SCOTTISH SALMON WATCH

DISEASES

Cabinet Secretary for Environment, Climate Change and Land Reform
Cabinet Secretary for Rural Economy & Connectivity
The Scottish Government
St. Andrew's House
Regent Road
Edinburgh
EH1 3DG

8 May 2018

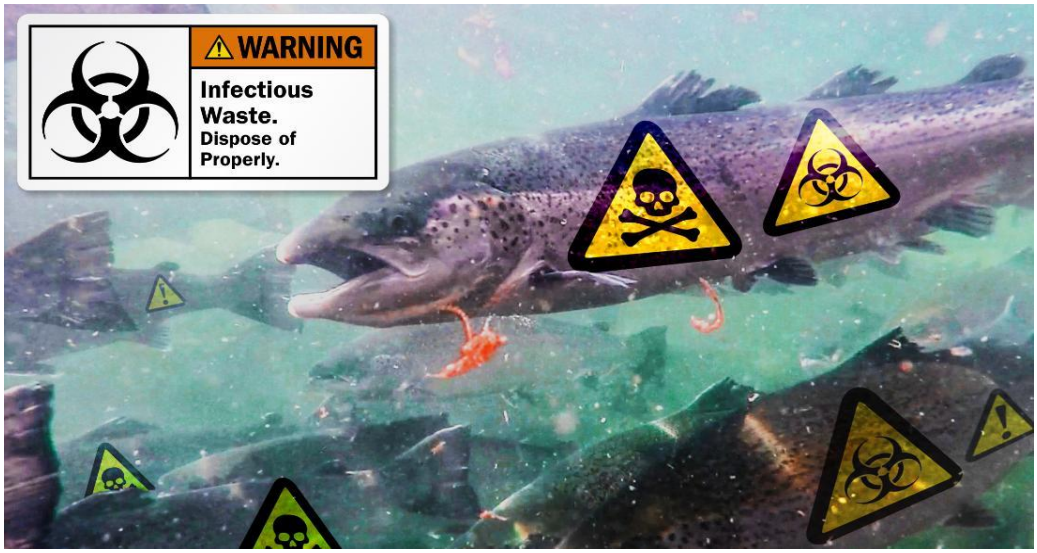
Dear Cabinet Secretaries,

Slipping Through the Net: Infectious Diseases, Viruses, Pathogens & Bacteria in Salmon Farm & Processing Plant Effluents

Further to previous correspondence (see Appendix 1), could you please explain why the Scottish Government does not test salmon farm and processing plant effluents for infectious diseases, viruses, pathogens, bacteria and contaminants?

In view of the problems plaguing Scottish salmon farming and positive tests for viruses in processing plant effluents in Canada the lack of Scottish Government testing is a serious oversight which must be corrected as a matter of urgency.

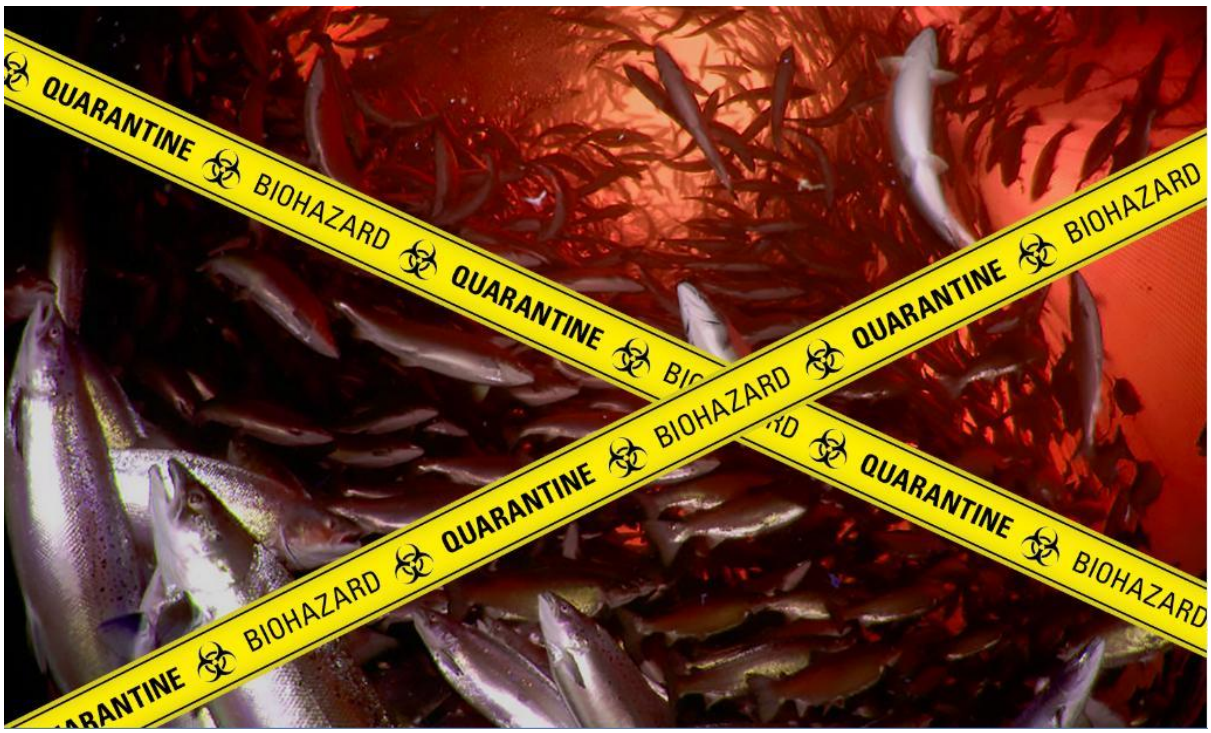
Data obtained via Freedom of Information from the Scottish Government has revealed that Scottish salmon farms during 2017 were not only riddled with lice but also disease-ridden.



