An Bord Achomharc Um Cheadúnais Dobharshaothraithe
Aquaculture Licences Appeals Board

AP1/2018

Marine Harvest Ireland

Site Ref: T5/233
Inishfarnard, Co Cork

Appeal

Cúirt Choill Mhínsí, Bóthar Bhaile Átha Cliath, Port Laoise, Contae Laoise, R32 DTW5
Kilminchy Court, Dublin Road, Portlaoise, County Laois, R32 DTW5

Guthán/Telephone: 057 8631912 R-phost/Email: info@alab.ie Láithreán Gréasáin/Website: www.alab.ie

Marine Harvest Ireland
Rinmore, Fanad, Letterkenny, Co. Donegal
Telephone: +353 (0) 74 9159071
Fax: +353 (0) 74 9159077

The Aquaculture Licenses Appeals Board (ALAB)
Kilminchy Court
Dublin Road
Portlaoise
Co Laois.
R32 DTW5

Date: 8th of January 2018.

By registered post and by email to info@alab.ie and cc to Mary.Ohara@alab.ie

Ref. Appeal to proposed amendment to license conditions of license T5/233, as outlined in the letter dated 11th of December 2017, signed by Mr. Kevin Hodnett of the Department of Agriculture, Food and the Marine (attached).

Dear ALAB,

We are writing to you in reference to the above, and completed and attached "Form3" entitled "Notice of appeal under section 40(1) of Fisheries (amendment) Act 1997 (No.23)" with fee of €380.92. This appeal concerns an amendment decision by the Minister for Agriculture, Food and the Marine as communicated to us by Mr. Kevin Hodnett on the 11th of December 2017 (attached). In this submission we would like to refer to a number of documents, which I have listed in an Appendix to this submission and copies of which are enclosed.

We appeal to ALAB that the Minister's proposed amendment to condition 2(d) of the license is replaced by an appropriate Maximum Allowable Biomass (MAB) instead, and that this condition becomes the production limit of this license to which the operator must comply. MAB has been recognised as the most appropriate parameter to control aquaculture production by the Minister and the Department. On the 5th of December 2011, Minister Coveney launched new aquaculture license templates and is quoted in his press release as stating:

> *"Key new features of the license templates include: . . . a move to Standing Stock Biomass* (same as MAB) *for finfish as the means of measuring production capacity at an aquaculture site;*
>
> . . .
>
> *Standing Stock Biomass is recognised internationally as the appropriate metric for assessing loading at an aquaculture production site and can be measured on a real time basis thus facilitating effective regulation and management of sites"*

We propose that the MAB for this site should be 2,200t, based on a yield of up to 5.5Kg per the limited juvenile input of 400,000 per the proposed amendment. Considering that current best practices stock any site only once every two years, and not annually every 12 month period, this represents a reasonable compromise. Accordingly, we suggest that a more appropriate wording for condition 2(d) of the license would be:

> *"The pens shall be subject to the stocking limit of 2,200 tonnes standing stock biomass (otherwise described as the Maximum Allowable Biomass, MAB). The stocking of the site will be subject to inspection at any time by the Department of Agriculture, Food and the Marine"*

Clause 2.(e) would have to be deleted because it does not make sense in respect of the existing clause 2(d), the Minister's amended clause 2(d), nor this proposed amendment to apply a MAB. We have previously explained to ALAB the appropriateness of the MAB license conditions. The company appealed the wording of the draft Shot Head license which remains under consideration by ALAB in part, but has also been reported on. We would like to summarise the reasons why a MAB should apply as follows:

1. The MAB parameter is the international norm and applies in our nearest competing countries of Scotland and Norway. This was recognised by the Irish regulatory authority (as per the quote from the Minister above and in the new aquaculture license templates in December 2011). As the use of this parameter is the existing policy we deem it to be essential for the regulatory authority to implement this regularisation at every opportunity, especially in case of amendments aimed to eliminate ambiguity in the wording of a license.

2. Since 2003, the Industry has made the case to the Department for implementing the MAB as the key license parameter. In respect of our licenses in the South West of Ireland we sought the opinion of the world renowned aquaculture expert Prof. Randolph Richards to help illustrate this point. He is well qualified to do so (details attached) and previously outlined his view of the license conditions operated by MHI in the South West (including site T5/233); his opinion is dated 29th of November 2016, and attached herewith.

3. The use of the 2,200 t MAB parameter would not cause any adverse environmental effects. The Inishfarnard site holds Aquaculture Stewardship Certification since 2016. This standard is the highest environmental and social standard which can be achieved for an aquaculture site and demonstrates MHI's commitment to responsible and sustainable aquaculture (certificate enclosed in the appendix).

4. The license as it stands has expired and the company has the consent to continue its operation under section 19A(4) of the 1997 Fisheries (Amendment) Act. We understand that the Department's position is that any proposed amendment to an aquaculture license operating under the provision of Section 19(A)4 of the 1997 Fisheries (Amendment) Act should be treated in the same way as an amendment to an extant license under the 1997 Fisheries (Amendment) Act.

   The terms of the license therefore consists of the original license (1995) and two sets of protocols (08/03/2001 and 04/08/2004); all are attached. The proposed amendment and

condition 2(e) of the license are incompatible as they do not guide the licensee towards an "all in all out" production strategy without mixing generations.
Any amendment to the license should take into context all of the license conditions that apply, good farming practices, and not simply represent one independent measure or parameter by which to control production. An MAB would solve this.

5. There are a number of lesser reasons why the proposed amendment is inappropriate, some of which are nonetheless significant and can be listed as follows:
    a. The proposed amendment is ambiguous (for example, it can be taken to mean a permitted input of 33,333 fish per month).
    b. The proposed amendment is incompatible with condition 2(e) of the license.
    c. The MAB is fully compatible and dovetails with the protocols as well as other best farming practices that promote sustainable environmental and fish health management.
    d. The MAB would provide the operating company with a level playing field when competing with producers based in other European countries. As noted in Prof. Richard's opinion, a company can tailor its fish sizes for the market within a MAB.
    e. The MAB enables the company to manage changing circumstances over the entire rearing cycle (typically 16-22 months) and so manage risks. The 12 month period is arbitrary and at best relate to historic rearing patterns with the use of separate "smolt and grower" sites which are now contrary to best farming practices.
    f. It is the biomass on a site that drives the environmental effect on the local environment. All EIS documentation relies on biomass modelling, and existing environmental monitoring requirements of the license and protocols are fully compatible with a MAB.

In summary, our appeal is well-intended to make an amendment to this license that will adjust this license into a practical format enabling best environmental and fish health practices, and demonstrating a clear commitment to such internationally recognised practices. I am sure that the Marine Institute and BIM (which do not appear to have been consulted on this amendment) could verify that this would be a most reasonable way forward, is justified and that environmentally and fish health wise such a change would make perfect sense.

I trust that you will receive this appeal as a constructive attempt to achieve a workable license for all stakeholders (regulatory, fish health and environmental interests, operator, customers, employees); it is the right thing to do.

Yours sincerely,

Jan Feenstra (MD)
Comhlucht Iascaireachta Fanad Teoranta, trading as Marine Harvest Ireland.

Appendix

List of enclosures

1. "Form3" Notice of Appeal (and fee of €380.92 per post).
2. Letter from APO Kevin Hodnett 11th of December 2017.
3. Letter from APO Kevin Hodnett 17th of February 2017.
4. Minister Coveney's press release dated 5th of December 2011.
5. Qualification of Prof. Randolph Richards
6. CV of Prof. Randolph Richards
7. Opinion on format of SW license conditions operated by MHI, dated 29th of November 2016.
8. The original license T5/233 and two accompanying protocol modifications (2001 and 2004).
9. ASC certification of Inishfarnard site.

NOTICE OF APPEAL UNDER SECTION 40(1) OF FISHERIES (AMENDMENT) ACT 1997 (NO. 23)

Name and address of appellant:

Telephone:... ..... Fax:
Mobile Tel.. ..... E-mail address:

Subject matter of the appeal:
Proposed amendment to the aquaculture license conditions for the site referred to below (T5/233) as outlined in the letter dated 11th of December 2017 (enclosed) signed by APO Kevin Hodnett.

Site Reference Number:
(T5/233) Also referred to as Aquaculture License No. 198 and Foreshore No. 198 date 30th of January, 1995. (original license and protocol modifications enclosed)

Appellant's particular interest in the outcome of the appeal:
The appellant is the operating company, trading as Marine Harvest Ireland (MHI), of this site and seeks a more appropriate and up to date license condition instead in order to be able to operate this license sustainably and according to best practices.

Outline the grounds of appeal (and, if necessary, on additional page(s) give full grounds of the appeal and the reasons, considerations and arguments on which they are based):
The proposed amendment conflicts with other license conditions, including the modify-cations in the form of protocols applied in March 2001 and August 2004. Instead MHI proposes that the amendment to the particular condition should be to limit production by reference to MAB rather than numbers of fish input per any twelve month period. Full submission and enclosed documentation attached here after.

