

An Roinn Comhshaoil,  
Aeráide agus Cumarsáide  
Department of the Environment,  
Climate and Communications



Mr Charlie McConalogue T.D.,  
Minister for Agriculture Food and the Marine,  
Agriculture House,  
Kildare St,  
Dublin 2,  
D02 WK12.

25<sup>th</sup> January 2022

### Impacts of Aquaculture on Wild Fish Stocks

Dear Charlie,

I am writing, in the context of my statutory responsibility for the conservation, protection and development of the inland fisheries resource and the impacts on that resource from aquaculture.

At the outset, I want to emphasise that I strongly believe that a thriving aquaculture sector and protecting / enhancing for Ireland's precious natural inland fisheries resource need not be mutually exclusive. However, I am also of the view that our current regulatory system for aquaculture is giving rise to ongoing detrimental and unsustainable impacts on wild fish stocks particularly salmonids.

In the first instance, the vast weight of peer reviewed and published scientific studies, both in Ireland and internationally, demonstrate clearly that the undeniable detrimental impacts of sea-lice emanating from fish farms on the survival of wild salmonids is unacceptably high and is a significant factor in the decline in wild stocks.

There is also an urgent requirement to mitigate, within aquaculture policy, the threat of introgression from escaped farmed fish with wild fish and the very real detrimental impacts on the genetic integrity, fitness, life cycle, and from competition for habitats and food.

In addition, damage visited on the marine eco-system and environment from uneaten fish food and pollution from a concentration of faeces in salmon farming areas needs to be addressed. There are also issues regarding chemical use in fish farms and corresponding impact on marine species in the vicinity of farms.

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Fundamentally there is a pressing need to align aquaculture policy and licensing with National, EU and international responsibilities and obligations as regards the conservation of wild fish stocks and the aquatic eco-system. Current aquaculture policy, regulation, development, and implementation have proven detrimental impacts on wild stocks and habitat.

I also note that the recently adopted National Marine Planning Framework (NMPF) sets out a number of objectives and policies in relation to aquaculture (Chapter 9) that include, inter alia, the conservation of biodiversity, the enhancement of the aquaculture licencing system so that it is characterised by the highest level of scientific expertise, promotes trust amongst operators, NGOs and the general public, and that any aquaculture licencing system is based on best practice and protects water quality.

In this regard, the NMPF notes the potential impacts of aquaculture on wild salmon and migratory fish and inshore shellfish stock. The NMPF seeks to minimise the environmental impacts of aquaculture through the adoption of an ecosystem-based approach to the assessment of proposals to minimise impacts on protected species, in accordance with the EIA Directive and the Birds and Habitats Directives. All public bodies are required to adopt such measures to secure the objectives of the NMPF in accordance with both Section 74 of the Planning and Development (Amendment) Act, 2018 and Section 30 of the Maritime Area Planning Act, 2021.

In addition to the primary concerns set out above, the severe disquiet, in relation to aquaculture policy, licencing and implementation, among stakeholders in the wild fish, environmental and ecology sectors, our state agency Inland Fisheries Ireland (IFI), myself and my Department has been recently intensified.

This results from the process of Appropriate Assessment (AA) carried out by the Marine Institute on behalf of your Department, in the context of the EU Habitats Directive, of bays and estuaries for aquaculture activity.

As you will be aware my Department has statutory responsibility for wild Atlantic salmon, a protected species under Annex II of the Directive. In that context, I have asked IFI in their role as statutory scientific advisors to me, as Minister, to examine the recent screening for AA in respect of Kenmare Bay.

I am advised that IFI is of the view that the screening for AA is based on a misinterpretation of the attributes which define the favourable conservation status of salmon, set out by the National Parks and Wildlife Service (NPWS - as the relevant competent authority under the Habitats Directive). Moreover, my Department has concerns regarding the apparent reliance on two publications by the Marine Institute (MI) which are at odds with the very vast majority of peer reviewed and published scientific papers on this issue.

I attach a detailed analysis, prepared by IFI, of the MI's screening document which gives rise to very significant concerns as regards the assessment's consideration of the impact of fin-fish aquaculture on wild salmonids.



The consideration given in the screening document that "out migrating smolts will not be impeded or captured by the proposed salmon farming activity" does not properly reflect or capture the attributes which define the favourable conservation status of salmon. The absence of assessment of the proven negative impact on the attribute of salmon smolt abundance from the increase sea lice levels due to the presence of marine salmon farms runs the risk of underlining serious flaws in this interpretation.

I am advised by the IFI, on that basis, that the appropriate assessment and risk assessment of salmon aquaculture undertaken are not sufficient to meet the requirements of the Habitats Directive.

I understand that the assessment as it stands cannot determine (as required) if existing or proposed salmon aquaculture activities are consistent with the Conservation Objectives for the Natura site or if such activities will lead to deterioration in the attributes of the habitats and species over time and in relation to the scale, frequency and intensity of the activities.