Read in detail via Hard Evidence: Dossier of Data on Lice, Diseases & Mortalities at Scottish Salmon Farms

In February 2018, the Global Alliance Against Industrial Aquaculture published site specific disease data (obtained via FOI from the Scottish Government) for salmon farms operated by Scotland's three largest companies (Marine Harvest, Scottish Sea Farms & the Scottish Salmon Company).

Salmon Gill poxvirus, Paranucleospora theridion, gill pathology, complex gill issues, Vibrio anguillarum, Proliferative Gill Disease, Amoebic Gill Disease, Pancreas Disease, fungus, Sardiomyopathy Syndrome, Haemorrhagic Smolt Syndrome, Heart & Skeletal Muscle Inflammation, Enteric Redmouth Disease and Anaemia were reported during 2017.



The top twenty mortality events reported by Marine Harvest in 2017 (up to November) were:

Site Name	Start date	End date	Size of fish	Average weight of affected population	Mortality rate recorded (%)	If explained, select reason(s)	If unexplained, select observations:	Total mortality during event (if applicable)	Additional information (e.g. action taken)
Ardintoul	23/10/2017	29/10/2017	≥750g	2Kg	5.63	CMS, Complex gill issues	General Anaemia	51592	Observed a decrease in appetite prior to increase in mortality levels. Combination of factors - fish have tested positive to CMS, PRV and complex gill issues. Cause recorded as anaemia by company
Soay	09/10/2017	15/10/2017	<750g	0.4Kg	5.7	Treatment		31705	Disease samples taken, but all negative. Oxygen saturation issue on wellboat during freshwater treatment
Port Na Cro	30/10/2017	05/11/2017	≥750g	4kg	29.66	Complex gill issues, Gill issues, Anemia		24400	Site harvested out 6/11/17
MacLean's Nose	27/02/2017	05/03/2017	≥750g	1128.6g	3.86	CMS		22774	Monitoring situation closely. Health personnel on site frequently.
Ardintoul	30/10/2017	05/11/2017	≥750g	2Kg	2.58	CMS, Complex gill issues	General Anaemia	22330	Observed a decrease in appetite prior to increase in mortality levels. Combination of factors - fish have tested positive to CMS, PRV and complex gill issues. Cause recorded as anaemia by company

