



SALMON WATCH IRELAND

"Dedicated to the restoration of salmon abundance in Ireland"

Applicant: Bradan Beo Teoranta (BBT)
Location: Kilkieran Bay, County Galway
Application Type: Review & Renewal of Marine Finfish Aquaculture

**Licence – {AQ427 (T09/203A)/AQ 428 (T09/114A) Ardmore,
Amalgamated Together},
AQ 428 (T09/114B) Na Macken
AQ429 (T09/146A) Coonawileen
AQ 429 (T09/136A) Casheen / Dinish
AQ432 (T09/141A) Cnoc**

Date: 25 July 2025

The legal requirement for consent for this licence is contained in the following judgements:

Kelly (Eamon) v An Bord Pleanála [2014] IEHC 400¹ and Connelly v An Bord Pleanála [2018] IESC 31. In Connelly, the Supreme Court explained that the 'overall conclusion' which must be reached before the competent authority will have jurisdiction to grant development consent following an appropriate assessment 'is that all scientific doubt about the potential adverse effects on the sensitive area have been removed.'

¹ http://www.europeanrights.eu/public/sentenze/Irlanda-25luglio2014-High_Court.pdf

Executive Summary: Salmon Watch Ireland Submission – Kilkieran Bay Aquaculture Licence Review (July 2025)

This submission from **Salmon Watch Ireland** strongly opposes the renewal and review of aquaculture licences for salmon farming in **Kilkieran Bay, County Galway**, by **Bradán Beo Teoranta (BBT)**. It argues that the application and its supporting environmental documentation fail to meet the legal and scientific standards required under **Article 6(3) and 6(4) of the EU Habitats Directive**, the **EIA Directive**, and recent relevant **High Court judgments**.

Key Objections

1. **Inadequate Environmental Assessment**
 - The submitted EIAR and NIS are deemed scientifically insufficient and legally non-compliant.
 - Crucial data (e.g., water quality, sea lice modelling, escape risk, cage design) are either outdated, unsupported, or lack transparency.
2. **High Ecological Sensitivity of Kilkieran Bay**
 - The farm sites are adjacent to designated **salmon rivers** (e.g., Screebe, Lough Na Furnace), with **Screebe failing to meet conservation limits** in 2025.
 - Numerous smaller, non-designated rivers in the **Connemara Bog Complex SAC** are likely home to unique salmonid populations and are not assessed.
3. **Sea Lice Impacts on Wild Salmonids**
 - The application underrepresents the impact of sea lice from farmed salmon on **wild Atlantic salmon and sea trout**.
 - It relies heavily on **Marine Institute studies**, while ignoring a wider body of independent, peer-reviewed research that shows significant impacts on **adult salmon returns** and **juvenile sea trout survival**.
 - Modelling of lice dispersal is challenged as overly simplistic and unsupported by real-world larval density data.
4. **Water Quality and Modelling Concerns**
 - **DIN levels** are projected to exceed thresholds at sites like **Coonawilleen**, breaching **WFD requirements**.
 - Modelling lacks clear input data and independent validation, undermining confidence in the projected environmental impacts.
5. **Escape Risk and Climate Vulnerability**
 - Recent **salmon escapes from nearby Killary Harbour** raise concerns about structural resilience.
 - The application fails to address future climate risks or present detailed site-specific **cage designs**.

6. Marine Habitat and Legal Protections

- Cumulative risks to SACs and species like the **pearl mussel in wider geographical area are overlooked** and **sea trout** are largely overlooked and not considered adequately.
- **Sea trout**, now protected under the **EU Nature Restoration Law**, are facing critical pressure and require urgent marine habitat restoration.

7. Lack of Consideration for Alternatives

- No genuine exploration of **land-based aquaculture** systems or other lower-risk technologies is provided.

8. Animal Welfare and Mortality

- National mortality rates of up to **45% in farmed salmon** are cited, raising ethical and regulatory concerns.

Conclusion

Salmon Watch Ireland concludes that there remains **scientific doubt regarding the environmental safety** of continuing salmon aquaculture in Kilkieran Bay. It urges the competent authority to **refuse the licence renewal**, in line with EU legal obligations, due to:

- documented threats to protected habitats and species,
- inadequate environmental and scientific justification,
- and failure to mitigate ongoing negative impacts of open-cage salmon farming.

Salmon Watch Ireland calls for a national policy to transition toward sustainable land-based facilities and strict adherence to both the Habitats Directive and the Nature Restoration Law.

