

An Bord Achomharc Um Cheadúnais Dobharshaothraithe
Aquaculture Licences Appeals Board



AP7-11 Trawbreaga

Visual Impact Report – Aquafact

Submitted by Appellants 18 July 2018



**Kilminchy Court
Dublin Road
Portlaoise
Co. Laois R32 DTW5**

REF: APPEAL OF LICENSES T12/475, T12/471, T12/434, T12/426

TRAWWBREGA BAY, CO. DONEGAL

17th July 2018

Dear Sir/Madam,

Please find attached a report we the Oyster producers of Trawbreaga Bay Co. Donegal, had done by AQUAFAC, on Visual impact in Trawbreaga Bay in connection with our appeal.

We thank you for giving us the opportunity to do this and hoping for a successful outcome so that we can continue with expanding our businesses and stay living in a remote area of Donegal with our families, which has been decimated with unemployment.

Yours Sincerely,

Euan and Michael Mc Laughlin

James Ball

Michael Barr

Marjorie Doherty



AQUAFACT

**Landscape and Visual Impact Assessment
for Proposed Oyster Trestles in
Trawbreaga Bay,
Co. Donegal**

Produced by

AQUAFACT International Services Ltd

On behalf of

**Michael and Eunan McLaughlin, James Ball, Michael Barr and
Marjorie Doherty**

Date Report Issued

July 17th, 2018

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Report Approval Sheet

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1. Introduction

AQUAFACT was commissioned by ALAB to carry out a landscape and visual impact assessment for 4 proposed oyster aquaculture sites in Trawbreaga Bay, Co. Donegal. The assessment was carried out in line with the guidelines for Landscape and Visual Impact Assessment of Marine Aquaculture (ERM, 2001).

2. Assessment Methodology

A desk study was carried out to identify sensitive receptors within 4km of the proposed site. Data sources included: satellite imagery, Donegal draft development plan 2018 -2024, Donegal Landscape Character assessment, National Monuments Service and Ordnance Survey maps. Detailed maps were then produced to show the position of these receptors in relation to the proposed site. Photos were taken of the proposed site from surrounding roads. Graphics of the trestles were overlaid onto these images to give a visual representation of the proposed activity.

A Visual Envelope Map (VEW) was produced using the Viewshed plugin in QGIS mapping software. The line of sight is calculated using a Digital Terrain Model (DTM) and produces visual representation of the areas that the site can be viewed from. A 30m DTM was sourced from JAXA (Japan Aerospace Exploration Agency). The DTM elevation is expressed in meters above Mean High Water Spring. As the proposed trestles are located on the lower shore a DTM was required for the bathymetry of Trawbreaga bay. As no DTM was available one was produced from the admiralty chart for the area. The VEM was then overlaid on the receptor maps. It is important to note that this method does not take into account the screening effect provided by trees and other vegetation and therefore, the actual visual envelope of the proposed site is likely much smaller than the model predicts.

The landscape and visual sensitivity of each receptor was then assessed as either high, moderate or low based on its vulnerability and distance from the site (Table 2.1). The magnitude of the impact or change was also assessed as high, moderate or low (Table 2.2).

Table 2.1 Sensitivity categorisation.

Sensitivity category	Receptor	Definition/Description
Low	Landscape	Landscape that can accommodate aquaculture developments without detriment to its character or features. No special landscape qualities or values apply.
	Visual	Viewers have limited viewing opportunities and/or low amenity expectations, such as farmers, fishermen, aquaculture or other workers.
Medium	Landscape	Landscape that can accommodate carefully sites, small scale aquaculture development that respects existing landscape character and features. May have some special qualities or values at a local level
	Visual	Viewers have moderate amenity expectations and/or short or intermittent viewing opportunities, such as passing motorists, and temporary residents
High	Landscape	Landscape that is vulnerable to change as a result of aquaculture development. Change may damage landscape feature(s) that are important or distinctive in a regional or national context. Special qualities or values at a regional or national scale apply.
	Visual	Viewers have high amenity expectations and/or prolonged viewing opportunities, such as tourists, people involved in recreational pursuits such as walking or sailing and local communities.

Table 2.2. Magnitude categorisation.

Magnitude category	Receptor	Definition/Description
Low	Landscape	Limited or virtually imperceptible change in landscape elements and features, giving rise to negligible change in landscape character and qualities.
	Visual	Narrow visual envelope and/or few viewers affected. Generally long distance views and/or limited changes in view.
Medium	Landscape	Moderate change in landscape elements and features, giving rise to a noticeable change in landscape character and qualities.
	Visual	Visual envelope of moderate size and/or moderate number of

		viewers affected. Some short or middle distance and/or moderate changes in view.
High	Landscape	Extensive change in landscape elements and features, giving rise to a marked change in landscape character and qualities.
	Visual	Extensive visual envelope and/or high number of viewers affected. Short distance views and/or major changes in view.

Table 2.3 Significance level matrix.