MacLean's Nose	06/03/2017	12/03/2017	≥750g	1199.1g	2.7	CMS		21460	Monitoring situation closely. Health personnel on site frequently.
MacLean's Nose	20/02/2017	26/02/2017	≥750g	1059.9g	3.4	CMS		20801	Monitoring situation closely. Health personnel on site frequently.
MacLean's Nose	13/03/2017	19/03/2017	≥750g	1255.1	2.7	CMS		20249	Monitoring situation closely. Health personnel on site frequently.
Poll Na Gille	23/10/2017	29/10/2017	≥750g	3.3kg	3.2	Complex gill issues, Gill issues,		20053	Harvesting worst affected cages.
Creag an T'Sagairt (Loch	26/06/2017	02/07/2017	≥750g	2.75Kg	2.31	Treatment		19633	Salmosan treatment
MacLean's Nose	22/03/2017	26/03/2017	≥750g	1323.9g	2.61	CMS		19056	Monitoring situation closely. Health personnel on site frequently.
MacLean's Nose	13/02/2017	19/02/2017	≥750g	992.7g	2.97	CMS		18740	Monitoring situation closely. Health personnel on site frequently.
Port Na Cro	23/10/2017	29/10/2017	≥750g	4kg	8.15	Complex gill issues, Gill issues, Anemia		17651	Site harvested out 6/11/17
MacLean's Nose	06/02/2017	12/02/2017	≥750g	922.0g	2.69	CMS		17428	Monitoring situation closely. Health personnel on site frequently.
Poll Na Gille	16/10/2017	22/10/2017	≥750g	3.3kg	2.6	Complex gill issues, Gill issues, Anemia		15861	Harvesting worst affected cages.
MacLean's Nose	27/03/2017	02/04/2017	≥750g	1393.7g	2.07	CMS		14719	Monitoring situation closely. Health personnel on site frequently.
Poll Na Gille	30/10/2017	05/11/2017	≥750g	3.3kg	2.7	Complex gill issues, Gill issues, Anemia		13830	Harvesting worst affected cages.
Loch Alsh (Sron)	23/10/2017	29/10/2017	≥750g	3.6 kg	2.44	CMS, Handling (harvest and treatment - salmosan)		12680	Site has begun harvesting, company vet monitoring mortality levels. Salmosan treatment conducted, increase in mortality due to backlog of mort removal during previous week due to logistics issues.
Ardintoul	13/11/2017	19/11/2017	≥750g	2Kg	1.5	CMS, Complex gill issues	General Anaemia	12502	Observed a decrease in appetite prior to increase in mortality levels. Combination of factors - fish have tested positive to CMS, PRV and complex gill issues. Cause recorded as anaemia by company
Creag an T'Sagairt (Loch Hourn)	12/06/2017	18/06/2017	≥750g	2.75Kg	1.39	Treatment		12082	Freshwater treatment on wellboat

The top ten mortality events [reported by the Scottish Salmon Company in 2017](#) (up to November) were:

Site Name	Start date:	End date:	Mortality rate recorded(%):	If explained, select reason(s):	Total mortality during event	Additional information (e.g. action taken):
Vuiabeag	04/09/2017	10/09/2017	10.37	AGD, PD, Treatment	97534	
Loch Odhairn(Gravir)	24/07/2017	30/07/2017	9.64	AGD, Complex gill issues, Treatment	64872	Severe gill issues with high levels of AGD present. H2O2 treatment at end of week 29. FW treatment planned for 12/08/17. Vet has been attending weekly and will attend FW treatment.
Loch Odhairn(Gravir)	24/07/2017	30/07/2017	9.64	AGD, Complex gill issues, Treatment	64872	Severe gill issues with high levels of AGD present. H2O2 treatment at end of week 29. FW treatment planned for 12/08/17. Vet has been attending weekly and will attend FW treatment.
Druimyeon Bay	13/11/2017	19/11/2017	8.69	post treatment hydrolicer losses,	45089	further hydroliser treatment planned, fish on functional feed, harvesting.
Russel Burn	17/07/2017	27/07/2017	4.42	Fungus	40873	Mortality event attributed to fungus post vaccination. Affected stock were treated with formalin and numbers have dropped.
Strone Point	23/10/2017	29/10/2017	6.27	Ongoing bacterial challenge. Vibrio anguillarum identified as primary pathogen	38,694	FVG Visited site and provided advise on increasing biosecurity. Awaiting antibiotic sensitivity results.
Loch Odhairn(Gravir)	31/07/2017	04/08/2017	6.34	AGD, Complex gill issues, Treatment	38530	Severe gill issues with high levels of AGD present. H2O2 treatment at end of week 29. FW treatment planned for 12/08/17. Vet has been attending weekly and will attend FW treatment.

