

Report: 17-49d

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Production Area	Sample Site	Sample Date	Species	Tissue	ASP mg/kg	AZP µg/g	DSP µg/g	PSP µg/kg STX&HCL equivalents	PTX µg/g	YTX µg/g	Status
Sherkin North	CK-SN-SN	04/12/2017	Magallana gigas	Whole	n.d.(a)	0.01(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Mulroy Bay	DL-MB-MB	04/12/2017	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Aughinish	CE-AH-AH	05/12/2017	Magallana gigas	Whole	n.d.(a)	<LOQ(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Roaringwater Bay	CK-RB-RB	05/12/2017	Mytilus edulis	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Donegal Harbour	DL-DH-MS	05/12/2017	Mytilus edulis	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Kinvara	GY-KA-KA	05/12/2017	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Kinvara	GY-KA-KA	05/12/2017	Mytilus edulis	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Mweeloon Bay	GY-MW-MB	05/12/2017	Mytilus edulis	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Ballyvaughan	CE-BN-PH	06/12/2017	Magallana gigas	Whole	n.d.(a)	<LOQ(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Sherkin North	CK-SN-SN	06/12/2017	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Dungloe	DL-DE-DS	06/12/2017	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Gweebarra	DL-GA-GA	06/12/2017	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Loughras Beg	DL-LB-LB	06/12/2017	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Lough Swilly	DL-LS-FC	06/12/2017	Ostrea edulis	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Kenmare Inner	KY-KI-TE	06/12/2017	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Carlingford	LH-CL-MY	07/12/2017	Mytilus edulis	Whole	<LOD(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Bannow Bay	WX-BB-BB	07/12/2017#	Magallana gigas	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open
Bannow Bay	WX-BB-BB	07/12/2017#	Mytilus edulis	Whole	n.d.(a)	<LOD(a)	<LOD(a)		<LOD(a)	<LOD(a)	Open

Presumed Sample Date ; LOD = Limit of Detection, LOQ = Limit of Quantification, ULQ = Upper Limit of Quantification, N.D. = Not Detected

(a)M.I. Galway

Samples of shellfish were received from the above locations.

Harvesting may resume/continue in the other areas above.

Scallop Results											
Production Area	Sample Site	Sample Date	Species	Tissue	ASP mg/kg	AZP µg/g	DSP µg/g	PSP µg/kg STX&HCL equivalents	PTX µg/g	YTX µg/g	Status
Kenmare Outer	KY-KO-KR	05/12/2017	Pecten maximus	Gonad	11.0(a)						Not Classified
				Posterior Adductor	0.9(a)						
East of Dun Laoghaire Ground (35-E4)	OS-ED-ED	05/12/2017	Pecten maximus	Gonad	<LOQ(a)						Not Classified
				Posterior Adductor	<LOD(a)						
Isle of Man Ground (37-E5)	OS-IM-IM	06/12/2017	Pecten maximus	Gonad	<LOQ(a)						Not Classified
				Posterior Adductor	<LOD(a)						
Port William Ground (38-E5)	OS-PW-PW	06/12/2017	Pecten maximus	Gonad	9.1(a)						Not Classified
				Posterior Adductor	<LOD(a)						
South of Isle of Man (36-E5)	OS-SI-SI	06/12/2017	Pecten maximus	Gonad	1.7(a)						Not Classified
				Posterior Adductor	<LOD(a)						
Mine Head Ground (32-E2)	OS-MH-MH	07/12/2017	Pecten maximus	Gonad	5.2(a)						Not Classified
				Posterior Adductor	<LOD(a)						
Saltees Ground (32-E3)	OS-SS-SS	07/12/2017	Pecten maximus	Gonad	4.4(a)						Not Classified
				Posterior Adductor	<LOQ(a)						

Total Tissue values are always estimated ; LOD = Limit of Detection, LOQ = Limit of Quantification, ULQ = Upper Limit of Quantification, N.D. = Not Detected

(a)M.I. Galway

Samples of scallops were received from the above locations.

1/3/2018

The scallops from these landings OS-SS-SS, KY-KO-KR, OS-MH-MH, OS-PW-PW, OS-IM-IM & OS-ED-ED must be processed. Only the Adductor Muscle and Gonad may be marketed.