If screening for AA processes, as employed for Kenmare, are used in relation to other bays and estuaries, the entire screening process is open to question, based as it would be on an incorrect interpretation of the attribute of salmon smolt abundance as set out by NPWS. Accordingly, an opportunity exists to deal with these anomalies and ensure that screenings for AA across all estuaries and bays effectively and adequately take account of and address important attributes which heretofore appear to have been ignored or summarily dismissed.

I would emphasise that I am aware from a range of stakeholders in the inland fisheries area that their intention is to challenge the screening process and any aquaculture licensing system it purports to underpin both domestically and at EU level.

As you may be aware, I launched a process to develop an ambitious policy statement for the inland fisheries area. My Department and IFI, as the statutory authorities for wild fish, including salmonids, have a significant stake in the impacts of the aquaculture sector on such species. As part of the process of developing the policy statement, I will shortly publish for consultation a policy paper "Mitigating the impacts of Salmon Aquaculture on Wild Fish Stocks" (including sea-lice and the dangers of introgression of farmed salmon on wild salmon populations) which will also set out my and my Department's preliminary views on how aquaculture policy can align closely with the needs of wild stocks and facilitate both sectors responsibly co-existing.

I will ensure that this draft policy is forwarded to your Department for early input.

I would also emphasise that my Department and IFI would be supportive of aquaculture activity which is environmentally and ecologically sustainable, does not compromise biodiversity and genetic integrity, whose implementation is not



detrimental to other sectors and meets the requirements of EU and domestic legislation particularly the Habitats Directive.

In my view, the regulatory framework for aquaculture licencing requires a more robust environmental underpinning which fully respects the requirements of the Habitats Directive. I would be keen to work with you in this regard. I would welcome an early meeting with you to discuss how we can protect and preserve our inland fisheries resource while supporting an environmentally and ecologically sustainable aquaculture sector. Following this direct engagement officials from our Departments, IFI and the NPWS should convene at the earliest opportunity to discuss the development of a strategic plan to achieve this outcome, in the context of a policy statement on Inland Fisheries.

Yours sincerely,

Eamon Ryan T.D.,

Minister for the Environment, Climate and Communications

cc Mr. Malcolm Noonan, T.D., Minister for Heritage and Electoral Reform  
Mr. Francis O'Donnell, Chief Executive, Inland Fisheries Ireland  
Mr. Mick Gilhooly, Acting Chief Executive, Marine Institute

## Appendix

### **Concerns regarding the Appropriate Assessment of aquaculture activities in marine SACs and potential impact on Atlantic salmon**

Appropriate assessments (AA) of aquaculture are carried out against conservation objectives for designated ecological features, within SACs, as defined by the National Parks and Wildlife Service (NPWS). One example is the Kenmare River which is designated as a Special Area of Conservation (SAC) under the Habitats Directive. The Blackwater River runs into the north shore of Kenmare River SAC and is designated as an SAC for salmon (Blackwater River (Kerry) SAC). There are four salmon farms active in the Kenmare river SAC. The function of an appropriate assessment and risk assessment is to determine if the ongoing and proposed aquaculture and fisheries activities are consistent with the Conservation Objectives for the Natura site or if such activities will lead to deterioration in the attributes of the habitats and species over time and in relation to the scale, frequency and intensity of the activities.

Atlantic salmon are an Annex II species under the EU Habitats Directive. Under the Habitats Directive, Atlantic Salmon are required to be maintained or restored to favourable conservation status. The favourable conservation status of Atlantic salmon is defined by a list of Conservation Objectives which have attributes and targets, provided by NPWS, which are management targets for habitats and species in the SAC. One attribute is outgoing smolt abundance where it is noted in the Conservation Objective that smolt abundance can be negatively affected by a number of impacts such as estuarine pollution, predation and sea lice (*Lepeophtheirus salmonis*).

In the Appropriate Assessments of salmon aquaculture undertaken for the Kenmare river SAC, it is stated that with regard to the attribute of smolt abundance, that out migrating smolts will not be impeded or captured by the proposed salmon farming activity. This is an incorrect interpretation of the attributes which define the favourable conservation status of salmon. Assessment should be made as to whether the presence of marine salmon farms will increase sea lice levels such that the attribute of salmon smolt abundance will be negatively affected. The Appropriate Assessment for the Kenmare River SAC concludes that aquaculture production in the Kenmare River SAC does not pose any risk to a range of salmon attributes including salmon smolt abundance. This conclusion cannot be reached as the presence of salmon farms and their potential impact on causing elevated sea lice levels and subsequent impact of out-migrating salmon smolts from the Blackwater river salmon SAC has not been assessed.

The Appropriate Assessment states that aquaculture and fishing operations existed in coastal areas prior to the designation of such areas under the Habitats Directive. Ireland is thereby assessing both existing and proposed aquaculture and fishing activities in such sites. Based on the conclusion reached in the Kenmare river SAC with regard to marine salmon farms and Atlantic salmon, it is likely that the same conclusion will be reached for future proposed salmon aquaculture in all locations, which will be completely unsatisfactory as an assessment of potential environmental impact.

