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SALMON WATCH IRELAND
"Dedicated to the restoration of salmon abundance in Ireland"

Application for a renewal and review of Extant Aquaculture Licenses
MOWI Aquaculture Sites in Clew Bay
T10-058-4 Kinnacora
Cumulative Effects
T10-054 Inishcannon, T10-058-8 Portlea , T10-067 Inishdoonver

The legal requirement for consent for these licenses is contained in the following judgements:

Kelly (Eamon) v An Bord Pleanála [2014] IEHC 400 [1]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.'

Executive Summary

The renewal and review of aquaculture licenses for MOWI's salmon farms in Clew Bay raise significant environmental and ecological concerns. The submission by Salmon Watch Ireland highlights the detrimental impact of these farms on wild Atlantic salmon and sea trout populations, alongside serious deficiencies in the environmental assessment process.

[1] Kelly (Eamon) v An Bord Pleanála [2014]

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Key Concerns

1. Declining Wild Salmon and Sea Trout Populations
    - Six salmon rivers flow into Clew Bay, all experiencing declining fish stocks.
    - Scientific data from the Burishoole research station shows a drastic reduction in sea trout populations from over 2,100 in the 1970s to only 22 in 2022.
    - Sea lice and disease from salmon farms are identified as key factors in the decline of wild fish stocks.
2. Burishoole Research Station Data and Findings
    - The Burishoole system has been a key site for monitoring wild salmon and sea trout populations since the 1960s.
    - Historical data indicate a continuous decline in sea trout survival rates, particularly after the establishment of salmon farming operations in adjacent waters.
    - Key statistics from Burishoole studies:
        - In the 1970s, an annual run of over 2,100 sea trout was recorded; by 2022, only 22 fish returned.
        - Finnock (young sea trout returning in the same year) return rates declined from historic averages of 11.4%-32.4% to just 5.9% in 2022.
        - Smolt migration numbers have dropped drastically from 4,176 per year (1970s) to only 240 in 2022.
        - Marine survival rates for sea trout have collapsed, falling from a range of 19%-66% to near-extinction levels.
    - The Marine Institute's long-term studies have failed to acknowledge the direct role of salmon farming in this collapse, despite strong correlations between sea lice outbreaks and wild fish mortality.
3. Inadequate Environmental Impact Assessment (EIA)
    - The submitted documentation does not meet the requirements of Article 6(3) of the Habitats Directive.
    - The Marine Institute has failed to acknowledge the role of salmon farming in the decline of wild fish populations.
    - No attempt has been made to establish a baseline sea lice level in a bay without aquaculture for comparison.

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4. Failure of Mitigation Strategies
    - Chemical treatments for sea lice are increasingly ineffective.
    - The use of cleaner fish (wrasse) is an insufficient solution and raises ethical and ecological concerns.
    - The continuous presence of farmed salmon ensures year-round sea lice proliferation, increasing the risk to wild fish populations.
5. Legal and Conservation Issues
    - The site is within the zone of influence of multiple Special Areas of Conservation (SACs) protecting Atlantic salmon and freshwater pearl mussels.
    - Several salmon rivers in the region have conservation statuses below acceptable limits.
    - Legal precedent dictates that scientific uncertainty regarding environmental impact should prevent the renewal of these licenses.

Conclusion

Given the strong scientific evidence of harm caused by salmon farming in Clew Bay, the renewal of MOWI's aquaculture licenses should be denied. The continued decline in sea trout and salmon populations, combined with inadequate environmental assessments and failed mitigation strategies, makes it clear that open-cage salmon farming is not sustainable. Immediate steps must be taken to transition toward alternative technologies, such as land-based closed containment systems, to protect Ireland's valuable wild fish stocks and marine ecosystems.

Introduction.

The documentation submitted by MOWI seeking a review and renewal of their four extant aquaculture licenses in Clew Bay, comprising the following sites, Inishcannon, Portlea, Inishdoonver and Kinnacora 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 a salmon farm at this sensitive location.

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The site is in close proximity to eighteen rivers which flow into Clew Bay of which six are designated by Inland Fisheries Ireland as salmon rivers. This designation is for management purposes and does not dilute the conservation objectives related to wild salmon in rivers which are not designated.