Introduction

The documentation submitted by **Bradan Beo Teoranta (BBT)** seeking a review and renewal of their extant aquaculture licences in Kilkieran Bay, County Galway falls far short of what is required pursuant to Article 6(3) of the Habitats Directive. Nor can there be reliance on Article 6 (4) thereof, as there are no stated ‘imperative reasons of overriding public interest’, (IROPI), which could ever justify locating salmon farms at this sensitive location. The EIAR and NIS presented is deficient and cannot be considered to be in compliance with EU legislation.

The five sites are adjacent to a considerable number of designated salmon rivers which discharge into Kilkieran Bay. The main rivers are the **Screebe catchment and Lough Na Furnace system, both of which are designated salmon rivers and are also located within the Connemara Bog Complex which includes Salmo Salar as a qualifying interest.**

The Screebe River flowing into Kilkieran Bay failed to meet its salmon conservation limit for 2025, achieving only 70% of the required stock (151 fish) with a deficit of 46 fish. Electrofishing surveys also recorded a low mean of 11.5 salmon fry per 5 minutes, below the national threshold of 17. As a result, the river is designated for catch-and-release-only salmon angling in 2025. The other designated catchment, Lough Na Furnace is also closed to harvest

with no surplus identified. The data included in the environmental documentation is outdated and does not take account of large recent declines in Atlantic salmon survival at sea.

There are also a large number of smaller catchments flowing into Kilkieran Bay. These smaller catchments are not designated as salmon rivers but in all probability do contain unique salmon populations. The majority of these smaller catchments have a hydrological connection to the Connemara Bog Complex SAC and thus enjoy the protection afforded by the EU Habitats Directive. Notable fisheries existed in the majority of these catchments prior to the introduction of salmon farming notably in the Invermore and Inverbeg catchments.

The sites under review are also within the expected zone of influence using the Source – Pathway – Receptor methodology, of a number of rivers outside Kilkieran Bay and within the Connemara Bog Complex SAC which have Atlantic salmon as a qualifying species and thus have added protection requiring appropriate assessment of impacts. These rivers include the Owenmore (Ballynahinch) and numerous smaller catchments which have not been sufficiently addressed in the environmental documentation presented.

We are strongly of the opinion that the EIAR and the NIS presented do not adequately consider the impact on Atlantic salmon and sea trout populations in these rivers and that the mitigation strategies presented do not address our concerns regarding the damage caused by sea lice, disease, and escapees.

It is apparent that these farms are located in mid and outer Kilkieran Bay and pose a significant risk to all rivers within Kilkieran Bay.

They also pose a significant threat to sea trout and that in combination with the annual stocking and staggered production model –(odd/even years) could certainly result in upwards of two and a half million potential hosts for sea lice and pathogen transfer to wild salmonids during wild smolt migration.

The stocking and production cycle indicates that smolts are introduced in **November** on an alternating annual basis. In odd years, **Ardmore and Casheen/Dinish** receive approximately **1,448,330 smolts**, while in even years, **Cnoc, Coonawilleen, and Carraig na Meachain** receive around **1,432,997 smolts**.

This November start date overlaps with the **critical early period** in spring of year one affecting wild salmonid smolt migration and again also with the **spring smolt migration** of wild salmonids in year two — a period of particular ecological sensitivity.

The reported production volumes in the application are exceptionally high, representing nearly **50% of total national output**. This figure is extraordinary and does not align with known trends, particularly given the increasing impact of **climate-related mortality** events currently affecting salmon farms across Ireland.

There is a clear mismatch between the modelled production levels and what is likely occurring in practice at Kilkieran Bay. The environmental modelling assumes a combined cycle production of over **7,000 tonnes**, which seems implausible given site constraints and

industry trends. Unfortunately, **no verified production data** are available for this bay, making it impossible to assess the accuracy of these figures. In the absence of transparent, site-specific data, we cannot comment with confidence on whether the assumptions used in the modelling reflect actual operations. This represents a clear failure on the part of the applicant to meet their obligations under the Habitats Directive in assessing such activities.

Smaller Catchments

The minor rivers above as outlined enter Kilkieran Bay and Salmon Watch Ireland considers these rivers to be important waterbodies for migratory sea trout. Some of these smaller streams and rivers also sustain small and unique populations of Atlantic salmon which have not been adequately assessed in the environmental documents presented by the applicant.