Joint Oireachtas Committee – Agriculture Food and the Marine

Opening Statement of

Inland Fisheries Ireland

14th July 2015

Gregory Forde Ph.D. Head of Operations, Inland Fisheries Ireland

Patrick Gargan Ph.D. Senior Research Officer, Inland Fisheries Ireland

We are grateful to have the opportunity to address the Committee on the important topic of 'The Draft Strategic Plan for sustainable aquaculture development'. Inland Fisheries Ireland was established on the 1st of July 2010 following the amalgamation of the Central and Regional Fisheries Boards. The Agency was established under the 2010 Inland Fisheries Act with many of its powers deriving from the Principal Act governing the sector, the 1959 Fisheries (Consolidation) Act. The main functions of Inland Fisheries Ireland (IFI) as identified in the 2010 Act are:

'to promote, support, facilitate and advise the Minister on the conservation, protection, management, marketing, development and improvement of inland fisheries, including sea angling.'

It is important to note that protection and conservation of the inland fisheries resource includes the important migratory species in the sea in particular the Atlantic salmon and sea trout. These responsibilities were also part of the primary functions of the Central and Regional Fisheries Boards established in 1980, and the Boards of Conservators and the Inland Fisheries Trust before that. Salmon fisheries in the marine, estuaries and freshwater are an important asset of the state that yield considerable revenue through angling in particular.

IFI will, in the course of the next week, be making its own submission in respect of this consultation but it is important for us to identify the key areas where we believe the Committee may find it useful in making observations on the documents currently proposed by the Minister or in clarifying the areas IFI has concern and the reasons for this concern.

The angling resource in the country has long been undervalued, however a recent economic assessment identified that this industry is worth some €755 million annually to the National economy. The impact of this socio-economic dividend is largely of benefit to peripheral and rural communities often where alternative income earning opportunities can be limited and the safeguarding of these areas in terms of their earning potential from angling tourism should be a priority. In fact rural communities benefit most from small labour intensive ventures rather large industrial sized operations.

The current consultation is specifically about the sustainable development of aquaculture – and this opening statement attempts to identify the key issues of interest and concern to IFI which may assist the Committee in their deliberations.

Licensing:

The current licensing system has proven problematical, however IFI are conscious of the environmental issues that must be considered by the licensing authority in developing a sustainable industry. IFI supports the sustainable development of the aquaculture industry – The word sustainable is key and specifically encompasses sustainability of the development from an ecological as well as financial point of view. The area of particular concern to IFI is the need to ensure that any aquaculture development does not have a deleterious effect on other industries such as the valuable salmon and sea trout tourist angling industries.

IFI would welcome reform to the aquaculture licensing process. Where existing licences are in place and where these have an effect on the wild fisheries the licence process must be capable of phasing these sites out and selecting of alternative sites that do not impact on wild fisheries.

A second important consideration in the reformation of the licensing system is to separate the processes of licensing and regulation. It would be preferable if these responsibilities were not within the same Government department. The licensing section should remain under the parent Department and the regulation / enforcement remit should be under a different state agency – for example the EPA. The regulatory agency should be appropriately mandated to transparently enforce the licence conditions. This would also help the licence operators and wild fish interests know the rules within which the industry operates. Similarly in the view of IFI it is unwise for the state to be the licence applicant in a commercial aquaculture venture.

IFI are aware that escapes from salmon farms into the wild are primarily the consequence of an unplanned catastrophe. The licensing system should include the creation of an emergency fund to facilitate the recovery / clean-up of the consequences of any such events – this could include the recovery / removal of escapees from local rivers by the competent authority as well as any other environmental clean-up such as removal of mortalities from the sea bed.

The current system of licensing includes a series of protocols. The code of practice for pest control is not, in the view of IFI, adequately robust to ensure the protection of wild sea trout and salmon smolts from lice from marine salmon farms – this is dealt with later by my colleague. It is recommended that the enforcement regime should include a series of incremental penalties for persistent breaches of licence conditions.

IFI favours the development of closed containment re-circulatory land-based systems for the farming of Atlantic salmon, this ensures all outputs can be managed and controlled. IFI acknowledges that the technology may not yet be at a sufficiently commercial scale but recommends that adequate funding should be provided to assist in developing this aspect of the industry. Over time IFI would welcome a gradual move towards on shore recirculation sites and a phasing out of open pen facilities to ensure the protection of the wild salmonid stocks.