The Burishoole or Srahmore catchment which discharges into Clew Bay is an Atlantic salmon and sea trout research station and facilitates the counting of both salmon and sea trout through migration as smolts to adult returnees. The facility acts as an index catchment for wild salmon which supplies data to NASCO and ICES. The facility has operated and gathered data relating to survival of salmon and sea trout at sea since the 1960's and has effectively tracked the decline of both species. It is a valuable resource and demonstrates that since the commencement of salmon farming in bays adjacent to the research station that sea trout and salmon have declined substantially.

The impact on sea trout is stark while the impact on Atlantic salmon is somewhat masked by the brief period of time salmon smolts stay in the bay on their migration but is still a significant man-made contributary factor in the decline of Atlantic salmon. Sea Trout effectively occupy the near coastal area, and it is most likely that the sea trout smolts do not leave the Clew Bay area and thus are increasingly susceptible to disease and sea lice originating from salmon farms within the bay.

The most recent report from the Marine Institute[2] is certainly an alarming report which notes the continued decline in both species and when viewed against historic stock levels it is indeed shocking. The largest and most obvious controlling factor is certainly the ongoing salmon farming impact in Clew Bay which can effectively reduce salmon runs by a significant number and undermine the conservation objectives of all SACs with salmon as a qualifying interest while essentially causing an extinction vortex for sea trout.

[2] Newport Research Annual Report 2022

The following data is extracted from the report:

Historic to Current Sea Trout Return Rates

1. Annual Runs of Sea Trout:

- In the 1970s, annual runs of sea trout recorded in the traps were over 2,100 fish.
- By the 1980s, numbers had declined to approximately 1,238-978 fish.
- The decline continued in the 1990s, with numbers falling to around 200 fish per year.
- By the 2000s, the annual run had dropped further to less than 100 fish per year.
- In 2022, the total number of sea trout returning upstream was 22 fish, a dramatic reduction compared to historical levels.

2. Finnock (0+ Sea Trout) Return Rates:

- Historically, the percentage of trout smolts returning as finnock (young sea trout returning in the same year) ranged between 11.4% and 32.4%.
- A major collapse occurred in 1989, with return rates dropping to 1.5%.
- The return rates fluctuated through the 1990s, recovering to 16.7% in 1999.
- In 2014, the return rate peaked again at 29.5%, the highest recorded since the mid-1970s.
- In 2022, the finnock return rate dropped significantly to 5.9%, down from 21.2% in 2021.

3. Total Survival to First Return:

- Historically, total marine survival rates for sea trout to their first return ranged from 19% to 66%.
- After fluctuating in the 1990s, survival improved, reaching 23.2% in 2010.
- In 1970-79, an average of 4,176 sea trout smolts migrated downstream annually.
- This number declined to 816 smolts per year in 2000-04.
- The lowest recorded smolt count occurred in 2020, with only 92 smolts.
- In 2022, the total smolt count was 240, similar to the 231 recorded in 2021.

4. Spawning Escapement:

- In the 1970s, the estimated maximum number of sea trout returning to freshwater for spawning was 2,090 fish.
- By 1990-94, this number had dropped to 231 fish.
- Number now essentially well below 100 trout and significantly much less in certain years. (22 seatrout returned in 2022)

The long-term decline in sea trout populations in the Burrishoole system is stark, with numbers falling more than tenfold since the 1970s. The real issue here is the unwillingness of the Marine Institute as an organisation to admit that salmon farming and wild sea trout populations cannot co-exist due to the impact of sea lice and diseases originating on farms.

It is ludicrous to suggest that salmon farming has not been the single largest factor in this absolute collapse of sea trout stocks and a stark indictment of the Marine Institute and their position of the competent authority for examination of documents attaching to the EIA and Appropriate assessment.

They have essentially failed to interpret and analyse data from their own research and cannot be relied on to assess these applications. The mitigation in regard to sea lice and disease is not even remotely adequate in both the EIAR and subsequent NIS. Essentially there has been no attempt by the applicant or competent authority to describe the background levels of sea lice in a bay without aquaculture and their suggestion of low levels of sea lice in all probability constitute a far greater density of sea lice larvae than would exist in a bay without salmon farms.