The sea trout which inhabit these catchments and indeed all Irish catchments now enjoy protection under the Nature Restoration Law and are included along with Atlantic salmon as annex 111 species with specific protection under Article 5. (Restoration of marine ecosystems). ²

This essentially gives sea trout as a marine species added protection as follows:

Listed as a Marine Species of Concern: Sea trout are specifically included in Annex III (Article 5(3)) of the law—this means they are formally acknowledged alongside species like salmon.

Habitat Restoration Required: The law obliges EU countries to “put in place the restoration measures necessary to improve the quality and quantity of habitats of species” such as sea trout, and even to re-establish them where necessary. This includes the marine habitat.

Habitat Connectivity Focus: Restoring habitats is not just about individual sites. The law demands that connectivity between habitats be improved—crucial for migratory species like sea trout.

Ambitious Targets & Schedules: By 2050, the law requires that all ecosystems and species habitats in need of restoration be brought back to good condition. Intermediate milestones: 30% restoration by 2030, increasing to 60% by 2040, then 90% by 2050

Marine Habitat Measures

Under Article 5, Member States must assess marine habitats (e.g., coastal rivers, estuaries, sea-bed areas) and take restoration actions where they are not in “good condition”.

These include measures to counter pollution, restore river connectivity (barrier removal), and re-enable access to spawning grounds.

² Nature Restoration Law – Article 5/5 - <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1991&qid=1722240349976>

The transmission of sea lice and disease to the wider environment from these sites currently harms wild salmonids and will continue if these licenses are renewed. The prospect of escape of farmed salmon which may interbreed with wild salmon is certainly increased by climate change which will result in ever increasing challenging weather conditions including storms of severe magnitude.

The prospect of declining water quality cannot be ruled out with modelling of BOD, DIN and Phosphorus all being viewed as a myriad of notional values with little effort by applicant to present data which were entered into the model thus not allowing any independent evaluation. We would also assume that DAFM are not in possession of this data and thus cannot form an independent appraisal. It is not even remotely good enough to accept a model as presented by applicant without independent and appropriate appraisal. We would also have similar misgivings on the modelling of sea lice dispersal.

This specific point concerning modelling of data³ was recently raised in a judgement by the High Court which noted that experts should effectively “show their workings” or “at least stating the facts or assumptions upon which their opinion was based.” We certainly would suggest that the competent authority should have stated how they appraised the data as presented for hydrological modelling in the area under review. This point is particularly relevant when viewed against modelling presented in a study by the Marine Institute⁴ which suggests that there are significant differences to dispersal models presented in the NIS.

All documentation presented by the applicant requires an independent and concise appraisal by your department in order to renew and review this extant licence and this cannot be achieved in view of the standard of assessment documents presented by **Bradan Beo Teoranta** (BBT).

We note that the sites are in a High-Status coastal water quality category, and we are particularly interested in dissolved inorganic nitrogen (DIN) modelling contained in the environmental documentation presented. The modelling suggests that DIN will generally stay within the high-status category but that some of the sites will at times exceed the maximum parameters allowed.

We note that the modelling for DIN should always focus on winter levels and accordingly the present worst-case scenario to link to maximum biomass in August appears flawed. We note that the Coonawillen (T09-146A) site exceeds the maximum allowable level of 0.17 mg/l DIN.

It should also be noted that the recent High Court Judgement above, related to Shot Head noted the following in regard to breaches of water body status.

³ High Court Judgement - Salmon Watch Ireland CLG -v- The Aquaculture Licences Appeals Board & Ors, Inland Fisheries Ireland -v- The Aquaculture Licences Appeals Board & Ors, Sweetman & Ors -v- The Aquaculture Licences Appeals Board & Ors – Para 1273-1274-

https://www.courts.ie/acc/alfresco/b4f7916e-69aa-4bee-bb93-a81126fbad83/2024_IHC_421.pdf/pdf#view=fitHhttps://www.courts.ie/acc/alfresco/b4f7916e-69aa-4bee-bb93-a81126fbad83/2024_IHC_421.pdf/pdf#view=fitH

⁴ AQUAPLAN - Health Management for Finfish Aquaculture
<https://drive.google.com/file/d/1GtblvtDyFksK6pGd-zYQw5iBwvsV5y38/view?usp=sharing>

A temporary exceedance may only be permitted under Article 4.6 of the WFD, which applies in very limited and exceptional circumstances. Outside of those, any exceedance is a breach, including short-term or localized ones.