Sensitivity of Landscape or visual Receptor	Magnitude of Change		
	High	Moderate	Low
High	Very substantial	Substantial	Moderate
Moderate	Substantial	Moderate	Slight
Low	Moderate	Slight	Negligible

3. Project Description

This assessment focuses on four adjacent proposed oyster sites located in Trawbreaga bay (Figure 3.1), licence numbers T12/475 (22000m²), T12/471 (12684m²), T12/434 (12850m²) and T12/426 (11400m²). The typical trestle method is proposed and this is constructed of 16mm steel bar with plastic oyster bags secured on top. Trestles are 0.6m high with a width of 1.3m at the base tapering to 0.8m at the top. Oyster bags are placed length ways across the trestles at a width of 1m. Trestles are arranged in rows of up to 100m in length to fit within the licence area and rows are spaced 4m apart. The trestles are located at low water Spring tides and so are only accessible or visible during the latter period of low water when this occurs in daylight hours. Access will be by tractor via existing routes and an existing processing area will be used (Figure 3.1).



Figure 3.1 Proposed site location.

4. Baseline Environment

The site is contained within Donegal County Council's Seascape Unit 5 – Trawbreaga Bay, along with Landscape Character Areas 1 Malin Coast, 2 Dunaff Coast and 3 North Inishowen Farmland and Coast. The coastline includes sea cliffs, rocky shores at Malin and Dunaff, a silty and sandy estuary at Trawbreaga Bay, sand dunes at Isle of Doagh, Ballyliffen, Tullagh Bay and Five Finger Strand. Five Finger strand is the only one of these dune complexes within 4 km of the proposed site. There is evidence of settlement from the earliest times and a wealth of archaeological monuments are present. Doagh Isle contains some of the best examples of rock art in Ireland and Europe dating from the late Mesolithic period. There is a hotel, Golf course and walking trails to the southwest at Ballyliffen. The Wild Atlantic Way Follows the R238 from Ballyliffen to Carndonagh and then the R242 along the northern end of Trawbreaga Bay past the proposed site and on to Malin Head.

Trawbreaga Bay lies within two Natura sites, North Inishowen Peninsula SAC (2012) and Trawbreaga Bay SPA (4034). With regard to the Qualifying Interest habitats and species, Mud and Sandflats exposed at Low Water and Otter occur within the area where the licenses are being sought while the only Species of Conservation Interest for the SPA that may occur at the site is the Light bellied Brent Goose.

Landscape Character types within 4 km of the proposed site include: Atlantic Blanket bog, Mountainous Blanket bog, a mixture of coastal, estuarine, foothills and riverine agriculture, dunes and beaches, woodland, Golf course, intertidal flats, salt marsh and upland heath/moorland (Figure 4.1) with agriculture being the most dominant land use.

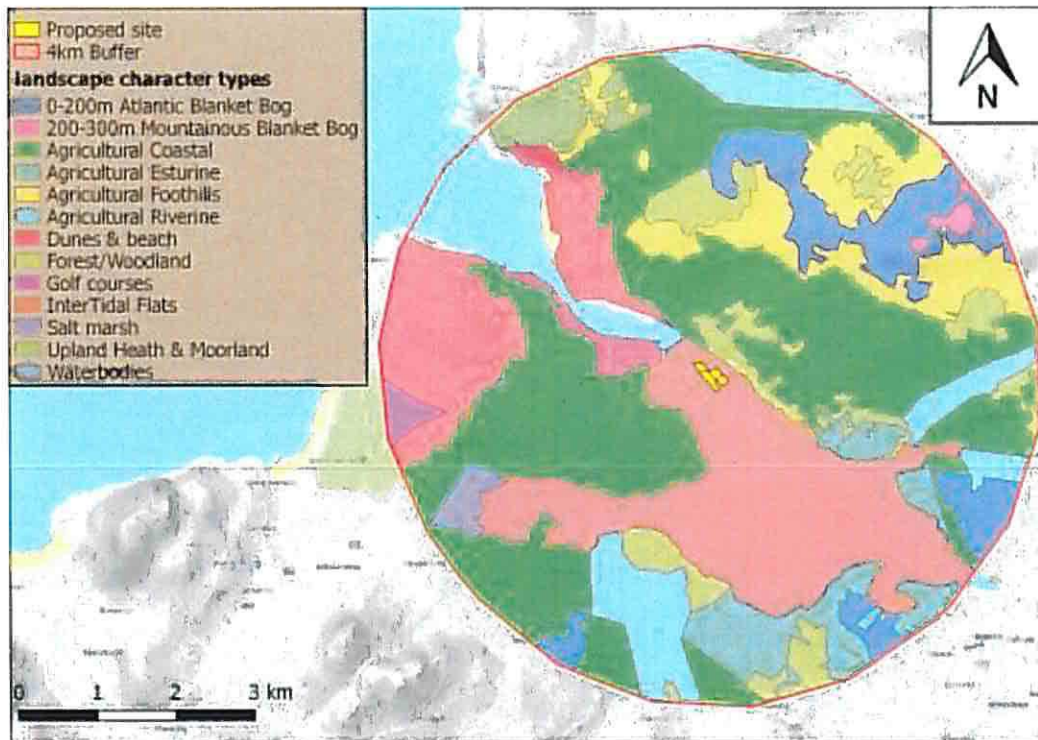


Figure 4.1 Landscape Character types.

