

Appropriate Assessment of proposed Aquaculture Activity in Cleggan Bay for site application T09/524A (AP1/2023) – consideration of Special Areas of Conservation and Special Protection Areas

1.1 Brief description of Project or Plan

License application to cultivate blue mussels on longlines on the sub-tidal foreshore on site T09-524A on the north shore of Cleggan Bay, Co. Galway. Mussels are cultured using longlines. A long-line is supported by a series of small floats joined by a cable or chain and anchored at the bottom on both ends. Mussel spat (seed) is collected on ropes or strings (droppers), which are suspended on the line. From each of the lines there are a number of dropper lines (up to 5m in length). The depth of the droppers, which is directly related to the quantity of mussels being cultured, is dependent upon a number of factors including water depth, the floatation provided and the carrying capacity of the system.

This site was previously screened for Appropriate Assessment by the Marine Institute in November 2021 on behalf of the Department of Food, Agriculture and the Marine. A review by ALAB found some gaps in that assessment resulting in a new screening process being undertaken here.

There are five existing licenced sites for aquaculture and one application within West Connacht Coast SAC:

1. T10/058A – finfish – licenced (Clare Island).
2. T09/143A – finfish – licenced (Killary).
3. T09/132A – finfish – licenced (Ballinakill).
4. T09/434A – longline seaweed- licenced (Cleggan Bay).
5. T09/492A – longline mussels – licenced (Ballinakill); and
6. T09/524A – longline mussels – application (Cleggan Bay).

The MI AA report referenced above assessed the potential impact of the three licences/licence applications listed as numbers 4-6 above without considering potential in-combination impacts of licences 1-3.

This screening report assesses the licence application as listed at number 6 above, T09/524A and potential in-combination impacts of all other licenced sites in the bay, listed as 1-5 above, along with other relevant potential impacts.

1.2 Brief description of Natura 2000 site

West Connacht Coast Special Area of Conservation (SAC) (Site code: 002998, NPWS, 2015) consists of two large bodies of marine waters off the coasts of Mayo and Galway (see Figure 1). The site is a Special Area of Conservation (SAC) for the Annex II species, the Bottle-nosed Dolphin (*Tursiops truncatus*) [1349]. For more detail see NPWS (2015) Conservation Objectives: West Connacht Coast SAC 002998. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.



Figure 1: West Connacht Coast SAC (002998), taken from MI AA report, 2021

1.3 Relevant prescribed bodies consulted:

See DAFM file submitted to ALAB on 21 February 2023 and Marine Institute AA report of November 2021 entitled "Report Supporting Appropriate Assessment of Suspended Aquaculture in West Connacht Coast SAC (Site code: 002998)" ("MI AA report")

1.4 Response to consultation:

See DAFM file submitted to ALAB on 21 February 2023 and MI AA report

1.5 Identification of relevant Natura 2000 sites using Source-Pathway-Receptor model and compilation of information on Qualifying Interests.

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from proposed development (km)	Connections (Source- Pathway- Receptor)	Considered further in screening Y/N
SAC sites				
<p>West Connacht Coast SAC [002998]</p> <p>NPWS (2015) Conservation Objectives: West Connacht Coast SAC [002998] Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht</p>	<p><i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]</p>	<p>0km – site is within SAC</p>	<p>Site development and use within SAC</p>	<p>Y</p>
<p>Slyne Head Peninsula SAC [002074]</p> <p>NPWS (2015) Conservation Objectives: Slyne Head Peninsula SAC 002074. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht</p>	<p><i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]</p> <p>See NPWS (2015) Conservation Objectives: Slyne Head Peninsula SAC 002074. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht for list of other QI species and habitats – all with no Source-Pathway-Receptor link to proposed development</p>	<p>Approx. 17.5 km straight line distance at nearest point</p>	<p>Within foraging range of QI species</p>	<p>Y</p>