In the context of aquaculture licensing, temporary exceedance is not permitted.

“Article 4.6 WFD stipulates that 'Temporary deterioration in the status of bodies of water shall not be in breach' of the WFD – but only in limited listed circumstances not here relevant. Article 4.7 WFD stipulates, inter alia, that Member States will not be in breach where failure to prevent deterioration of body of surface water from high to good status is the result of new sustainable human development activities and certain conditions are met. It follows that outside those circumstances listed in Articles 4.6 and 4.7 – i.e. generally – deterioration from high to good status is in breach. No-one in this case has suggested reliance on the exceptions provided by Articles 4.6 and 4.7.”

This effectively demonstrates that in the absence of such circumstances any determination must be to refuse consent.

The background levels of DIN appear not to be included in the modelling and no account of other inputs to bay are evident in the documentation presented.

Special Areas of Conservation – Escape of farmed salmon- Introgression

We certainly are concerned with the recent escape of farmed salmon in Killary⁵ harbour and we consider that the large number of SACs with salmon and or pearl mussel populations as a Q1 located in county Galway and further afield may be at risk as demonstrated by the migration of farmed salmon into rivers up to 100 km from the Killary escape.

This certainly calls into question the inadequate examination of SACs outside Kilkieran Bay including SACs especially where Atlantic salmon and pearl mussel are listed as qualifying interests.

The relevant report about the escape suggests that any licence application should examine the issue of escape and that all infrastructure should conform to future climate modelling weather patterns. However, the only solution which may be climate resilient would suggest a movement to on land sites away from the marine environment.

It is also immediately evident that the examination of cage technology contained in the documentation is not adequate. The cage design used in Kilkieran Bay is not described in detailed technical terms in Part 2 of the EIAR, but it is discussed in general terms, with references to design standards and best practices.

This is not sufficient to allow an informed decision by the competent authority. The design must be site specific and contain all relevant information pertaining to structure including

⁵ Occurrence of Farmed Atlantic Salmon in Western River Basin Districts during August & September 2024

detailed drawings. This point was also contained in the recent judgement regarding the Shot Head site in Bantry Bay.

EIA as to the risks of escape of salmon from the fish farm.

This finding relates to

- **necessity of re-consideration of bespeaking the DAFM reports on the 2014 farmed salmon escape in Bantry Bay, and**
- **comprehensiveness of the EIA as it related to the specification and structural integrity of the cage installation.**

Sea Lice

In regard to wild salmon, we are not satisfied with the level of scrutiny of peer reviewed material concerning the impact of sea lice on wild salmon. While the NIS does discuss the different interpretation of data, it totally ignores the effect on the numbers of returning adults. We have prepared a document which outlines the various peer reviewed papers concerning the impact of sea lice on adult salmon returns.⁶

This clearly reflects the loss of adult returnees across a myriad of studies and the interpretation of the Marine Institute is clearly flawed as the most critical issue is returning adults and not focussing on a one percent differential in overall survival. It is also clearly admitted that in years of poor survival indices at sea of wild salmon, wild smolts treated with Slice had a very substantial increase in survival against their wild untreated smolts. Conditions at sea are expected to be challenging due to climate and changing distribution of prey thus exacerbating issues surrounding the impact of sea lice originating from salmon farming areas.

We also strongly suggest that the efficacy of chemical treatments for sea lice has now become unreliable, and it is important to note that the paired releases which demonstrate a significant difference between treated and control cohorts in the earlier releases may be subject to a situation whereby the efficacy of the treatment may be reduced over time. The continued reliance on these trial releases should take account this reduction in efficacy rather than any suggestion that management of sea lice on farms had improved. It is essential that the Marine Institute Studies⁷ be viewed with caution.

⁶ Smolt Loss Aquaculture Bays – Salmon Watch Ireland <https://docs.google.com/spreadsheets/d/1Euepvl1wJKDoGUFFd-vKzgr4APL2q8-B/edit?usp=sharing&ouid=111338563308166601523&rtpof=true&sd=truehttps://docs.google.com/>

⁷ Jackson, D., Cotter, D., Newell, J., McEvoy, S., O'Donohoe, P., Kane, F., McDermott, T., Kelly, S., and Drumm, A. (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*. Available at [https://oar.marine.ie/bitstream/handle/10793/849/Impact%20of%20Lepeophtheirus%20Salmonis%20on%20Migrating%20Atlantic%20Salmon%20\(Jackson,%20D.%20et%20al.\).pdf;jsessionid=C61B3246F793421270901A3CB67C911C?sequence=1](https://oar.marine.ie/bitstream/handle/10793/849/Impact%20of%20Lepeophtheirus%20Salmonis%20on%20Migrating%20Atlantic%20Salmon%20(Jackson,%20D.%20et%20al.).pdf;jsessionid=C61B3246F793421270901A3CB67C911C?sequence=1)