It is also interesting to note the correlation between the number of farms operating in Clew Bay and the survival of sea trout. There is certainly a differing trend when recently stocked smolts or grower fish are in these farms. It is noted that both farms at Clare Island have overlapped in having smolts and grower fish in situ. Both Clare Island farms have production in alternate years and when operating there is a continuing residue of sea lice larvae within Clew Bay. The two sites near Clare Island are just over three kilometres away from each other and constitute a high risk of parasite and disease transfer thus facilitating sea lice larval development over the

entire production cycle. The Aquaplan - Health Management for Finfish Aquaculture Report from the Marine Institute certainly reflects this.[3]

There also appears to be some confusion in relation to production cycles in the documentation presented in that in certain years MOWI have used the inner farms to transfer fish and keep them in these farms well into May and they state in the documentation that fish are only in these farms until March. The Marine Institute Sea lice inspection reports have noted fish still in situ in these farms in inner Clew Bay in April / May period over several years.[4] This scenario certainly poses issues to salmon smolts and sea trout originating in the Srahmore and Newport River.

The issues with salmon are more complex in that the effect can be less obvious due to salmon smolts spending a limited period of time in the immediate vicinity of inshore salmon farms and thus being less exposed to parasites and disease originating in the farms than sea trout. However, the impact is certainly significant enough to undermine conservation limit attainment in adjacent catchments. It is worth noting that salmon numbers effectively declined once salmon farms became established in Clew Bay. While there are many factors outside our control involved in the declining survival rate of salmon, it is obvious that the impact of salmon farms is significant and can be controlled with the use of evolving and indeed proven closed containment systems. Salmon Watch Ireland has prepared a smolt loss calculation which readily demonstrates the effect on salmon adult returns.[5] These papers categorically demonstrate the impact of sea lice on wild salmon returns.

The sites are comparatively close to all rivers discharging into Clew Bay being located over a wide area of Clew Bay with two of the farms, Portlea and Kinnacora in the outer bay near Clare Island while the remaining two, Inishcannon and Inishdoonver, are located in the inner bay area.

[3] **AQUAPLAN - Health Management for Finfish Aquaculture**

[4] **Marine Institute Sea Lice Inspection Reports 2022 as an example:**

[5] **Smolt Loss Calculation – Loss of adult returns**

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The rivers which are designated Atlantic salmon rivers flowing into Clew Bay have the following conservation status according to "The Status of Irish Salmon Stocks in 2024 with Catch Advice for 2025"[6]

- Owengarve – Below Conservation Limit
- Owenwee – Below Conservation Limit
- Newport River – Below Conservation Limit
- Burishoole / Sramore – Below Conservation Limit
- Carrownisky – Above Conservation Limit
- Bunowen - Above Conservation Limit

However, the rivers above conservation limit are in a fragile position with CL surplus exceptionally low and as a result no harvesting of salmon is permitted. It is noteworthy that the Newport River[7] which is in the Newport River SAC has Atlantic salmon as a qualifying interest and thus has increased protection.

Other rivers that flow into Clew Bay which are also in the Owenduff/Nephin Complex SAC (000534) and the Mweelrea/Sheeffry/Erriff Complex SAC (001932) namely the Srahmore (Below CL) and Bunowen and Carrownisky have Atlantic salmon also as a qualifying interest.

Rivers within the nearby SAC and adjacent to Clew Bay also have Atlantic salmon as a qualifying interest. The rivers in question are the Erriff, Delphi, Owenduff and Owenmore. It is also important to note that there are a number of small catchments within all these SAC's including a number flowing into Clew Bay on the North shore which enjoy protection for their unique salmon populations under the Habitats Directive irrespective of their categorisation as not being designated salmon rivers by the Technical Expert Group on Salmon, (TEGOS).

The sea trout which inhabit these catchments and indeed all Irish catchments also now enjoy protection and are included along with Atlantic salmon as annex 111 species with

[6] The Status of Irish Salmon Stocks in 2024 with Catch Advice for 2025

[7] Newport River SAC

specific protection under Article 5. (Restoration of marine ecosystems). [8] This should be noted in the Environmental Impact Assessment Report

Discussion.

Our main concerns regarding the renewal and review of these extant licenses relate to Atlantic salmon, sea trout, *margaritifera margaritifera* (Pearl Mussel) and near coastal pollution.

The transmission of sea lice and disease to the wider environment from this site currently harms wild salmonids and will continue if these bay wide licenses are renewed. The prospect of the 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 ongoing issues with sea lice and disease mediated mortality of wild juvenile salmonids has a direct effect on pearl mussel populations in the area. This will certainly increase with climatic change resulting in warmer sea surface temperatures resulting in a shorter generational period for sea lice and more disease proliferation.

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 data[9] 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

[8] Nature Restoration Law – Article 5/5

[9] High Court Judgement - Salmon Watch Ireland

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 Institute [10] for Clew Bay which in our view are suggestive of significant differences to dispersal models presented in the documents supporting this application.