<p>Slyne Head Islands SAC [00328]</p> <p>NPWS (2015) Conservation Objectives: Slyne Head Islands SAC [00328] Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht</p>	<p><i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]</p> <p><i>Halichoerus grypus</i> (Grey Seal) [1364]</p> <p>Reefs [1170]</p>	<p>Approx. 15 km straight line distance at nearest point</p>	<p>Within foraging range of both QI species</p>	<p>Y</p>
<p>Inishbofin and Inishshark SAC [000278]</p> <p>NPWS (2015) Conservation Objectives: Inishbofin and Inishshark SAC 000278. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht</p>	<p><i>Halichoerus grypus</i> (Grey Seal) [1364]</p> <p>See NPWS (2015) Conservation Objectives: Inishbofin and Inishshark SAC 000278. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht for list of other QI species and habitats – all with no Source-Pathway-Receptor link to proposed development</p>	<p>Approx. 6 km straight line distance at nearest point</p>	<p>Within foraging range of QI species</p>	<p>Y</p>
<p>The Twelve Bens/Garraun Complex SAC [002031]</p> <p>NPWS (2017) Conservation Objectives: The Twelve Bens/Garraun Complex SAC 002031. Version 1. National Parks and Wildlife Service, Department of</p>	<p><i>Salmo salar</i> (Salmon) [1106]</p> <p><i>Lutra lutra</i> (Otter) [1355]</p> <p>See NPWS (2017) Conservation Objectives: The Twelve Bens/Garraun Complex SAC 002031. Version 1. National Parks and Wildlife Service, Department of</p>	<p>Approx. 11 km straight line distance at nearest point</p>	<p>Within foraging and migration range of QI species</p>	<p>Y</p>

Arts, Heritage, Regional, Rural and Gaeltacht Affairs.	Arts, Heritage, Regional, Rural and Gaeltacht Affairs for a list of other QI species and habitats – all with no Source-Pathway-Receptor link to proposed development			
Other nearby SAC sites	See Table 2-2 of the MI AA report for details	See Table 2-2 of the MI AA report for details	See Table 2-2 of the MI AA report for details	N
SPA sites				
High Island, Inishshark and Davillaun SPA [004144] NPWS (2023) Conservation Objectives: High Island, Inishshark and Davillaun SPA [004144] Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage	Fulmar (<i>Fulmarus glacialis</i>) [A009] [A045] Arctic Tern (<i>Sterna paradisaea</i>) [A194] Barnacle Goose (<i>Branta leucopsis</i>) [A045]	Approx. 6 km straight line distance at nearest point	Within possible foraging range of SCI species	N
Clare Island SPA [004136] NPWS (2023) Conservation Objectives: Clare Island SPA [004136] Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage	Fulmar (<i>Fulmarus glacialis</i>) [A009] Shag (<i>Phalacrocorax aristotelis</i>) [A018] Common Gull (<i>Larus canus</i>) [A182] Kittiwake (<i>Rissa tridactyla</i>) [A188] Guillemot (<i>Uria aalge</i>) [A199] Razorbill (<i>Alca torda</i>) [A200]	Approx. 23 km straight line distance at nearest point	Within possible foraging range of some SCI species	Y

	Chough (<i>Pyrhocorax pyrrhocorax</i>) [A346]			
Lough Carra SPA [004051] NPWS (2023) Conservation Objectives: Lough Carra SPA [004051] Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage	A182 Common Gull (<i>Larus canus</i>)	Approx. 40 km straight line distance at nearest point	Within possible foraging range of SCI species	Y
Lough Mask SPA [004062] NPWS (2023) Conservation Objectives: Lough Mask SPA [004062] Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage	Tufted Duck (<i>Aythya fuligula</i>) [A061] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Common Gull (<i>Larus canus</i>) [A182] Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183] Common Tern (<i>Sterna hirundo</i>) [A193] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395] Wetland and Waterbirds [A999]	Approx. 34 km straight line distance at nearest point	Within possible foraging range of SCI species	Y
Connemara Bog Complex [004181] NPWS (2023) Conservation Objectives: Connemara Bog Complex [004181] Version 1.	Cormorant (<i>Phalacrocorax carbo</i>) [A017] Merlin (<i>Falco columbarius</i>) [A098] Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Approx. 14 km straight line distance at nearest point	Within possible foraging range of SCI species	Y