Fee enclosed:..... € 380.92
(payable to the Aquaculture Licences Appeals Board in accordance with the Aquaculture Licensing Appeals (Fees) Regulations, 1998 (S.I. No. 449 of 1998))(See Note 2)

Signed by appellant:..... Date: 8th of January 2018

Note 1: This notice should be completed under each heading and duly signed by the appellant and be accompanied by such documents, particulars or information relating to the appeal as the appellant considers necessary or appropriate and specifies in the Notice.

Note 2: The fees payable are as follows:

Appeal by licence applicant.....	€380.92
Appeal by any other individual or organisation	€152.37
Request for an Oral Hearing (fee payable in addition to appeal fee)	€76.18

In the event that the Board decides not to hold an Oral Hearing the fee will not be refunded.

Department of
Agriculture,
Food and the Marine
An Roinn
Talmhaíochta,
Bia agus Mara

COPY

sent by registered post

Mr Jan Feenstra
Managing Director
Comhlucht Iascaireachta Fanad Teoranta
t/a Marine Harvest Ireland
Kindrum
Letterkenny
Co Donegal

11th December 2017

Re: Acquaculture Licences for the cultivation of Atlantic Salmon at a site at Inishfarnard, County Cork (T5/233)

Dear Mr. Feenstra,

I am to refer to the above licence and the Minister's decision under the provisions of Section 68 of the Fisheries (Amendment) Act 1997 earlier this year in relation to that site. The details of this decision were conveyed to you by letter dated 17th February 2017.

The Minister, as you are aware, decided that an amendment be made to the aquaculture licence conditions for the above named site. The Minister has agreed the following amendment to Aquaculture Licence condition 2(d) of the relevant aquaculture licence:

(a) the removal of the existing text of condition 2(d) of the licence which states:

> ***"the stock of fish in the cages shall not exceed such quantity as may be specified by the Minister from time to time, the number of smolts to be stocked at the site should not in any event exceed 400,000. Licensed stocking densities are not to be exceeded and will be subject to inspection at any time by the Department of the Marine;"***

(b) the insertion of the following text:

> ***"no more than 400,000 fish of any growth category may be input to the site in any twelve month period and will be subject to inspection at any time by the Department of Agriculture, Food and the Marine;"***

I am to refer also to condition 2(k) of the licence which states:

> ***"the Licensee shall furnish to the said Secretary at the said address such returns relating to the fishery as may be required by the Minister;"***

In this regard, I am to advise that the following information should be returned to me in respect of the above named site for each calendar month.

1. Stock numbers introduced to the site and held on site during the month.

2. Details of mortalities during the month.

3. Details of stock during the month (broken down by category, smolts, ova, fry, others).

This information should be provided for each month, commencing November 2017. The return of this information for the month ended 30th November 2017 should be made no later than close of business 18th December 2017 and within 7 working days of each month end thereafter.

The information may be forwarded to me at this address or alternatively by way of e-mail at the following addresses:
Nicole.OShea@agriculture.gov.ie
Eimear.Reilly@agriculture.gov.ie

If you require any clarification please do not hesitate to contact me.

Yours sincerely,

Kevin Hodnett
Assistant Principal Officer
Aquaculture & Foreshore Management Division
Department of Agriculture, Food and the Marine
National Seafood Centre
Clonakilty
Co Cork
P85 TX47

COPY

Department of
Agriculture,
Food and the Marine
An Roinn
Talmhaíochta,
Bia agus Mara

Mr. Jan Feenstra
Chief Executive Officer
Comhlucht Iascaireachta Fanad Teoranta
t/a Marine Harvest Ireland
Kindrum
Letterkenny
Co Donegal

sent by registered post

17 February 2017

Re: Entitlement to continue aquaculture operations under the provisions of Section 19(A)4 of the 1997 Fisheries (Amendment) Act for the culture of salmon and rainbow trout in cages at a site east of Inishfarnard, Coulagh Bay, Co Cork (T5/233)

Dear Mr Feenstra,

I am to refer to the Department's previous correspondence and discussions concerning the above issue.

The Minister has considered all aspects of this case and has determined that a provable breach of the licence condition 2(d) did not occur.

Condition 2(d) of the licence states:

> ***"the stock of fish in the cages shall not exceed such quantity as may be specified by the Minister from time to time, the number of smolts to be stocked at the site should not in any event exceed 400,000. Licensed stocking densities are not to be exceeded and will be subject to inspection at any time by the Department of the Marine;"***

The Minister has concluded that a provable breach of the licence condition did not occur, in circumstances where evidential issues may arise as to what technically constitutes a smolt. The Minister wishes to seek to avoid a similar situation occurring in the future and therefore wishes to endeavour to have the licence amended.

Accordingly, pursuant to the applicable legislation, further correspondence will issue in relation to the proposed amendment.

A public notice of the Minister's decision will be made in accordance with the applicable legislation.

Yours Sincerely,

John Quinlan
Principal Officer
Aquaculture & Foreshore Management Division
Department of Agriculture, Food and the Marine
National Seafood Centre
Clonakilty
Co Cork
P85 TX47

Oifig Faisnéise
Áras Talmhaíochta
Sráid Chill Dara
Baile Átha Cliath 2

Tel: (01) 607 2802
Fax: (01) 662 1165

Department of
Agriculture, Food and the Marine
An Roinn
Talmhaíochta, Bia agus Mara

Press/Information Office
Agriculture House
Kildare Street
Dublin 2

E-mail: info@agriculture.gov.ie
Website: www.agriculture.gov.ie

PRESS RELEASE

5 December, 2011

244/11

MINISTER COVENEY LAUNCHES

NEW AQUACULTURE LICENCE TEMPLATES

The Minister for Agriculture, Food and the Marine, Simon Coveney TD, today launched new aquaculture and companion foreshore licence templates. The new templates, which are species specific, have been introduced to address the technological, environmental and legal issues that have come to the fore since the first licences were issued under the Fisheries (Amendment) Act, 1997. A new template for the accompanying foreshore licence has also been devised.

The new templates will be introduced as individual licences come up for renewal and as new licences are issued.

Speaking at the launch, the Minister said *"the new templates contain significant new terms and conditions which are designed to reflect the technical advances that have taken place in the industry and the enhanced environmental protection now required under EU and national legislation. They will form the basis for sustainable development of the industry and the creation of long-term jobs into the future."*

Key new features of the licence templates include:

- a move to Standing Stock Biomass for finfish as the means of measuring production capacity at an aquaculture site;
- enhanced provisions on environmental monitoring;
- greater clarity on the requirements for operators in relation to operational conduct and monitoring;
- the possibility for the group-marking of sites for navigational purposes;
- specific provisions covering company registration/dissolution, tax certificates, payment of fees etc.

Information Seminars for industry are currently being rolled out by the Department.

ENDS

"Minister launches new Aquaculture Licence Templates"

Background Note

1.0 New Aquaculture licence templates have been devised to take account of the technological, environmental and legal issues that have arisen since the first licences were issued under the Fisheries (Amendment) Act 1997 – the core legislation governing aquaculture licensing. The templates were developed by a Working Group established to address these issues. The Working Group consisted of the Department's Aquaculture and Foreshore Management Division, Engineering Division, Legal Services Division, the Marine Institute and BIM.

New Template Types

2.0 Seven aquaculture templates have been developed:

- Marine based shellfish e.g. mussels, typically using longlines
- Marine based shellfish sea-bed bottom culture e.g. mussels, oysters, scallops – no structures are used
- Marine based shellfish inter/sub tidal e.g. oysters, typically using bags and trestles
- Marine based aquatic plants/fish food e.g. seaweed using longlines
- Marine finfish e.g. salmon, rainbow trout, cod – using cages
- Land based finfish (freshwater), mainly hatcheries for salmon farms
- Marine multi species – to provide for cases where multi method or multi species are used e.g. a combination of longlines and trestles, mussels and oysters etc

Core Changes

3.0

- Change from licensing by Annual Harvested Tonnage (i.e. the dead weight of fish harvested from a site in a calendar year measured in tonnes) to Standing Stock Biomass for Finfish (the weight of live fish on a site at any given time, measured in tonnes) Standing Stock Biomass is recognised internationally as the appropriate metric for assessing loading at an aquaculture production site and can be measured on a real time basis thus facilitating effective regulation and management of sites

- New provision on environmental monitoring taking account that most aquaculture sites are located in Natura 2000 areas – protected by European Birds and Habitats Directives

- Enhanced requirement in relation to operational conduct and monitoring

- Potential for sites to be marked on a group basis
- Licences not assignable for 3 years following grant – except in exceptional circumstance
- A company incorporated outside the State will be required to register with the CRO within one month of being granted a licence
- Requirement to produce a current Tax Clearance Certificate on demand
- A provision that when a company dissolves, its associated Aquaculture Licence cease to exist
- Licences will be species specific

ENDS

PROFESSOR R.H. RICHARDS. C.B.E., M.A., Vet.M.B., Ph.D., C.Biol., F.S.B., F.R.S.M., M.R.C.V.S., F.R.Ag.S., F.R.S.E.

