 2000 site It would be helpful for a map or plan to be provided:	The activities are located within the Slieve Tooley /Tormore Island/Loughros Beg Bay SAC (site code: 0190) and directly proximate to the West Donegal Coast SPA (Site Code: 04150).
Description of the project or plan	Oysters (<i>Crassostrea gigas</i>) are grown at two licenced sites in Loughros Beg Bay with applications to grow oysters for a further 5 sites in the bay. Triploid oysters are

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	grown in bags on trestles.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No.
Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)?	An oyster fishery order is located within Loughros Beg Bay. On the basis of lack of activity at the site it presents no in-combination effects.
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.	The cultivation of oysters in Loughros Beg Bay is not likely to affect the adjoining Natura 2000 sites.
Explain why these effects are not considered significant.	<p>There is no spatial overlap of the shellfish culture activities with the features of the Natura 2000 sites. In addition, there would be no interference with key relationships that define the function of the sites. The shellfish culture activity will not result in habitat loss, there will not be significant disturbance to key species and there will be no habitat or species fragmentation. There will be no direct discharge of pollutants into the environment during the works and water quality will not be affected. Consequently, it is concluded that the culture of shellfish in Loughros Beg Bay will not likely pose significant risk to the conservation features of Slieve Tooley /Tormore Island/Loughros Beg Bay SAC and adjacent Natura 2000 sites and as such does not require a full appropriate assessment.</p> <p>On the basis of the above it is considered that there will be <u>no significant effects</u> on the qualifying interests' of the Natura 2000 sites.</p>
Who carried out the assessment?	Marine Institute

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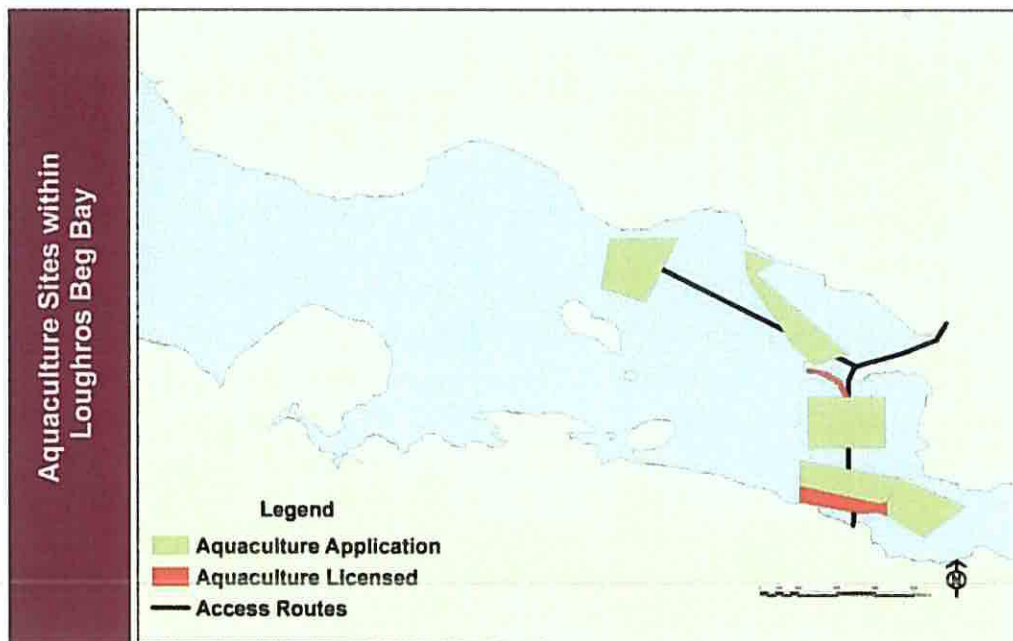


Figure 1: Aquaculture sites in Loughros Beg Bay.

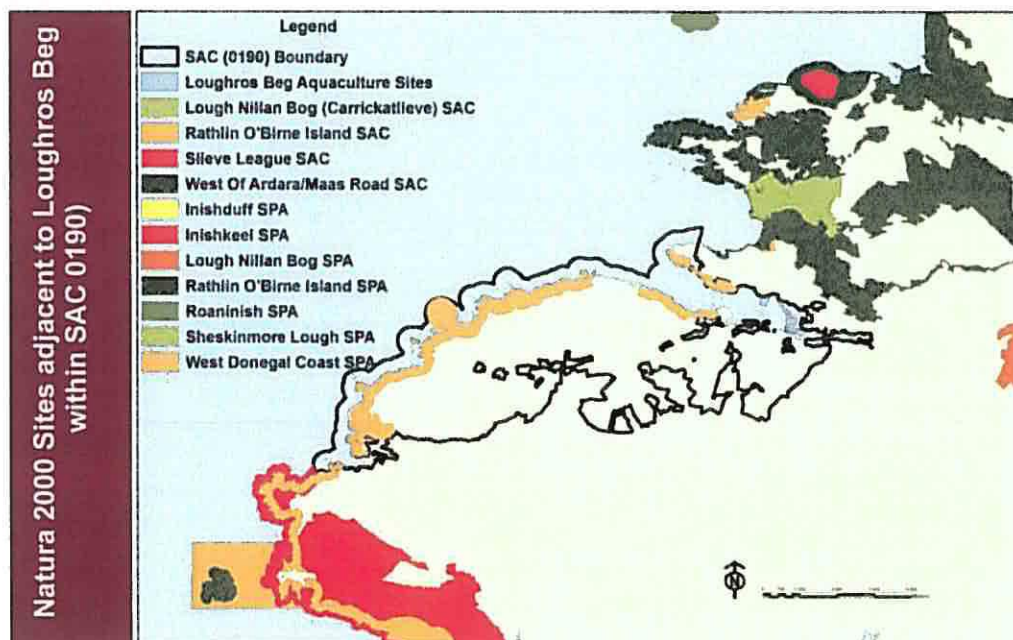


Figure 2. Adjacent Natura 2000 sites to Loughros Beg Bay and aquaculture sites.

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Figure 3. Natura features and aquaculture locations within Loughros Beg Bay.



Figure 4. Aquaculture sites and Oyster Fishery Order in Loughros Beg Bay.