**Comment in the Appropriate Assessment with regard to the potential impact of sea lice from aquaculture on wild salmon stocks.**

The Kenmare river AA states '*Marine finfish farms are perceived by certain sectors to be problematic because of the proximity of some operations to river mouths and a concern over the possible impact on wild migratory salmonid fisheries through infestation with sea lice. The studies on the impacts of lice infestation on smolts (Jackson et al. 2011, 2013a) suggest that sea lice induced mortality on outwardly migrating smolts is likely a minor and irregular component of marine mortality in the stocks studied. This conclusion is further supported by the finding of no correlation between the presence of aquaculture and the performance of adjacent wild salmon stocks.*'

The AA further states '*The results of a long-term study carried out in the Burrishoole system in Co. Mayo (Jackson et al., 2011) show a strong and significant trend in increasing marine mortality of Atlantic salmon originating from the Burrishoole system. They would also point to infestation of outwardly migrating salmon smolts with the salmon louse (L. salmonis) as being a minor and irregular component of marine mortality in the stocks studied and not being implicated in the observed decline in overall survival rate. The results of this study have been corroborated by studies carried out by the Marine Institute as part of a detailed investigation into the potential impacts of sea lice on a number of other river systems, including the Newport River (Jackson et al., 2013a).*'

Another paper, not quoted in the Kenmare river AA, was also published in 2011, (Jackson et al. 2011b). Slice treated and control salmon smolts were released from four Irish rivers, Bundorracha, Erne, Lee and Screebe. The paper states that when the results of this study are examined in the context of the results of the Burrishoole time series, it can be seen that out of a total of fifteen releases at five locations, twelve are positive, showing a higher rate of return in the treated groups. Jackson et al. (2011b) states that this result is significant and supports the view that infestation of outwardly migrating salmon smolts with salmon lice has a negative impact on fitness and can contribute to increased marine mortality. The paper also states that, however the results of this study and the Burrishoole time series would also point to infestation of outwardly migrating salmon smolts with the salmon louse (*L. salmonis*) as generally being a minor component of the overall marine mortality in the stocks studied. It might be clarified how these two viewpoints can be reconciled.

In the Irish context, a number of other key studies on the impact of sea lice from marine salmon farms on salmon have been published. In a study in the Erriff river, Gargan et al. (2012) demonstrated that hatchery salmon smolts treated against sea lice infection were 1.8 times more likely to return than control fish, with a 44.4% mortality of untreated salmon. The results suggested that sea lice induced mortality can significantly negatively impact adult salmon returns and that sea lice larvae emanating from salmon farms may influence individual survivorship and population conservation status of wild salmon in Irish rivers. A similar study by Jackson et al. (2013), quoted above, on release of treated and untreated salmon smolts was challenged on the basis of incorrect statistical analysis. However, they found that sea lice-induced mortality on outwardly migrating smolts can be significant, and found an odds ratio of 1.14:1, which equates to a 12.3% decrease in returning adult salmon due to sea lice infestation from local salmon farms.

Shephard & Gargan (2017) used a 26-year study from the Erriff River to evaluate the contribution of sea lice from salmon aquaculture to declining returns of wild 1 sea-winter (1SW) salmon. Statistical models suggested that returns were >50% lower in years following high lice levels on nearby salmon farms during the smolt out-migration. In a recent study of the impacts of sea lice from marine salmon farms on Irish Atlantic salmon populations, Shephard & Gargan (2020) examined annual counts of 1SW salmon from ten rivers in Ireland, including five "control" systems without salmon aquaculture. Most counts showed a downward trend, consistent with declines in Atlantic salmon populations. Rivers with aquaculture showed lesser returns (mean 33%, range 19–46%) in years following high lice levels on nearby salmon farms. No scientific publications other than those undertaken by Jackson et al. are quoted in the Appropriate Assessment and the conclusions reached in the AA can not therefore be regarded as a robust scientific assessment based on available scientific data.

There is a substantial literature on the impacts of sea lice on salmonids (see review in Thorstad et al., 2015), often derived from experiments using prophylactic lice treatments. A meta-analysis of differential survival between control and parasiticide treatment groups of cultured salmon showed that returns of treated fish were 39% greater (Krkosek et al., 2012). Thorstad et al. (2015) comment that comprehensive meta-analyses, long-term studies, and similar results from an increasing number of experimental studies support that mortalities caused by salmon lice in farm-intensive areas can be expected to result in 12–29% fewer returning Atlantic salmon adult spawners. None of the large body of international scientific literature on the impact of sea lice from salmon farms on the impact of wild salmon is quoted or discussed in the AA.

The AA goes on to state '*Based on the evidence from targeted studies, the information collected as part of the National Sea Lice Monitoring and Control Programme, scientific reports published by the Marine Institute, and in-line with external advice, it is concluded that there is a robust and effective management programme in place in Ireland to control sea lice infestation on farmed fish. Furthermore, there is no empirical evidence to support the suggestion that the fisheries are being adversely affected by unusual levels of sea lice infestation, whether of farmed origin or from other sources.*' This statement is not supported by evidence as there are many occasions when salmon farms are instructed to treat for sea lice due to elevated sea lice levels above an arbitrary lice threshold and salmon farms have been instructed to undertake accelerated harvesting and clear stock from sites due to their inability to control sea lice prior to wild salmonid smolt runs in spring.

