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Landscape and visual impact assessment of shellfish farm development proposals in Loughros Beg Bay, Co. Donegal

File ref: T12/161
T12/162
T12/403
T12/417
T12/431
T12/460
T12/498

Background

This report considers the landscape and visual impact implications of 7 aquaculture licence applications made for Loughros Beg Bay; 2 of the applications (for sites 161A and 162A) are for renewal of existing licences; the other 5 are new applications for as yet unlicensed development.

The development proposals for all 7 applications are for suspended pacific oyster culture using the standard bag and trestle system. Each application relates to a single site.

The assessment methodology used follows the guidance in published document "Guidelines for Landscape and Visual Impact Assessment of Marine Aquaculture" produced by DMNR in 2001.

The locations of the 7 sites are shown on MAP 1 "Map of aquaculture sites" overleaf. Licensed sites are outlined in green, new applications in red.

Landscape character of area

See MAP 2 (this is an extract from the 2018-24 county development plan scenic amenity map) included in this report. It indicates the scenic quality classification levels in Loughros Beg Bay and the general coastal area west of Ardara town.

Land lying to the south of the Bay is steeply rising mountainous upland (from Glengesh to Slievetooy and points further west) and is designated as area of "Especially High Scenic Amenity"- shown as the largest dark green area on MAP 2. The designation of "Especially High Scenic Amenity" is in the County Donegal Development Plan 2018-24 and is the highest of three scenic quality classifications used in that document.