All documentation presented by the applicant requires an independent and concise appraisal by your department in order to renew and review these extant licenses and this cannot be achieved in view of the standard of assessment documents presented by MOWI.

Special Areas of Conservation

The site under review is also within the expected zone of influence to a number of Special Areas of Conservation (SAC) which have Atlantic salmon as a qualifying species and thus have added protection requiring appropriate assessment of impacts. There are also a number of Natura sites which have *margaritifera margaritifera* as a qualifying interest which also require appropriate assessment. The Natura Impact Statement as presented does not adequately address concerns regarding Atlantic salmon and *Margaritifera margaritifera*.

The following adjacent special areas of conservation, Owenduff/Nephin Complex SAC (000534), Newport River SAC (002144), Mweelrea/Sheeffry/Erriff Complex SAC (001932), Maumturk Mountains SAC (002008) have Atlantic salmon as a qualifying interest and as such are required to be appropriately assessed.

The Report of the Technical Expert Group on Salmon to the North-South Standing Scientific Committee for Inland Fisheries-The Status of Irish Salmon Stocks in 2024 with Catch Advice for 2025 reports that the following rivers within the Bangor District and flowing into Clew Bay are as outlined in the introduction but significantly the Newport River (Newport River SAC) is significantly below its conservation limit. While the other rivers are not part of Natura sites, they are without exception suffering a declining trend caused in part by the presence of salmon

[10] AQUAPLAN - Health Management for Finfish Aquaculture

farming. Of the six designated salmon rivers discharging into Clew Bay only two rivers exceed their conservation limit while four are deemed to be below their conservation limit. The two rivers above their conservation limit are closed to harvest as there would be a high degree of probability that the minimal surplus would be over exploited.

As the objective for Atlantic salmon in the Newport River SAC is to maintain the favourable conservation condition, it is imperative that the existing farms be closed to help the restoration of this population of Atlantic salmon. Obviously, the presence of salmon farms has had a negative impact. It is helpful now to remind DAFM that it would not be legally permissible to renew these licenses under review due to scientific doubt existing about the impact of sea lice from salmon farms on wild salmonids.

There are many minor rivers within the SAC's mentioned above which enjoy the same protection as designated salmon rivers. The designation of a river as a salmon river is more aligned with management rather than any biological or ecological status. Caution must always be to the forefront of any decision regarding the continuation of aquaculture at this site.

In addition, the natura sites with *Margaritifera margaritifera* include the Owenduff/Nephin Complex SAC (000534), Newport River SAC (002144), Mweelrea/Sheeffry/Erriff Complex SAC (001932), Maumturk Mountains SAC (002008) which may be impacted by sea lice on numbers of juvenile salmon and sea trout as host fish for glocidia originating in the farms within the Clew Bay area.

We certainly are concerned with the recent escape of farmed salmon in Killary[11] harbour and we consider that the large number of SAC's with salmon and pearl mussel populations as a Q1 near the Clew Bay farms or indeed remote catchments up to 100 km from this farm may be at risk as demonstrated by the migration of farmed salmon into rivers up to 100 km from the Killary escape.

[11] Occurrence of Farmed Atlantic Salmon in Western River Basin Districts during August & September 2024

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.

We have prepared a document which outlines various peer reviewed papers concerning the impact of sea lice on adult salmon returns.[12] 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 important 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 theMarine InstituteStudies[13] be viewed with caution.
The following paper[14] "***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***

[12] Smolt Loss Aquaculture Bays – Salmon Watch Ireland

[13] 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

[14] **Direct evidence of increased natural mortality of a wild fish caused by parasite spillback from domestic conspecifics**

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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) [15]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 Natura Impact Assessment 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 licenses, and grants of renewal of licenses, 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 MOWI as flawed and thus not in compliance with Article 6 subsections (3) and (4) of the Habitats Directive.

[15] **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

The studies carried out by the Marine Institute[16] have once again been relied upon by the Marine Institute in their assessment of the documentation presented by MOWI.

The Marine Institute 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 salmon farms on wild salmonid stocks. The 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.

These studies have been subject to much criticism[17] and overall scientific consensus indicates a significant effect on wild salmon survival.

While a very limited amount of peer reviewed papers concerning sea lice appear in the EIAR and NIS 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 as the resources of the Marine Institute were utilised to carry out these studies.

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**.