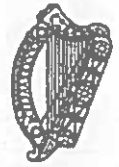
In summary, based on a misinterpretation of the attributes which define the favourable conservation status of salmon, and the reliance on two publications by the Marine Institute and a disregard for the large number of scientific publications at odds with this view, the appropriate assessment and risk assessment of salmon aquaculture undertaken are not sufficient to meet the requirements of Habitats Directive. The assessment cannot determine if existing or proposed salmon aquaculture activities are consistent with the Conservation Objectives for the Natura site or if such activities will lead to deterioration in the attributes of the habitats and species over time and in relation to the scale, frequency and intensity of the activities.

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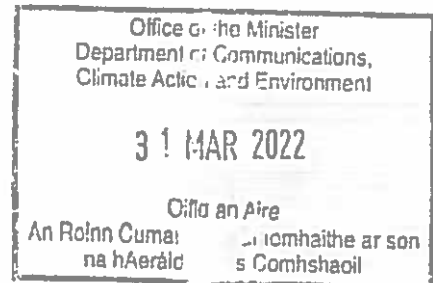


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**29 March 2022**

**Re: Impacts of Aquaculture on Wild Fish Stocks**



**Dear Eamon,**

Thank you for your letter of 25 January 2022 in relation to Impacts of Aquaculture on Wild Fish Stocks and I would like to set out in some detail my reasoned response to the letter.

I would also like to state from the beginning that I am fully satisfied that the current regulatory system in place in Ireland for aquaculture is fully compliant with all of the State's obligations in relation to the Environment. The aquaculture licensing process takes fullest consideration of all potential environmental impacts in advance of any decision to grant an aquaculture licence.

My Department considers all applications for aquaculture licences in accordance with the provisions of the 1997 Fisheries (Amendment) Act, the 1933 Foreshore Act and applicable national and EU legislation. The licensing process involves consultation with a wide range of scientific and technical advisers as well as various Statutory Consultees. The legislation also provides for a period of public consultation. All submissions received during the public and statutory consultation phase are considered during the licensing process. A key component of the aquaculture licensing process is a series of measures designed to assess and address the impact of aquaculture on the environment. All applications for aquaculture licences in Special Areas of Conservation and Special Protection Areas (Natura 2000 sites) are required to be appropriately assessed for the purpose of environmental compliance with the EU Birds and Habitats Directives. In addition to the Appropriate Assessment process, all applications for marine finfish licences must be accompanied by a detailed Environmental Impact Assessment Report as set out in both EU and National legislation.

The licensing process as it currently stands has been developed and enhanced over a number of years following the 2007 European Court of Justice (ECJ) negative judgment against Ireland for breaches of the EU Birds and Habitats Directives. A large element of the judgement concerned a failure by the State to put in place a system for data collection, definition of scientific interests and adequate assessment of aquaculture licence applications in Natura 2000 areas. In order to address the judgment a 'Roadmap towards the Management of Fisheries and Aquaculture in Natura 2000 sites' was agreed and is being implemented. As you are aware, the National Parks and Wildlife Service (NPWS) has the lead role in coordinating the State's response to the ECJ judgment.

Throughout the process, my Department has adhered fully to the agreed "Roadmap" and has provided detailed updates on progress to the Commission via NPWS in accordance with the programme of measures for Ireland to ensure full compliance with the ECJ judgment.

### Appropriate Assessment Development

The role of my scientific advisors, the Marine Institute, is to oversee and/or prepare a report in support of the Appropriate Assessment (AA) process and submit these reports to my Department to support the licensing determination process. These AA reports are consistent in their adherence to formal guidance.

- Articles 3 - 11 of the European Community (EC) Directive 92/43/EEC 1 on the Conservation of Natural Habitats and of Wild Flora and Fauna (Habitats Directive) provide the legislative means to protect habitats and species of Community interest through the conservation of an EU-wide network of protected sites known as Natura 2000 sites.
- The requirements for AA derive directly from Article 6(3). Article 6(3) outlines the decision-making tests for considering plans and projects that may have a significant effect on a Natura 2000 site. No definition of the content or scope of AA is given in the Habitats Directive, but the concept and approach are set out in EC guidance (EC, 2018).
- The Guidance on Appropriate Assessment of Plans and Projects in Ireland document published by the Department of Environment, Heritage and Local Government (DEHLG) in 2009 (DEHLG, 2009<sup>2</sup>) sets out how AA of plans or proposals in Natura 2000 sites in Ireland should be carried out in alignment with EC guidance. In 2021 the Office of the Planning Regulator (OPR) published a practice note on AA Screening (OPR, 2021<sup>3</sup>). The practice note provides guidance on how a planning authority should screen an application for planning permission for appropriate assessment. In preparing AA reports, the Marine Institute adheres to the guidance identified and any others provided by the relevant bodies.