MAP 1

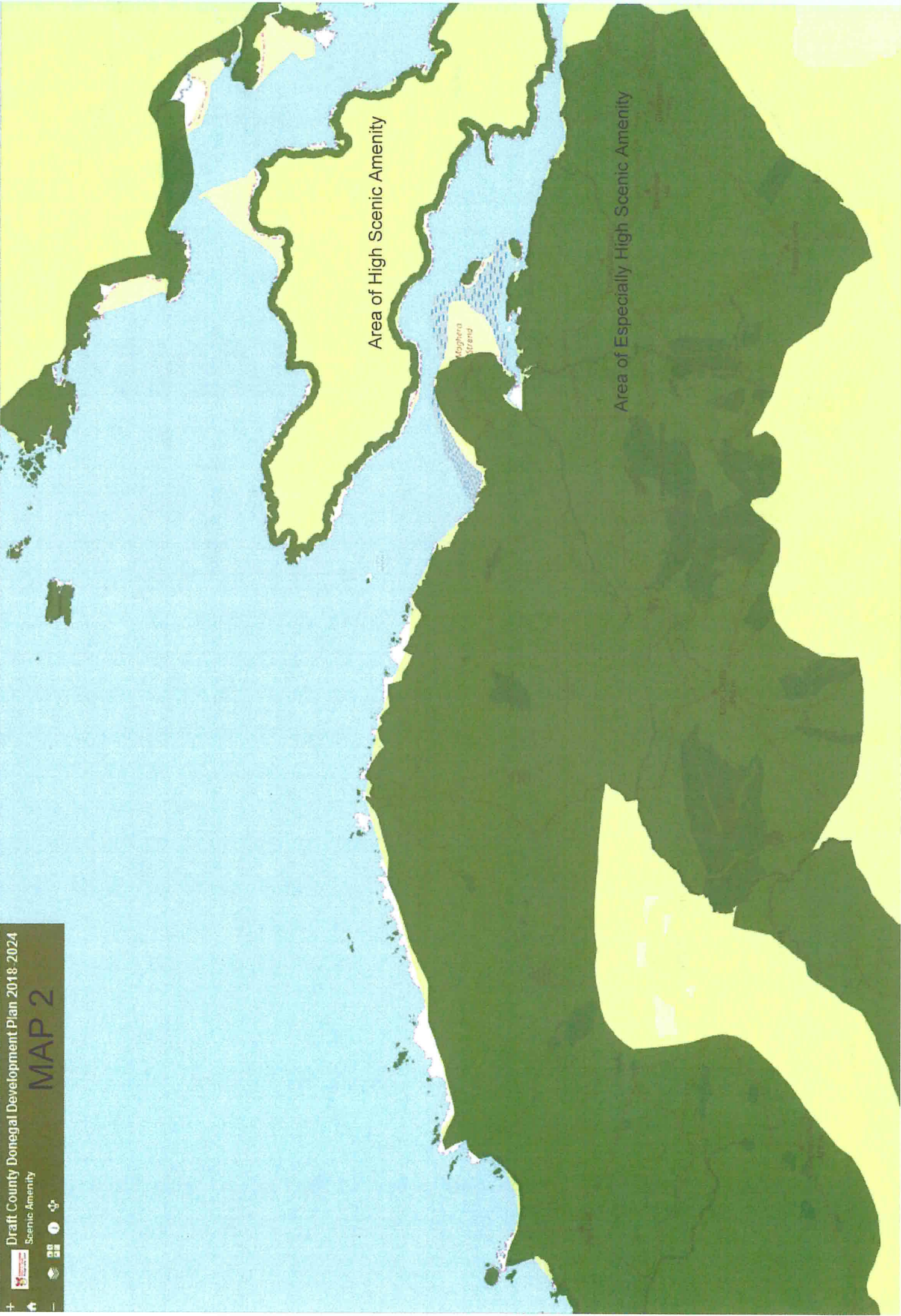
Map of aquaculture sites

KEY

- Licensed site —
- Application site —

0 100 200 300metres

DAFM



The two large islands in the inner bay area (Illauncreeve and Sand Island) are also designated as areas of Especially High Scenic Amenity.

Most of the coastal strip along the northern shore of Loughros Beg Bay is designated as an area of “Especially High Scenic Amenity”. Land north of the coastal strip on the north side of Loughros Beg Bay (the Loughros Point peninsula) has a lower level classification being designated as area of High Scenic Amenity.

Most of the narrow coastal strip along the east shore of the Bay including promontory at Torree is designated as an area of “Especially High Scenic Amenity”.

There are no designated views and prospect overlooking Loughros Beg Bay. In general the landscape quality levels point to the area having substantial scenic amenity value and mean that insensitive placement of new development could detract from that visual amenity. The scenic amenity quality designations will inform later impact assessment in this report.

Visual character of area

The sites are located in a thinly populated rural area. Land use in the vicinity of the sites is agricultural and residential usage, the latter mainly on north side of the Bay.

Land rises steeply on south side of the Bay – this restricts extent of visibility of the Bay sites from land but on other hand does offer some high elevation views of the sites at short and mid-distance ranges within the zone of visual influence of the sites.

I expect there to be a mix of visual sensitivities – ranging from low to moderate (eg workers on the foreshore /local road users regularly in area) to higher sensitivity (visitors to the area / tourists who often would have higher amenity expectations).

Visibility of proposed oyster farm sites

I determined the zone of visibility for the applications – this visual envelope (also called the Zone of Visual Influence (ZVI)) of the proposed sites is shown on MAP 3 overleaf. The red line on the ZVI map encloses the area within which the proposed farm sites would be visible.

I have used a combined ZVI in this case because the ZVI for individual sites do not differ greatly from each other - due to the close location of the sites. A corollary of this high degree of overlap between the ZVIs of the various individual sites is that cumulative visual /landscape impacts are likely to be important to consider in this Bay.

The ZVI map allows identification of the important public viewpoints for the proposed aquaculture development.

Visual Receptors

In fieldwork carried out on a number of visits to the Bay I identified 5 public viewpoints within the zone of visual influence of the sites which might be considered as representative of

locations from where aquaculture development is/would be clearly visible at short distance (<500m) or middle distance (<2km) range .

The viewpoints are listed in the table below with approximate ING coordinates taken during field survey 29/3/18 :

Number	Location	Easting	Northing
1	Maghera Strand	166824	391318
2	Maghera road at Leaconnell	168854	390252
3	Maghera Road at Mullanacarry	169551	390020
4	Local road at Crumlin	170095	390433
5	Point Road 100m west of Crannóg Bhuí school	169148	391649

Locations of these viewpoints are shown on MAP 4 “Map of viewpoints” overleaf.

