



An Bord Achomharc Um Cheadúnais Dobharshaothraithe Aquaculture Licences Appeals Board

BioAtlantis Mechanical Kelp Harvesting/Shot Head Salmon Farm (AP2/1-15/2015) – Report on Potential In-Combination Effects on SCI species identified in Stage 1 Appropriate Assessment

Dr Ciar O'Toole, ALAB Technical Advisor, 28th May 2021

This report outlines the results of an investigation of the ALAB Technical Advisor (TA) into the potential in combination effects on Special Conservation Interest (SCI) species from Special Protected Area (SPA) sites near a proposed salmon farm in Shot Head, Bantry Bay with licenced but currently inactive mechanical kelp harvesting activity in Bantry Bay. These SCI species are Fulmar *Fulmarus glacialis*, Gannet *Morus bassanus* and Guillemot *Uria aalge* and the SPAs potentially impacted, as highlighted by the AA Screening Report (Crowe, 2019) are Fulmar SCIs (Beara Peninsula SPA, Iveragh Peninsula SPA, Deenish Island and Scariff Island SPA), Gannet SCIs (The Bull and The Cow Rocks SPA and Skelligs SPA) and Guillemot SCI (Iveragh Peninsula SPA), as shown in Figure 1.

This report was undertaken to answer remaining questions after public consultation of an AA report for the Shot Head project (AP2/2015) prepared for the board by MERC consultants in 2020. An Taisce raised a question, detailed on page four of this report regarding the potential in combination or cumulative impacts of the Shot Head site and the licenced Mechanical Kelp harvesting activity in Bantry Bay.

Ecology, Status and Distribution in Bantry Bay of the three SCI species (adapted from MERC, 2020)

Gannet, Fulmar and Guillemot nest on coastal cliff and island sites around Ireland. They are pelagic species which feed largely in offshore waters but will also forage in coastal waters. They are vulnerable to predation and human disturbance at their nest sites. All three species are long lived, with a low reproductive output. Populations are therefore slow to recover from adult mortality.

Section 5 of the AA report (MERC, 2020) details the biology, status and distribution of the three SCI species. A brief summary of the status of each species is given below, along with their known use of Bantry Bay.

Guillemot

The Guillemot is a bird of medium conservation concern in Ireland and is a migratory species under the EU Birds Directive. The Irish population is increasing, although breeding numbers in Europe are in decline. Surveys (Roycroft *et al.* 2007) of Bantry Bay found that Guillemot use Bantry Bay in low

densities. While Bantry Bay is within the foraging range of Guillemots breeding on the Iveragh Peninsula, there is no data to link Guillemots from this site to those which use Bantry Bay. However, it can be assumed that Guillemots from breeding sites on the Iveragh Peninsula and from other breeding colonies forage within Bantry Bay.

Fulmar

The Fulmar is of low conservation concern in Ireland and is a migratory species under the EU Birds Directive. The Irish population is increasing; however recent data indicates that this increase may be masking a site level decline (Cummins *et al*, 2019) and breeding numbers in Europe are in decline. Roycroft (2007) observed fulmars in Bantry Bay, but only in flight, rather than on the water and potentially foraging. They were distributed mainly in the outer regions of Bantry Bay and along its northern side.

Gannet

The Gannet is of medium conservation concern in Ireland and is a migratory species under the EU Birds Directive. The Irish and UK Gannet population is increasing and this trend has been apparent for several years. The Gannet population at connected SPA's has been increasing over the last number of years and this trend is consistent with population trends at other Irish, UK and Norwegian colonies, including at those colonies that are within the foraging range of the extensive marine cage culture industries in those countries. This increasing population trend has continued throughout the period where salmon cages have been in place in Bantry Bay and the adjacent Kenmare River, suggesting that any mortality events at these sites are not currently having an adverse population level impact on the Gannet colonies at connected SPA's.