November 29, 2016

Professor Randolph H. Richards.
Expertise in Aquaculture and links to Irish Aquaculture.

Please see the attached curriculum vitae for further details.

I qualified as a veterinary surgeon from the University of Cambridge in 1972 and have worked at the Institute of Aquaculture at Stirling University since 1973 until the present time. I carried out a PhD on Fish Disease between 1973 and 1979, was the deputy-director of the Unit of Aquatic Pathobiology and then the Institute of Aquaculture between 1976 and 1996 and was the Director of the Institute of Aquaculture between 1996 and 2009.

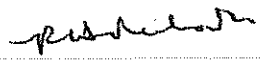
My work has concentrated on international aquaculture development and particularly disease control, both as an academic running major multinational projects and training large numbers of Masters and PhD students, but also working in very close association with the developing aquaculture industry. A particular interest was the development of disease diagnostic services for the industry and advising industry associations.

In Scotland, I have acted as Research Director of the Scottish Salmon Growers Association between 1986 and 1989 and since 1989 have been the Veterinary Adviser of the Scottish Salmon Growers Association. I have also been Director of a number of Aquaculture companies.

In the Irish context, I worked closely with a large number of Irish Aquaculture companies such as Fanad and the Electricity Supply Board, particularly during the 1980s and was a board member of the Disease Committee of the Irish Aquaculture Association. I also acted as a Director of Aquahatch (Ireland) Ltd and was Director of the Salmon Fisheries Disease Diagnostic Services (Irish Aquaculture Association). During this period, I also held regular meetings with NADCORP (the National Development Organisation). I also have particularly strong links with the Aquaculture Insurance Industry and have been involved in the investigation of many insurance claims in Ireland.

I have been a member or chair of many government/industry working groups in the UK and Europe and of particular relevance to Ireland, I was rapporteur to the DG Fish working group on EU regulations on organic aquaculture.

My experience and expertise have been recognised with the award of many honours, of particular note being the award of the CBE in the Queen's birthday honours list for services to veterinary science and the Aquaculture Today award for personal contribution to global aquaculture, both in 2008; the Award for Excellence in European aquaculture from FEAP (Federation of European Aquaculture Producers) in 2009; and the award of the Royal College of Veterinary Surgeons Queen's Medal in 2016 for outstanding contribution to aquaculture.



Professor Randolph Richards

CURRICULUM VITAE

NAME — Professor Randolph Harvey Richards

CURRENT POST — Professor of Aquatic Veterinary Studies
Institute of Aquaculture,
University of Stirling
Stirling FK9 4LA
Scotland, UK

DOB

HOME ADDRESS

POST SCHOOL EDUCATION

Jesus College, University of Cambridge
Degree obtained: BA (Hons) Medical Sciences

Veterinary School, University of Cambridge
Degrees obtained: VetMB MA

University of Stirling
Degree obtained: PhD
Title of Doctoral thesis:- Studies on peri-spawning mortalities in Brown trout (*Salmo trutta* L.) from Loch Leven, Kinross, Scotland.

CAREER
Appointments Held

1972-1973	Veterinary surgeon in mixed practice Employers: Stabler & Harrison, Chester Street, Wrexham
1973-1976	Nuffield Research Fellow, University of Stirling
1976-1979	Deputy Director, Unit of Aquatic Pathobiology, University of Stirling
1979-1996	Deputy Director, Institute of Aquaculture, University of Stirling
1991	Appointed to RMB Chair

1996-2009 Director, Institute of Aquaculture, University of Stirling

2010 to date Head of Fish Health & Welfare, Institute of Aquaculture, University of Stirling

Role and responsibilities

- Academic leader of the Fish Health Research Area
- Principal liaison with the Aquaculture Industry (eg Veterinary advisor to the Scottish Salmon Producers Organisation)
- Manager and principal pathologist of the Diagnostic Services at Stirling
- Principal lecturer in the area of fish pathology and diagnostics
- University official Home Office veterinary surgeon
- Supervisor of numerous PhD and MSc students

Synopsis of current research interests

Aspects of host-pathogen interaction in aquatic species. Diagnostic Methods for fish pathogens including antibody and molecular-based methods. Development of novel chemotherapeutic agents. Investigation of novel disease syndromes and pathologies in new aquaculture species such as Pangasius catfish in Vietnam and Tuna in the Mediterranean. Recent projects have involved the coordination of EU projects on viral diseases such as Nodavirus infection and Infectious Salmon Anaemia .
More than 120 refereed scientific papers in the above areas.

Recent Grants

- Pancreas Disease in farmed Atlantic salmon 3 years from 1/3/2011.
Scottish Government.
- SPASE (Scottish Partnership in Animal Science Excellence). Host-pathogen interactions in fish viral diseases. 4 years from 1/4/2011.
Scottish Government.

TSB Sea lice vaccine development. 2012-16
Zoetis Sea lice vaccine development 2012-16
Principal applicant – Scottish Aquaculture Innovation Centre – Scottish Funding Council. with match funding from industry – 5 years from 1/5/2014

Measures of esteem

- CBE for services to veterinary science 2008
- Aquaculture Today award for personal contribution to global aquaculture 2008
- Federation of European Aquaculture Producers Award for Excellence in European Aquaculture 2009

- Academic Facilitator of the Health and Welfare section of the European Aquaculture Technology and Innovation Platform
- Scottish Representative on the Trination Working Group on Salmon Pancreas Disease
- Scottish representative on the Multination Gill Health Working Group Member of the Scottish Government's Ministerial Working Group on Aquaculture and Chair of the Fish Health Group
- Chair of the UK National Bacterial Kidney Disease Group
- Member of Unit of Assessment 16 of the UK Research Assessment Exercise 2008
- Member of the International Panel of the Norwegian Research Council's Centres of Excellence Scheme
- Member of the Editorial Board of World Agriculture and Veterinary Record
- Director of Machrihanish Marine Farm Ltd
- Vice-chairman of the Moredun Foundation
- Fellow of the Royal Society of Edinburgh
- Awarded the Royal College of Veterinary Surgeons Queen's medal 2016
- Chair of the Scottish Government-Industry Working Group on Integrated sea Lice Management.

MEMBERSHIP OF ACADEMIC SOCIETIES
AND PROFESSIONAL BODIES

- Member of numerous academic societies and professional associations
- Member of Veterinary Products Committee 1991-1998
- Member of the Royal College of Veterinary Surgeons
- Veterinary Adviser to Scottish Salmon Growers Association (now Scottish Quality Salmon)
- Member of the Scientific Panel of Salmon and Trout Association
- Regular adviser to international bodies such as FAO, World Bank, Council of Europe, Lloyds of London
- Ex-director of farming companies – Atlantic Freshwater PLC (Scotland); Aquahatch (Ireland) Ltd, Alkioni Ltd (Cyprus)
- Fellow of the Institute of Biology
- Fellow of the Royal Society of Medicine
- Founder member of the Veterinary Association for Arbitration and Jurisprudence
- Trustee of Forth Fisheries Foundation
- Fellow of the Royal Agricultural Societies
- Fellow of the Royal Society of Edinburgh

- Founding member and Diplomate of the European College of Aquatic Animal Health

ADVISORY WORK AND PROFESSIONAL CONTRIBUTIONS

1967
Leader of Cambridge Expedition to Peru, working with FAO attempting to domesticate wild rodents and identify potential aquarium and farmed fish supplies.

1976 to 1989
Consultant to Golden Sea Produce Ltd (Fitch-Lovell) on fish disease problems.

1977 to 1985
Assessor to the Large Animals Committee of the British Veterinary Association on Fish Disease Matters.

1979 and 1980
Advisory work on aquaculture in Turkey on behalf of the British Executive Service Overseas and the Confederation of British Industry.

1980 to 1990
Consultant on Fish Diseases to White Fish Authority.