The key coastal uses included farming, fishing, tourism, residential and recreational. The recreational use is around the coast, beaches and golf courses at Ballyliffen. The seascape is used for recreation and tourism, mainly on the beaches as well as the piers where fishing vessels operate. The more sheltered Trawbreaga is used for aquaculture. There is a view point located to the north of the mouth of the estuary at Knocknamany which looks out over Five Finger Strand. Donegal County Council has also mapped the scenic amenity levels of the county, categorised as either areas of Especially High Scenic Amenity, High Scenic Amenity or Moderate scenic amenity (Figure 4.2).

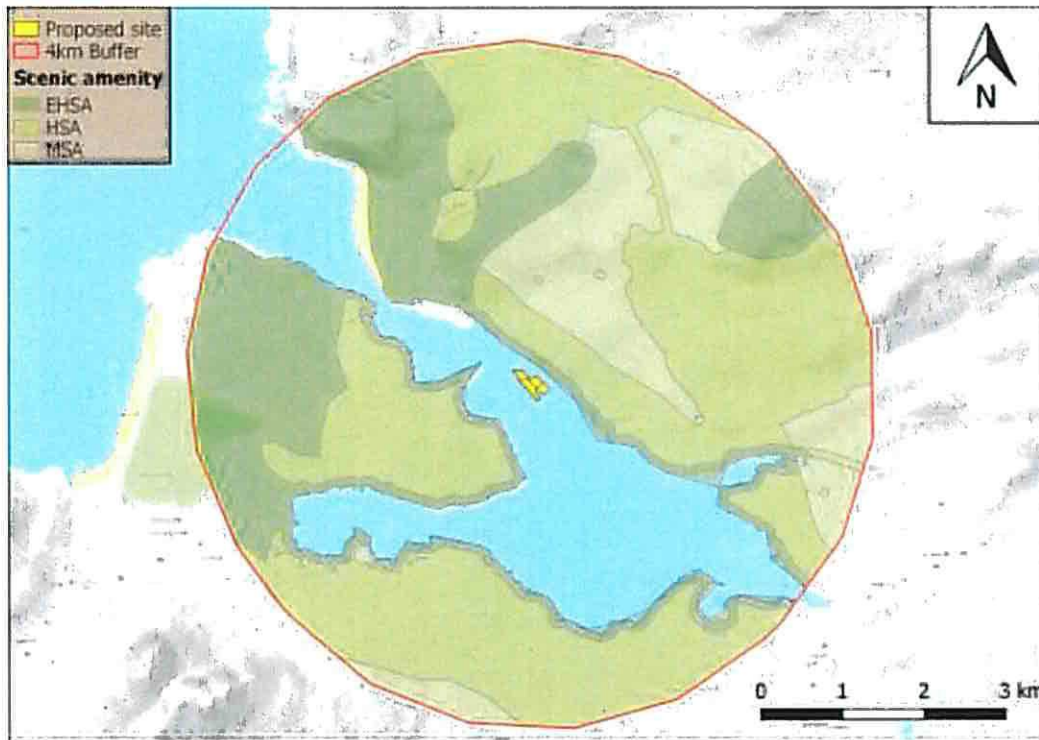


Figure 4.2 Scenic amenity levels within 4km of the Site (Especially High Scenic Amenity (EHSA), High Scenic Amenity (HAS), Moderate scenic amenity (MSA)).

5. Impact Assessment

The landscape and visual receptors that have been identified are residential properties, National Monuments, a key view point, Wild Atlantic Way, golf courses, beaches and walking trails. Receptors were initially scoped out by using a 4km buffer around the proposed site as per the guidance document. As no evidence of official walking trails could be found within 4km of the site, this receptor is considered screened out and will not be discussed further. The area of assessment was further reduced through the production of a visible envelope for the site using a digital terrain map (Figure 5.1). This highlighted the areas in which the proposed site can be seen in the surrounding landscape and so the only areas that could have any visual impact. The position of each receptor that occurred within the visible envelope was then mapped.

With regard to vessels entering and exiting the bay, Trawbreaqa Bay is so shallow that keeled boats can only safely navigate to the anchorage on High Spring tides. Furthermore, there is a large section of breaking waves at the southwestern part of the approach that is extremely dangerous. For these reasons, only local

work boats that know the waters use the bay. For this reason, sailing vessels are screened out from further consideration.



Figure 5.1 Visual envelope of the proposed site.

5.1. Viewshed Assessment

Residential Properties

The residential properties located within the visual envelope have been map from satellite images (Figure 5.2). There are 34 properties within 1km of the site, 12 at 1-2km, 11 at 2-3km and 70 at 3-4km. The properties between 2 – 4km are unlikely to have any impact on view due to the size of the site at that distances and screening effect by bushes, trees or other buildings. The site will be more visible from properties <2km away, although this will also be reduced by screening by bushes, trees and buildings. As the proposed site will only be exposed at low water, any visual impact will be further reduced.