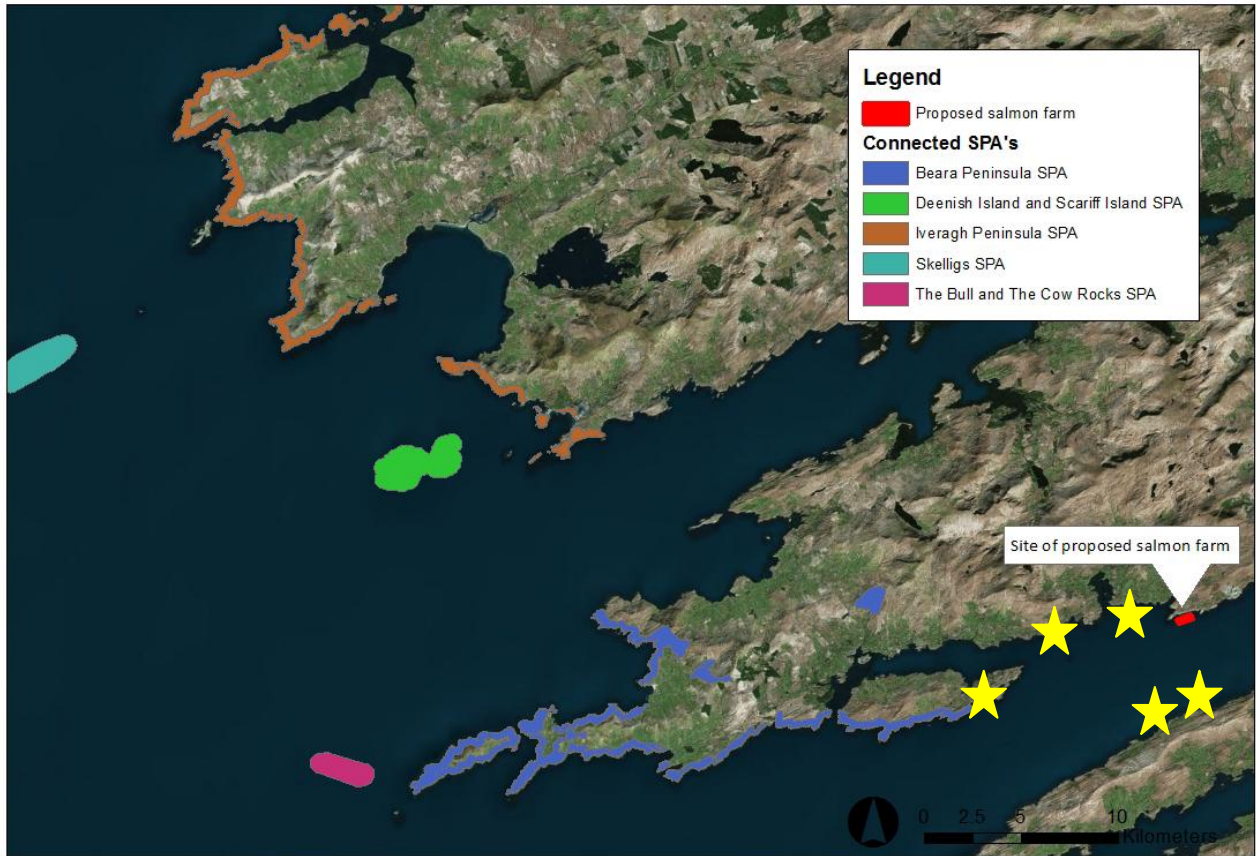


Figure 1: map showing proposed salmon farm (red rectangle), approximate locations of proposed kelp harvesting sites (yellow stars) and connected SPA's (from MERC, 2020).

Table 1 gives the distances for each of the SPA's to the Shot Head site within Bantry Bay. Table 2 gives foraging ranges of Gannet, Fulmar and Guillemot. The five proposed kelp sites, to be used in rotation over a four-year cycle, are all within 12 kilometres of the Shot Head site, within Bantry Bay and all within foraging range also of the three species. All three species have been observed in Bantry Bay (Roycroft, 2007). Only Fulmar is recognised to breed nearby (within 15km of Bantry Bay) with Gannet and Guillemot potentially using the bay for foraging, as part of a wider foraging area.

Table 1: SPA distances from Bantry Bay Shot Head site, from MERC, 2020

SPA	SCI	Connection
Bull and Cow Rocks	Gannet	Bull Rock is c.45 km from the salmon farm site. The foraging range of Gannets from Bull Rock is 60.9km. This foraging range overlaps with Bantry Bay and the site of the proposed salmon farm at Shot Head (AP2/2015).
Skelligs	Gannet	Little Skellig is 60km from site. Gannet foraging range is 99km from Skellig. Overlap in foraging range with the proposed salmon farm at Shot Head (AP2/2015).
Beara Peninsula	Fulmar	Breed throughout Beara peninsula, and along northern side of Bantry Bay. Proposed salmon farm at Shot Head (AP2/2015) is within their core foraging range and 12km from the SPA (see Table 2).