Using the matrix of visual sensitivity versus magnitude of visual change (and significance levels terminology specified in section 4.6 of the 2001 DMNR Guidelines) the assessment will arrive at a measure of the degree of significance of visual and landscape impact arising at the various viewpoints in each case.

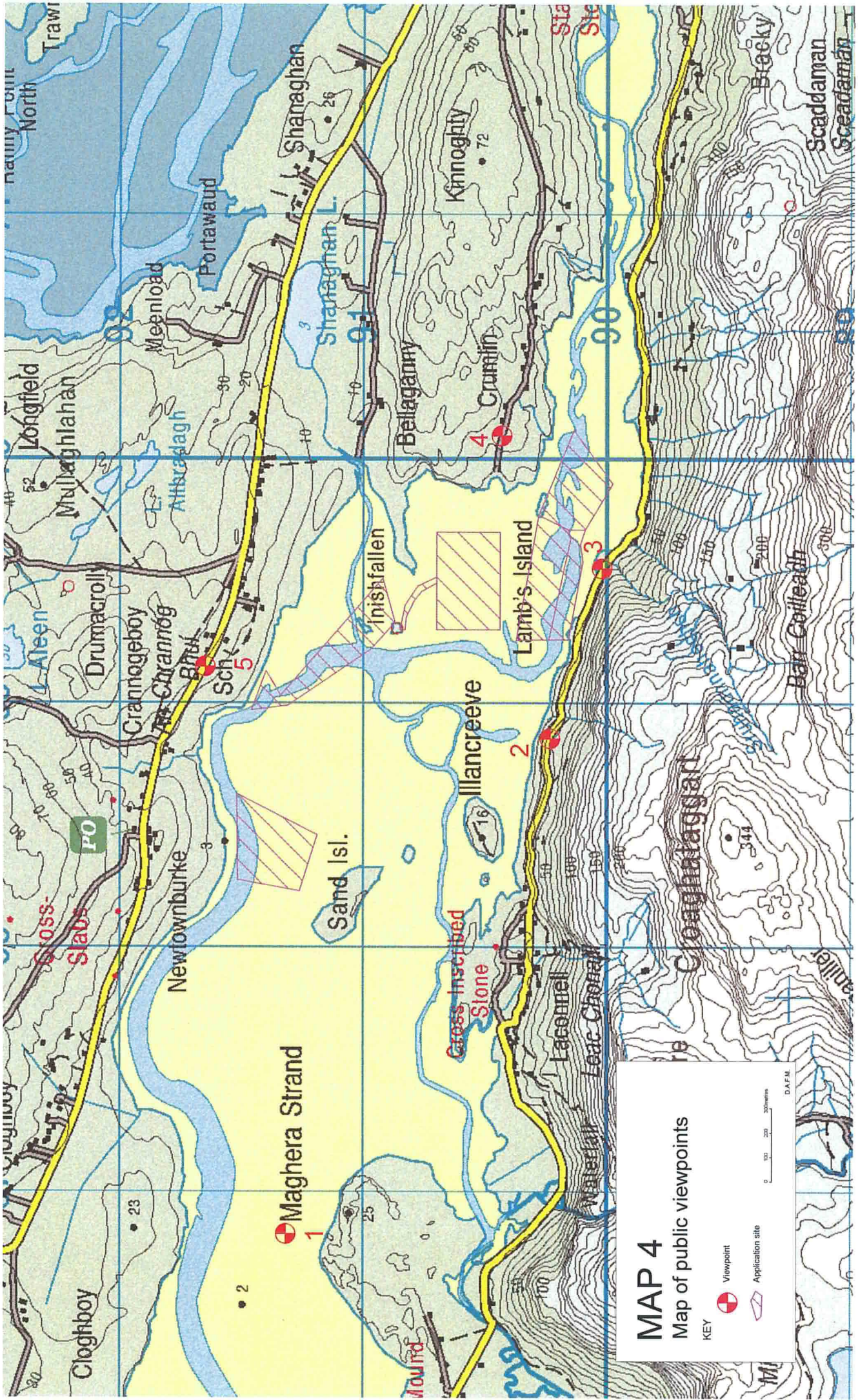
Visualisation using photomontage techniques to model before and after development was used as an aid in this assessment.