IFI believes that small scale mollusc aquaculture activities best suit rural communities that have farming and fishing as part of their existing core skills. The development of these activities still have very significant potential and these are both low impact and labour intensive. In relation to Oysters, IFI notes that disease in the wild oyster oysters (*Ostrea edulis*) has reduced the wild oyster stock in many bays around the country. The development of farming the Pacific oyster (*Crassostrea gigas*) has unexpectedly led to this non-native species becoming feral in Lough Swilly. Whilst acknowledging that the wild oyster stocks in most parts of the country remain in trouble IFI recommends that any farming of *Crassostrea sp.* is done in an enclosed regime (bags and trestles) using triploid stock – this will prevent it becoming established elsewhere in the wild. In areas such as Lough Swilly where it has already become established in the wild provision should be made to remove the pacific oysters. This must be done in line with the

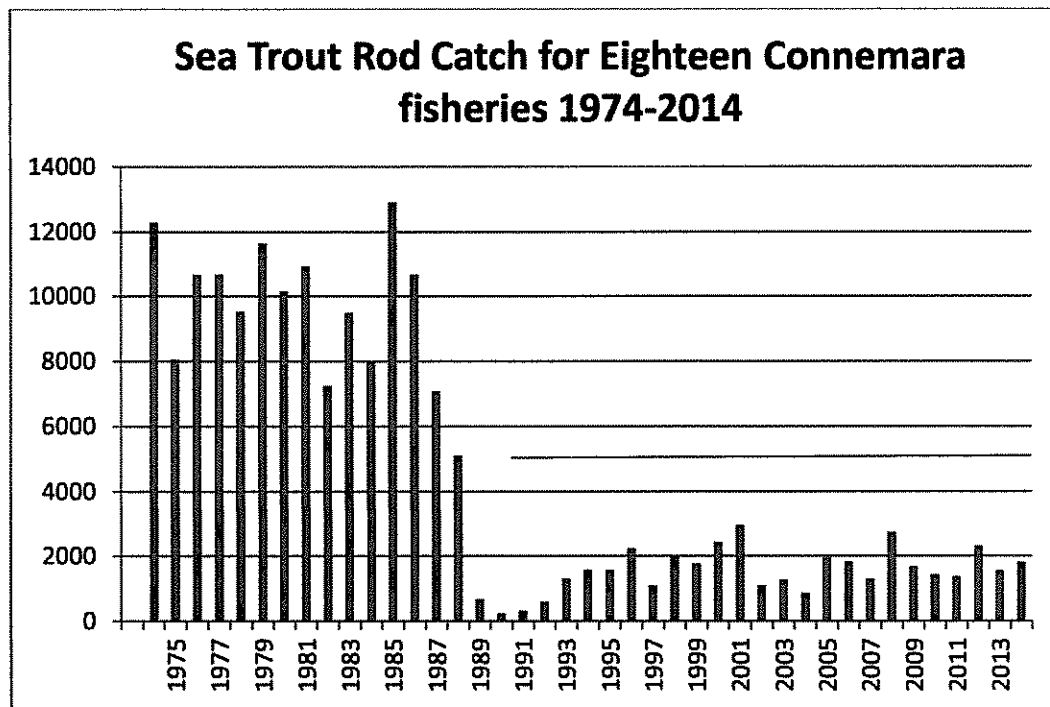
requirements of the National Parks and Wildlife Service.

The issuing of aquaculture licences in areas where established wild mollusc fisheries exist has also raised certain concerns. Any plan for the sustainable development of the industry should include provision for surrendering aquaculture licences where they conflict with wild mollusc beds to be replaced by a licence on a different unlicensed site.

I will pass to my colleague Dr. Gargan who will give some more technical detail of the issues to be raised by IFI in its own submission:

Inland Fisheries Ireland has been concerned regarding the negative impact of salmon farming on wild sea trout and salmon stocks since the late 1980's. Sea lice, derived from local marine salmon farms causing lice infestation on sea trout stocks has been a particular concern. Many of the sites chosen in the early days of salmon farming were in shallow bays, close to river mouths and these were not suitable locations for farming salmon from a wild fish perspective. While there has been some improvement in sea lice control recently, some existing locations remain a threat to wild salmonid stocks due to their proximity to rivers.

The best documented sea trout angling fisheries took place in the Connemara area. Salmon aquaculture began to develop in bays in the mid-West in the early 1980's and by the late 1980's approximately 7,000 tonnes of farmed salmon were being produced. At the same time as the development of salmon farming was taking place in Western bays, heavy sea lice infestation were observed on sea trout returning to rivers. This has been linked with the development of marine salmon farming in the mid-west zone at that time (Gargan et al. 2003). At the same time in the late 1980's a sea trout stock collapse occurred in these rivers. I refer to the graph of sea trout rod catches for the Connemara area for the years 1974 – 2014. The stock has never recovered to the levels seen before the stock collapse and angling tourism for sea trout is now only a fraction of that occurring before the collapse.