1980
Advisor (FAO) on Fish Disease in Thailand
British Representative on the Risk Management Task Force of the World Mariculture Society

1981
Advisory work on aquaculture in Ceylon on behalf of the British Executive Services Overseas

1982
Advisor to Council of Europe on Aquaculture Development of the EEC
Advisor to the Steering Group on Aquaculture in Sweden
Advisor to the NFU Fish Farming Committee and Salmon Producers Association on Fish Disease Matters

1983
Advisory visit on fish diseases to Hong Kong
Advisory visit on behalf of Lloyds Underwriters, London to Germany on fish disease matters
Advisory visit to Cephalonia Fisheries, Greece on fish culture and disease

1984
Advisory visit on fish disease to Faroe Islands
Consultant to Fanad Fisheries, and the Electricity Supply Board, Eire on fish disease matters

1984 to present
Official Inspector under the Zoo Licensing Act 1981

1985-1987
Board member of the Disease Committee of the Irish Aquaculture Association

1985
Advisory visit on fish disease to Ireland
Head of the Research and Development Group of the Scottish Salmon Growers Association
Advisor to MEDRAP (FAO) on training development in aquaculture in the Mediterranean area

1984-1985
Advisory visits to Canada on fish disease on behalf of Lloyds Underwriters London and the Canadian Government

1986 – 1989
Research Director of the Scottish Salmon Growers Association
Director of the Salmon Fisheries Disease Diagnostic Services Ltd (Irish Aquaculture Association)

1987
Consultant to FAO on National Plan for Greek Aquaculture
Consultant to FAO on Aquaculture Development in Morocco
Advisory visit to Israel for Israeli Government to investigate fish disease problems
Member of Editorial Board of "Thalassographica" Journal concerning Marine Environmental Issues
Consultant to Lloyds in Faroe Islands during legal case concerning fish losses from disease

1988
Member of the Health and Husbandry Committee of the National Farmers Union (England & Wales)
Further consultancy work provided to Lloyds in Faroe Islands during legal case

1989 to present
Veterinary Adviser of Scottish Salmon Growers Association

1989
Member of the Fish Farming Committee of the Scottish National Farmers Union

1990
Consultant to the EEC (DG XIV) in assessment of grant applicants for Aquaculture research under the FAR programme
Several advisory visits to America and Switzerland to discuss market opportunities for fish medicaments with international pharmaceutical companies
Consultancy visits to Denmark and Sweden on behalf of Lloyds Insurance Brokers

1992-1999
Member of the Veterinary Products Committee, licensing committee of the Ministry of Health

1992
Consultant to the EEC (DG XIV) in assessment of grant applications for Aquaculture research under the AIR programme

1993
Adviser to FAO (Medrap) on developments in Mediterranean Aquaculture
Adviser to the Greek Aquaculture Association

1994
Adviser to the Farm Animals Welfare Committee

1996
Member of the Aquaculture sub-committee of the Marine Panel of Technology Foresight

1996 to present
Convener of the Fish Disease Section of the European Inland Fisheries and Aquaculture Committee of the Food and Agriculture Organisation of the United Nations
Director of Stirling Aquaculture Ltd
Director of Aquaculture Project Development Ltd

1996 and 1997
Adviser to DGXIV (EC) on future Medicines Regulations in Aquaculture

1997
Adviser to the CVMP (Committee for Veterinary Medicinal Products) – the Animal Drug Licensing Agency of the EC on the licensing of fish medicines

1999 – 2000
Advisory work re salmon losses in New Zealand

1999 – 2004
Director of Alkioni Ltd, a bass and bream farming company based in Cyprus

1999 – present
Trustee, Forth Fisheries Foundation

2000 – present
Member of the Government/Industry Aquaculture Health Joint Working Group

2001- present
Associate of the Royal Agricultural Societies, Fellow since 2006
Fellow of the Royal Society of Medicine
Director, Machrihanish Marine Farm Ltd

2001 – present
Member of the Scientific Committee of the Research Council of Norway – Centres of Excellence Scheme

2002 – present
Member of Scotia Agricultural Club
Member of Government/Industry Location/Relocation Working Group

2003 - 2012
Director, Moredun Research Institute

2003
Chair of Quinquennial Review of the Royal Veterinary College MSc in Wild Animal Health

2003 – 2004
Member of the Royal Society of Edinburgh Scottish Fisheries Inquiry

2003 – present
Member of Government/Industry Working Group on Location/Relocation of Aquaculture installations

2005-06
Vice Chair of DEFRA quinquennial review of CEFAS aquaculture and fisheries research

2005 -2008
Member of sub panel 16 of the Research Assessment Exercise

2007 onwards
Facilitator of the Health and Welfare Group of the EU European Aquaculture Technology and Innovation Platform

Scottish representative of the Trination Working Group on pancreas disease and related pathologies

2008

CBE awarded in the Queen's birthday Honours list for services to veterinary science

Rapporteur to DG Fish working group on EU regulations on organic aquaculture

2009
Award for Excellence from FEAP (Federation of European Aquaculture Producers)

2009 onwards
Member of the Ministerial Group on Aquaculture and Chair of the Healthier Fish and Shellfish Working Group

2010-2011
Chair of the UK Working Group on Bacterial Kidney Disease of Salmonid Fish

2011
Elected to Fellowship of the Royal Society of Edinburgh

2012 to date
Member of the Animal Health Committee of the BBSRC (Biology & Biotechnology Research Council)
Member of the BBSRC Animal Health Research Club.
Member of editorial board of Veterinary Record and World Agriculture
Scottish representative on the Multination Gill Health Working Group

2013 to date
Founder Member of the BBSRC Vaccinology Network

2014 to date
Vice-Chairman of the Moredun Foundation

2015 to date
Founder Member of the European College of Aquatic Animal Health

PUBLICATIONS

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ISSUES CONCERNING SITE LICENSING AT MARINE HARVEST IRELAND

Abstract

A short review of a sample of salmon aquaculture licences held by MHI in the south west of Ireland concludes that their wording is out of date, inappropriate and contrary to supporting best practices. Using terms such as 'growers' and 'smolts' is confusing and erroneous in biological terms. It is recommended that a MAB (Maximum Allowable Biomass) should be the key parameter to limit production on all salmon production sites as is the International Standard. The MAB relates directly to the EIS (Environmental Impact Statement) and environmental loading as well as the annual benthic monitoring, while enabling market led production. Licences should promote "all in all out" and fallowing between generations of stock as opposed to being scheduled to a calendar timeframe that is unrelated to the production cycles. It is further recommended that a young industry such as aquaculture benefits from regular reviews and modifications between the regulator and licensees, as is practised in Scotland and Norway.

Historical Perspective

The licensing of Fish Farming Sites in the marine environment has been carried out by Government Agencies since the early days of salmon farming in the 1970s. Norway pioneered these developments and initially licensed farm sites according to the allowable surface area of the ocean to be covered by pen structures. No account was taken of total numbers of fish to be stocked into the sea or total biomass to be present at a site at any one time. At that time, farmers chose to maximise production by increasing the depth of the nets being used . Significant problems were experienced with disease, in particular the bacterial disease furunculosis and the parasitic disease caused by sea lice infection. A mortality rate in excess of 50% was often experienced, causing farmers to double the number of fish stocked in anticipation of such high mortality. This often led to very high stocking densities being used, resulting, especially in inshore sites with poor water circulation, in significant deterioration of the benthic and water column quality. Subsequent control of numbers stocked or tonnage produced was used in order to avoid environmental deterioration and the risk of disease development.

It was also common practice to use inshore, protected sites to stock fish from the freshwater environment in the first year and subsequently transfer the partially grown stock to other less-protected sites for their second and even third year of sea production. The industry in both Ireland and Scotland consisted of a large number of smaller companies, usually operating independently in the same bays or bodies of water. There was little coordination of husbandry procedures such as treatment for sea lice and, as a result, disease agents often circulated around sites in the same bay. Disease control became very problematical.

Development of Code of Good Practice

An outbreak of the exotic notifiable disease Infectious Salmon Anaemia in Scotland in May 1998, which resulted in the slaughter of large numbers of fish, led to the establishment of the Joint Government / Industry Working Group on Infectious Salmon Anaemia, the purpose of which was to identify the measures required to prevent or minimise the impact of further outbreaks of ISA. The conclusions of the group are presented in document number ISBN 0 7480 8950 0. Available literature on the topic was assessed and epidemiological modelling used to produce a risk assessment of husbandry procedures in use at that time and provide recommendations as to future husbandry practice. This work also formed the basis of the current Code of Good Practice for Scottish Finfish Aquaculture.
The application of the principles outlined has also drastically reduced the spread of other disease conditions and forms the basis of international salmon production methodology.

Key principles of the Code of Good Practice

- A general presumption against seawater to seawater movement. This may occur, exceptionally, followed the application of a documented risk assessment.
- Delineation of management areas, defined hydrologically, where ideally, all sites in a management area are controlled by a single company. If more than one company is present, a management agreement should be in place to ensure the coordination of procedures such as sea lice treatment and fallowing.
- The stocking of sites with fish from a single source, or if that proves impossible, a restricted number of sources.
- Well boat movements are also a source of transfer of infection and 'bus-stop' deliveries going from site to site are discouraged unless sites are managed by the same entity and even then, only when fish are stocked into appropriately fallowed sites.
- The use of site-specific equipment and staff and, if equipment or staff have to be shared between sites, the use of approved disinfection procedures.
- Agreed methods for monitoring and recording of sea lice numbers.