The following paper⁸ “*notes that in a 19 year time series of release group studies of Atlantic salmon, we demonstrated that (i) the effect of subjecting out-migrating salmon smolts to parasite treatment on marine survival has been reduced over a time, (ii) the relation between salmon lice levels in the out-migration route of the salmon and effect of treatment against the parasite is weak, but also (iii) the return rates in both treated and untreated groups of salmon are negatively correlated with salmon lice levels, and (iv) returns of wild salmon to the region are similarly negatively correlated with salmon lice levels during the out-migration year. Our study suggests that salmon lice can have a large effect on wild salmon populations that is not revealed with randomized control trials using antiparasitic drugs. This should be better accounted for when considering the impacts of farms on wild salmon populations.*”

The European Court of Justice (ECJ)⁹ in several judgments have ruled that the test to be applied must be based on the ‘best available scientific knowledge in the field.’ We take issue, therefore, with the failure of the application to have regard to independent peer reviewed scientific reports and their interpretation of the effect of sea lice on wild salmonids and which challenge the conclusions of the small and select number of reports which are the only ones that have been consistently considered by DAFM and indeed the industry.

It is unacceptable that the environmental reports as presented ignores the ECJ jurisprudence and only considers a narrow range and indeed interpretation of scientific literature concerning the impact of sea lice from salmon farms on wild salmonids.

Assessment of applications for grants of licences, and grants of renewal of licences, by the Minister for Agriculture Food and the Marine, have in the past relied exclusively on a limited number of scientific papers from the Marine Institute in respect of sea lice impacts on wild salmonids in the marine setting.

Salmon Watch Ireland strongly asserts that DAFM must consider the application by **Bradan Beo Teoranta (BBT)** as flawed and thus not in compliance with Article 6 subsections (3) and (4) of the Habitats Directive and the EIA Directive.

The Marine Institute¹⁰ studies have been relied upon by **Bradan Beo Teoranta (BBT)** in their NIS and EIA associated with this application and are once again at considerable variance with both national and international studies in relation to the impact of salmon farming and the impacts of sea lice emanating from these farms on wild salmonid stocks. The

⁸ [Direct evidence of increased natural mortality of a wild fish caused by parasite spillback from domestic conspecifics](#)

⁹ C-258/11 - Sweetman and Others v ABP (Galway Bypass)
C-258/11 - AG opinion, Sweetman and Others v ABP (Galway Bypass)
C-127/02 - Waddenzee

C-521/12 - T.C. Briels and Others v Minister van Infrastructuur en Milieu
C-323/17 - People Over Wind and Sweetman v. Coilte Teoranta

¹⁰ Jackson 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.
[https://oar.marine.ie/bitstream/handle/10793/849/Impact%20of%20Lepeophtheirus%20Salmonis%20on%20Migrating%20Atlantic%20Salmon%20\(Jackson,%20D.%20et%20al.\).pdf?sequence=1](https://oar.marine.ie/bitstream/handle/10793/849/Impact%20of%20Lepeophtheirus%20Salmonis%20on%20Migrating%20Atlantic%20Salmon%20(Jackson,%20D.%20et%20al.).pdf?sequence=1)

Jackson et al. 2011. An evaluation of the impact of early infestation with the salmon louse *Lepeophtheirus salmonis* on the subsequent survival of outwardly migrating Atlantic salmon, *Salmo salar* L., smolts.
<https://www.sciencedirect.com/science/article/pii/S004484861100247X>

Marine Institute papers imply falsely in their interpretation that the impact of sea lice emanating from salmon farms are a minor and irregular component of wild salmon survival. This has been relied upon by the applicant in this case to minimize the effects caused by salmon farming.

These studies have been subject to much criticism¹¹ and overall scientific consensus indicates a significant effect on wild salmon survival.

While other peer reviewed papers concerning sea lice appear in the environmental reports, it is obvious that a bias is towards the Marine Institute papers and that the Competent Authority in its examination of same is not independent in this matter.