Photographs at 50mm focal length were taken on 29/3/18 at selected viewpoints. Lighting conditions on the day were not ideal with significant cloud cover and overcast conditions. This meant that the visualisations produced lacked sharpness and visibility of farms would be less than on a brighter day. Nonetheless when developments are drawn on to the background images it gives a general indication of the contrast between pre-development and post development views at a particular viewpoint.

Note in the case of the 2 licensed site which have been in place since the early 1990s, and 25 years later are semi- established features on the shore I considered them in the same way as proposed new developments – it did not prove necessary as it turned out to make later allowance in the report for their being semi established (and authorised) developments in the Bay for some years. The other five applications are considered as proposed new developments (only).

Note for background that sites 161A and 161B were a matter of visual impact concern at start up (Donegal County Council objected to the untidy nature of the developments in the 1990s). This was partly due to very untidy ancillary aquaculture development on foreshore – storage, trailers etc. This was removed by 2000.

Note that three of the new application sites have been partly developed by the applicants some years ago without authorisation (T12/403 T12/431 and T12/460). Sites 403A, 431A and 460A were not cleared of this unauthorised development despite verbal and written requests from the Department to do so over the years. For LVIA visualisation purposes any such existing unauthorised development on sites 403A, 431A and 460A is blanked out.



Visual impact significance assessments

Individual oyster farm site developments

Table of visual receptors and impact significance Site 161A (renewal)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	2.68	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	Moderate	0.41	Low	Slight
		Visitor	High			Moderate
3	Users of Maghera Road at Mullanacarry	Local	Low ^{*3}	0.08	Low ^{*2}	Negligible
		Visitor	Moderate ^{*3}			Slight
4	Users/residents of Local road at Crumlin		Low	Not visible	N/A	N/A
5	Users of Point Road west of Crannóg Bhuí		Moderate ^{*4}	1.41	Low	Slight

^{*2} much of development in subtidal waters and submerged at low tide

^{*3} low elevation view

^{*4} landscape of Especially High Scenic Amenity in view at middle distance

This shows that when considered as a proposed new development, visual impact significance levels for site 161A would not be above moderate level.

Table of visual receptors and impact significance Site 162A (renewal)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	2.52	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	Moderate	0.74	Low	Slight
		Visitor	High			Moderate
3	Users of Maghera Road at Mullanacarry	Local	Low	0.68	Low	Negligible
		Visitor	Moderate			Slight
4	Users/residents of Local road at Crumlin		Low	0.64	Low	Negligible
5	Users of Point Road west of Crannóg Bhuí		Moderate	0.83	Low	Slight

The table of impact significance levels shows that when considered as a proposed new development, visual impact significance levels for site 162A would not be above moderate level.

Table of visual receptors and impact significance Site 403A (application)

Viewpoint	Type of View/Viewer	Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user	High	2.61	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	0.41	Low	Slight
		Visitor			High
3	Users of Maghera Road at Mullanacarry	Local	0.16	Moderate	Slight
		Visitor			Moderate
4	Users/residents of Local road at Crumlin	Low	0.84	Low	Negligible
5	Users of Point Road west of Crannóg Bhuí	Moderate	1.28	Low	Slight

Visual impact significance levels for development of site 403A would not be above moderate based on above analysis. A critical decision in the above table relates to what level of visual sensitivity is assigned to visitor users of Maghera road at viewpoint 3; It could be argued that it should be high but in my assessment I have opted for a moderate sensitivity level because of low elevation of road at this location, short distance into Area of Especially High Scenic Amenity and closed in topography further east- this moderate sensitivity would indeed rise to a high level at points further west on the road to Maghera Strand and Waterfall where the view of the Bay opens out and is clearly of a higher scenic amenity.