Loch Odhairn(Gravir)	31/07/2017	04/08/2017	6.34	AGD, Complex gill issues, Treatment	38530	Severe gill issues with high levels of AGD present. H2O2 treatment at end of week 29. FW treatment planned for 12/08/17. Vet has been attending weekly and will attend FW treatment.
Loch Tuath	04/09/2017	10/09/2017	14.2	AGD, Algal bloom, Complex gill issues, Jellyfish	36422	FHI informed, company biologists notified. Worst effected cages harvested and reducing biomass
Vuia Mor	11/09/2017	17/09/2017	4.13	AGD, Complex gill issues, Treatment	32487	

The top ten mortality events [reported by Scottish Sea Farms in 2017](#) (up to November) were:

Site Name	Start date:	End date:	Mortality rate recorded (%):	If explained, select reason(s):	Total mortality during event	Additional information (e.g. action taken):
Kishorn B (North)	02/10/2017	08/10/2017	6.44	Gill pathology, anaemia	24345	Site is harvesting early.
South Sound	26/12/2016	08/01/2017	4.58	Physical damage	23657	Visit from fish vet group and samples showed no further action required. Attributed to bad weather.
Kishorn A (South)	18/09/2017	24/09/2017	6.27	Gill pathology, anaemia, CMS	18854	Site to begin harvesting early
Kishorn B (North)	09/10/2017	15/10/2017	5.35	Gill pathology, anaemia	16300	Site is harvesting early.
Kishorn A (South)	02/10/2017	08/10/2017	6.02	Gill pathology, anaemia, CMS	15490	Site is harvesting early.
Kishorn B (North)	16/10/2017	22/10/2017	4.58	Gill pathology, anaemia	13050	Site is harvesting early.
Kishorn West	02/10/2017	08/10/2017	6.35	Gill pathology, anaemia	12500	Site is harvesting early.
Loura Voe	02/01/2017	15/01/2017	1.41	Physical damage, Seal damage	11450	Light were turned off as thought on this occasion that it was attracting seals. Physical damage also attributed to bad weather.
Kishorn B (North)	24/07/2017	30/07/2017	2.63	AGD, PGD, Treatment	11442	H2O2 treatment (wellboat) carried out during week 30. Mortalities attributed to post-treatment losses and underlying gill pathology, likely exacerbated due to the additional handling when using the wellboat for treatment. Treatments are now being conducted using tarps and mortalities have fallen below 1%. Vets have attended site.
Kishorn West	11/09/2017	17/09/2017	4.09	Gill pathology, anaemia	11314	Ongoing losses at site. Site being harvested to reduce risk Site was visited by FHI on 05/06/2017. Diagnostic results showed fish were positive for gill pathology including Salmon Gill poxvirus, Paranucleospora theridion and AGD.