All the above have resulted in the licensing of sites being based on MAB (Maximum Allowable Biomass), established in Scotland through modelling of environmental parameters by the Scottish Environmental Protection Agency (SEPA). Ongoing monitoring takes place to ensure that the effects predicted by the model are not exceeded and involves a mixture of monitoring being carried by experts employed the aquaculture company and also by SEPA. Permissions may be adjusted according to the monitoring results. As seawater to seawater movements are

considered particularly risky, an input of fish from freshwater to a marine site usually remains at that site until harvest, unlike the earlier systems used.

Interaction between the aquaculture industry and government

Scotland provides an excellent example of the development of a working relationship between government and industry regarding aquaculture.
A formal government/ industry working group was established at the time of the first outbreak of Infectious Salmon Anaemia. The group involved experts from the aquaculture industry, government health officials, academics, and other interested parties such as SEPA. The group met regularly and eventually produced an agreed detailed report and recommendations which formed the basis of the current Code of Good Practice for Scottish Finfish Aquaculture, which is regularly updated.

This was seen to be a very successful way of promoting interaction between government and industry and was followed by the Ministerial Working Group on Aquaculture which has met regularly and convenes subgroups as necessary to evaluate issues of interest or concern. This group has contributed significantly to the development of aquaculture legislation in Scotland, and particularly the Aquaculture and Fisheries (Scotland) Acts of 2007 and 2013, and the Aquatic Animal Health (Scotland) Regulations 2009. The latest Working Group to be established is the Scottish Government/Industry Working Group on Integrated Sea Lice Management in 2016.

In addition, representatives of the SSPO meet regularly (approximately monthly) with scientific staff at Marine Scotland in Aberdeen to review current issues and ensure that officials are aware of industry developments.

Licences currently held by Marine Harvest Ireland Ltd.

I have been provided with historical details of licences currently held by Marine Harvest Ireland, specifically licences 198 (Inishfarnard), 199(Deenish), and 444 D & E (Bantry Bay). The licences were originally issued to Gaelic Seafoods and subsequently transferred to Murpet, then to Silver King and eventually to Marine Harvest Ireland. Earlier licences were held by the Electricity Supply Board.

Initial terms of the licences generally included :-

- The farming of only salmon or trout.
- Allowance of passage of migratory fish and no interference with fishing or navigation.
- Chemicals and antibiotics to be controlled and recorded.
- Notification of the presence of disease or any abnormal losses.
- Disposal of dead fish according to local authority requirements.
- Application of 30 day fallowing periods.
- Notification of escapes.
- Details of benthic and water quality monitoring to be reported and reviewed.
- Details of sea lice monitoring and control.
- Sale or disposal only to be carried out with written permission of the authorities.
- Ongoing precautionary measures against algal blooms.

Smolt Numbers and Tonnage

I note that the licences also contain details of allowable stocking in terms of either smolt numbers and/or grower production in tonnage terms in a calendar year and these figures are those allowed in the licences in 1995 and have not subsequently been modified. This takes no account of the accepted methodology of single year class stocking at a site which depends on fish remaining at the site from original input to final harvest. As explained earlier, the use of seawater to seawater movement is considered very high risk – it will increase the risk of disease spread and will also considerably stress the fish, leading to increased likelihood of disease development. I believe that the practice of rearing of stock from transfer to harvest has been carried out at these sites since before Marine Harvest Ireland acquired them, in keeping with industry norms. Should the Maximum Allowable Biomass approach be taken, following practice elsewhere, the number of smolts to be transferred from freshwater would be determined by the producer based on expected harvest weight and anticipated mortality rate during the ongrowing phase at sea. A margin of error would be applied in case of unexpected losses, and if survival was higher than expected, harvest of fish earlier than expected could be undertaken in order to remain within the consented limits. Initial stocking would be based on expected market requirements and should the market change, earlier harvest could again be undertaken. The key issue is the requirement to remain within the consented maximum biomass at any time in order to avoid any possible environmental degradation.

I am not sufficiently acquainted with the marketing plans of Marine Harvest Ireland to know of their market requirements but harvesting at 4.5 kilos bodyweight with an average loss of 25% stock in the saltwater phase would be a reasonable industry average, suggesting that approximately 300 smolts would be required to be transferred from freshwater for each tonne of eventual production. This would tend to equate to the numbers of fish stocked in relation to eventual biomass at sites 444D and 444E, where 2000 tonnes would be reared at each site from an initial stocking of 600,000 fish.

The eventual tonnage produced from stocking 400,000 fish at sites 198 and 199 would be approximately 1350 tonnes, not 500 tonnes and so in this case, there is little correlation between smolt numbers and expected tonnage. Sites with as little as 500 tonnes capacity would not be justified financially in terms of the costs of boats, staff and shore support and even the 1350 tonnage seems undersized considering the very open and exposed location of these sites.

I also believe that the terminology used in the licences is confusing and erroneous in biological terms. The definition of a smolt applies only to a fish in freshwater which has adapted to allow it to be transferred to saltwater through changes in gills and kidney. The basic changes include the development of 'chloride cells' in the gills to allow active transport of sodium and chloride ions out of the gill and changes in the glomerulus of the kidney which lead to a decreased glomerular filtration rate and decreased urine production. The fish are recognised by aquaculturists and fisheries biologists by the silvered appearance of the skin and testing is carried out to determine whether fish to be transferred are capable of adapting to the saltwater environment. Fish in saltwater should all be considered as 'salmon' or 'growers'. It could be that the use of 'smolts' was meant to indicate the number of smolts to be transferred from fresh water, but at sites 444D and 444E, there is no meaningful relationship between numbers of smolts consented and tonnage consented. As there is no certain means of establishing the final

tonnage that will result from stocking with a given number of smolts, then allowable biomass is a much more meaningful measure. The maximum allowable biomass (MAB) would also be relevant to stocking biomass at any time in the cycle in the sea, whereas total tonnage allowed may be interpreted as a total maximum tonnage to be produced in a calendar year rather than that being held at any point in time. This is the current state of the licences at sites 198 and 199 which stipulate tonnage on a calendar year basis and take no account of the total harvest taking place in year 2 in the sea.

The MAB can be calculated for each site by using the environmental impact statements submitted by the aquaculture producers to the authorities as part of the licence requirements.

Fallowing

It is also important to remember that the period of time that fish would be expected to remain at an individual site would be close to two years and would then result in triggering the fallow process. This does not equate to annual fallowing as is possibly suggested in the current licences, which would result in movement of fish at sea, producing considerable stress and the increased risk of disease development.

There is an increasing tendency to use heat and light control in hatcheries in order to produce larger smolts and thus reduce the timescale of the marine phase of production.

My personal opinion would be that it is necessary to modify the licences to allow stocking to be based on Maximum Allowable Biomass and allow fallowing to be carried out at the end of the production cycle, as is practised in other countries. Synchronous fallowing should also be undertaken in an individual management area.

Professor Randolph Richards.

T5/233

CERTIFICATION OF RENEWAL OF AQUACULTURE LICENCE No.198 AND FORESHORE LICENCE No.198

Dated 30 January 1995

This is to certify that the above-mentioned licences have been renewed, subject to the modification of the Aquaculture Licence specified below, with the approval of the Minister of State at the Department of Communications, Marine and Natural Resources, for the period up to and including 15 February 2007 subject to the terms and conditions thereof and subject to the provisions of the Fisheries (Amendment) Act, 1997 (No. 23), as amended.

Aquaculture Licence

- substitution for condition 2(l) of the following condition

2(l)(i) *The Licensee shall fallow the licensed area for at least 30 continuous days before restocking with fish of a different generation, in accordance with the requirements of the Department of Communications, Marine and Natural Resources (Protocol No. 5 Fallowing at Offshore Finfish Farms, as may be revised from time to time).*

2(l) (ii) *The Licensee shall undertake Benthic Monitoring of the licensed area in accordance with the detailed specifications of the Department of Communications, Marine and Natural Resources (Monitoring Protocol No. 1 for Offshore Finfish Farms - Benthic Monitoring, as may be revised from time to time) and promptly prepare and implement a Benthic Amelioration Plan if permitted parameters are breached.*

2(l)(iii) *The Licensee shall undertake Water Column Monitoring of the licensed area in accordance with the detailed specifications of the Department of Communications, Marine and Natural Resources (Monitoring Protocol No. 2 for Offshore Finfish Farms - Water Column Monitoring, as may be revised from time to time) and promptly take any required follow-up action in the light of the results of that monitoring.*

2(l)(iv) *The Licensee shall arrange for the treatment of fish against sea-lice and shall comply with the detailed specifications of the Department of Communications, Marine and Natural Resources (Monitoring Protocol No. 3 for Offshore Finfish Farms - Sea lice Monitoring and Control, as may be revised from time to time).*

2(l)(v) *The Licensee shall co-operate in the audit from time to time of its aquaculture operations and licensed area and facilities and premises in accordance with the detailed specifications of the Department of Communications, Marine and Natural Resources (Monitoring Protocol No. 4 for Offshore Finfish Farms - Audit of Operations, as may be revised from time to time)*

Signed: _____

A person authorised under Section 15 of the Minister and Secretaries Act, 1924, to authenticate the seal of the Minister for Communications, Marine and Natural Resources

Dated this 4 AUG 2004

CERTIFICATE OF ASSIGNMENT

OF

AQUACULTURE LICENCES No's. AQ 198, AQ 199 AND AQ 299.