National Parks and Wildlife Service, Department of Housing, Local Government and Heritage	Common Gull (<i>Larus canus</i>) [A182]			
Lough Corrib SPA [004042] NPWS (2023) Conservation Objectives: Lough Corrib SPA 004042. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage	See NPWS (2023) Conservation Objectives: Lough Corrib SPA 004042. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage for list of SCI species.	Approx. 33 km straight line distance at nearest point	None identified	N
Bills Rock SPA [004177] NPWS (2023) Conservation Objectives: Bills Rock SPA [004177] Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage	A014 Storm Petrel (<i>Hydrobates pelagicus</i>) A204 Puffin (<i>Fratercula arctica</i>)	Approx. 34 km straight line distance at nearest point	None identified	N
Cross Lough (Killadoon) SPA [004212] NPWS (2023) Conservation Objectives: Cross Lough (Killadoon) SPA [004212] Version 1. National Parks and Wildlife Service, Department of Housing, Local	A191 Sandwich Tern (<i>Sterna sandvicensis</i>)	Approx. 25 km straight line distance at nearest point	None identified	N

Government and Heritage				
Other nearby SPA sites and SCI species	See Table 2-3 of the MI AA report for details	See Table 2-3 of the MI AA report for details	See Table 2-3 of the MI AA report for details	N

<p>1.6 Describe the individual elements of the project (either alone or in combination with other plans and projects) likely to give rise to impacts on the Natura 2000 site</p>	<p>Mussels are cultured using longlines, these are supported by a series of small floats joined by a cable or chain and anchored at the bottom on both ends. Mussel spat (seed) is collected on ropes or strings (droppers), which are suspended on the line. From each of the lines there are a number of dropper lines (up to 5m in length). The depth of the droppers, which is directly related to the quantity of mussels being cultured, is dependent upon a number of factors including water depth, the floatation provided and the carrying capacity of the system. There are currently one licenced mussel site within the SAC and one application site, T09/524A, the focus of this assessment.</p> <p>Finfish (salmon) are contained in floating cage structures arranged in a grid system which are secured to the seabed via ropes attached to anchors. The fish are put into the cages as smolts, where they are fed, and following a period of usually 18-24 months are harvested. There are currently three licenced salmon culture sites within the SAC.</p> <p>Seaweed culture is currently licenced in Cleggan Bay and involves the natural seeding of ropes with young native seaweed gametophytes which then grow through to harvest. Culture is by means of suspended culture with ropes hanging from floats deployed in subtidal areas, similar to the structures used for mussel culture. Depending on the species, the seaweed will be left to grow for months to a year before it will be harvested manually. One site is currently used for this culture practice within the SAC (T09/434A) and is subject to a renewal application.</p> <p>Fishing in the West Connacht Coast SAC is subject to a Fisheries Natura Assessment which has not yet been concluded, according to information on the online Fishing Net portal. Fishing in the SAC historically consists of both offshore and inshore fishing efforts of various methods (atlas.marine.ie).</p> <p>In relation to SACs listed in 1.5 above, there are no overlaps with protected habitats. Annex II species to be considered further in terms of their conservation objectives – to maintain favourable conservation conditions are:</p> <p>West Connacht Coast SAC - 002998</p> <ul style="list-style-type: none"> • Common Bottlenose Dolphin, <i>Tursiops truncatus</i> [1349] <p>Slyne Head Peninsula SAC - 002074</p> <ul style="list-style-type: none"> • Common Bottlenose Dolphin, <i>Tursiops truncatus</i> [1349] <p>Slyne Head Islands SAC - 000328</p> <ul style="list-style-type: none"> • Common Bottlenose Dolphin, <i>Tursiops truncatus</i> [1349] • Grey Seal, <i>Halichoerus grypus</i> [1364] <p><i>Inishbofin and Inishshark SAC [000278]</i></p>
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	<ul style="list-style-type: none"> • Grey Seal, <i>Halichoerus grypus</i> [1364] <p>The Twelve Bens/Garraun Complex SAC - 002031</p> <ul style="list-style-type: none"> • Atlantic salmon, <i>Salmo salar</i> [1106] • Otter <i>Lutra lutra</i> [1355] <p>For the majority of SCI species in the SPA's listed in Section 1.5 above, there is no potential link in terms of either range or feeding habits to the proposed development in Cleggan Bay. SCI species from the listed SPA's that have the potential to range as far as Cleggan Bay and are known to feed in in-shore waters and bays are:</p> <p>Clare Island SPA - 004136</p> <ul style="list-style-type: none"> • Common Gull <p>Connemara Bog complex SPA - 004181</p> <ul style="list-style-type: none"> • Cormorant • Common gull <p>Lough Carra SPA – 004051</p> <ul style="list-style-type: none"> • Common gull <p>Lough Mask – 004062</p> <ul style="list-style-type: none"> • Lesser Black-backed gull
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1.7 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:

<ul style="list-style-type: none"> • Size and scale 	<p>For <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] from West Connacht Coast SAC [002998], Slyne Head Islands SAC [000328] and Slyne Head Peninsula SAC [002074] the conservation objective for all SACs is to maintain favourable conservation condition.</p> <p>West Connacht Coast SAC [002998] supports a resident population of the Bottlenose Dolphin (<i>Tursiops truncatus</i>). Within this large SAC (approx. 65,000ha), it is estimated, on the basis of surveys conducted during the summers of 2013 and 2014, that there are between 140-296 dolphins resident in the SAC. Bottlenose dolphins from Slyne Head Islands SAC [00328] and Slyne Head Peninsula SAC [002074] are likely to migrate into the West Connacht Coast SAC. It is possible these individuals may interact with shellfish and macro-algal aquaculture operations if they forage inshore. Bottlenose dolphin individuals from the Slyne Head Island SAC and Slyne Head Peninsula SAC are also likely to be found within the West Connemara Coast SAC.</p> <p>There is potential that the Bottlenose Dolphin may occur within the existing and proposed aquaculture sites and thereby, interact with activities. This interaction is likely if they forage inshore close to the structures. The MI AA report notes that the overall footprint of total specified suspended aquaculture operations (mussel and seaweed) is small (i.e., approx. 30ha) and represents a very small proportion of the Dolphin habitat in the SAC (i.e., 0.05%). Given the relatively small footprint of all suspended aquaculture locations, the likelihood of interactions is very small. In addition, the locations of the existing and proposed structures are relatively close to the shorelines, and as such they do not present a barrier to movement of this species. These structures are also such that echolocating species, such as dolphin, can easily avoid the structures/sites (Watson-Capps and Mann, 2005; Heinrich, 2006;</p>
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Ribeiro et al., 2007), greatly reducing any entanglement risk. It is also important to note that there are no energy sources (e.g., light, noise etc.) likely to result from activities at any of the aquaculture sites within the SAC that are of a type to pose a risk to this dolphin species.

Some research has indicated that dolphin species, and marine mammals generally, may be attracted to finfish installations, presumably as these installations act as attractants to wild fish (Callier et al., 2017). This may potentially have implications for increased entanglement risk to cetaceans but the research to date does not bear this out (Callier et al., 2017).

As seaweed and mussel installations do not act as such strong wild fish attractants, they are not considered such a strong attractant for marine mammal species. Their structures also pose a very low entanglement risk to cetaceans, as discussed above.

Potential in-combination impacts relating to the proposed development relate to the neighbouring seaweed farm, fishing and other aquaculture activities in the SAC. However, as **the proposed development has been deemed not to be of risk to the QI species**, it follows that it will not act in combination with other activities considered here to increase their risk and **no pathways which indicate same have been identified**.

For *Halichoerus grypus* (Grey Seal) [1364] from Inishbofin and Inishshark SAC [000278] and from Slyne Head Islands SAC [00328] the conservation objective is also to maintain favourable conservation condition.