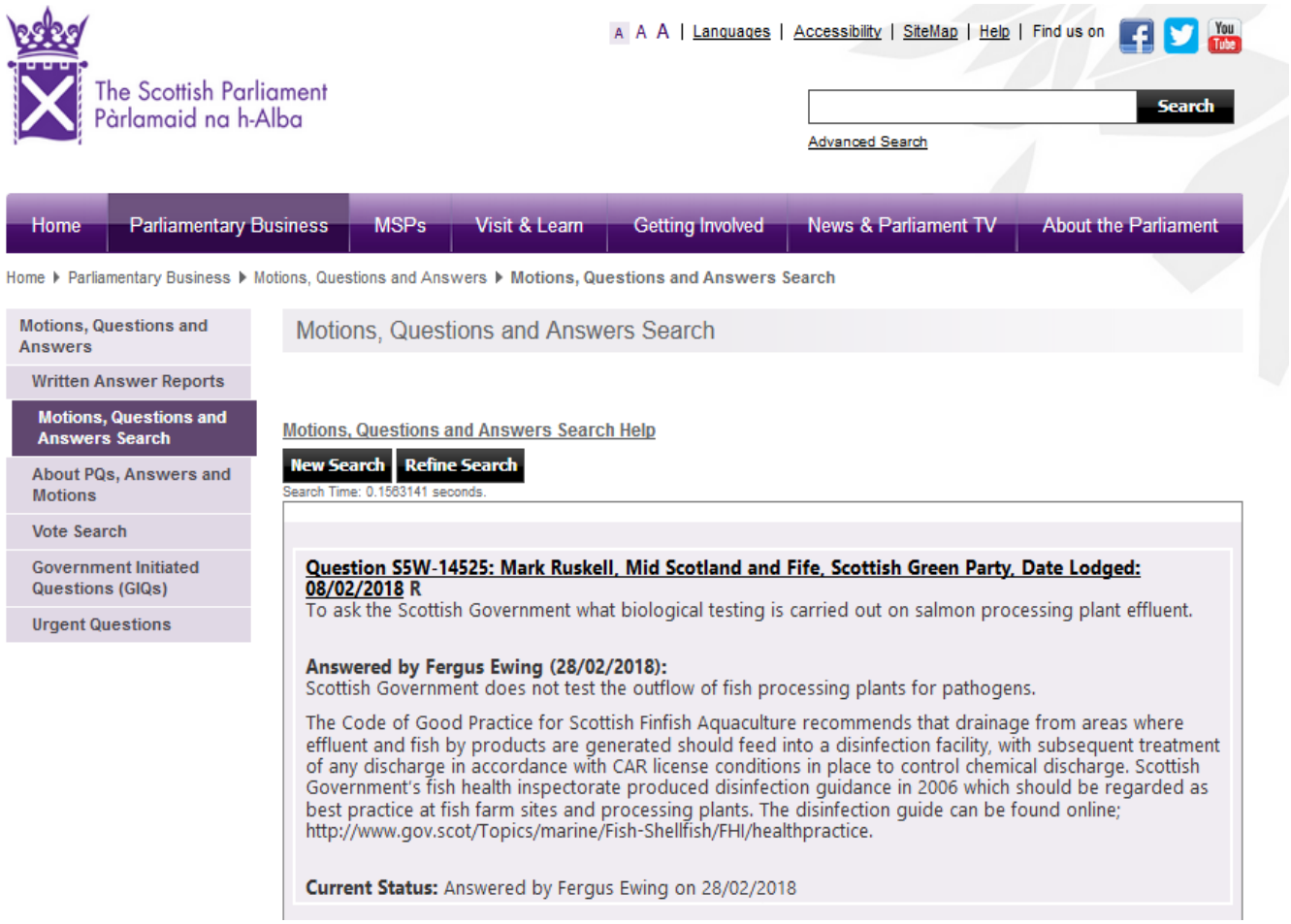
Given the raft of infectious diseases, viruses, pathogens and bacteria lurking in Scottish farmed salmon it seems incomprehensible that the Scottish Government does not test effluents. Allowing salmon farms and processing plants to slip through the net represents the antithesis of the precautionary principle. In the absence of testing, Scottish salmon should surely come stamped with a Government health warning?

HEALTHY SCOTTISH SALMON!?

Amoebic Gill Disease
Anaemia
Bacterial Kidney Disease
Bacterial Skin Ulceration
Cardiomyopathy Syndrome
Chlamydia
Complex Gill Issues
Dermaocystidium spp.
Enteric Redmouth Disease
Epitheliocystis
Exophiala
Fungus
Lesions
Lice Infestation
Flavibacterium psychrophila
Gyrodactylus derjavini
Haemorrhagic Smolt Syndrome
Heart & Skeletal Muscle Inflammation
Ichthyobodo spp.
Infectious Pancreatic Necrosis
Moritella viscosa
Myxosporean spp.
Nephrocalcinosis
Pancreas Disease
Paranucleospora theridion
Pasteurella skyensis
Piscirickettsia salmonis
Proliferative Gill Inflammation
Salmon Gill Poxvirus
Vibrio anguillarum
Yersinua ruckeri

WHAT HIDDEN EXTRAS ARE LURKING IN YOUR SCOTTISH SALMON?

The Scottish Government's position was set out in a [Parliamentary Reply on 28 February 2018]:



A similar response was provided on behalf of the Cabinet Secretary for Environment, Climate Change and Land Reform and Cabinet Secretary for Rural Economy & Connectivity in a [letter to the Global Alliance Against Industrial Aquaculture dated 26 February 2018]:

> With regards to fish disease, Piscine Orthoreovirus (PRV) and processing plant effluent, the Scottish Government does not conduct testing of processing effluent for fish pathogens. Many infections which can be carried by farmed fish are present naturally within the wider environment. Scottish Government will continue to consider best available evidence to ensure that the interactions of wild and farmed fish are appropriately managed. Processing plants may pose a risk of concentrating fish pathogens in the environment and these risks can be mitigated by biosecurity protocols. As you are aware, the Code of Good Practice for Scottish Finfish Aquaculture contains a chapter on processing sites and states that drainage from areas where effluent and fish by-products are generated should feed into a disinfection facility, with subsequent treatment and discharge in accordance with CAR license conditions. Scottish Government's fish health inspectorate produced disinfection guidance in 2006 which should be regarded as best practice at fish farm sites and processing plants. The guide can be found online; http://www.gov.scot/Topics/marine/Fish-Shellfish/FHI/healthpractice A copy is also available as an annex to the Code (Annex 4).