Deenish Island and Scariff Island	Fulmar	61 km from site. Overlap in foraging range (see Table 2) with the proposed salmon farm at Shot Head (AP2/2015).
Iveragh Peninsula	Fulmar	64 km from site. Overlap in foraging range (See Table 2) with the proposed salmon farm at Shot Head (AP2/2015).
	Guillemot	64 km from site. Overlap in foraging range (see Table 2 with the proposed salmon farm at Shot Head (AP2/2015).

Table 2: Foraging range for Gannet, Fulmar and Guillemot, from MERC, 2020

Species	Foraging range (km)
Gannet	229.4 ± 124.3 mean max 92.5 ± 59.9 mean Highest confidence in assessment
Fulmar	400 ± 245.8 mean max 47.5 ± 1 + 9 + 7.7 mean Moderate confidence in assessment
Guillemot	84.2 ± 50.1 mean max. 37.8 ± 32.3 mean Highest confidence in assessment

Evaluation Method

The three relevant SCI species (Fulmar, Gannet and Guillemot) were assessed for potential in-combination effects of the proposed salmon farm development and the proposed mechanical harvesting of kelp in Bantry Bay following:

- A review of all documentation held by ALAB and relevant to the Shot Head appeal and the AA process for this site, including the AA Screening report, NIS, AA assessment report and various other reports carried out by or on behalf of ALAB.
- A review of the report by MERC, 2020 which assessed the NIS and looked at further potential in-combination and cumulative effects of the Shot Head salmon farm, AP2/2015 and responses received after this report went to public consultation.
- A review of the Addendum to the 2020 MERC report dealing with replies to the public consultation process, submitted April 2021.
- A review of all the publicly available documents relating to the foreshore licence relating to the BioAtlantis kelp mechanical harvesting licence available on www.gov.ie/en/foreshore-notice/e62b9-bioatlantis-ltd-bantry-bay/ accessed on the 16th April 2021.
- A review of the available literature on the impacts of mechanical kelp and its ecological and environmental impacts including, but not restricted to Kelly, 2005, Werner and Kraan, 2004 and Scottish SEA report, 2016.
- Consideration and evaluation of the impacts of the identified activities and likely interactions with each of the SCI species.

Mechanical Kelp Harvesting – brief background

A number of state agencies have carried out reviews in the last two decades on the potential for sustainable seaweed harvesting; these include Ireland (Werner and Kraan, 2004) Northern Ireland (Environment and Heritage Service, 2007) and Scotland (Morrison, 2018). These documents focused on the biology of kelp and on suggested management and licencing strategies for sustainable harvesting, with little to no reference to bird species being affected.

The Scottish Government also commissioned a Strategic Environmental Assessment Environmental Report in 2016, and the NPWS in Ireland published a report on the role of Kelp in the Marine Environment in 2005 (Kelly, 2005) looking at more in depth ecological and environmental impacts of harvesting. As well as a review of peer-reviewed literature, these documents were used to evaluate the potential impact on the three relevant SCI species from mechanical kelp harvesting, and in-combination effects with the proposed salmon farm installation in relation to the three SCI species.

Laminaria digitata and *L. hyperborea* are the two species of kelp that are targeted by mechanical harvest. The importance of kelp not only as a habitat but as a food resource has been highlighted by numerous studies. Kelp contributes directly and indirectly to the food resource of invertebrates which make it an important feeding habitat for fish species. Kelp forests also provide a foraging habitat for birds due to the associated invertebrate and fish communities present (Kelly, 2005).

Mechanical harvest physically removes the seaweed using a number of different methods. France and Norway have well established mechanical kelp harvesting industries. In France, about 60,000 tonnes of *L. digitata* are harvested annually, primarily in Brittany. Specialised mechanical harvesting equipment called "scoubidou" is used. On average, 30% of the biomass of a kelp forest is harvested. Regulations of harvesting times are imposed to make allowance for growth, reproduction and regeneration of kelp beds. These measures are thought to be sufficient to ensure sustainable harvesting. *L. digitata* is a relatively fast growing alga with a life span of 3 - 5 years (Werner and Kraan, 2004).