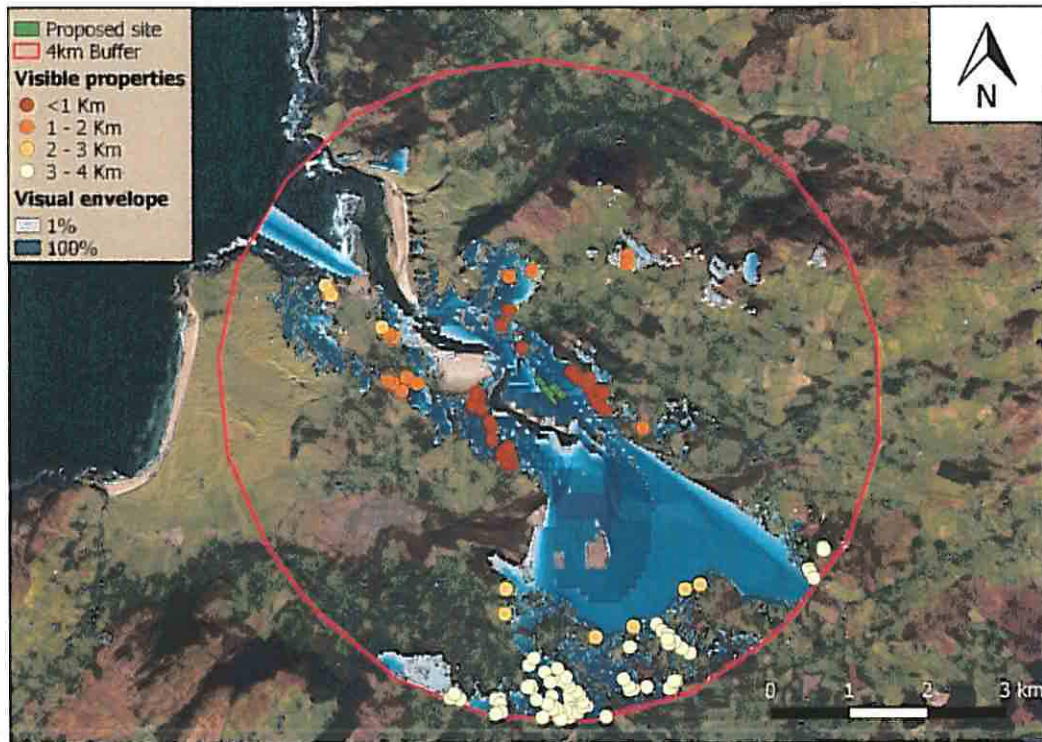


Figure 5.2 Residential properties within the visual envelope.

National Monuments

There are a total of 17 national monuments located within the visual envelope (Figure 5.3). There are six within 1km of the site which include a mound, hut site, rock art, flat cemetery, a midden and a standing stone. The closest is the mound at *circa* 740m. There are four monuments between 1-2km a souterrain, a ringfort (unclassified), a standing stone and rock art. There are a further seven monuments at 3-4km which include three holy wells, two standing stones, a souterrain and a burial cairn. Visibility from these monuments is expected to be low due to the screening effect of hedgerows, trees and buildings.