Please be assured that processing plants handling fish culled for disease control purposes, (for example fish culled for the control of infectious salmon anaemia) must be authorised by Scottish Government's Fish Health Inspectorate under the Aquatic Animal Health (Scotland) Regulations 2009. This will be done where Scottish Ministers are satisfied that the operation and biosecurity of the establishment will not lead to an unacceptable risk of spreading disease. In addition, where a listed disease occurs the fish health inspectorate will consider the sampling of wild fish as part of any epidemiological investigation. This provides information on the state of the environment in terms of the presence of the pathogen in relation to susceptible wild species.

The Scottish Government's lack of testing contrasts with the situation in Canada where [the B.C. Government is auditing 28 fish processing plants] after tests confirmed the presence of a contagious fish virus in the bloody waste water released into the ocean by at least two plants.

The Vancouver Sun reported in February 2018:

"The audit, which should be completed by the start of summer, will include inspection of the 28 facilities to ensure they are using the “best available technology” to deal with effluent. It will also review whether permits contain strong enough environmental protection provisions, according to a recent Ministry of Environment release."

"The audit comes after underwater photographer Tavish Campbell filmed a cloud of blood being released into the ocean from two pipes, one near Campbell River and another near Tofino. The Atlantic Veterinary College tested the blood in November and found piscine reovirus (PRV), which has been linked to HSMI, a potentially deadly disease that causes heart lesions and organ hemorrhaging in fish. PRV has been found in both farmed and wild salmon populations, but its prevalence is higher on fish farms. In December, the government conducted its own tests of the effluent released from Brown Bay Packing and Lions Gate Fisheries and also found the virus."

Read more via Bloodwater’ Released into B.C.’s Coastal Water Contains Deadly Fish Virus, Government Tests Confirm

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‘Bloodwater’ Released into B.C.’s Coastal Water Contains Deadly Fish Virus, Government Tests Confirm

By Carol Linnitt • Monday, February 5, 2018 - 15:29

Fish plant effluent pipes a known danger to wild salmon

There are currently 109 fish processing plants in B.C., 28 of which have provincial permits under the Environmental Management Act to release effluent into ocean waters.

The provincial discharge permit for the Brown's Bay Processing plant, obtained by DeSmog Canada, shows that in 1989 the province granted the facility permission to release 28,000 litres of effluent every day.

"British Columbians expect their government to ensure any discharge into the water is safe, and does not threaten wild salmon," B.C. environment minister George Heyman said in a statement provided to DeSmog Canada.

"The previous government ignored the issue and failed to update regulations or even regularly conduct inspections," Heyman said.

The most recent inspection of the Brown's Bay facility occurred in 2013.

"That isn't good enough, and that is why, in December I announced an immediate review of fish processing plants, which will include audits of 28 facilities, as well as strengthening requirements to ensure wild salmon are protected," Heyman said.

The province will review whether effluent released from the 28 plants is causing harmful pollution, whether the current permits contain provisions to protect the environment, whether permit holders are in compliance with existing rules and whether or not the rules set out in the permits reflect best practices to protect wild salmon stocks.

Michael Price, salmon researcher and PhD candidate at Simon Fraser University, said while he isn't surprised government has confirmed the presence of piscine reovirus in bloodwater, he is surprised it has taken so long for B.C. to address the release of untreated effluent into fish habitat.

CTV News reported in November 2017:

Including:

The federal government said fish plant effluent falls under the provincial government's jurisdiction. But Fisheries Minister Dominic LeBlanc was so alarmed by the video that he opted to launch a review.

"Obviously if there's an appropriate enforcement action that will take place, it will take place," LeBlanc said.

The B.C. government confirmed it is also investigating. The province's environment minister, George Heyman, said it's important to know what's entering the water.