In Norway, about 160,000 tonnes of *L. hyperborea* are harvested annually by an industry comprising of one company. Special seaweed dredges are used for harvesting. The Directorate of Fisheries, State Agencies, Research Institutions, fishermen and the industry implement the management schemes. A central aspect of this is the allocation of harvesting areas, subdivided in smaller fields, which are allowed to be harvested every 6 years in a defined order. This results in the removal of 10 - 15% of total standing stock *per annum*. Harvesting is accompanied by monitoring of kelp beds (Werner and Kraan, 2004). Kelp forest ecology and the impact of seaweed dredging has been the subject of extensive research programmes. In general harvesting seems to be performed in a sustainable manner, resulting in no obvious long-term damage of the ecosystem.

In Ireland, the number of investigations into kelp species and their ecosystem is limited. Short term studies by the Irish Seaweed Centre have provided information on kelp growth, biomass, biodiversity of kelp beds and the impact of experimental harvesting. Based on these data, total natural kelp resources (*L. digitata* plus *L. hyperborea*) are estimated to be 81,641 tons for Galway Bay and about 3,000,000 tonnes for the entire coastline of Ireland (Werner and Kraan, 2004).

Question raised during Public Consultation:

It was noted from the public consultation of the AA report prepared by MERC (2020) that An Taisce stated in their submission:

“At page 43 reference is made to potential in combination effects from kelp harvesting in Bantry Bay: “Possible in-combination effects from aquaculture and kelp harvesting have not been accounted under in-combination effects on connected SCI’s and SPA’s as it is not clear whether previously proposed kelp harvesting activity will in the future be licensed.”

This is a significant issue. There is at least one appeal pending and one licence granted in relation to kelp harvesting since this appeal was lodged. Loss of mature kelp takes away feeding and concealment habitat for sprat and other juvenile forage fish. This will create a temporary bonanza for feeding birds (as fish feed on smaller species that can no longer hide in the kelp), followed by a collapse of feedstocks in the bay (when those smaller species are consumed or driven off.) This needs to be factored into the “in combination” and “cumulative” effects, as well as into potential knock on effects in the food chain.”

Following an assessment of the licencing matter by the ALAB TA, the position at present appears to be that no kelp harvesting is actually taking place as yet in Bantry Bay. The An Taisce response to the NIS/AA Report notes there is "at least one appeal pending and one licence granted". ALAB has checked the website the Department of Housing Local Government & Heritage and cannot find any other foreshore licence applications for mechanical kelp harvesting in Bantry Bay.

BioAtlantis Licencing Background

Relating to the BioAtlantis Ltd. Foreshore licence application for a trial licence to carry out Mechanical Kelp Harvest in Bantry Bay, a summary of current knowledge available to ALAB is given below:

Baseline environmental/ecological studies:

- No EIA screening or further investigations were carried out when the original licence application was submitted in 2009. It appears this type of project is not defined in the legislation requiring the completion of an EIA process, see Schedule 5, Planning and Development Regulations 2001
<http://www.irishstatutebook.ie/eli/2001/si/600/made/en/print#sched5>
- No consideration has been given in relation to the potential impacts on Special Conservation Interests (bird species) from nearby Special Protected Areas due to the mechanical harvesting of kelp in Bantry Bay.
- A baseline environmental study was carried out by MERC Consultants in 2016, looking at one test site and one control site in each of the five areas in Bantry Bay where a licence application was made by BioAtlantis. This recorded the existing flora, fauna and habitat in all sites and recorded no rare or unusual habitats or species and appears to be of a reasonable

quality. This is the only environmental monitoring relating to this project that has been carried out that I can find.

- BioAtlantis provided a monitoring programme plan for five years post harvest, based on sites selected by MERC in the baseline study to monitor potential impact of harvesting. From my understanding, this post-harvest monitoring was to be included as a licence condition. It appears to be a reasonable monitoring plan, looking at flora, fauna and habitat effects.

Current licence status (taken from ALAB Board Minutes 2nd March 2021):