AND

FORESHORE LICENCES No's AQ 198, AQ 199 AND AQ 299

This is to certify that the Licences referred to above have been assigned, with the approval of the Minister of State at the Department of Communications, Marine and Natural Resources, from:

Murpet Fish Ltd.

to

Silver King Seafoods Limited
c/o John Power
Curryglass
Waterfall
Co. Cork

subject to the terms and conditions thereof.

Signed: _____

A person authorised under Section 15
of the Ministers and Secretaries Act 1924,
to authenticate the seal of the Minister for
Communications, Marine and Natural
Resources.

31 July 2004

T5/233 - Inishfarnard, Coulagh Bay

Certification of Renewal of Aquaculture Licence No. AQ 198

Dated 30 January, 1995

and Companion Foreshore Licence

Granted to

Murpet Fish Company, Unit 2, Garvan Court, Main Street, Ballyboffey, Co Donegal

This is to certify that the above mentioned licences have been renewed with the approval of the Minister of State at the Department of the Marine and Natural Resources for the period up to and including 15 February, 2004 subject to the terms and conditions thereof and subject to the provisions of the Fisheries (Amendment) Act, 1997 (No. 23) and

(a) The Licensee shall undertake Benthic Monitoring of the licensed areas in accordance with the detailed specifications of the Department of the Marine and Natural Resources (Monitoring Protocol No. 1 for Offshore Finfish Farms - Benthic Monitoring, as may be revised from time to time) and promptly prepare and implement a Benthic Amelioration Plan if permitted parameters are breached.

(b) The Licensee shall undertake Water Column Monitoring of the licensed areas in accordance with the detailed specifications of the Department of the Marine and Natural Resources (Monitoring Protocol No. 2 for Offshore Finfish Farms - Water Column Monitoring, as may be revised from time to time) and promptly take any required follow-up action in the light of the results of that monitoring.

(c) The Licensee shall comply with the detailed specifications of the Department of the Marine and Natural Resources (Monitoring Protocol No. 3 for Offshore Finfish Farms - Sea Lice Monitoring and Control, as may be revised from time to time) for Sea Lice Monitoring and Control in all licensed areas of the Licensee.

(d) The Licensee shall co-operate in the Audit from time to time of its aquaculture operations and licensed areas and facilities and premises in accordance with the detailed specifications of the Department of the Marine and Natural Resources (Monitoring Protocol No. 4 for Offshore Finfish Farms - Audit of Operations, as may be revised from time to time).

Signed: Thomas A. Dolan

A person authorised under Section 15 of the Minister and Secretaries Act, 1924, to authenticate the seal of the Minister for the Marine and Natural Resources.

8 March, 2001

AGREEMENT made the 30th day of January, 1995.

1. The Minister for the Marine, (hereinafter referred to as "the Minister"), in exercise of the powers conferred on him by Section 15 of the Fisheries (Consolidation), Act, 1959, and the Fisheries (Transfer of Departmental Administration and Ministerial Functions) Order ,1977 (S.I. No. 30 of 1977), (as adapted by the Tourism, Fisheries and Forestry (Alteration of Name of Department and Title of Minister) Order, 1987 (S.I. No. 82 of 1987), hereby grants to Gaelic Seafoods (Ireland) Ltd., whose registered address is at Rusheenamanagh, Carna, Co. Galway (hereinafter referred to as "the Licensee"), at the place and in the waters defined in the attached Schedule hereto and delineated on the map annexed hereto and thereon coloured red (hereinafter referred to as "the fishery"), the exclusive right to

   (a) perform all operations necessary for the culture of salmon and rainbow trout in cages, details of which have been submitted to and approved by the Minister placed in that area east of Inishfarnard in Coulagh Bay, Co. Cork, designated in the agreement dated the 30th day of January, 1995 and the map annexed thereto between the Licensee and the Minister;

   (b) at any time of year to purchase, have in possession or sell salmon, salmon smolts and rainbow trout the acquisition of which has been approved by the Minister;

   (c) at any time of year to take and have in possession salmon, salmon smolts and rainbow trout within the confines of the area referred to at (a) above;

   (d) for the management of the fishery, to have in possession and use nets, traps or other such devices as may be approved by the Minister for the taking of salmon and rainbow trout as aforesaid.

2. This licence shall be subject to the following conditions:

(a) no fish other than salmon and rainbow trout shall be cultured or taken under the terms of this licence without the prior written permission of the Minister;

(b) the Licensee shall make adequate arrangements to ensure that the cages shall not obstruct the passage of migratory fish and shall take all measures necessary to prevent the escape of salmon and rainbow trout from the cages and shall carry out any instructions issued in this connection by the Minister;

(c) the licensee shall ensure that all towing of cages for any reason to and from the fish farm site is carried out only with the prior notification to and approval of the Minister;

(d) the stock of fish in the cages shall not exceed such quantity as may be specified by the Minister from time to time, the number of smolts to be stocked at the site should not in any event exceed 400,000. Licensed stocking densities are not to be exceeded and will be subject to inspection at any time by the Department of the Marine;

(e) the Licensee shall not harvest more than 500 tonnes (dead weight) of fish in any one calendar year.

(f) all chemicals and antibiotics used in the fishery shall be used in accordance with instructions issued by the Minister from time to time;

(g) the Licensee shall keep records of all chemicals and antibiotics with which the fish have been treated, including quantities and times of use;

) The Licensee shall notify the Secretary, Department of the Marine, (Aquaculture Section), Leeson Lane, Dublin 2, and the Fisheries Research Centre (Fish Pathology Unit), Abbotstown, Castleknock, Dublin 15, within forty-eight hours of the suspected appearance of any disease in the fishery or of any abnormal losses or mortalities in the fishery and shall carry out any instructions issued by the Minister as a result of the notification including instructions relating to the treatment, disposal and destruction of diseased stocks;

(i) disposal of all dead fish shall be in a manner acceptable to the local authority;

(j) the Licensee shall notify the Secretary, Department of the Marine, (Aquaculture Section), Leeson Lane, Dublin 2, within twenty-four hours of any escapes of fish from the fishery and shall keep records of fish escaped, including numbers, types, origin and year classes and shall make these records available to the Secretary on request;

(k) the Licensee shall furnish to the said Secretary at the said address such returns relating to the fishery as may be required by the Minister;

(l) the Licensee shall carry out such monitoring as the Minister shall specify from time to time and the results of such monitoring shall be furnished to said Secretary;

(m) the licensee shall ensure that water quality monitoring is continued for the duration of this licence in accordance with specifications laid down by the Minister, which may be modified from time to time, and results should be forwarded to the Fisheries Research Centre at agreed regular intervals;

(n) the licensee shall, before the end of each year for the duration of this licence, forward to the Fisheries Research Centre, annual review/update of water chemistry and other environmental parameters to assess the impact of operations at the fish farm;

(o) the licensee shall ensure that sea-lice densities are monitored regularly and that all warranted measures are taken to ensure that lice densities are minimised and the licensee shall comply with any instructions issued by the Minister in this regard;

(p) live salmon, salmon smolts and rainbow trout shall not be sold or disposed of to any person or in any way transferred outside the said fish farm save in accordance with the prior written permission of the Minister;

(q) the licensee shall keep the Secretary, Department of the Marine advised of ongoing precautionary measures to deal with naturally occurring algal blooms in the area of the fish farm;

(r) the fishery and any equipment, structure, thing or premises wherever situated, used in connection with operations carried on in the fishery shall be open for inspection at any time by an authorised person (within the meaning of section 292 of the Fisheries (Consolidation) Act, 1959 (No.14 of 1959) (as amended by the Fisheries Act, 1980) other than a private water keeper), a sea fisheries protection officer (within the meaning of section 220 of the Fisheries (Consolidation) Act, 1959) or any other person appointed in that regard by the Minister;

(s) the Licensee shall give all reasonable assistance to an authorised person, a sea fisheries protection officer or any person duly appointed by the Minister, to enable the person or officer enter and inspect the fishery, equipment, structures, things or premises pursuant to sub-paragraph (r) of this paragraph;