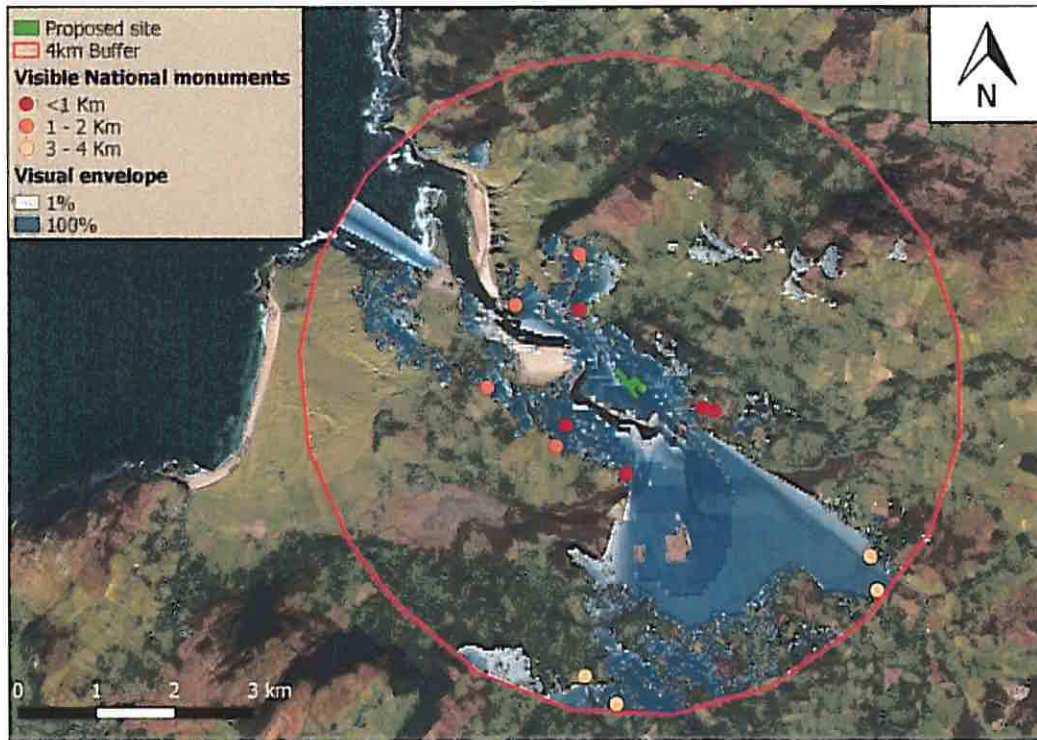


Figure 5.3 National Monuments within the visual envelope.

Key Tourist View Point

There is only one view point within the 4km buffer which is listed on the draft Donegal County Development Plan 2018-2024. It is located to the north of the mouth of the estuary at Knocknamany and has view across Five Finger Strand. A visual envelope was produced to show the areas which are visible from the viewing point (Figure 5.4). It is noted from Figure 5.4 that the proposed site would be partially visible from the view point at low water. However, as the view point is approximately 3.1km from the site, the partially visible site would have minimal impact of the visible landscape.



Figure 5.4 Knocknamany view point visual envelope.

Wild Atlantic Way

This tourist route passes along the south of the bay along R238 and then along the north of the bay along R242. The areas from which the site will be visible are highlighted in Figure 5.5. The locations greater than 3km from the site will have no appreciable view as it will be broken by hedgerows and buildings while driving. The proposed site would also appear small at such a distance. The main impact will be to the section of the R242 which passes within 150m of the proposed site. The impact will be minimised as the site would only be visible at low Spring tides that occur during hours of daylight. The main scenic views along this section are of the mountains and hills surrounding the area. The proposed site would cause no obstruction to these views due to its positioning on the lower shore.

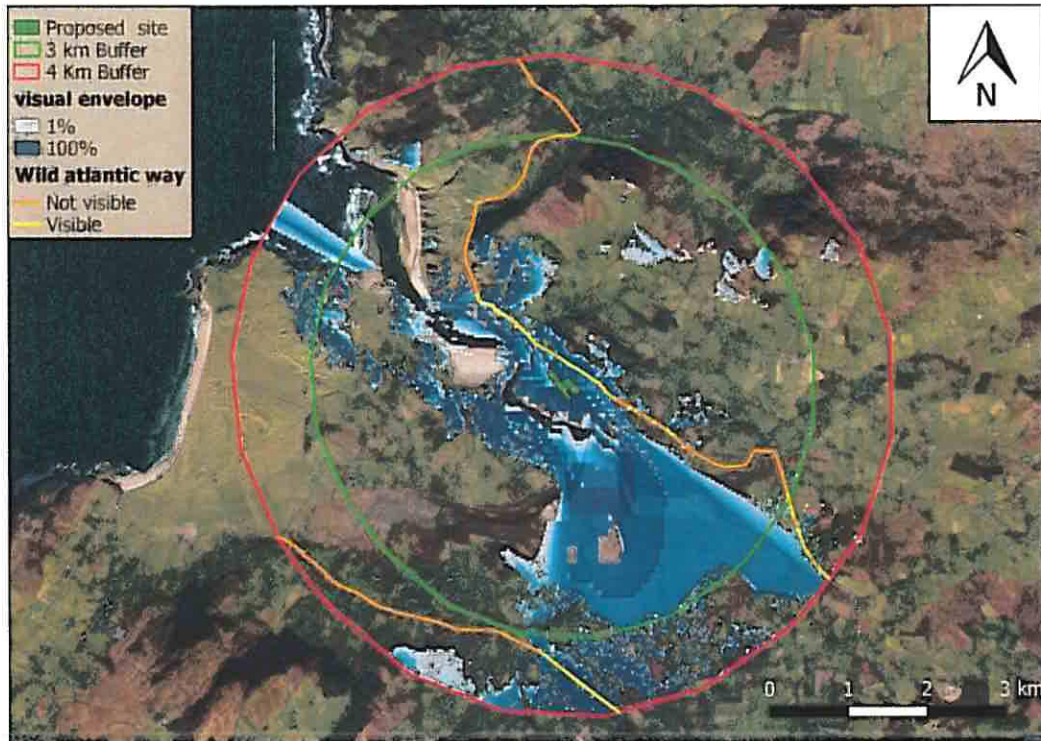


Figure 5.5 Visibility of the site from the Wild Atlantic Way along R242 and R238

Golf courses and Beaches

The only golf course within 4Km of the proposed site is located to the west and is outside of the visual envelope. Similarly the only beach within the buffer is Five Finger Strand which is to the northwest of the proposed site. The proposed site would not be visible from the beach due to the significant sand dunes all along the beach.

5.2. Photographic overlays

The location of the images taken can be seen in Figure 5.6. All images were taken at low water.