Grey Seal from both SACs may migrate into the West Connacht Coast SAC. It is possible that those individuals (seals) may interact with the shellfish and macro-algal aquaculture operations if they forage inshore. Given the distance to Inishbofin and Inishshark SAC, it is unlikely that the existing or proposed activities will negatively impact on those conservation targets relating to haul-out locations. In addition, the proposed activities do not result in those pressures considered to be threats to the species (NPWS 2019), (i.e., Geotechnical Surveying and Marine fish and shellfish harvesting using tangle nets) The structures associated with suspended aquaculture may act as fish attraction devices to an extent and thus, may prove beneficial to the seal. Entanglement is not considered a risk for grey seals at these type of suspended aquaculture installations **it is unlikely that this species will negatively interact with the existing and proposed suspended aquaculture activities**.

Potential in-combination impacts relate to the neighbouring seaweed farm, fishing and other aquaculture activities in the SAC. However, as **the proposed development has been deemed not to be of risk to the QI species**, it follows that it will not act in combination with other activities to increase their risk and **no pathways which indicate same have been identified**.

Atlantic salmon, *Salmo salar* [1106] could migrate through or near the area proposed for development, however, as the in-water structures consist of mussel growing lines, mooring lines and mooring weights, they will not cause an obstruction to the migration of the fish. There are no increased disease or

	<p>predation risks for the salmon linked to the proposed development at this site. Migrating salmon smolts and returning adults may find temporary cover in these kinds of structures although the size of the farm is relatively small in terms of the size of the Bay so any potential positive impact would also be small.</p> <p>Potential in-combination relate to the neighbouring seaweed farm, fishing and other aquaculture activities in the SAC. However, as the proposed development has been deemed not to be of risk to the QI species, it follows that it will not act in combination with other activities to increase their risk and no pathways which indicate same have been identified in this screening.</p> <p>Otter <i>Lutra lutra</i> [1355] will likely forage in the Cleggan Bay area. Given the location adjacent to coastline and the relatively dispersed nature of the ‘dropper’ ropes at the sites, otter will be able to move freely among the structures. They do not present a barrier to movement. In the case of disturbance, activities at the site occur during daylight hours and will not overlap with the crepuscular foraging of otter. Given these observations it is concluded there are no significant effects posed by the suspended aquaculture on salmon and otter in The Twelve Bens/Garraun Complex SAC.</p> <p>Potential in-combination impacts relate to the neighbouring seaweed farm, fishing and other aquaculture activities in the SAC. However, as the proposed development has been deemed not to be of risk to the QI species, it follows that it will not act in combination with other activities to increase their risk and no pathways which indicate same have been identified in this screening.</p> <p>SCI Species – Birds</p> <p>The size and scale of the proposed development is unlikely to have any negative impacts on any of the SCI species listed in 1.6 above. Potential impacts on these species are discussed further in the Sections below.</p> <p>Potential in-combination impacts relate to the neighbouring seaweed farm, fishing and other aquaculture activities in the SAC. However, as the proposed development has been deemed not to be of risk to the SCI species (as described in Sections below), it follows that it will not act in combination with other activities to increase their risk and no pathways which indicate same have been identified in this screening.</p>
<ul style="list-style-type: none"> • Land-take 	<p>Not relevant here</p>
<ul style="list-style-type: none"> • Distance from the Natura 2000 site or key features of the site 	<p>See above – Section 1.5 and “Size and Scale” in Section 1.7 There is considered to be the possibility of overlap in foraging and migration areas for the species identified.</p>