### Stage 1: Appropriate Assessment Screening

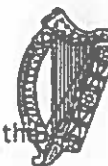
- Stage 1 AA Screening is the process that addresses and records the reasoning and conclusions in relation to whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of the site's Conservation Objectives.
- If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 AA. Screening should be undertaken without the inclusion of mitigation.

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<sup>1</sup> EC. 2018. Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC Commission Notice (2018).

<sup>2</sup> DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Environment, Heritage and Local Government  
[https://www.npws.ie/sites/default/files/publications/pdf/NPWS\\_2009\\_AA\\_Guidance.pdf](https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf)

<sup>3</sup> OPR (2021) Appropriate Assessment Screening for Development Management. Practice Note PN01. Office of the Planning Regulator. March 2021. <https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf>



- The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no effect.

### Stage 2: Appropriate Assessment

- This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. This stage requires a targeted scientific examination of the plan or project and the relevant Natura 2000 sites, to identify and characterise any possible implications for the site in view of the site's Conservation Objectives, taking account of in combination effects. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then permission/ approval for the plan or project in its current form cannot be granted.

First and foremost, it is important to note that EU guidance does not preclude development in Natura 2000 sites. More specifically, the European Commission has published guidance documents<sup>4</sup> on aquaculture in Natura 2000 sites, within which is stated:

*"There is no automatic exclusion of any economic activities in and around Natura 2000. Instead, human activities need to comply with the provisions outlined in Article 6 of the Habitats Directive to ensure that these activities are in line with the conservation objectives of Natura 2000 sites."*

The requirement of a regulatory body to implement or consider an Appropriate Assessment (AA) process when considering licencing validates this statement. National guidance (produced by NPWS) goes somewhat further in that it identifies thresholds of disturbance to certain habitat related conservation features that are permitted (e.g., 15% disturbance communicated in Conservation Objectives Supporting documents for marine habitats and species<sup>5</sup>).

As set out above, the evaluation of the interaction between aquaculture activities and conservation features in Natura sites, like all other developments, is carried out in a 2-stage process by the licencing authority. Stage 1 of the AA is a screening, wherein the likely significant effects of the activity in light of the Conservation Objectives of the site in question are considered. The threshold of effect at this stage is very low and mitigation (in the form of licence conditions, monitoring controls and management actions) cannot be taken into consideration. It for this reason that most aquaculture developments invariably proceed to AA Stage 2 consideration.

This stage considers whether the plan or project, alone or in-combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and takes into account any mitigation measures necessary to avoid, reduce or offset any negative effects. Mitigation measures can take the form of active management measures at the sites. These may be presented as specific conditions applying to licencing or implementation of appropriate monitoring programmes (e.g. Sea Lice or Benthic Protocol) to inform robust management actions or a combination of both. It is further noted in the EU Guidance<sup>1</sup> that:

<sup>4</sup> EU (2018). Guidance on Aquaculture and Natura 2000 Sustainable aquaculture activities in the context of the Natura 2000 Network. PDF ISBN 978-92-79-99668-9 doi:10.2779/34131

<sup>5</sup> [https://www.npws.ie/sites/default/files/publications/pdf/002158\\_Kenmare%20River%20SAC%20Marine%20Supporting%20Doc\\_V1.pdf](https://www.npws.ie/sites/default/files/publications/pdf/002158_Kenmare%20River%20SAC%20Marine%20Supporting%20Doc_V1.pdf)

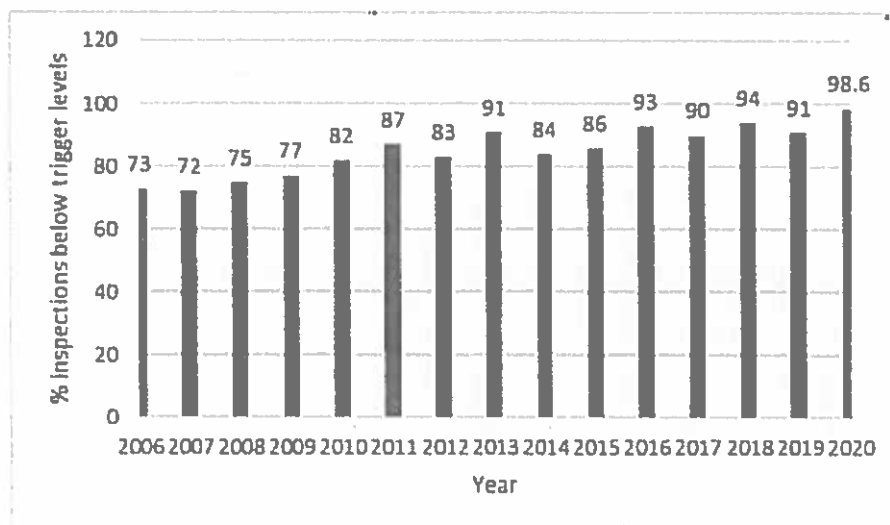
*“ ... by properly implementing relevant EU and national legislation (including licensing and control) most of the potential pressures and impacts from aquaculture are prevented or minimised”.*

In short, the AA process follows a standard risk assessment methodology wherein the evaluator (i.e. the licencing body), in the first instance, acknowledges the risks to conservation features associated with aquaculture and only then, upon adoption and implementation of appropriate management actions considered sufficient to reduce the risks to an acceptable level, can licencing proceed. If the risk cannot be managed, then licencing would be considered unsafe.