Salmon Watch Ireland strongly suggests that an independent review be considered to examine the studies carried out by the Marine Institute which have already been widely dismissed as defective. Simply put there is an impact on vulnerable salmon stocks and to licence open cage farming is effectively ignoring the inevitable outcome of this practice, **less adult returns**.

We would also like to bring to your attention the following paper¹², which was recently published, and which effectively disputes the Marine Institutes papers regarding the impact of sea lice from salmon farms on wild Atlantic salmon survival. The study involves 43 paired release trials from 2001 to 2019 across Ireland's west coast, researchers compared hatchery-raised salmon treated with anti-lice medication against untreated controls. The study represents the most comprehensive dataset of its kind in Ireland.

Key findings include:

- Treated salmon had a 22% higher survival rate on average which equates to an 18% decrease in adult returns.
- Lice pressure was a major driver: survival dropped sharply with increasing lice densities.
- Even treated fish suffered reduced returns under high lice pressure, indicating partial resistance to treatment.

The implications are broad:

- Rivers with salmon farming nearby may see significantly lower salmon returns.

¹¹ M Krkosek et al. (2013) Comment on Jackson et al. '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'
<https://drive.google.com/file/d/1TtsD1Ra3R7bczcNtJZ2IMT6LS3BUpD1G/view?usp=sharing>

¹²Gargan et al. 2025 Salmon lice from aquaculture reduce marine survival of Atlantic salmon.

https://drive.google.com/file/d/19580NNF2a_Ok6rEQjwtcEt_lisRHu7tc/view?usp=sharing

- Protected rivers under the EU Habitats Directive are at risk of missing conservation targets due to farm-related lice impacts.
- The findings challenge the fish farming industry's current sea lice management strategies, calling into question their effectiveness.

This study strengthens the case for spatial planning to move farms away from sensitive salmon habitats preferably to an on-land relocation. According to the North Atlantic Salmon Conservation Organisation, 100% of farms should prevent lice-related mortality of wild salmon. This research shows Ireland is failing Atlantic salmon.

This study essentially demonstrates that wild salmon are at significant risk during smolt migration. The study also calls into considerable doubt the ongoing attachment by regulatory bodies to research carried out by the Marine Institute which is now firmly at odds with this research.

It is alarming to note the dependence of the applicant on chemical sea lice treatments and the recent transfer over to the use of cleaner fish to mitigate the effects of sea lice on farmed salmon, as most of the studies concerning impacts on wild salmonids were carried out while mitigation strategies were in place and while biomass was generally lower on farms. It is also relevant that the application of SLICE exceeded environmental quality standards at a number of sites within Kilkieran Bay notably Coonawilliam.

It is also a rapidly changing temperature regime in the majority of bays in Ireland where salmon farming is taking place. The recent study¹³ by the Marine Institute, Marine Environmental Characterisation of Irish Inshore Aquaculture Regions, **certainly notes that the longest running SST timeseries, based at Malin Head and submitted to ICES annually, has showed a steady increase in positive anomalies, suggesting a general trend of rising SST, particularly in the Northwest region. These anomalously high-water temperatures have been linked to salmon survivability in farms.**

This factor will make sea lice more problematic and disease more prevalent as indicated by the extraordinary mortalities experienced around various bays most notably in Donegal, Cork, and Kerry which alone on a welfare basis should not be allowed to continue. We are unable to access mortality reports for this application and indeed other applications but are in the process of an appeal to the information commissioner to release the mortality data of all farms. The redaction of this material does not allow us to adequately address the ongoing welfare and disease issues presently at play in the fish farming industry.

We again strongly reiterate that trigger levels for treatment on salmon farms are arbitrary and have no scientific basis to suggest that background natural levels are ever maintained in the presence of salmon farms. No attempt has been made to measure background levels of sea lice larvae in non-aquaculture bays, and this is certainly required to present a realistic base line set of data.

¹³ Marine Institute "Marine Environmental Characterisation of Irish Inshore Aquaculture Regions https://drive.google.com/file/d/1C0meEnLHD6h9-okD_OSbh-8seWqkvwqk/view?usp=sharing

It is essential to note that there is a substantial difference in impact aligned with biomass, period fish are in farms and environmental conditions. There are significant differences in impacts if farms in bays are recently stocked with smolts, grower fish in second year of production and bays that are fallowed. The situation in Kilkieran Bay presently and into the future may have farms always operating in their second year of production at all times thus ensuring a continuous availability of sea lice larvae from the farms.