<ul style="list-style-type: none"> • Resource requirements 	<p>Cultured bivalves (mussels and 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 pseudofaeces, which is excreted into the water column. Typically, the faecal and pseudofaecal 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 build-up of excess organic matter beyond the footprint of the sites is not considered likely.</p> <p>The proposed bivalve shellfish production activities will not use any resources, or are predicted to have a negative impact on any resources, required by the qualifying interests within the Natura 2000 site or nearby Natura 2000 sites under consideration.</p>
<ul style="list-style-type: none"> • Emissions (disposal to land, water or air): 	<p>The only emissions arising from the mussel production are faeces and pseudofaeces, which are excreted into the water column. Typically, the faecal and pseudofaecal pellets will fall to the sea floor and there is no direct or indirect impact on the qualifying interests within the Natura 2000 sites under consideration.</p> <p>Activities associated with the mussel culture would include regular boat trips to the lines to seed, maintain, thin lines and/or harvest the mussels. These site visits would necessitate the use of a vessel which would increase slightly the level of noise in the system. As the access route runs parallel to an existing ferry route, this would be an insignificant addition. The risk of pollution from exhaust or a spill would be increased by virtue of the vessels operating in the system. This same risk would apply to recreational boats, ferries and wild fishery interests operating in the SAC. Any accidental oil spills / pollution events associated with mussel production activities within Cleggan Bay are likely to be minor in nature, have a localised impact only and will not have any direct or indirect impact on the qualifying interests of the Natura 2000 sites it is in or near to.</p>
<ul style="list-style-type: none"> • Excavation requirements 	<p>There are no excavation or similar activities associated with the aquaculture activity</p>
<ul style="list-style-type: none"> • Transportation requirements 	<p>Access routes to the aquaculture site spatially overlap with the West Connacht SAC, however, the access route is less than 900m long and is in the vicinity of a regular ferry route to Inishbofin. There is no risk of significant increased disturbance to any of the species under consideration from a small increase in boat traffic in the Cleggan Bay area. The produced aquaculture products would be transported offsite by lorry using the existing national road network with no impact on the nearby Natura 2000 sites.</p>
<ul style="list-style-type: none"> • Duration of construction, operation, decommissioning etc 	<p>During set up and decommissioning there will be some temporary non-significant small scale disturbance due to increased boat activity and the deployment of mooring weights, buoys and lines. This is not of a level to be considered significant to any of the qualifying interests under consideration.</p>

<ul style="list-style-type: none"> • Other 	None
1.8 Describe any likely changes to the site arising as a result of:	
<ul style="list-style-type: none"> • reduction of habitat area 	<p>There is negligible habitat area loss within the Natura 2000 site arising from the mussel production activities that has been considered under “Size and Scale” in Section 1.7 above and is not considered to have a negative impact on any of the qualifying interests under consideration.</p> <p>As discussed in Section 1.7 above, entanglement is not considered a risk to bottlenose dolphins or grey seals and the proposed development and existing development in Cleggan Bay will not impede migration or foraging.</p> <p>Mussel longlines have actually been shown in studies to provide extra perching sites for gulls, shags and cormorants, causing a potential positive impact</p>
<ul style="list-style-type: none"> • disturbance to key species 	<p>There is no evidence in the literature to suggest that rope mussel culture will negatively impact bottlenose dolphins, grey seals, salmon, otter, cormorants, common gulls or lesser black-backed gulls.</p> <p>The studies of Roycroft et al (2006) on mussel farm and bird interactions in a bay in SW Ireland found neutral/positive interactions for both cormorants and gull species from mussel farming and Section 1.7 above further outlines potential neutral/positive impacts for Annex II species.</p>
<ul style="list-style-type: none"> • habitat or species fragmentation 	There is no protected habitat or species fragmentation within the Natura 2000 sites arising from the mussel production activities.
<ul style="list-style-type: none"> • reduction in species density 	There is no reduction in species density within the Natura 2000 sites arising from the mussel production activities
<ul style="list-style-type: none"> • changes in key indicators of conservation value (water quality etc) 	There are no changes in key indicators of conservation value within the Natura 2000 sites arising from the mussel production activities.
<ul style="list-style-type: none"> • climate change 	Given the nature and scale of the mussel production activities the contribution to climate change is insignificant. Aquaculture production can generally be considered a low-carbon emitting activity.
1.9 Describe any likely impacts on the Natura 2000 site as a whole in terms of:	
<ul style="list-style-type: none"> • interference with the key relationships that define the structure of the site 	The activities associated with the proposed production of mussels in Cleggan Bay will not interfere with the key relationships that define the structure of the West Connacht Coast SAC, nearby SAC sites or nearby SPA sites
<ul style="list-style-type: none"> • interference with key relationships that define the 	As there are no potential pathways for significant interaction with activities effects on the Qualifying Interests in terms of Annex II species can be excluded. While other activities in the SAC may pose a risk to the QI species, as the