Scientific evidence of the impact of sea lice on wild stocks

Scientific studies have demonstrated that sea lice from marine salmon farms, when not adequately controlled, can have a serious impact on local sea trout stocks. Sea trout are especially vulnerable to salmon lice infestation because, in the sea, they remain feeding and growing in coastal waters where salmon farms are situated. A major review, of over 300 scientific publications, was published by the Norwegian Institute for Nature Research (NINA) in 2014 on the effects of sea lice on sea trout stocks. Scientists concluded that sea lice have negatively impacted wild sea trout stocks in salmon farming areas in Ireland, Scotland and Norway. The report noted that in farm-intensive areas, lice levels on wild sea trout are higher and elevated lice levels on wild sea trout are found particularly within 30 km of the nearest farms but can also extend further.

The NINA report also examined the potential effect of sea lice on salmon. Results show that mortality due to sea lice on juvenile salmon at sea can lead to, on average, 12-29% fewer salmon spawning in rivers. It is clear from this report that sea lice from marine salmon farms can have a serious impact on the survival of both wild sea trout and salmon.

Sea Lice levels on marine salmon farms.

The Marine Institute monitors sea lice levels on marine salmon farms on a monthly basis.

According to the 2014 report on sea lice monitoring, sea lice levels on farmed salmon rose in 2014 compared to 2013. In 2014, 29% of sea lice inspections were above the treatment trigger level (TTL) compared to 18% in 2013. According to the 2014 report, many factors have contributed to these increases including challenges to fish health, husbandry practices and treatment efficacy. From a wild fishery perspective the current control of sea lice levels on marine salmon farms is not adequate at some sites and the trigger treatment levels need to be based on total salmon farm production in the area. IFI have consistently called for this total bay sea lice cap to be introduced which sets a limit on the lice production level in a bay and this concept should be introduced in the new proposed strategy for sustainable aquaculture development.

Protracted harvesting of salmon has also been identified by IFI as a factor militating against effective sea lice control as sea lice treatment is generally not undertaken during harvesting.

Scientific evidence of the impact of escaped farm salmon on wild stocks.

There is a large body of published literature on the negative interaction of farmed and wild stocks. Large-scale experiments showed highly reduced survival of salmon that have interbred with escapees when compared to wild salmon. In Ireland official statistics indicate that approximately 415,000 salmon were reported to have escaped from salmon farms in coastal waters in the period 1996-2004, with an annual range of 0-160,000 fish. In February 2014, 230,000 salmon were reported to have escaped from a single salmon farm in Bantry bay.

The proposal in the Strategic Plan for Sustainable Aquaculture to increase farmed salmon production, with maximum biomass on individual farms of 7,000 tonnes, therefore poses a potential threat to wild salmon populations. This threat is particularly great when the small number of wild salmon in rivers (hundreds) is compared to the potential level of salmon farm escapes (possibly hundreds of thousands).

Guiding Principles for the Sustainable Development of Aquaculture – (page 75 in the Draft National Strategic Plan for Sustainable Aquaculture Development).

IFI supports the six guiding principles recommended by the Marine Institute for the sustainable development of aquaculture. Responsible planning to ensure that the overall development of aquaculture and the siting of individual farms are compatible with other uses

and the responsible management of the marine environment, as set out in Principle 1, is an important guiding principle for the proposed future expansion of the salmon aquaculture industry. However, a number of existing sites, licensed during the 1980's, were located too close to river mouths and these sites should also be subject to assessment under the Guiding Principles in order to ensure the sustainable development of aquaculture.

It is intended that under Principle 2, Ecosystem Protection, that licensing and ongoing regulation of aquaculture operations will ensure compatibility with the goal of maintaining healthy, productive and resilient marine ecosystems. The aspiration is that this will ensure maintenance of good water quality and healthy populations of wild species, prevent escapes and avoid harmful interactions with wild fish stocks, protected habitats and species. Inadequate control of sea lice is a harmful interaction with wild salmon and sea trout stocks. Under the current licencing and regulation of salmon aquaculture, this guiding principle for sustainable development of aquaculture is not being met with regard to control of sea lice, particularly at sites in the West.

Under the Department of Agriculture, Fisheries and Food "Strategy for Improved Pest Control in Irish salmon farms, 2008", which is still in place, it was proposed that a feature of the strategy to enhance the control of sea lice infestations on Irish salmon farms should be the creation of a "real time" management regime. This regime was intended to vigorously deal with failures to control sea lice infestations on a case-by-case basis. It was designed to bring progressively tougher actions to bear on the sea lice infestation to ensure the highest possible level of compliance. Actions available include accelerated harvesting of salmon, followed by extended fallowing post-harvesting. In recent years there are examples where individual salmon farms having failed to control sea lice below the sea lice treatment trigger level over long periods and the sanctions available under the real time management cell approach have not been enacted. Guiding Principle 2 will need to take account of the inadequacies in the current regulation of sea lice levels on salmon farms.