The impacts are readily recognisable from Passive Integrated Transponder (PIT) studies carried out by Inland Fisheries Ireland on the Erriff river in County Mayo. These studies clearly demonstrate that there is a substantial effect on salmon and sea trout survival at all times but is substantially greater when farms are in second year of production and biomass is large.¹⁴

It is also mentioned that sea lice densities rapidly decrease away from the farm. There has been no concerted study to indicate larval sea lice densities or copepod densities in areas where no salmon farms are, so to suggest that background levels are achieved is entirely without merit.

The recent paper by Morton *et al.*¹⁵ clearly demonstrates that removal of farms reduces sea lice infestation pressure to background levels.

The following peer reviewed papers although not exhaustive demonstrate the impact of sea lice on wild salmon and must be considered in order to comply with the standards required what is required pursuant to Article 6(3) of the Habitats Directive.¹⁶

Salmon Watch Ireland also contends that no relevant studies have been undertaken to identify the migration routes of wild salmonids through Kilkieran Bay and other regions in Galway which may pass on their migration route near to Kilkieran Bay. The mitigation strategies employed by the industry as a whole do not come anyway near to fulfilling their obligations concerning environmental standards as set out in both national and EU environmental legislation.

In regard to sea trout, we would also like to draw your attention to the following scientific papers which reflect damage to sea trout stocks with specific detailed references to Kilkieran Bay rivers and the various systems nationally. It should be noted that these studies were carried out when production levels were substantially lower than they are in modern times.

It is also noteworthy that the premise in the NIS and EIAR that copepod lice have to reach nearby estuarine waters to infect wild salmon and sea trout is entirely without foundation and does not consider the movement of juvenile salmon and sea trout smolts during migration.

The first study relates to a paper published in 2017¹⁷ which demonstrates the different infestation pressures between areas where salmon farms are present and farms which are over 30km from salmonid rivers.

¹⁴ Page 66- Annual Report and Financial statements – Inland Fisheries Ireland
https://opac.oireachtas.ie/Data/Library3/Documents%20Laid/2023/pdf/DECCdoclaid290623_102523.pdf

¹⁵ Effect of government removal of salmon farms on sea lice infection of juvenile wild salmon in the Discovery Islands -
https://drive.google.com/file/d/1C0meEnLHD6h9-okD_OSbh-8seWqkvwqk/view?usp=sharing

¹⁶ Sea Lice Papers -https://drive.google.com/drive/folders/14pkmp_eiA4zA_yE-w1wXrXJCyWdPQNr?usp=sharing

¹⁷ 2017 Report Sea Trout Symposium - https://drive.google.com/file/d/19PeLini6w6opCL9uZlYXW2Ne7aeKzT_c/view?usp=sharing

The second study is “ *The Relationship Between Sea Lice Infestation, Sea Lice Production and Sea Trout Survival in Ireland, 1992-2001.*”¹⁸

A paragraph from this study adequately demonstrates the link between salmon farms and proximity to sea trout catchments.

“It is clear from the data presented that there is a strong relationship between high infestation of juvenile lice stages on sea trout and proximity to salmon farms and the patterns of infestation and infestation levels change markedly beyond about 25-30 km from salmon farms. There is also a decrease in risk of osmoregulatory imbalance and mortality from sea lice infection at distances greater than 25-30 km from farms. From these relationships we therefore conclude that sea lice from marine salmon farms were a major contributory factor in the sea trout stock collapses observed in salmon aquaculture areas in western Ireland, western Scotland, and western Norway.”

The following paper ¹⁹ readily demonstrates the larval density around farms in production. The study shows levels of larval density at 0.4 to 2.5 per M³ outside the cages but demonstrates near zero levels once farms are fallowed. This indicates significant overspill of lice from farms. This is more evidence that background levels cannot be attained in the presence of active salmon farms.

Modelling of Sea Lice Dispersal

We are alarmed that the dispersal modelling of sea lice does not appear to consider environmental factors including dispersion by wave and wind action, ability of movement of sea lice copepods during daytime and night, ability to move dependant on salinity. We are also concerned that no account of increasing temperature in bays has been examined. This will reduce generation time and cause increased production of larvae.