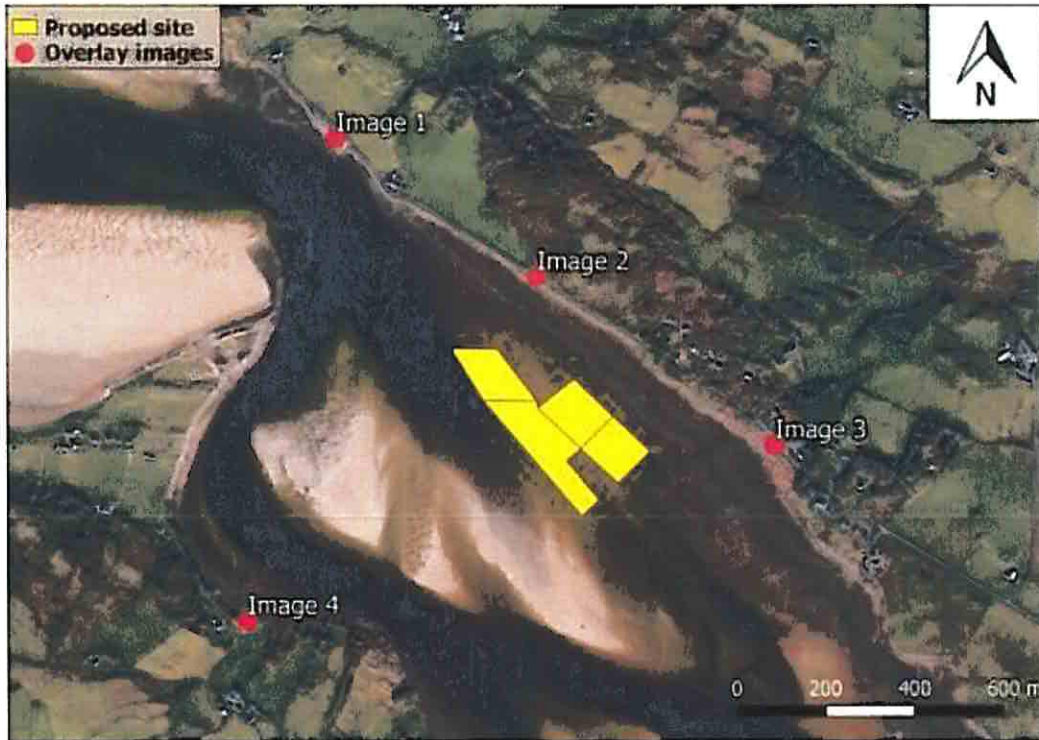


Figure 5.6 Overlay image locations.

The first overlay is from northwest of the proposed site as viewed from a layby on the R242 (Figure 5.7). The extent of the visibility of the proposed site at low water can be seen in the right hand image. This point is approximately 540m from the edge of the proposed site. The trestles can be seen along the shore on the left hand side of the overlay image.



Figure 5.7 Image 1 overlay comparison, original image on the left and overlay on the right. Looking southeast.

The second overlay is from north of the proposed site at one of the closest points to the road (Figure 5.8). In the image on the right, the trestles can be seen running horizontally along the middle of the image. This point is approximately 180m from the edge of the proposed site.



Figure 5.8 Image 2 overlay comparison, original image on the left and overlay on the right. Looking southwest.

The third overlay image is from the east of the proposed site (Figure 5.9). In the original image without the overlay the existing trestles can be seen on the left hand site. In the overlay image on the right the trestles can be seen as a darkening on the lower shore running horizontally. This point is approximately 280m from the edge of the proposed site. It is noted that the overlay trestles are much more prominent in the images than the existing trestles. Therefore, the visual impact of the proposed trestles will be somewhat less than the images show.



Figure 5.9 Image 3 overlay comparison, original image on the left and overlay on the right. Looking west.

The fourth overlay image is from the west of the proposed site on the southern site of the bay (Figure 5.10). The trestles are barely visible from this point on the right hand side of the image. This point is approximately 730m from the edge of the proposed site.



Figure 5.10 Image 4 overlay comparison, original image on the left and overlay on the right. Looking northeast.

Table 5.1 Description of visual receptors.

Receptors	Type of View/Viewer and Notes	Sensitivity	Magnitude	Viewing Distance
Long Distance Views > 2km				
Residential properties	81 houses. Located mostly on the South west and South of the bay.	Low	Low	2 - 4 km
National monuments	Includes a holy well, standing stones, souterrain and a burial cairn.	Low	Low	3 – 4km
Key View point	Located to the north of the mouth of the estuary at Knocknamany. Minimal Impact (no full view of the project site).	Low	Low	3.1 km
Wild Atlantic Way	R242 and R238 have no appreciable view.	Low	Low	3km
Middle Distance Views 0.5 – 2km				
Residential	12 houses. Residences	Moderate	Moderate	1 – 2km

properties	located at West and East of the bay. The site will be more visible from these properties, although this will be reduced by screening by bushes, trees and building.			
National monuments	include a mound, hut site, rock art, flat cemetery, a midden, standing stones, souterrain, ringfort (unclassified).	Moderate	Moderate	The closest one is the mound – 750m
Short Distance Views < 0.5km				
Residential properties	34 houses. The residences are located on the coastal road (West and East of the bay).	Moderate	Moderate	< 1km
Wild Atlantic Way	Section of the R242 which passes close of the proposed site.	Moderate	Moderate	150 m