Table of visual receptors and impact significance Site 417A (application)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	2.16	Low	Moderate
2	Users of Maghera Road at Leacconnell	Local	Moderate	0.79	Low	Slight
		Visitor	High			Moderate
3	Users of Maghera Road at Mullanacarry	Local	Low	0.88	Low	Negligible
		Visitor	Moderate			Slight
4	Users/residents of Local road at Crumlin		Low	0.88	Most not visible	N/A
5	Users of Point Road west of Crannóg Bhuí		Moderate	0.28	High	Substantial

Substantial visual impact arises at viewpoint 5 ; note short distance view , moderate (only) sensitivity. Visualisations were used to confirm this finding. See those included in Appendix 1 to this report.

Site 417A is a large and an elongated site in short distance view with background mountainous areas of Especially High Scenic Amenity. The development would be in prominent view where roadside views are available. In certain parts of the Point road the Bay is screened by roadside hedging but this is not the case when on the road west of the school.

The applicant may in fact have had in mind applying for a site even larger than that considered in this report.

If the applicant had chosen instead to apply for a significantly smaller site – perhaps at the Inishfallen end (south end) only of 417A and avoid being in short distance views from the Point road - the magnitude of visual change from viewpoint 5 could have been less and visual impact significance mitigated as a result. This report does not evaluate this possibility as the application for development of site 417A has already gone to public consultation at the time of writing this report. In the event of application for site 417A being turned down on visual impact grounds the applicant might be advised to consider submitting a new application for a better located and smaller site area.

Table of visual receptors and impact significance Site 431A (application)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	2.55	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	Moderate	0.49	Moderate	Moderate
		Visitor	High			Substantial
3	Users of Maghera Road at Mullanacarry	Local	Low	0.42	Low	Negligible
		Visitor	Moderate			Slight
4	Users/residents of Local road at Crumlin		Low	0.39	High	Moderate
5	Users of Point Road west of Crannóg Bhuí		Moderate	0.96	Low	Slight

Substantial visual impact arises at viewpoint 3. Being further west on road to Maghera Strand and at high elevation visitors have a panoramic view of inner Loughros Beg Bay in an area of Especially High Scenic Amenity viewer sensitivity is high. Short distance views arise from viewpoint 4 where significance of visual impact arising is moderate. Visualisations were used to confirm these findings. See those included in Appendix 1 to this report.

Table of visual receptors and impact significance Site 460A (application)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	3.07	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	Moderate	0.86	Low	Slight
		Visitor	High			Moderate
3	Users of Maghera Road at Mullanacarry	Local	Low	0.17	Moderate	Slight
		Visitor	Moderate			Moderate
4	Users/residents of Local road at Crumlin		Low	Not visible	N/A	N/A
5	Users of Point Road west of Crannóg Bhuí		Moderate	1.5	Low	Slight

Visual impact significance levels for development of site 460A would not be above moderate is the outcome based on the above analysis. Again the relatively low sensitivities assigned to viewers for viewpoint 3 is an important consideration that influences this result.

Table of visual receptors and impact significance Site 498A (application)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	1.41	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	Moderate	1.03	Low	Slight
		Visitor	High			Moderate
3	Users of Maghera Road at Mullanacarry	Local	Low	1.60	Low	Negligible
		Visitor	Moderate			Slight
4	Users/residents of Local road at Crumlin		Low	1.80	Low	Negligible
5	Users of Point Road west of Crannóg Bhuí		Moderate	0.83	Moderate	Moderate

Visual impact significance levels for development of site 498A would not be above moderate is the outcome arrived at based on the above analysis.

Combined sites – Cumulative visual impact

This section considers the impact arising from a number of sites being developed.

Table of visual receptors and cumulative impact significance where all 7 sites are developed

Viewpoint	Type of View/Viewer	Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user	High	1.41	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	0.41	High	Substantial
		Visitor			Very Substantial
3	Users of Maghera Road at Mullanacarry	Local	0.08	High	Moderate
		Visitor			Substantial
4	Users/residents of Local road at Crumlin	Low	0.39	High	Moderate
5	Users of Point Road west of Crannóg Bhuí	Moderate	0.28	High	Substantial

Development of all sites will lead to unacceptable levels of cumulative visual impact at three viewpoints. Development footprint would extend almost continuously in a wide band across the inner Bay. The visual amenity value of this part of the Bay would be significantly reduced.