"We want to ensure that anything discharged into the ocean is safe before it hits the water," Heyman said.

BBC News [reported in November 2017]:

In Scotland, the issue of blood water effluent also attracted interest following a FOI disclosure. BBC News reported in January 2018:

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Shetland salmon packing factory leaks 'blood water' into sea

By Ewan Murrie
BBC Scotland news website

25 January 2018 Share

A Shetland salmon packing factory leaked "bloody" sewage into the sea, BBC Scotland has been told.

People had complained of an "offensive odour" coming from the Cooke Aquaculture's Mid Yell Plant.

It led to a Scottish Environment Protection Agency (Sepa) investigation in 2017 - which uncovered "significant" breaches of environmental conditions.

Cooke Aquaculture said it "never" discharged untreated waste water from its Mid-Yell packing facility.

A Freedom of Information request has revealed that Sepa was contacted by a member of the public in August 2017, who reported "weekly offensive smell complaints from locals, the school and tourists".

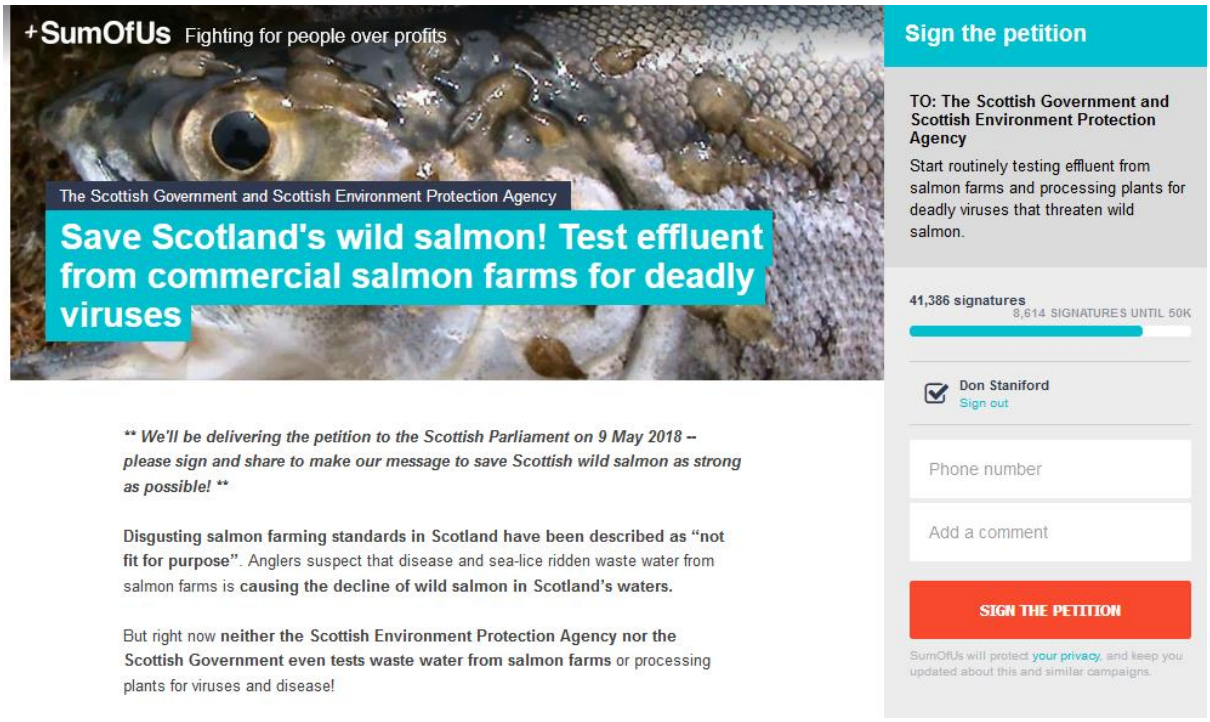
It led to the environmental regulator visiting the site on the island of Yell - which, according to the inspector's report, uncovered untreated overflow from blood water tanks discharging into Mid Yell Voe.

Sepa identified one "gross" and two "significant" breaches of Environmental Limit Conditions related to this activity - but it is reported that only "small quantities" of blood water were leaked into the sea.

Scottish government advice says untreated effluent from processing plants risks spreading infectious salmon anaemia.

Read more via: Scottish waters flooded with salmon blood after food plant leaks

Finally, a petition signed by over 41,000 people asks the Scottish Government and SEPA "start routinely testing effluent from salmon farms and processing plants for deadly viruses that threaten wild salmon".