In addition to the consideration of environmental impacts in the licensing process there are significant protocols in place in relation to finfish licensing to monitor the environmental impact of licensed sites. I'd like to address some of the issues raised in your letter and provide clarity and substance to the issues.

#### Sea lice Monitoring and control programme

The sea lice monitoring programme in Ireland has been acknowledged by the EU Commission as representing best practice and as outlined in the graph below the percentage of inspections below trigger levels for all active salmon farms has continually improved over the last number of years.



The control protocols for the management of sea lice are operated by the Marine Institute on behalf of the State. These protocols are more advanced than those operated in other jurisdictions for the following reasons:

- The inspection regime is totally independent of the industry;
- Data obtained from these inspections is published and made widely available;
- Treatment trigger levels are set at a low level

Sea lice monitoring in Ireland was subject to a complaint to the EU Commission in 2009 (EU Pilot Project 764/09/ENV1) which included the management of sea lice in Ireland. The complaint was closed

**Oifig an Aire Talmhaíochta, Bia agus Mara**  
**Office of the Minister for Agriculture, Food and the Marine**



in favour of the State in 2012 noting that the EU Commission were satisfied with Ireland's approach. The management programme was first implemented in the early 1990's through the Sea Trout Task Force and has been refined over the years through the publication of the Monitoring Protocol No. 3 and the Pest Management Strategy in 2008. The Marine Institute, and DAFM, monitor international developments in relation to sea lice management on an ongoing basis to ensure that appropriate management measures remain in place. An example of our commitment to ongoing research in this field is that GMIT, in conjunction with the Marine Institute, will begin a PhD study in 2022 focussed on the monitoring programme.

Monthly inspection reports are circulated to relevant stakeholders, including IFI, and the annual report is published as an Open Access Marine Institute publication. The Marine Institute is currently investigating how these results can be made available online in real-time.

Ireland is one of the only countries to provide independent sea lice monitoring (the other being Faroe Islands) and the threshold levels are in line with those applied in all other salmonid aquaculture jurisdiction. Thresholds were initially devised and approved by the Sea Trout Task Force which included a range of stakeholders, including representation from your own Department and Inland Fisheries Ireland. Due to a lack of empirical evidence on the direct effect of sea lice infestation levels and wild salmonid population levels, thresholds were devised by expert opinion to be as close to zero as practically possible. Although other jurisdictions may have different management programmes, they are all based on a standard threshold of number of lice per fish.

Should the threshold be exceeded, the issuing of an instruction to a farm to take action due to elevated sea lice levels is in fact an example of a properly functioning management programme. The reduction in the number of instructions issued, as evidenced in the sea lice annual reports, over the last 10-15 years is a reflection of the improved level of sea lice management on Irish farms.

It is also important to note that the effective management of sea lice is of critical importance to the fish farm operator and the efficacy of their operations. The Irish industry through their interactions and compliance with the sea lice monitoring and management protocol demonstrate their commitment to this rigorous programme.

While your correspondence does not indicate which studies you are referring to you suggest that "the vast weight of peer reviewed and published scientific studies, both in Ireland and internationally, demonstrate clearly that the undeniable detrimental impacts of sea-lice emanating from fish farms on the survival of wild salmonids is unacceptably high and is a significant factor in the decline in wild stocks", These are important issues that are covered in management actions and licence conditions to be found in finfish licencing in addition to national and European legislative programmes. Neither myself, nor my scientific advisors dispute that the management of sea lice is critically important, however the actual significance of its impact in regard to wild salmonoids is not fully quantified.

Field experiments with parallel releases of treated versus untreated Atlantic salmon smolts have been performed in Ireland<sup>67</sup> and Norway<sup>89</sup> with varying results, reflecting the numerous factors influencing marine survival. Recent meta-analyses of these studies confirm a negative effect of sea lice, but primarily in years when the natural mortality, arising from numerous other factors impacting marine survival, is high<sup>10</sup>. There is an absence of clear evidence exclusively linking sea lice with high mortality rates. International organisations, such as ICES (International Council for the Exploration of the Sea) have stated that further research is needed to investigate the connection between sea lice infestations and effects on wild salmonids<sup>11</sup>. Irrespective of the unresolved scientific position, the fact that Ireland has operated an independent national sea lice monitoring programme for nearly 30 years reflects the seriousness which the State takes any risk posed by sea lice on our wild salmonid populations and clearly demonstrates the mitigating measure in place.

### Sea Survival

Marine survival rates vary among rivers considerably. Best estimates are from monitored rivers such as the Burrishoole (approximately 7% five-year average marine survival return) and the Bush (NI approximately 4%). The estimate for the Corrib is not as robust but is also approximately 4% (Source ICES Working Group on North Atlantic Salmon (WGNAS) 2020). Other indices from hatchery and other rivers internationally can be much lower. This further indicates the extant attrition rate on salmonoids irrespective of sea lice.