Residential properties

The Sensitivity of residential properties to landscape and visual amenity impacts associated with the project is considered to be Medium owing to the presence of existing oyster farms and intermittent viewing opportunities because the trestles are virtually invisible as they can only be seen at low Spring tides during daylight hours see Figure 5.2. The Magnitude of change is considered to be Medium due to the size of the visual envelope and the viewing distance (short-distance). This gives an overall risk Significance of Moderate for the residential properties but only at low Spring tides during daylight hours.

National Monuments

The Sensitivity of national monuments to landscape and visual amenity impacts associated with the project is considered to be Medium owing to the presence of existing oyster farms and intermittent viewing opportunities because the trestles are virtually invisible as they can only be seen at low Spring tides during daylight hours. The Magnitude of change is considered to be Medium due to the size of the visual envelope (Large) and the viewing distance (short-distance), see Figure 5.3. This gives an overall risk Significance of Moderate but only at low Spring tides during daylight hours for the tourists viewing the monuments.

Key view point

The Sensitivity of scenic viewpoint to landscape and visual amenity impacts associated with the project is considered to be Medium owing to the presence of existing oyster farms and intermittent viewing opportunities because trestles are virtually invisible as they can only be seen at low Spring tides during daylight hours and the topography of the landscape, see Figure 5.4. The Magnitude of change is considered to be Low due to the size of the visual envelope (Small) and the viewing distance (Middle-distance); this gives an overall risk Significance of Slight but only at low Spring tides during daylight hours.

Wild Atlantic Way (R242 and R238)

The Sensitivity of R242 to landscape and visual amenity impacts associated with the project is considered to be Medium owing to the presence of existing oyster farms and intermittent viewing opportunities because trestles are virtually invisible as they can only be seen at low Spring tides during daylight hours, see Figure 5.5. The Magnitude of change is considered to be Medium due to the size of the visual envelope (Large) and the viewing distance (short-distance). This gives an overall risk Significance of Moderate for the road users but only at low Spring tides during daylight hours. A digital overlay of the project as views from the road 242 is presented in Figure 5.7, Figure 5.8, and Figure 5.9.

The Sensitivity of R238 to landscape and visual amenity impacts associated with the project is considered to be Medium owing to the presence of existing oyster farms and intermittent viewing opportunities because trestles are virtually invisible as they can only be seen at low Spring tides during daylight hours, see Figure 5.5. The Magnitude of change is considered to be Low due to the size of the visual envelope (Small) and the viewing distance (Middle-distance); this gives an overall risk Significance of Slight but only at low Spring tides during daylight hours.

Comparison of the levels of these determinations of visual impact with those arrived at by Mr. Paul O'Sullivan, an engineer in the Department of the Marine, are considerably different. Examination of Mr. O'Sullivan's report and the quality of photographs and the "before" and "after" images are certainly possible reasons for the differences: the photographs in that report are very curiously coloured showing aqua marine blues and pinks and look almost as if there has been some colour enhancement/alterations made to them. The photographs shown in pages 12, 13 and 14 of this AQUAFAC report show the typical brown, grey and black colour of intertidal furoid –covered muddy sands and stones into which the trestles blend, lessening their visual impact. Furthermore, Mr. O'Sullivan's report does not take into account that the trestles would only be visible at low water Spring tides thereby having a significant lessening of visual impact nor does he mention that, when exposed at low water Springs, it is only those tides that occur during daylight hours are of concern. Mr. O'Sullivan's report does not account for the fact that the access route and buildings are already in existence, that some of the aquaculture sites are occluded by natural vegetation and that the trestles are aligned parallel to the coast and to each other thereby reducing their visibility. All these reasons are probably the main reasons why Mr. O'Sullivan's conclusions are at variance with this report.

6. Cumulative Impact Assessment

In 2016, there were 25 existing licensed aquaculture sites and 42 determinations for new site applications or renewals. Of the 25 existing aquaculture sites, 22 are located in the West side of Trawbreaga Bay and of the 42 new applications, 34 are located in the same area of the bay (Figure 6.1). The 4 new sites that are the subject of this visual impact assessment are also in the western part of Trawbreaga.

The total extent of Trawbreaga Bay is 10.03 km². The area that is currently licensed and that for which licenses are being sought represents 7.5% of the total bay area, while the project sites (T12 / 475, T12 / 471, T12 / 434 and T12 / 426) only represent 0.58% of the total bay area. The cumulative impact for these 4 sites is considered medium, as the distance from the sites to other sites is short: the closer sites are to one another, the lower level of visual intrusion. As existing foreshore access routes (Figure 3.1) will be used, no construction or operational impacts need be considered in this cumulative impact assessment.