- BioAtlantis Limited applied for a trial foreshore licence in June, 2009 and was granted a 10 year (non-trial) licence for the period commencing 1 January 2014, in March 2014, under reference no. Number: FS006061 for the mechanical harvesting of kelp at 5 locations in outer Bantry Bay comprising 753 Hectares.
- In June 2018 BioAtlantis notified the Department of Housing, Planning and Local Government, in accordance with the conditions of the Foreshore Licence, of its intention to commence mechanical harvesting of kelp within the foreshore limited, commencing on approximately 4 July 2018.
- This foreshore licence was the subject of a judgment in the High Court by Ms. Justice Murphy, delivered on the 20th day of May, 2020, on the judicial review application of John Casey (Applicant). The other parties were The Minister for Housing, Planning and Local Government, The Minister for State at the Department of Housing, Planning and Local Government, Ireland, and The Attorney General. BioAtlantis Aquamarine Limited was a Notice Party. The net effect of that decision is that it determined the licencing process in relation to the BioAtlantis licence application had not yet concluded by reason of the failure by the Minister to comply with section 21A and section 21B of the Foreshore Act and as a consequence the Court had no jurisdiction to determine the particular dispute which has arisen between the parties. In order to complete the process as required under the Foreshore Act 1933 (as amended) it was stated that the Minister's determination must be published in Iris Oifigiul. This is required pursuant to Section 21A of the 1933 Act so that the public are informed of the right to question the validity of the determination, as provided for in section 21B of the Act. Until those provisions are complied with, the licencing process is incomplete.
- ALAB understands an appeal against this decision was lodged on 6 August 2020 and that no hearing date has yet been assigned for it.
- ALAB has also established that there are separate proceedings entitled "Casey v BioAtlantis 2018/257 MCA". In these proceedings an appeal was lodged on 20 July 2019. This case has a hearing date of 21 June 2021. It is not known whether this case concerns the Foreshore Licence application.
- ALAB has checked the website the Department of Housing Local Government & Heritage and cannot find any other foreshore licence applications for mechanical kelp harvesting in Bantry Bay.

This was discussed at the ALAB Board meeting of the 1st April 2021 with the Board requesting me as its TA to proceed with the assessment of potential in-combination effects on the SCI species from SPA's within range of the development with the potential to be affected by the Shot Head site and

this licenced kelp harvesting programme for the remaining years of the existing Mechanical kelp harvesting licence, that is, up to 2024.

Looking at the plan for Shot Head submitted with the aquaculture licence application, if a licence were to be granted by the current ALAB appeal deadline of 30th June, then the earliest the site could be stocked with fish would be late 2021, or early 2022. This leaves a potential maximum of three years overlap where both sites may be operating, regardless of any proceedings/appeals against the BioAtlantis judgment. This also does not allow for fallowing periods at the salmon farm site, so can be considered the maximum likely period of overlap and was taken as the maximum timeframe for assessment.

The potential for existing and planned future developments in Bantry Bay to act together with the proposed Shot Head salmon farm development to give rise to new effects and / or cause previously described effects to be increased must be considered. Potentially, additional development could increase effects with regard to displacement, disruption, reduction in available foraging area or direct mortality to the three species under consideration.

Conservation objectives for connected SPA sites

A generic conservation objective is available for the connected SPA sites (NPWS, 2019; NPWS, 2018). The generic conservation objective is:

“To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA”

No further or more specific conservation interests have been published in relation to any of the SPA sites connected to Bantry Bay. However, MERC (2020) identified further possible conservation objectives that could be applied to the SCI sites in order to demonstrate more thorough and effective application of the precautionary principle. They determined that specific conservation objectives are available for the Great Saltee Islands (NPWS, 2011) and these relate to the same SCI species. Table 3 lists these conservation objectives, which were used to assess potential impacts in the MERC (2020) report, and will also be used here to assess potential in-combination impacts of the Shot Head site and the mechanical harvesting of Kelp proposed by BioAtlantis.

Table 3: Conservation objectives used to assess impacts (from MERC, 2020).

Attribute	Measure	Target
Breeding population abundance: apparently occupied sites (AOSs)	Number	No significant decline
Productivity rate	Mean number	No significant decline
Distribution: breeding colonies	Number; location; area (hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at the breeding site	Level of impact	No significant increase

Disturbance at marine areas immediately adjacent to the colony	Level of impact	No significant increase
--	-----------------	-------------------------

Breeding population abundance, productivity rate, prey biomass and disturbance at marine areas immediately adjacent to the colony were considered factors which could potentially be affected by the combination effects of the mechanical kelp harvesting and Shot Head fish farm applications.

The distribution of the breeding colonies will not be affected by these developments as none of these activities are occurring directly within or beside any breeding colonies. Therefore also, there will be no disturbance at any breeding sites or any barriers to connectivity for the three SCI species being considered as a result of these two developments.