Considering options relating to trestle layout or orientation on the sites would not significantly lessen impact. Mitigation of impact for same areal footprint of development would not be possible. Clearly there will be a need to reduce the development area proposed.

To test possible scenarios involving development area reduction, the approach taken will be to consider cumulative development combinations that do not include the most recent applications made – this is done on the basis that earlier date applications will have precedence.

Table of visual receptors and cumulative impact significance
6 of the 7 sites developed (not 498A)

Viewpoint	Type of View/Viewer	Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user	High	2.16	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	0.41	High	Substantial
		Visitor			High
3	Users of Maghera Road at Mullanacarry	Local	0.08	High	Moderate
		Visitor			Moderate
4	Users/residents of Local road at Crumlin	Low	0.39	High	Moderate
5	Users of Point Road west of Crannóg Bhuí	Moderate	0.28	High	Substantial

No change to impact significance outcome – development of 6 sites (omitting the most recent application) would lead to unacceptable levels of cumulative visual impact at three viewpoints.

Table of visual receptors and cumulative impact significance
5 of the 7 sites developed (not 460A or 498A)

Viewpoint	Type of View/Viewer	Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user	High	2.16	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	0.41	High	Substantial
		Visitor			High
3	Users of Maghera Road at Mullanacarry	Local	0.08	High	Moderate
		Visitor			Moderate
4	Users/residents of Local road at Crumlin	Low	0.39	High	Moderate
5	Users of Point Road west of Crannóg Bhuí	Moderate	0.28	High	Substantial

The above table shows no change to cumulative visual impact significance outcome – development of 5 sites (omitting the two most recent applications) leads to unacceptable levels of cumulative visual impact at three viewpoints.

Table of visual receptors and cumulative impact significance

4 of the 7 sites developed 161A, 162A, 403A and 417A (not 431A, 460A or 498A)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	2.16	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	Moderate	0.41	Moderate	Moderate
		Visitor	High			Substantial
3	Users of Maghera Road at Mullanacarry	Local	Low	0.08	High	Moderate
		Visitor	Moderate			Substantial
4	Users/residents of Local road at Crumlin		Low	0.64	Low	Slight
5	Users of Point Road west of Crannóg Bhuí		Moderate	0.28	High	Substantial

Development of 4 sites (omitting the 3 most recent applications) would lead to some improvement – cumulative impact significance is less at viewpoints 2 and 4. However the cumulative impact significance levels are substantial at three viewpoints. Impact levels of substantial or very substantial offer grounds for refusal of an aquaculture licence application. This scenario will therefore not be acceptable.

Table of visual receptors and cumulative impact significance

3 of 7 sites developed (161A, 162A and 403A only)

Viewpoint	Type of View/Viewer		Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user		High	2.16	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	Moderate	0.41	Low	Slight
		Visitor	High			Moderate
3	Users of Maghera Road at Mullanacarry	Local	Low	0.08	Moderate	Slight
		Visitor	Moderate			Moderate
4	Users/residents of Local road at Crumlin		Low	0.64	Low	Slight
5	Users of Point Road west of Crannóg Bhuí		Moderate	0.83	Low	Slight

From a cumulative visual impact perspective this is an acceptable set of developments.

It seems likely from the foregoing visualisation exercises that sites 431A and 417A (which individually give rise to substantial visual impact) are also the sites with the highest contribution to a negative cumulative impact outcome when they are included. It is likely that development of oyster farm sites at 498A and 460A may not be as critical to the cumulative visual impact outcome. To test this we will consider the scenario where all sites except 417A and 431A are developed in the next table.

Table of visual receptors and cumulative impact significance
5 of 7 sites developed (161A, 162A, 403A, 460A and 498A)

Viewpoint	Type of View/Viewer	Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Amenity beach user	High	1.41	Low	Moderate
2	Users of Maghera Road at Leaconnell	Local	0.41	Low	Slight
		Visitor			High
3	Users of Maghera Road at Mullanacarry	Local	0.08	Moderate	Slight
		Visitor			Moderate
4	Users/residents of Local road at Crumlin	Low	0.64	Low	Slight
5	Users of Point Road west of Crannóg Bhuí	Moderate	0.83	Low	Slight

This combination of 5 oyster farm sites (161A, 162A, 403A, 460A and 498A) would therefore be an acceptable group of developments from a cumulative visual impact perspective.