<p>function of the site</p>	<p>proposed development is not a risk to the QI species, there are no risks of negative impacts, either alone or in-combination with other activities listed in the SAC.</p> <p>In relation to SCI species under consideration, current knowledge indicates that these species have a positive/neutral reaction to mussel longlines, using the floats as perches and feeding from the epibenthos growing on the ropes and floats.</p> <p>Consequently, it is concluded that the culture of mussels using longlines proposed for Cleggan Bay does not pose significant risk to Annex II and the SCI species considered to their key relationships, either alone or in combination with any other activities and as such does not require a full appropriate assessment.</p>
<p>1.10 Provide indicators of significance as a result of the identification of effects set out above in terms of:</p>	
<ul style="list-style-type: none"> • loss 	<p>None identified</p>
<ul style="list-style-type: none"> • fragmentation 	<p>None identified</p>
<ul style="list-style-type: none"> • disruption 	<p>None identified</p>
<ul style="list-style-type: none"> • disturbance 	<p>None identified</p>
<ul style="list-style-type: none"> • change to key elements of the site (e.g., water quality etc) 	<p>None identified</p>
<p>1.11 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.</p>	<p>None identified;</p> <p>The proposed development is considered not to pose a risk to the favourable conservation condition of Bottlenose Dolphin in the West Connacht Coast SAC and for individuals from nearby SACs.</p> <p>The proposed development is considered not to pose a risk to the favourable conservation condition of Grey Seal in the Inishbofin and Inishshark SAC and from Slyne Head Islands SAC.</p> <p>The proposed development is considered not to pose a risk to the favourable conservation condition of Atlantic Salmon in the Twelve Bens/Garraun Complex SAC.</p> <p>The proposed development is considered not to pose a risk to the favourable conservation condition of Otter in the Twelve Bens/ Garraun Complex SAC.</p> <p>The proposed development is considered not to pose a negative risk to the continuing favourable conservation condition of SCI species in the SPAs identified.</p>

	Consequently, it is concluded that the culture of mussels using longlines at Site T09/524A proposed for Cleggan Bay does not pose significant risk to any of the Annex II or the SCI species considered from any of the natura 2000 sites listed in Section 1.5, either alone or in combination with any other activities, and as such does not require a full appropriate assessment.
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Finding of No Significant Effects	
Details of project or plan	
2.1 Name of Project or Plan	Appropriate Assessment of proposed Aquaculture Activity in Cleggan Bay for site application T09/524A (AP1/2023)
2.2 Name and location of Natura 2000 site	Cleggan Bay is within the West Connemara Coast SAC and the other SACs and SPAs considered for interactions with the proposed development are listed and referenced in Section 1.5 above.
2.3 Description of Project or Plan	Licence application for rope mussel culture in Cleggan Bay
2.4 Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No
2.5 Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)?	No
Assessment of significant effects	
2.6 Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site	No significant effects detected on the West Connemara Coast SAC, nearby SAC sites and Annex II species or nearby SPA sites and SCI species due to the planned cultivation of mussel in Cleggan Bay for site application T09/524A (AP1/2023). See Appropriate Assessment Screening Matrix above for further details.
2.8 Explain why these effects are not considered significant	<p>While the activity takes place within a Natura 2000 site, emissions of faeces and pseudofaeces are localised and impact the seabed beneath the longlines & rafts and have no direct or indirect effect on the qualifying interests of this or adjoining Natura sites as assessed in the Appropriate Assessment Screening Matrix above. There will be no reduction or fragmentation of any protected habitats within the sites or disruption or disturbance of key species. The integrity of the sites will not be impacted.</p> <p>Previous studies have detected positive/neutral impacts on the SCI species assessed from longline mussel culture and ruled out negative impacts on bottlenose dolphins.</p> <p>On the basis of the above it is considered that there will be no significant effects posed by the culture of shellfish on the Annex II or SCI species</p>