Potential Effects of Mechanical Kelp Harvesting and their Significance

Foraging Area

In terms of foraging habitats, kelps are thought to provide three main habitats for bird species (Kelly, 2005): Kelp forests (living attached plants associated with rocky substrata), drift kelp in the open sea and wrack, or detached kelp washed up on the shoreline. Kelp forests provide a foraging habitat for birds due to the associated and diverse invertebrate and fish communities present but the assessment by Kelly (2005) only suggested that Guillemot, of the three species being looked at here could potentially utilise this habitat, but stated that no direct interactions with kelp forests have been described for Common Guillemots. Looking at the importance of drift kelp and kelp wrack, the three species under consideration here were not mentioned as being observed as using these habitats (Kelly, 2005). While there are concerns regarding other bird species and direct impacts due to mechanical kelp harvesting, it does not appear to include the three species of concern in this case. A review of the literature did not list the three SCI species of concern as species which utilise kelp as a foraging resource (Kelly, 2005, Burrows et al, 2018). Within Bantry Bay, the proposed sites for harvesting per year represent between 0.2-0.4% of the available foraging habitat in Bantry Bay. This is not considered to be a significant loss of potential foraging habitat.

Impact on food resource due to harvesting:

Harvesting of kelp forest can remove a direct food resource for some bird species, as discussed above. It can also remove an indirect food source for birds in that it removes a nursery ground for some fish species and a habitat for invertebrates, which are in themselves a food source for fish species, which can have a knock on effect on foraging on higher trophic levels, a concern raised by An Taisce in their submission in response to the AA report prepared by MERC, which is referenced on page five of this report. A review of the literature has not highlighted the use of the kelp forests of any specific fish species of note that are preyed upon by the species under consideration here. All three species are primarily offshore feeders that forage for only part of their time in inshore areas, as described in the report by MERC (2020).

The harvesting plan outlined in the foreshore licence granted to BioAtlantis Ltd. details how different sites will be harvested on a four-year rotational basis to allow for regeneration of sites between

harvests. This compares with international practise which sees 6-7 years between harvesting of the same sites in Norway, and an informal rotation plan for some French kelp harvesting sites of three years. Norway's monitoring of harvesting sites has shown no long term environmental or ecological impacts using their rotation method (Werner and Krann, 2004). Growth rates in Norway are expected to be slower than in Irish waters, which would be considered to be closer to the growth rates observed in Brittany, Northern France where their mechanical kelp harvesting operates, due to a more similar water temperature profile (Kelly, 2005).

An Taisce's concern of a trophic level collapse within Bantry Bay due to mechanical kelp harvesting, with knock on significant impacts to the three SCI species under consideration is not borne out by an examination of the literature and previous experience in other countries. While there are likely to be some localised environmental and ecological impacts of mechanical harvesting on the local area, it is not reasonable to assume this percentage removal of kelp forest on a rotational basis will cause the total collapse of prey fish species in Bantry Bay that is referred to in the An Taisce submission. *"This will create a temporary bonanza for feeding birds (as fish feed on smaller species that can no longer hide in the kelp), followed by a collapse of feedstocks in the bay (when those smaller species are consumed or driven off.)"*. None of the relevant literature reviewed on predicted or observed effects has reported or predicted such a result, including observations from countries with a history of mechanical kelp harvesting going back over 40 years or longer (Werner and Kraan, 2004, Kelly, 2005, APBmer, 2016, Burrows et al 2018). In both France and Norway, where mechanical kelp harvesting already occurs, at rates of between 60,000 and 160,000 tonnes harvested per annum, no collapse of fish populations has been observed in their environmental monitoring schemes.

Additionally, there are procedures in place in the licence granted to BioAtlantis to monitor for environmental and ecological impacts and a condition allowing the Minister to revoke the mechanical kelp harvesting licence if serious, unforeseen environmental or ecological impacts are detected. This licence period was also intended to be used as a trial to assess mechanical kelp harvesting on a rotational basis and its environmental impacts, so these assessments would be expected to be taken into consideration for any future licence renewals, should they be made.

All three SCI species have large foraging ranges as is shown in Table 2 and detailed in MERC (2020). **Therefore, it is not predicted that mechanical kelp harvesting will have a significant impact on the foraging ability or available prey resource for the three species under consideration.**

Displacement due to Disturbance:

The licence granted to BioAtlantis grants harvesting rights to a total area of 753 hectares on a four-year cycle, including areas only to be harvested during times of bad weather. This means, in practise, between 80-160 hectares per year will be harvested over the summer/autumn period. This time period of disturbance are less than equivalent aquaculture practises already operating in Bantry Bay, where there will be daily boat traffic out to aquaculture sites.