It is alarming to note the dependence of the applicant on 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

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[16] **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 of Lepeophtheirus Salmonis on Migrating Atlantic Salmon (Jackson, D. et al.).pdf;jsessionid=C61B3246F793421270901A3CB67C911C?sequence=1.**

D. Jackson, D. Cotter, N. ÓMaoiléidigh, P. O'Donohoe, J. White, F. Kane, S. Kelly, T. McDermott, S. McEvoy, A. Drumm, A. Cullen, G. Ro gan. 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 (2011). Aquaculture. Available at : https://www.sciencedirect.com/science/article/pii/S004484861100247X

[17] **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'**

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 a rapidly changing temperature regime in the majority of bays in Ireland where salmon farming is taking place. The recent study[18] 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 is also relevant to Clew Bay.**

The relevant applications by MOWI have mortality data redacted, and it is unfair that we as an organisation cannot access same to prepare our submissions regarding the licence applications. We have taken steps through FOI regulations to have this data released unredacted.

We again strongly reiterate that trigger levels for treatment on farms are arbitrary and have no scientific basis to suggest that background natural levels are ever maintained in the presence of salmon farms.

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 during spring, grower fish in second year of production and bays that are fallowed. The situation in Clew Bay where four farms operate presently has fish in second year of production at all times in that areas are in production in alternate years. There is **no whole-bay (Clew Bay)** fallowing and there is a consistent source of sea lice larval distribution 12 months per year.

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

[18] Marine Institute "Marine Environmental Characterisation of Irish Inshore Aquaculture Regions

demonstrate that there is a substantial effect on salmon and sea trout survival and all times but is substantially greater when farms are in second year of production and biomass is large.[19]

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*. [20] 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. [21]

Mortalities in Farmed Salmon

Another aspect which requires more scrutiny is the increased mortality evident over recent years in Ireland. Unfortunately, mortality data has not been included in applications which precludes us from commenting, but anecdotal evidence suggests some extreme values which should be in the public domain.

While climatic change may negatively 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.

[19] Page 66- Annual Report and Financial statements – Inland Fisheries Ireland

[20] Effect of government removal of salmon farms on sea lice infection of juvenile wild salmon in the Discovery Islands -
[21] Sea Lice Papers

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 from the Newport River SAC and indeed all rivers in Clew Bay are certainly at risk on their migration route.

The issues with AGD and wild salmonids have not been sufficiently addressed in the EIAR and NIS and it is alarming that wild salmonids may be disproportionally affected by this disease when compared to farmed salmon. The following study[22] 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. The environmental reports presented suggest that the temperature regime required for the outbreak of AGD at 12 degrees Celsius are at odds with the Marine Institute temperature guidelines of 10 degrees Celsius. We would suggest that this is an attempt by the applicant to downplay the significance of salmon smolts being affected by AGD during their migration in April and May. Nearby temperature at Lough Furnace regularly is below 12 degrees Celsius during this period.

Freshwater Pearl Mussel

The issue of Freshwater Pearl Mussel populations includes the Owenduff/Nephin Complex SAC (000534), Newport River SAC (002144), Mweelrea/Sheeffry/Erriff Complex SAC (001932), Maumturk Mountains SAC (002008) have not been effectively addressed in the EIAR and NIS. The negative effect of farm origin lice on both Wild Atlantic salmon and sea trout is well established. As the FPM requires a healthy population of juvenile salmonids to

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

ensure that reproduction capacity is not inhibited and if this renewal is granted it will continue to deteriorate.

Wrasse

It is insufficient to describe the use of wild wrasse as having no impact on the near coastal ecosystem and the use of wild fish to effectively be used as cleaner fish outside their normal ecosystem is an issue which should alarm anyone interested in a balanced ecosystem. These fish are culled at the end of the production cycle due to concerns surrounding disease transfer to the wider environment. Again, we reiterate that no study has been carried out to essentially describe the effect which falls far below the criteria for appropriate assessment.

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.

We would like again to reiterate the following:

The legal requirement for consent for these licenses is contained in the following judgements:

Jerpoint Hill
Thomastown
County Kilkenny

Kelly (Eamon) v An Bord Pleanála [2014] IEHC 400 [23]***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 Owenduff/Nephin Complex SAC (000534), Newport River SAC (002144), Mweelrea/Sheeffry/Erriff Complex SAC (001932) as well as the escape of salmon which may impact on other SAC's which have pearl mussel or Atlantic salmon as qualifying interest.

Signed

John Murphy
Salmon Watch Ireland
14 March 2025

[23] Kelly (Eamon) v An Bord Pleanála [2014]