It is therefore considered that cumulative impacts associated with other projects/developments will be of medium impact.

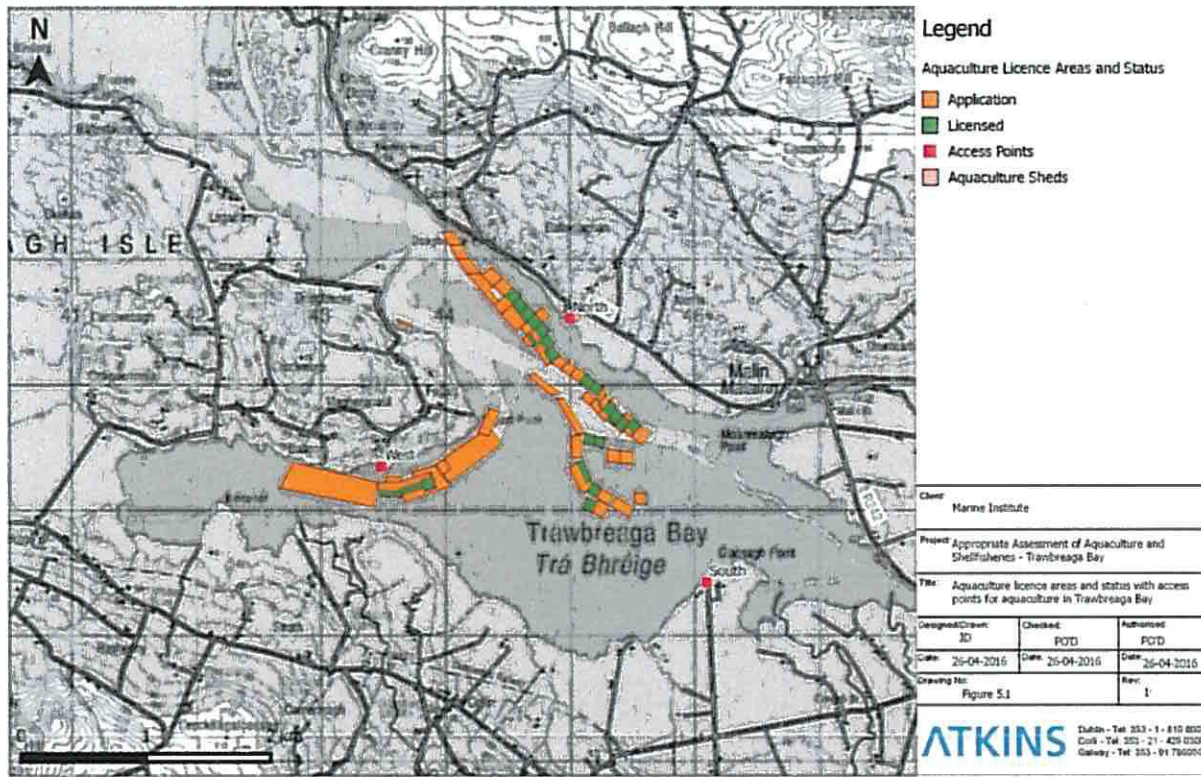


Figure 6.1 Map of current licenced aquaculture and applications.

7. Conclusion

In line with the sensitivity categorisation presented in Table 2.1, all visual receptors identified in Table 5.1 were categorised. All potential impacts were then judged against the magnitude categorisation (Table 2.2). The overall significance level was then calculated in line with table 2.3.

The overall conclusion of the visual assessment is presented below in Table 7.1.

Table 7.1. Conclusions of assessment in respect of landscape, visual amenity and cumulative impacts.

Receptors	Sensitivity Magnitude (N.B. Trestles can only be seen at low Spring tides and during daylight hours)		Magnitude of change
Residential properties	Medium	Medium	Moderate but only at low Spring tides and during daylight hours.
National monuments	Medium	Medium	Moderate

		but only at low Spring tides and during daylight hours.
Key view point	Medium Low	Slight but only at low Spring tides and during daylight hours.
Wild Atlantic Way (R242)	Medium Medium	Moderate but only at low Spring tides and during daylight hours.
Wild Atlantic Way (R238)	Medium Low	Slight but only at low Spring tides and during daylight hours.
Cumulative impacts		
Distance to other projects		Impact
Short		Moderate

Given that:

1. There are already fairly extensive areas of oyster trestles in the bay
2. The exposed lower shore is comprised of mud and stones with dark brown algae that mask the trestles
3. The trestles are only visible at low water Spring tides and during periods of clear sunshine
4. The access route and buildings are already in existence
5. Many of the aquaculture sites are occluded by natural vegetation and
6. The fact that the trestles are aligned parallel to the coast and to each other thereby reducing their visibility.

The overall conclusion of this visual assessment is that the four additional oyster farms will have little additional impact on the landscape, the seascape and the people who live there or visit the location.

Given all the above reasons and the findings of this report on the visual impact of the 4 additional licences indicate that there will be little additional negative effects on the visual landscape, it can be concluded that the licences should be granted.