The AA report prepared by MERC (2020) assessed the disturbance to the three SCI species as not having a significant impact due to existing traffic in the Bay. Mechanical harvesting will introduce

one more boat into the bay in inshore areas, in areas of habitat already established not to be an important food source for any of the bird species being considered here.

Guillemot are considered to be moderately sensitive to boat traffic and they may be displaced from potential foraging habitat by boat activity during harvesting events. This is not considered to be a significant loss of potential foraging habitat. It is likely that displaced Guillemot will forage elsewhere (moderate flexibility in prey and large foraging range) and it is likely that this displacement effect will not be significant, given the availability of extensive areas of open waters in Bantry Bay. Overall, Guillemot are recorded in low densities in Bantry Bay and not all Guillemot are likely to be from the connected to the Iveragh Peninsula SPA. **Significant impacts on breeding success and productivity in connected SPA populations of Guillemot are therefore not considered likely.**

The impacts of disturbance and loss of foraging habitat resulting from the mechanical harvesting of kelp are considered not likely to have a significant effect on foraging Fulmar in Bantry Bay. **Significant impacts on breeding success and productivity in connected SPA populations of Fulmar are therefore not considered likely.**

The impacts of disturbance and loss of foraging habitat resulting from the mechanical harvesting of kelp are considered highly unlikely to have a significant effect on foraging opportunities for the Gannet SCI in Bantry Bay. **Significant impacts on breeding success and productivity in connected SPA populations of Gannets are therefore not considered likely.**

Direct Mortality

There are no predicted impacts of direct mortality on any of the three SCI species under consideration here in relation to mechanical kelp harvesting.

In-combination effects – Mechanical kelp Harvesting and Shot Head Salmon Farm

Potentially, additional development could increase effects with regard to displacement, disruption, reduction in available foraging area or direct mortality to the three species under consideration.

A report by MERC (2020) and the NIS carried out on the Shot Head Salmon Farm project found that the impacts of disturbance and loss of foraging habitat resulting from the construction and operation of the proposed salmon farm at Shot Head are considered highly unlikely to have a significant effect on foraging opportunities for the Gannet SCI in Bantry Bay. The same reports found that for Fulmar, the impacts of disturbance and loss of foraging habitat resulting from the construction and operation of the proposed salmon farm at Shot head are considered not likely to have a significant effect on foraging Fulmar in Bantry Bay. Guillemot may be displaced from potential foraging habitat by the proposed salmon cages. The fish farm development will lead to a reduction of 0.106% in the available foraging habitat in Bantry Bay. This is not considered to be a significant loss of potential foraging habitat. Boat activity may cause temporary displacement of Guillemots during movements to and from the fish farm site. It is likely that displaced Guillemot will forage elsewhere (moderate flexibility in prey and large foraging range) and it is likely that this

displacement effect will not be significant, given the availability of extensive areas of open waters in Bantry Bay. Table 2 indicates the wide foraging range for these three species suggesting displacement or disturbance from Bantry Bay would have a very limited impact, on the overall foraging area availability for the three species.

The previous section considers the impact of mechanical kelp harvesting, as licenced, on the food resource, foraging area and displacement due to disturbance of the three SCI species under consideration and found that it was highly unlikely to have a significant impact on any of these factors. No significant source-pathway-target vectors have been identified whereby SCI species may be affected by present and proposed levels of activity within Bantry Bay.

Therefore, the proposed Shot Head farm together with mechanical kelp harvesting is considered highly unlikely to cause in-combination effects that will impact on SCI species or the conservation objectives for any designated site.

Conclusion

An AA assessment report by MERC consultants (MERC, 2020), an addendum to that report (MERC, 2021), an NIS prepared by the applicants, an AA Matrix Screening report by the Marine Institute (2020), along with a Technical Advisor report found that the Shot Head development would have no significant impact on the three species assessed. An extensive literature review and a review of all the documentation submitted to ALAB relating to the Shot Head application and the publicly available literature on the BioAtlantis Foreshore licence application has come to a similar conclusion in relation to mechanical kelp harvesting and in-combination impacts with the Shot Head Salmon Farm.

The ALAB TA has examined the evidence and it is their reasoned conclusion that in combination/cumulative effects can be discounted in terms of SCI species listed here. It is considered highly unlikely that there will be in-combination effects that will impact on SCI species or the conservation objectives for any designated site caused by the proposed developments – the licence for mechanical kelp harvesting and the Shot Head Salmon Farm.