(t) the Licensee shall not use any substance or thing or do anything which has a deleterious effect on the fishery environment including the use of organotin based anti-foulants and shall make adequate arrangements for the hygienic and disease-free operation of the fishery and shall comply with any directions issued by the Minister from time to time in that regard;

(u) the Licensee shall not carry out any operations authorised by this licence in the fishery in such a manner as to interfere unreasonably with fishing or navigation in the vicinity of the fishery and shall comply with any direction given to it in that regard by the Minister;

(v) the Licensee shall make adequate provision for the removal and disposal of all waste from the fishery;

(w) the Licensee shall indemnify and keep indemnified the State, the Minister, his officers, servants or agents against all actions, loss, damage, costs, expenses and any demands or claims howsoever arising in connection with the construction, maintenance or use of any structures, apparatus, equipment or other thing used in connection with the fishery or in the exercise of the rights granted under this licence and the Licensee shall take such steps as the Minister may specify in order to ensure compliance with this condition;

(x) the Licensee shall obtain the consent of the Minister to any proposed major change in the shareholding or control of the Licensee where such change substantially alters the identity of the Licensee;

(y) this licence shall remain in operation until the 15th day of February, 2001 subject to the payment of the fee prescribed by the Department of the Marine;

3. The Minister shall be at liberty at any time to revoke or amend this licence if he considers that it is in the public interest to do so or if he is satisfied that there has been a breach of any condition specified in the licence or that the fishery to which the licence relates is not being properly maintained. Any such revocation or amendment shall be subject to the provisions of section 15 of the Fisheries (Consolidation) Act, 1959.

4. This licence will remain subject to ongoing review in light of continued monitoring of, and research into, the two marine sites and neighbouring sea trout fisheries which may be undertaken by the Salmon Research Agency and/or the Fisheries Research Centre.

5. In the event of proven contra-indications for sea trout stocks causatively linked to the fish farming operations permitted under this licence, the Minister may exercise his discretion to take any necessary protective measures ranging from reduction in permitted production levels to revocation of the licence and harvesting of all stock.

6. The number given to the Licensee under this licence shall be FCL 198.

7. This licence is not transferable.

8. This Licence replaces the licence dated 15th day of February, 1991 between the Minister and Salmara Fisheries Ltd.

PRESENT when the Seal of Office)
of the MINISTER FOR THE MARINE)
was affixed and was authenticated) David Glynn
by the Signature of:) a person authorised
David Glynn) under section 15(1)
in the presence of:) of the Ministers and
WITNESS: Bernadette Kiely) Secretaries Act,
ADDRESS: Department of the) 1924 to authenticate
Marine, Leeson Lane, D.2) the Seal of the
OCCUPATION: Civil Servant) Minister.

I agree, on behalf of Gaelic Seafoods (Ireland) Ltd. to accept the terms and conditions of this licence.

Signed: _____

Date: 14th November 1997

Witness: _____

Address: _____

_____

Occupation: _____

SCHEDULE

This licence covers all that area of the foreshore which lies within Coulagh Bay, Co. Cork and is enclosed by a line drawn from Irish National Grid Reference point

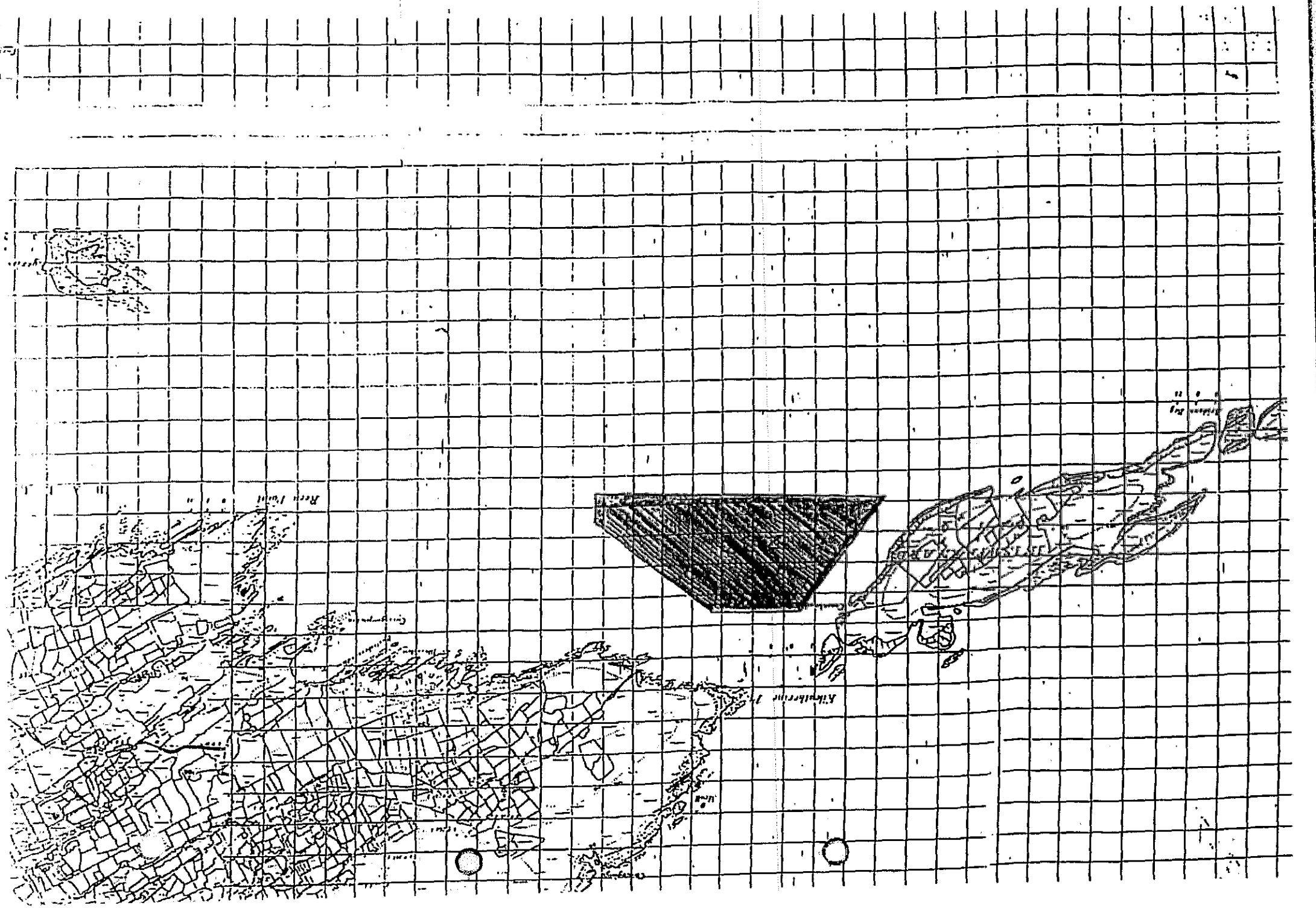
061150, 053070 to Irish National Grid Reference point

061440, 053070 to Irish National Grid Reference point

061830, 052750 to Irish National Grid Reference point

061830, 052660 to Irish National Grid Reference point

060890, 052690 to the point first mentioned.



T 5/253

AGREEMENT made the 30th day of January, 1995 between the Minister for the Marine (hereinafter referred to as "the Minister"), of the one part and Gaelic Seafoods (Ireland) Ltd. whose registered address is at Rusheenamanagh, Carna, Co. Galway (hereinafter referred to as the "the Licensee") of the other part whereby the Minister in exercise of the powers vested in him by Section 3 (1) of the Foreshore Act, 1933 hereby grants onto the Licensee licence to use and occupy that part of the Foreshore east of Inishfarnard in Coulagh Bay, Co. Cork, referred to in the Schedule hereto and delineated on the map annexed hereto and thereon coloured red for the purpose of mooring six Bridgestone cages and eleven service cages for the cultivation of salmon and rainbow trout on the terms and conditions following:

1. This licence shall remain in force until the 15th day of February, 2001 except as hereinafter provided.

2. The Licensee shall pay to the Minister through the Department of the Marine (Aquaculture Section), Leeson Lane, Dublin 2, the annual sum of £100 such payment to be made on the 15th day of February in every year during the continuance of this licence.

3. The Licensee shall use that part of the foreshore, the subject matter of this licence, for the mooring of fish cages as detailed above in connection with the cultivation of salmon and for no other purpose whatsoever. The number of cages specified herein shall not be exceeded.

4. The Licensee shall at all times during the continuance of this licence keep the said cages in a good and proper state of repair and condition to the satisfaction of the Minister and ensure that they will not be injurious to navigation, the adjacent lands or the public interest.

5. The Licensee shall ensure that the licensed area and the area around the development shall be kept clear of all redundant structures, waste products or materials associated with the development.

