

Screening Matrix for Aquaculture activities in outer Bantry Bay, Co. Cork	
Brief description of the project or plan	There are currently 34 licenced aquaculture operations in outer Bantry Bay with a further 2 applications. The following species are cultured in outer Bantry Bay (number of licences in parenthesis) - oysters (7), mussels (13), urchins and mussels (1), seaweed (6) and finfish (7). Additionally, applications are being considered for the following species - mussels (2). It should be noted that of those sites that are currently considered licenced 4 (2 mussel; 1 salmon and 2 Seaweed) are currently under appeal to the Aquaculture Licence Appeals Board ¹ . The locations of the sites (and licence status) are shown in Figure 1.
Brief description of the Natura 2000 sites	<p>Bantry Bay is approximately 39km long and ranges in width from 3km at the eastern end to 22km at the mouth. The area of outer Bantry Bay in question is not located within any Natura 2000 sites. However, - it is bordered by two SACs, the Sheep's Head cSAC and the Glengarriff Harbour and Woodland SAC and two SPAs, Beara Peninsula SPA and Sheep's Head to Toe Head SPA (see Figure 2).</p> <p>Adjacent Sites:</p> <p>Sheep's Head SAC (Site code: 000102) is located on the southern approaches to Bantry Bay, extends to Three Castle Head and Mizen Head to the south. It is a narrow ridge of sandstone which encloses a number of rectangular basins filled either by peat bogs or lakes. The main value of the area is the presence of the terrestrial features, dry heath and wet heath, habitats listed on Annex II of the EU Habitats Directive. In addition, Annex I Birds Directive species, the Chough, and an Annex II species under the Habitats Directive, the Kerry Slug, are found in the area.</p> <p>The Glengarriff Harbour and Woodland SAC (Site Code 00090) consists of a glacial valley opening out into a sheltered bay with rocky islets. The site supports populations of the Kerry Slug (<i>Geomalacus maculosus</i>), the freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) as well as the largest colony of Common Seals (<i>Phoca vitulina</i>) in the south-west of Ireland, all of which are listed on Annex II of the Habitats Directive.</p> <p>Beara Peninsula SPA (Site Code: 004155) is a coastal site parts of which border the northern shore of Bantry Bay. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Chough and Fulmar. In addition the presence of Peregrine falcon is of particular significance.</p> <p>Sheep's Head to Toe Head SPA (Site Code: 004156) large site situated on the south-west coast of Co. Cork. Adjacent</p>

¹ www.alab.ie

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	<p>Bantry Bay the site includes sea cliffs, the land adjacent to the cliff edge and is one of the most important sites in the country for Chough. The presence of Peregrine falcon is of particular significance.</p> <p>Caha Mountains SAC (Site Code: 00093) Is an inland SAC site with a number of freshwater aquatic, terrestrial and plant and animal species of conservation interest.</p> <p>Glanmore Bog SAC (Site Code: 01879). Is an inland SAC with a number of aquatic freshwater habitats and species of conservation interest, including the pearl mussel (<i>Margaritifera margaritifera</i>) in the Owenagappul system.</p>
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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.	<p>Oysters, seaweed, mussels, urchins and finfish are cultured in Bantry Bay. In addition, there are applications to culture mussels.</p> <p>Oyster culture is carried out using bags and trestles in the intertidal zone. The trestles are arranged in rows along the shore to maximise water movement over the oysters in the bags.</p> <p>Urchins are cultured in tanks on land or in cage structures in the lower intertidal and subtidal areas. They are contained at all times.</p> <p>The mussels are cultured using longlines. A long-line supported by a series of small floats joined by a cable or chain and anchored at the bottom on both ends is employed. Mussel spat (seed) is collected on ropes or strings (droppers) 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 dependant upon a number of factors including water depth, the floatation provided and the carrying capacity of the system.</p> <p>Finfish are contained in floating cage structures arranged in a grid system, which are secured to the seabed via ropes attached to anchors. Finfish are imputed into the cages as smolts and following a period of 18-24 months are harvested.</p> <p>Seaweed is cultured using longlines supported by floating structures similar to those used for mussel culture.</p>