	<p>listed in 1.5 above or any of the other qualifying interests of adjoining Natura 2000 sites assessed.</p> <p>It is concluded that the culture of mussels using longlines at Site T09/524A proposed for Cleggan Bay does not pose significant risk to any of the Annex II or the SCI species considered from any of the Natura 2000 sites listed in Section 1.5, either alone or in combination with any other activities, and as such does not require a full appropriate assessment.</p>
<p>Data collected to carry out the assessment</p>	
<p>2.9 Who carried out the assessment?</p>	<p>Dr Ciar O’Toole, Technical Advisor for the Aquaculture Licences Appeals Board on 26 September 2023</p>
<p>2.10 Sources of data</p>	<p>Callier M, Byron C, Bengtson D, Cranford P, Cross S, Focken U, Jansen H, Kamermans P, Kiessling A, Landry T., O’Beirn F., Petersson E., Rheault, RB., Strand, O., Sundell, K., Svasand, T., Wikfors, GH., McKindsey, CW. (2017) Attraction and repulsion of mobile wild organisms to finfish and shellfish aquaculture: a review. Rev Aquac 0:1–26</p> <p>Heinrich, S. (2006) Ecology of Chilean dolphins and Peale’s dolphins at Isla Chiloe, southern Chile (PhD dissertation). University of St Andrews, 239 p.</p> <p>Marine Institute (2021) Report Supporting Appropriate Assessment of Suspended Aquaculture in West Connacht Coast SAC (Site code: 002998).</p> <p>NPWS (2023) Conservation objectives for Bills Rocks SPA [004177]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Clare Island SPA [004136]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Cross Lough (Killadoon) SPA [004212]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Illaunnaon SPA [004221]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2021) Conservation objectives for High Island, Inishshark and Davillaun SPA [004144]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Cruagh Island SPA [004170]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Connemara Bog Complex SPA [004181]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Lough Carra SPA [004051]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Lough Mask SPA [004062]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p>

	<p>NPWS (2023) Conservation objectives for Lough Corrib SPA [004042]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Slyne Head to Ardmore Point Islands SPA [004159]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2023) Conservation objectives for Inishbofin, Omev Island and Turbot Island SPA [004231]. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p> <p>NPWS (2017) Conservation Objectives: The Twelve Bens/Garraun Complex SAC 002031. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p> <p>NPWS (2015) Conservation Objectives: West Connacht Coast SAC 002998. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p> <p>NPWS (2015) Conservation Objectives: Slyne Head Peninsula SAC 002074. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p> <p>NPWS (2012) Conservation Objectives: Slyne Head Islands SAC 000328. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p> <p>NPWS (2015) Conservation Objectives: Inishbofin and Inishshark SAC 000278. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p> <p>OPR (2021) Appropriate Assessment Screening for Development Management. Practice Note PN01. Office of the Planning Regulator. March 2021. https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf</p> <p>Roycroft, Daphne; Kelly, Thomas; Lewis, Lesley (2006) Behavioural interactions of seabirds with suspended mussel longlines Aquaculture International, Volume 15 (1) – Nov 8, 200</p> <p>Thaxter, Chris B.; Lascelles, Ben; Sugar, Kate; Cook, Aonghais S.C.P.; Roos, Staffan; Bolton M., Langston R H W, Burton N H K. (2012) Seabird foraging ranges as a preliminary tool for identifying candidate Marine Protected Areas. Biological Conservation, Volume 156: 53-61 – Nov 1, 2012.</p> <p>Ribeiro S, Viddi FA, Cordeiro JL, Freitas TRO (2007) Fine-scale habitat selection of Chilean dolphins (<i>Cephalorhynchus eutropia</i>): interactions with aquaculture activities in southern Chiloe Island, Chile. Journal of the Marine Biological Association of the United Kingdom 87: 119–128.</p> <p>Watson-Capps JJ, Mann J (2005) The effects of aquaculture on bottlenose dolphin (<i>Tursiops</i> sp.) ranging in Shark Bay, Western Australia. Biological Conservation 124: 519–526.</p> <p>Special Protection Areas (SPA) National Parks & Wildlife Service (npws.ie) gov.ie - Aquaculture & Foreshore Management (www.gov.ie)</p>
2.11 Level of assessment completed	Desk study

2.12 Where can the full results of the assessment be accessed and viewed?

See 2.9 for references