Separating out the other underlying mortality factors is not possible presently and the decline in North Atlantic salmon stocks over the last three decades in overall marine survival will most likely be multifactorial.

### Threat of introgression

My Department is not aware of an issue in respect of fish escapes requiring urgent mitigation within aquaculture policy. My Department has published a full Structural Design Protocol for Finfish farms which includes reference to both net and pen design to mitigate against potential escape. This is encompassed into the licensing process where escape prevention is a key consideration in the assessment of the application and all Statutory consultees, including the IFI, have sight of the proposed design. Compliance with the approved structural design forms a condition of the licence and each farm

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<sup>6</sup> Gargan, P.G. et al. 2012. Evidence for sea lice-induced marine mortality of Atlantic salmon (*Salmo salar*) in western Ireland from experimental releases of ranched smolts treated with emamectin benzoate. *Canadian Journal of Fisheries & Aquatic Sciences* 69, 343-353.

<sup>7</sup> Jackson, D.J. et al. 2013. Impact of *Lepeophtheirus salmonis* infestations on migrating Atlantic salmon, *Salmo salar* L., smolts at eight locations in Ireland with an analysis of lice-induced marine mortality. *Journal of Fish Diseases* 36, 273-281.

<sup>8</sup> Skilbrei, O.T. et al. 2013. Impact of early salmon louse, *Lepeophtheirus salmonis*, infestation and differences in survival and marine growth of sea-ranched Atlantic salmon, *Salmo salar* L., smolts 1997-2009. *Journal of Fish Diseases* 36, 249-260.

<sup>9</sup> Vollset, K.W. et al. 2019. Context-dependent impact of an ectoparasite on early marine growth in Atlantic salmon. *Aquaculture* 507, 266-274.

<sup>10</sup> Vollset, K.W. et al. 2016. Impacts of parasites on marine survival of Atlantic salmon: a meta-analysis. *Fish and Fisheries* 17, 714-730.

<sup>11</sup> ICES. 2016. Report of the Workshop to address the NASCO request for advice on possible effects of salmonid aquaculture on wild Atlantic salmon populations in the North Atlantic (WKCULEF). ICES CM 2016/ACOM:42. 44 pp.



is inspected at least annually or more by exception. It is also a requirement of the licensing regime that any escapes are reported by the operator.

A number of alleged farmed fish have been identified by the IFI in rivers. On foot of these reports, despite there being no reported escapes by the operators, my Department's Marine Engineers inspect any nearby fish farms for the integrity of the nets and pens and no evidence of escapes have been identified in recent years. As you will be aware, my Department has previously advised Inland Fisheries Ireland that if anglers or officers of Inland Fisheries Ireland suspected that they had collected salmon from farmed stock that the fish should be sent to the Marine Institute for analysis. To date no fish have been forwarded to the Marine Institute for the necessary analysis.

On the wider issue the Marine Institute has been to the fore internationally in assessing the impact of gene flow from farms into recipient wild populations. There have been substantial recent methodological developments in powerful genetic markers that have made it possible to accurately identify and quantify levels of genetic introgression over single and multiple generations and in once off and multiple escape events. Enabled by funding from Science Foundation Ireland research is currently ongoing at the Institute in collaboration with University partners at UCC and QUB in respect of the development, validation and application of this technology, which is bespoke to Irish populations and with a view to its more general deployment. The Marine Institute agree that on the basis of the newly available assessment capability that genetic monitoring of wild populations is timely and should be undertaken as a means of establishing an accurate genetic baseline of wild salmon populations in anticipation of potential future expansion of the industry. This would be an ideal candidate for a cross-departmental (agency) co-operative programme integrating complimentary skillsets of IFI and Marine institute in large scale field sampling and genetic analyses respectively.

#### **Regulation of Aquaculture - Benthic Monitoring & Use of Chemicals etc**

It is important to note that aquaculture activities are subject to a wide range of regulations both at an EU and national level. Such regulations include the monitoring of, and management of diseases (EU Animal Health Law, animal welfare regulations), use of veterinary medicines (EU Veterinary Medicines Directive) and other substances (EU Dangerous Substances Directive and SI 466 of 2008) seafood safety (EU Regulation on the placing on the market and use of feed; EU Animal By-products regulations), organic regulations, alien species directives and impacts of aquaculture on adjacent environment and ecosystems (Shellfish Waters Directive, Habitats Directive, Birds Directive, Environmental Impact Assessment Directives). These are governed by the following EU regulations:

- **REGULATION (EU) 2016/429 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 2016 on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law') and associated EU implementing and delegated regulations.**
- **REGULATION (EC) No 1069/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation)**

- REGULATION (EU) 2019/6 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 on veterinary medicinal products and repealing Directive 2001/82/EC
- DIRECTIVE 2006/11/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 February 2006 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community
- REGULATION (EC) No 1069/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation)
- REGULATION (EU) 2018/848 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007
- COMMISSION REGULATION (EC) No 535/2008 of 13 June 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 708/2007 concerning use of alien and locally absent species in aquaculture
- DIRECTIVE 2006/113/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the quality required of shellfish waters
- COUNCIL DIRECTIVE 92 / 43 / EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora
- DIRECTIVE 2009/147/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 November 2009 on the conservation of wild birds
- DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment
- Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (Habitats Directive)