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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 or indirect impacts from the culture operations on any of the SACs or SPAs adjacent to outer Bantry Bay.
Distance from the Natura 2000 site or key features of the site:	The activities in question occur within outer Bantry Bay the mouth of which is adjacent to the Sheeps Head cSAC, the Glengarriff Harbour and Woodland SAC, the Beara Peninsula SPA and Sheep's Head to Toe Head SPA. There are two inland SACs (Caha Mountains SAC and Glanmore Bog SAC) the conservation features of which, do not come into contact with Bantry Bay or likely interact with any of the aquaculture activities found therein (see Figure 2).
Resource requirements (water abstraction etc.):	<p>Cultured bivalves (oysters, clams, scallops and mussels) 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.</p> <p>Urchin culture is carried out in contained systems and rely on the input of feed (usually seaweed sourced locally). The production of these shellfish species does not use any resources required by the qualifying features within the Natura 2000 sites</p> <p>Finfish culture differs from shellfish culture in that there is an input of feed into the system and as a consequence a net input of organic matter to the system. This material will be found in the system in the form of waste feed (on the seafloor), solid waste (faeces), waste as a consequence of net-cleaning all of which usually accumulates on the seafloor and dissolved material (predominantly fractions rich in nitrogen). For the most part, the majority of organic material builds up on the seabed generally in and around the footprint of the salmon cages with a 'halo' effect evident in areas where dispersion occurs driven by local hydrographic conditions. This is typically referred to as <i>near-field</i> effects. Similar to shellfish, the quantity of material that might accumulate on the seabed will be a function of the quantity of fish held in cages, the stage of culture, the health of the fish (unhealthy fish will generally eat less), husbandry practices (are the fish fed too much</p>

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	<p>too quickly?), the physical characteristic of the solid particles and surrounding hydrographic conditions. The production of finfish does not use any resources required by the qualifying features within the Natura 2000 sites</p> <p>The culture of seaweed is reliant upon ambient nutrient levels in the water column and solar illumination. The production of seaweed does not use any resources required by the qualifying features of adjacent Natura sites.</p>
Emissions (disposal to land, water or air):	There will be no direct or indirect effects on the adjacent Natura 2000 site.
Excavation requirements:	There are no excavation or similar activities associated with the aquaculture activity
Transportation requirements:	The produced aquaculture products are transported offsite by lorry using the existing national road network with no 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 shellfish production activities.
Disturbance to key species:	There is no evidence in the scientific literature to suggest that aquaculture activities impact on seal species (Feature of Glengarrif Harbour and Woodlands SAC) and the bird species listed in the SPAs, i.e., Chough, Fulmar and Peregrine. Furthermore, any impacts on habitats are likely to be local and not extend beyond the footprint of the activities. Therefore they are not likely to impact on any of the adjacent SACs.
Habitat or species fragmentation:	There is no habitat or species fragmentation within the Natura 2000 sites arising from the aquaculture production activities.
Reduction in species density:	There is no reduction in species density within the Natura 2000 sites arising from the shellfish 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 shellfish production activities.
Climate change:	Given the nature and scale of the aquaculture production activities the contribution to climate change is considered insignificant.