Landscape Impact

Landscape impact may be considered in terms of what level of damage could occur to the scenic quality of the overall landscape as viewed from various viewpoints.

The magnitude of impact is influenced by the areal extent of site development in short or middle distance view from the viewpoints.

Table of landscape impact significance

5 of 7 sites developed (161A, 162A, 403A, 460A and 498A)

Viewpoint	Description	Sensitivity	Viewing Distance (km)	Magnitude of change	Impact Significance
1	Maghera Strand	High	1.41	Low	Moderate
2	Maghera Road at Leacconnell	High	0.41	Low	Moderate
3	Maghera Road at Mullanacarry	Low	0.08	High	Moderate
4	Crumlin	Moderate	0.64	Low	Slight
5	Point Road	Moderate	0.83	Low	Slight

Landscape impact significance levels for development involving 5 of the 7 applications is considered to be no higher than moderate (viewpoint 1, 2 and 3).

Report conclusions

Based on this LVIA assessment I find that

Visual impact arising from development of sites 161A, 162A, 403A, 460A and 498A (individually and cumulatively) is within acceptable range for licensing.

Visual impact arising from development of site 431A would be outside acceptable range for licensing when certain views from public road to south west of site are taken into consideration.

Visual impact arising from development of site 417A would be outside acceptable range for licensing when short distance views from public road to the north/northwest of the site are considered.

Cumulative visual impact arising from aquaculture development that includes development of sites 417A and 431A would be outside acceptable range. Cumulative visual impact arising from aquaculture development that does not include sites 417A and 431A would be in acceptable range – as would landscape impact arising.

Report recommendation

Continued oyster farm development of sites 161A and 162A is acceptable

Proposed oyster farm development of sites 403A, 460A and 498A will be acceptable provided good site management practices are followed ; Aquaculture development carried out should be oyster bag and trestle only as proposed. Spacing and height of trestle rows should be as uniform as possible and include frequent access gaps for vehicles so that density of trestle placement is not excessive. Layout of trestles on each site should be in accordance with plans submitted. Disused or unused equipment should be regularly removed from foreshore. There should be no stacking of trestles or equipment on the foreshore

Proposed oyster farm development of sites 417A and 431A is not recommended



Paul O'Sullivan

2/5/18

Appendix 1

Visualisations

Note – in the visualisations included in this appendix the assumption is made that sites 161A and 162A are to continue in operation as formerly licensed and trestles on those sites are part of the “pre-development” view (top image on each page).



View to northeast from Viewpoint 2 - application sites 403A and 431A clear



View to northeast from Viewpoint 2 - application site 431A clear; application site 403A developed



View to northeast from Viewpoint 2 - application sites 403A and 431A clear



View to northeast from Viewpoint 2 - application sites 403A and 431 fully developed



View to west from Viewpoint 4 - application sites 403A and 431 A clear of development



View to west from Viewpoint 4 - application sites 403A and 431A fully developed



View to west from Viewpoint 4 - application sites 403A and 431 A clear of development



View to west from Viewpoint 4 - application site 403A developed and application site 431A clear



View to southsoutheast from Viewpoint 5 - all new application sites clear



View to southsoutheast from Viewpoint 5 - application sites 403A and 460A developed.



View to southsoutheast from Viewpoint 5 - all new application sites clear



View to southsoutheast from Viewpoint 5 - application sites 431A, 403A and 460A developed.



View to southsoutheast from Viewpoint 5 - all new application sites clear



View to southsoutheast from Viewpoint 5 - application sites 471A, 403A and 460A developed.



View to southsoutheast from Viewpoint 5 - all new application sites clear



View to southsoutheast from Viewpoint 5 - application sites 417A, 431A, 403A and 460A developed.