Ciar O'Toole
ALAB Technical Advisor
28th May 2021

References

APBmer, 2013. Tools for Appropriate Assessment of Fishing and Aquaculture Activities in Marine and Coastal Natura 2000 Sites. Reports I-VII. Prepared for the Marine Institute Ireland. Available at: oar.marine.ie/discover

Burrows, M., Fox, C., Moore, P et al. 2018. Wild seaweed harvesting as a diversification opportunity for fishermen. Research report. Scottish Association of Marine Science.

Crowe, O. 2019. [Appropriate Assessment Screening for Shot Head Salmon farm](#). Aquaculture Licence Appeals Board. Ireland.

Cummins, S., Lauder, C., Lauder, A. & Tierney, T. D. (2019) The Status of Ireland's Breeding Seabirds: Birds Directive Article 12 Reporting 2013 – 2018. *Irish Wildlife Manuals*, No. 114. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Department of Housing, Local Government and Heritage. 2014. Foreshore licence reference number FS006061. BioAtlantis kelp mechanical harvesting licence available on www.gov.ie/en/foreshore-notice/e62b9-bioatlantis-ltd-bantry-bay/ accessed on the 16th April 2021.

Environment and Heritage Service, Northern Ireland. 2007. Environmentally Sustainable Seaweed Harvesting in Northern Ireland. Position Statement.

Gittings, 2018. Report 5 February, 2018 assessing potential impact on wild birds. Prepared for Aquaculture License Appeals Board. Aquaculture Licence Appeals Board. Ireland.

Kelly, E. (ed.) (2005) The role of kelp in the marine environment. *Irish Wildlife Manuals*, No. 17. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

Marine Institute. 2020. An Appropriate Assessment Matrix Screening Report of Aquaculture Activities in Outer Bantry Bay. Marine Institute Ireland.

MERC Consultants, 2020. Report for the purposes of the Aquaculture Licences Appeals Board's Appropriate Assessment AP2/1-14/2015. Aquaculture Licence Appeals Board. Ireland.

MERC Consultants, 2021. Briefing Note in response to public consultation regarding the report submitted for the purposes of the Aquaculture Licences Appeals Board's Appropriate Assessment AP2/1-14/2015. Aquaculture Licence Appeals Board. Ireland.

Morrison, 2018. Kelp Harvesting Briefing Note. Scottish Parliament Information Centre. Scotland.

NPWS (2011) Conservation Objectives: Saltee Islands SAC 000707 and Saltee Islands SPA 004002. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2018) Conservation objectives for Deenish Island and Scariff Island SPA [004175]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

NPWS (2018) Conservation objectives for Beara Peninsula SPA [004155]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

NPWS (2018) Conservation objectives for Sheep's Head to Toe Head SPA [004156]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

NPWS (2018) Conservation objectives for The Bull and the Cow Rocks SPA Site code: [004066]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

NPWS (2018) Conservation objectives for Skelligs SPA [004007]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

NPWS (2018) Conservation objectives for Iveragh Peninsula SPA Site code: [004154] Department of Culture, Heritage and the Gaeltacht.

NPWS, 2019. Special Protection Areas. <https://www.npws.ie/protected-sites/spa>.

NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neil.

Roycroft, D. Cronin, M., Mackey, M, Ingram S, N. O' Cadhla, O. March (2007) Risk Assessment for Marine Mammal and Seabird Populations in South-Western Irish Waters (R.A.M.S.S.I.). Coastal and Marine Resources Centre, University College Cork.

Saunders, G., 2020. *Shot Head (AP2/2015) Technical Advisor's Final Report*, Technical Report submitted to ALAB. Available here:

www.alab.ie/boarddeterminations/2015/scheduleofdocuments/

Scottish Government. 2016. Wild Seaweed Harvesting Strategic Environmental Assessment. Prepared by APBmer and Marine Scotland. www.gov.scot/publications/wild-seaweed-harvesting-strategic-environmental-assessment-environmental-report

Watermark-Aqua Environmental, 2020. Natura Impact Statement for proposed Shot Head salmon farm. Watermark Aqua environmental, Ballywaltrim House. Bray Co Wicklow.

Werner, A. And Kraan, S. 2005. Review of the Potential Mechanisation of Kelp Harvesting in Ireland. Marine Environment and Health Series, No. 17, 2004. ISSN NO: 1649-0053