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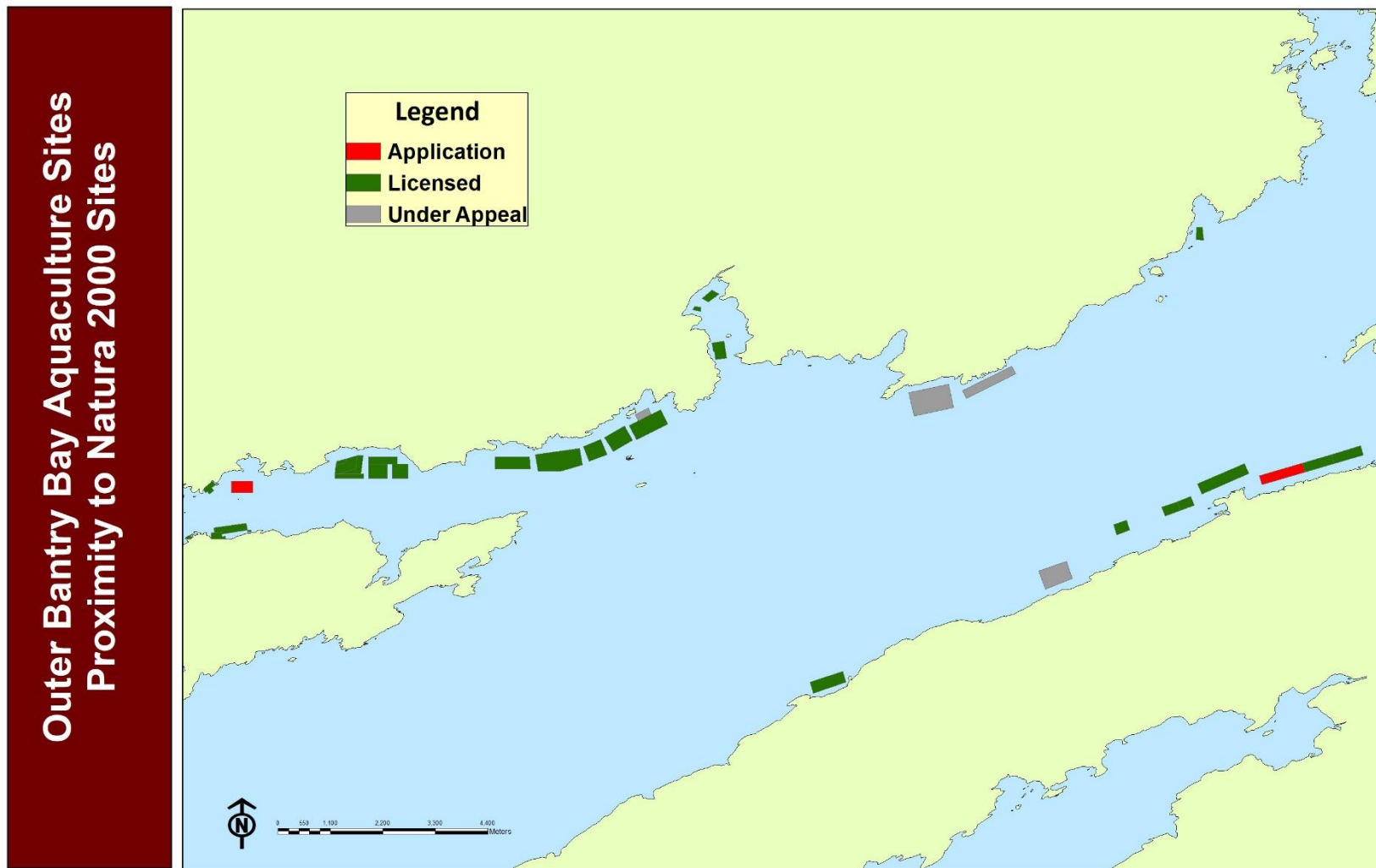
Describe any likely impacts on the Natura 2000 site as a whole in term of;	
Interference with the key relationships that define the structure of the site:	None of the activities associated with the shellfish and finfish production in outer Bantry Bay will interfere with the key relationships that define the structure of the adjacent Natura 2000 sites.
Provide indicators of significance as a result of the identification of effects set out above in terms of:	None identified
None identified:	None identified
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.	None identified

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Finding of no significance effect report:	
Name of project or plan:	Aquaculture activities in outer Bantry Bay, Co. Cork.
Name and location of Natura 2000 site It would be helpful for a map or plan to be provided:	The Sheeps Head cSAC, the Glengarriff Harbour and Woodland SAC, the Beara Peninsula SPA and the Sheeps Head to Toe Head SPA, Cahal Mountains SAC and Glanmore Bog SAC. (Figure 2).
Description of the project or plan	The plan is to licence the shellfish and finfish culture activity in Bantry Bay, Co. Cork. The activities in question cover approx. 418 ha. in total, representing approximately 0.9% of the surface area of Bantry Bay.
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)?	No.
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.	The cultivation of shellfish, finfish and macroalgae in outer Bantry Bay is not likely to affect the conservation features of adjoining Natura 2000 sites.
Explain why these effects are not considered significant.	<p>There is no spatial overlap of the aquaculture activities with Natura sites. In addition, there would be no interference with key relationships that define the function of the sites. The culture activities 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 and finfish, as it is currently constituted and proposed, in Bantry Bay does not pose significant risk to the conservation features of the adjacent 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, August 2020

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Figure 1. Aquaculture site status within the region of Outer Bantry Bay, Co. Cork.



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Figure 2. Aquaculture activities and Natura Sites within the region of Outer Bantry Bay, Co. Cork.