#### **National Marine Planning Framework**

Aquaculture is fully encompassed within the National Marine Planning Framework Plan and I am satisfied that the current licensing system is fulfilling the objectives set out in respect of aquaculture in the Plan, including to support a diverse, compliant, growing aquaculture sector that operates in a modern licensing and enforcement system to produce high quality food, protects and enhances the social and economic fabric of rural coastal and island communities, and conserves biodiversity around our coasts in line with ecological sustainability.

Your comments on the NMPF and requirements to adopt such measures to secure the objectives of the NMPF in accordance with both Section 74 of the Planning and Development (Amendment) Act, 2018 and Section 30 of the Maritime Area Planning Act, 2021 are noted.

The Marine Institute played a significant role in the development of the NMPF including the aquaculture sectoral policy (chapter 9 as referred) which recognises the extent and nature of the effects of interactions with wild salmonids as an important subject of ongoing research in Ireland and other jurisdictions.





### Public and Statutory consultation in the licensing process

My Department reports strong engagement from both members of the public and Statutory Consultees in respect of the consultations which are carried out in relation to specific aquaculture and foreshore licence applications. Submissions received during the Public and Statutory Consultations are fully considered by my Department as part of the licensing process.

I am surprised to learn of the significant issues that Inland Fisheries Ireland have raised in relation to the AA process specifically in respect of Kenmare Bay. The Aquaculture and Foreshore Management Division of my Department have advised that fifty-three (53) applications for aquaculture and foreshore licences have taken place following this AA. In all of these cases IFI was consulted as a Statutory Consultee and in all fifty-three (53) cases no submission was made by the IFI in relation to this AA. I'd like to take this opportunity to encourage the IFI to engage fully with the aquaculture licensing process in their role as a Statutory Consultee under the legislation to raise any concerns in relation to applications in that forum as these concerns will then be fully examined by my Department and scientific advisors in the Marine Institute. It should also be noted that the NPWS is also Statutory Consultee to the licensing process and has not raised any concerns in relation to how the Appropriate Assessment process operates.

### Specific AA Screening for Kenmare River SAC & Role of the Marine Institute

The Marine Institute has assured me and is confident that all advisory work completed by the Marine Institute is in line with best practices worldwide, and that Marine institute scientists take great care in discharging their responsibilities towards all conservation, protection and development activities in the natural environment. In their role as my scientific advisors the Marine Institute takes the critique in your correspondence seriously and have assisted me in taking this opportunity to thoroughly ensure that any perceived issues are addressed.

Your correspondence and annex refer extensively to "Appropriate Assessments (AA) of salmon aquaculture undertaken for the Kenmare river SAC". It is imperative to point out, from the outset, that the clear intention for the AA prepared for Kenmare was to determine shellfish aquaculture licencing only and are not sufficient nor were they intended or proffered to enable determination of marine finfish applications. I can confirm that no Finfish licencing was determined on the basis of this AA. Any finfish applications in these areas will be subject to a full AA process when the application is being considered.

Therefore, to question on the basis of this AA, whether salmon aquaculture is consistent with conservation objectives <sup>12,13</sup> of Natura or if Salmon Aquaculture will lead to deterioration in the attributes of the habitats and species over time is not for determination at this stage. The NIS and subsequent AA conclusion report on marine finfish applications will come to a conclusion on this and determine if there are mitigation measures to minimise risk.

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<sup>12</sup> NPWS. 2013a. Conservation Objectives for Kenmare River SAC (002158). Version 1.0. Department Arts, Heritage and the Gaeltacht. Version 1 (25 April, 2013); 27pp.

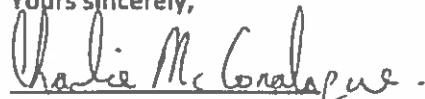
<sup>13</sup> NPWS. 2013b. Kenmare River SAC (002158): Conservation Objectives supporting document – marine habitats and species. Department Arts, Heritage and the Gaeltacht. Version 1 (March 2013); 34pp.

As I have set out in detail at the beginning of my letter you are aware that the role of my scientific advisors is to oversee and/or prepare a report in support of the AA process and submit these reports to my Department to support the licensing determination process. These AA reports are consistent in their adherence to formal guidance.

I note your intention to publish a consultation on a policy paper on "Mitigating the impacts of Salmon Aquaculture on Wild Fish Stocks" and would welcome the opportunity to have sight of an early draft of same.

As you know the current Programme for Government commitment is to work to develop the aquaculture industry in a sustainable way and I am satisfied, for the reasons set out above, that the licensing system as it currently operates is continuing to fulfil that commitment.

Yours sincerely,

A handwritten signature in black ink that reads "Charlie McConalogue". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Charlie McConalogue T.D.  
Minister for Agriculture, Food and the Marine