6. The Licensee shall cause each cage to be fitted to the satisfaction of the Minister with a low intensity, battery powered, yellow coloured flashing light and a radar reflector for the safety of navigation during the hours of darkness and reduced visibility.

7. The Licensee shall comply with any directions which may be issued by the Minister from time to time in that regard.

8. The Licensee shall ensure that each cage shall bear the licence number FCL 198.

9. The Licensee shall fit adequate anti-predator netting on all cages and shall comply with any directions which may be issued by the Minister from time to time in that regard.

10. The licensee shall ensure that cage locations and configurations, and marking and lighting arrangements shall conform to licence specifications as agreed with the Department of the Marine and the Marine Survey Office. Any changes for operational reasons at any time shall be approved in advance by the Minister.

11. The Licensee shall indemnify and keep indemnified the State, the Minister, their officers, agents and employees against all actions, loss, claims, damages, costs, expenses and demands arising in any manner whatsoever in connection with the construction, maintenance or use of the said cages or in the exercise of the permission hereby granted.

12. The Minister shall be at liberty at any time to terminate this licence by giving to the Licensee three weeks previous notice in writing ending on any day and upon determination of such notice the licence and permission hereby granted shall be deemed to be revoked and withdrawn without the liability for the payment of any compensation by the Minister to the Licensee.

13. The Licensee shall if so required by the Minister and, within

three weeks after receipt of such notice or on determination of this licence from any other cause at its expense remove the said cages to the satisfaction of the Minister and if the Licensee refuses or fails to do so the Minister may cause the said cages to be removed and shall be entitled to recover from the Licensee as a simple contract debt in any court of competent jurisdiction all costs and expenses incurred by him in connection with the removal and restoration, and the Licensee shall take such steps as the Minister may specify in order to secure compliance with this condition.

14. On site operations and related landbased activities including the use of piers are to be carried out with all possible circumspection and regard for other users and the environs.

15. The licensee shall keep the Secretary, Department of the Marine advised of ongoing and future arrangements reached with the Office of Public Works, local authorities or private owners concerning the use of piers and other local infrastructure;

16. In the event of the breach, non-performance or non-observance by the Licensee of any of the conditions herein contained the Minister may forthwith terminate this licence without prior notice to the Licensee.

17. Any notice to be given by the Minister may be transmitted through the Post Office addressed to the Licensee at its last known address.

18. This licence replaces Foreshore Licence dated 15th day of February, 1991 granted to Salmara Fisheries Ltd.

PRESENT when the Seal of Office)
of the MINISTER FOR THE MARINE)
was affixed and was authenticated)
by the Signature of)
David Glynn)
in the presence of:)
WITNESS: Bernadette Kiely)
ADDRESS: Department of the)
Marine, Leeson Lane, D2)
OCCUPATION: Civil Servant)

[illegible]

a person authorised
under section 15(4)
of the Ministers and
Secretaries Act,
1924 to authenticate
the Seal of the
Minister.

SIGNED on behalf of Licensee)
in the presence of:)
WITNESS: [illegible])
ADDRESS: [illegible])
)
OCCUPATION: Technical Assistant)

[illegible]

Director

SCHEDULE

This licence covers all that area of the foreshore which lies within Coulagh Bay, Co. Cork and is enclosed by a line drawn from Irish National Grid Reference point

061150, 053070 to Irish National Grid Reference point

061440, 053070 to Irish National Grid Reference point

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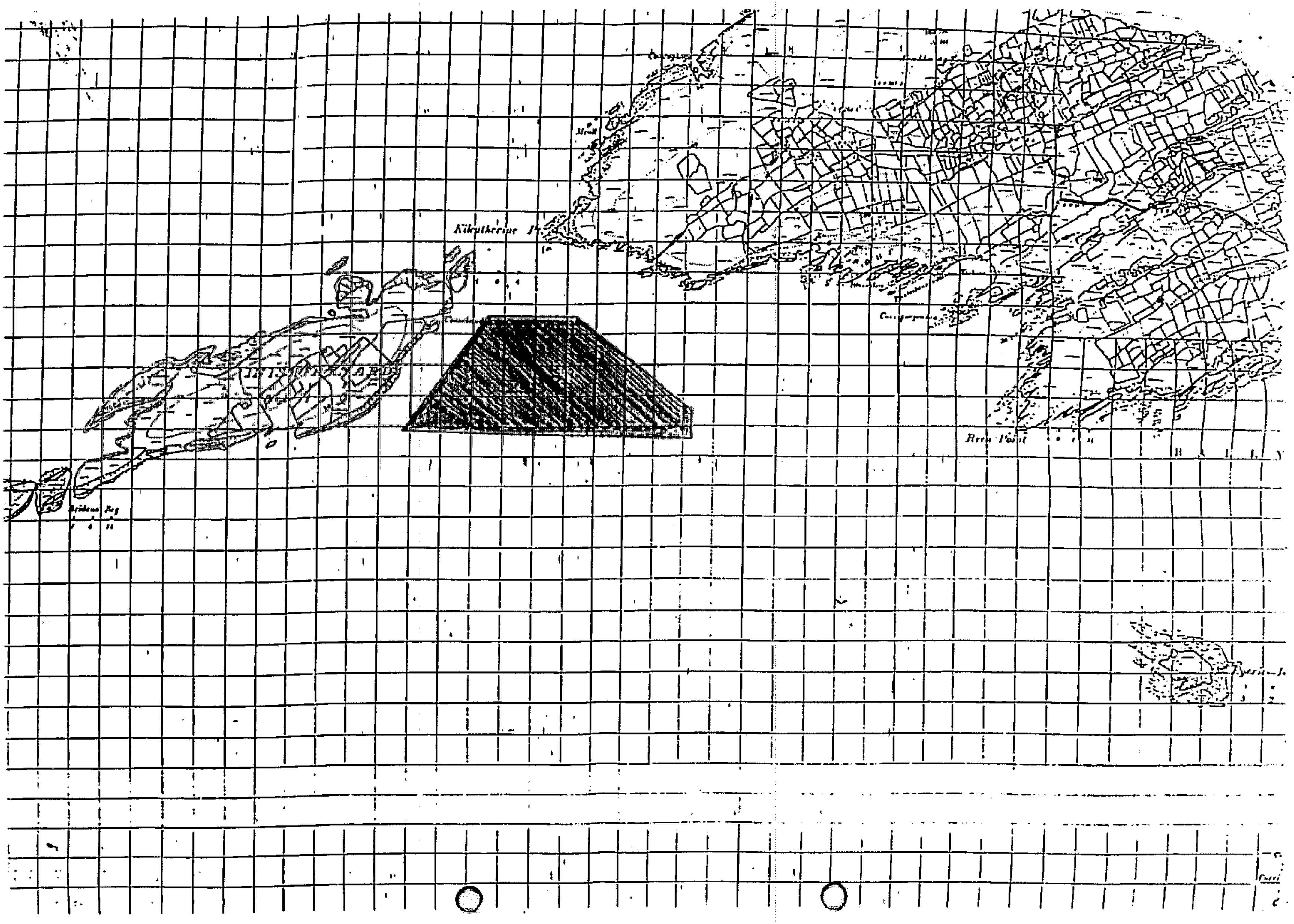

Kilcatherine Pt
Reen Point

CERTIFICATE OF CONFORMITY

This is to certify that the aquaculture operation of:

Marine Harvest Ireland

Site: Inishfarnard, Kenmare Bay, Co Kerry, Ireland

Head Office: Kindrum, Cashel P.O, Letterkenny, Co. Donegal, Ireland

Has been evaluated by SAI GLOBAL Assurance, ASI Accreditation Code ASC-ACC-006, and found to comply with the requirements of the Aquaculture Stewardship Council (ASC):

ASC Salmon Standard Version 1.0 June 2012

For the following Scope:

Production of Atlantic Salmon

Point at which certified products may enter a Chain of Custody:

Where salmon is entering harvest and processing line directly.

For the full list of product groups covered please refer to: http://www.asc-aqua.org/finalfarmauditreports

Certificate No: ASC-SAI-016

Certificate Issue Date: 27th June 2016

Certificate Expiry Date: 26th June 2019

Aquaculture Stewardship Council

Signed on behalf of SAI Global Assurance:

Mr Bill Paterson, General Manager

The validity of this certificate shall be verified on http://www.asc-aqua.org/finalfarmauditreports

This certificate itself does not constitute evidence that a particular product supplied by the certificate holder is ASC-certified. Products offered, shipped or sold by the certificate holder can only be considered covered by the scope of this certificate when the required ASC claim is clearly stated on invoices and shipping documents. The certificate shall remain the property of SAI Global, and the certificate and all copies or reproductions of the certificate shall be returned or destroyed if requested by SAI Global.