Under Principle 3 - Science-based Approach, planning, licensing and regulation of the sector are founded on the best available, impartial and objective science, as delivered by the national and international science community. This provides the highest level of confidence in the

decision-making process and allows for the adoption of a risk and evidence-based approach to determining monitoring requirements that are subject to continuous improvement. This is an important guiding principle with regard to the proposed future development of marine salmon farming as there has been significant advances in our understanding of the potential negative impacts of sea lice and escapes from marine salmon farms on wild salmonid stocks in recent years. Taking account of the best available science with regard to wild fish / farmed fish interactions will be important in ensuring the sustainable development of salmon aquaculture. IFI's is the statutory agency tasked with the protection and conservation of wild salmonids. These management responsibilities are supported by best scientific advice, and it would be important that IFI's scientific expertise is fully integrated into any Science-based approach, for the planning, licensing and regulation of the sector.

Scaling and Phasing of the Development of Offshore Salmon Farms

The use of the concept of carrying capacity, in the national strategic plan, which considers environmental limits aimed at avoiding 'unacceptable change' to the natural ecosystem is important in ensuring sustainability of aquaculture. The concept of scale limits and phasing as proposed are important for the development of offshore salmon farms and are consistent with the recommendations made by IFI with regard to the proposed offshore salmon farm in Galway bay. IFI commented that in any such project, a significantly lower smolt input should be licensed initially, and a gradual built up of smolt numbers should only take place following further rigorous review and consent processes. IFI believe that intensification should be treated as a totally separate application with all of the associated statutory consultations and reviews. This would allow an assessment of any impact of the salmon farm on the environment, flora and fauna and allow mitigation measures to be developed in a more sustainable manner.

While the general concept of scale limits and a gradual phased buildup of production as set out in Chapter 6 are consistent with the approach proposed by IFI, the proposed appropriate maximum for new individual offshore salmon farms of 5,000 tonnes peak biomass is too large as an initial maximum production, particularly as existing salmon farms in Ireland have considerably lower licensed production limits. There is a need to assess the environmental sustainability of offshore salmon farms at individual locations on a trial type basis and only

after monitoring has shown that no adverse impacts are evident should a gradual buildup of production be licensed. This will take a number of years and generations of salmon to adequately assess the sustainability of individual sites. It is therefore important that the initial licensed production tonnage be set at a lower level to demonstrate environmental sustainability. With regard to licensing additional tonnage beyond the initial licensed peak biomass, the recommendation in Chapter 6 that “Approval to increase the capacity above the initial allowable biomass should only be considered following a rigorous assessment of monitoring outcomes” is consistent with this view.

Biodiversity and Sustainable Development

The strategic plan notes that Ireland’s second National Biodiversity Plan (2011–2016) includes a programme of measures aimed at meeting Ireland’s biodiversity obligations including a commitment to halt biodiversity loss by 2020. Sea trout are listed in Ireland’s biodiversity plan and the commitments in this national strategic plan for sustainable aquaculture development must include maintaining biodiversity with regard to sea trout populations.

Organic Salmon Production

The strategic plan for sustainable aquaculture development identifies the opportunity for increased production of organic salmon. While organic salmon production may be more profitable, there may be unforeseen environmental consequences. The Irish Organic Farmers & Growers Association (IOFGA) Standards for Organic Aquaculture state that regarding sea lice control, in feed treatments (SLICE) and bath treatments (EXCIS) can only be used twice in a twelve month period and not within one month of harvesting. The standards also note that if it becomes necessary to exceed the restricted treatments, then the treated fish lose their organic status. Therefore application of organic status to salmon production may hamper the ability to control sea lice on farms and directly impact on wild salmonids, contrary to the guiding principles for sustainable aquaculture.

Risk based approach to licensing

There is a large body of scientific evidence that the production of farmed salmon in Ireland has had a serious impact on wild sea trout and this impact continues to occur at a number of sites where sea lice are not adequately controlled. IFI would propose the development of a

risk based approach using best national and international scientific information to analyse potential impacts on wild salmonids. This approach should not be confined to new developments but should also review existing fish farm locations. This risk based approach is being undertaken in the Norwegian salmon farming industry at present. Consideration could also be given to designating areas free of aquaculture development similar to the concept of National Salmon Fjords in Norway and the existing salmon farm free zone in Ireland.