The modelling which treats the sea lice larvae and copepods as passive is incorrect and should be viewed as incomplete and erroneous especially in light of study carried out by the Marine Institute reflecting disease transmission modelling.²⁰

Mortalities in Farmed Salmon

Another aspect which requires more scrutiny is the abject record all operators in relation to mortalities on their farms. Mortality rates are running at up to 45% nationally and it is objectionable that such events are allowed to continue. While climatic change may negatively

¹⁸ The Relationship Between Sea Lice Infestation, Sea Lice Production and Sea Trout Survival in Ireland, 1992-2001.
https://drive.google.com/file/d/19PeLini6w6opCL9uZiYXW2Ne7aeKzT_c/view?usp=sharing

¹⁹ Planktonic and Parasitic Sea Lice Abundance on Three Commercial Salmon Farms in Norway Throughout a Production Cycle
<https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2021.615567/full>

²⁰ AQUAPLAN - Health Management for Finfish Aquaculture
<https://drive.google.com/file/d/1GtblvtDyFksK6pGd-zYQw5iBwvsV5y38/view?usp=sharing>

affect their operation it is indefensible that DAFM should continue to allow open cage farms which offer little if any protection from changing oceanic conditions which may amplify further harmful algal blooms, jellyfish infestations, sea lice and a myriad of pathogenic diseases. Permitting such ongoing mortality in the farmed stocks raises fundamental questions regarding regulatory commitment to animal welfare.

Amoebic Gill Disease

With warming oceanic temperatures, it is evident that AGD will continue to increase in both intensity and indeed over longer periods and as such there is a consistent negative effect on both salmon and sea trout in areas where AGD is present on salmon farms. It is also important to note that the marine institute does note that wild salmon smolts may be affected by AGD dependant on temperatures during spring. The treatment of this topic in the documentation presented is not sufficient and falls far short of what is required. The juvenile wild migrating salmon and indeed sea trout from nearby rivers and from further afield areas in Kilkieran Bay are certainly at risk on their migration route. There is also a threat to adult sea trout from adjacent bays including Bertraboy Bay.

The issues with AGD and wild salmonids have not been addressed in the environmental documentation as presented and it is alarming that wild salmonids may be disproportionately affected by this disease when compared to farmed salmon.

The following study²¹ demonstrated that wild fish showed substantially higher mortality levels (64%) than farmed fish (25%), with intermediate levels for hybrid fish (39%) suggesting that AGD susceptibility has an additive genetic basis. This is extremely important as there has been no attempt to analyse the effect on wild fish at sea in Ireland and the attempt in the documentation to mitigate this disease falls far short of what is required.

Alternative Technologies

Alternative technologies as usual have again not been in any way addressed. There are many technologies available to rear salmon to market on land and this should have been addressed. It is imperative that economics over ecology is not used by the applicant. As we have stated there are no imperative reasons of overriding public interest to allow these licenses to be renewed.

Conclusion

In conclusion, it has to be accepted that salmon farming in open cage technology is significantly harmful to juvenile wild salmon and sea trout. The prospect of escapee salmon from farms breeding with wild salmon is certainly an issue which may continue to increase as a result of climatic change causing more intense storms and expected damage to farm infrastructure.

The legal requirement for consent for this licence is contained in the following judgements:

²¹ [Links between host genetics, metabolism, gut microbiome, and amoebic gill disease \(AGD\) in Atlantic salmon](#)

Kelly (Eamon) v An Bord Pleanála [2014] IEHC 400 ²² and Connelly v An Bord Pleanála [2018] IESC 31. In Connelly, the Supreme Court explained that the ‘overall conclusion’ which must be reached before the competent authority will have jurisdiction to grant development consent following an appropriate assessment ‘is that all scientific doubt about the potential adverse effects on the sensitive area have been removed.’

Accordingly, we state that consent cannot be given as scientific doubt exists concerning the impact of sea lice on wild salmon smolts originating in the above-mentioned SACs as well as the escape of salmon which may impact on other SAC’s which have pearl mussel or Atlantic salmon as qualifying interest.

It should also be noted that the modelling of water quality data and sea lice dispersal is certainly questionable and does not meet the standards required for environmental assessment.

We also state that the Nature Restoration Law is in place and Ireland is bound by this law even in the absence of detailed national plans. The restoration of sea trout populations may be difficult due to stock collapse caused in the main by the salmon farming industry but to renew this licence would only exasperate the already perilous position of these protected fish.

We also note that mitigation efforts by the industry have failed to arrest the impact on wild salmonids, and this industry is unsustainable going forward.

Signed



John Murphy
Salmon Watch Ireland
24 July 2025

²² http://www.europeanrights.eu/public/sentenze/Irlanda-25luglio2014-High_Court.pdf