BBC News reported in April 2018:

Campaigners want to see waste water tested as a matter of routine

More than 30,500 people have signed a petition urging the Scottish government to routinely test effluent from salmon processing plants for diseases.

Campaigners claimed that some polluted waste water contained pathogens that could "threaten" wild salmon stocks.

The Scottish government said the risk of disease transfer from farmed salmon to their wild counterparts was "low".

An industry body said fish farms worked to "strict regulations" on marine biosecurity.

Currently neither the Scottish Environment Protection Agency (Sepa) nor the Scottish government tests the waste water from salmon farms or processing plants for pathogens and diseases.

Self regulation

But lobby group Scottish Salmon Watch insisted that the current situation amounted to industry self regulation - which they claimed was "irresponsible".

This year a **damning report by Holyrood's environment committee** found that the sector was not being regulated "sufficiently" or "effectively".

Last year **footage was released** that showed treated "blood water" being released from a fish processing plant into Canadian waters where wild salmon spawn.

The discharge later tested positive for pathogens potentially harmful to fish: PRV and Piscirickettsia salmonis bacteria.

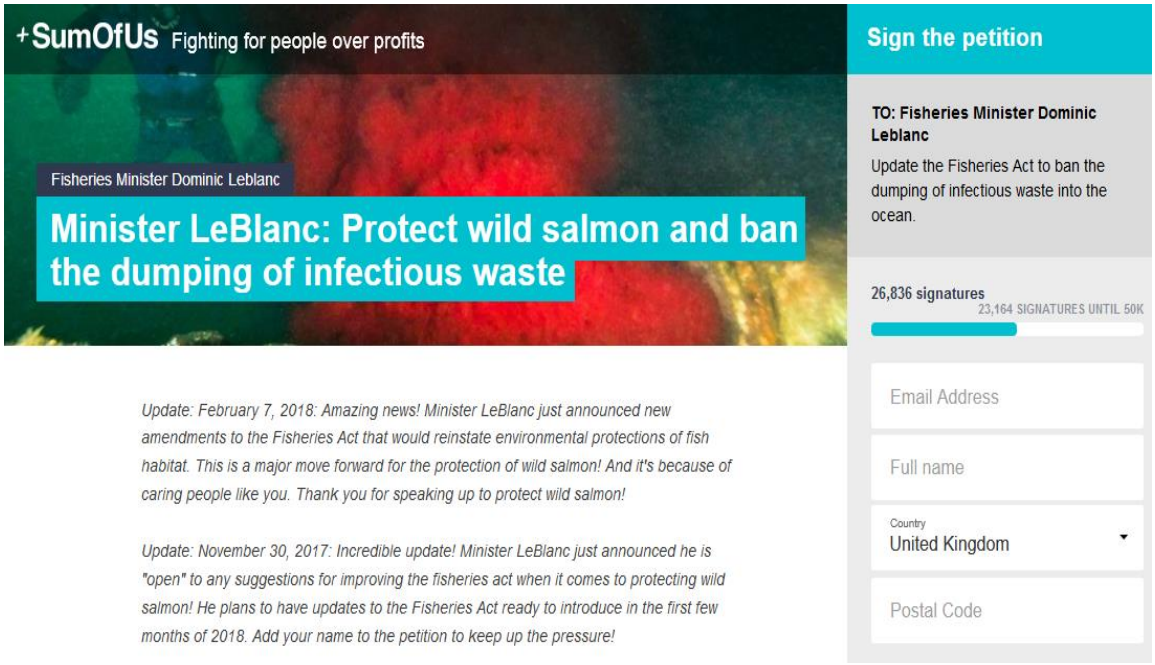
The Canadian case prompted SumOfUs, a website "fighting for people over profits", to organise a **petition** calling on the Scottish government and Sepa to carry out tests on any treated effluent that is discharged in Scottish waters.

> **It is shockingly irresponsible that the Scottish government does not even test for any pathogens**
> Don Staniford, Scottish Salmon Watch

Sondhya Gupta, senior campaigner at SumOfUs, said: "After we took action there, the Canadian fisheries minister amended the Fisheries Act to reinstate environmental protections.

"The situation in Scotland is just as urgent - people all over the UK want to see Scottish wild salmon protected too."

A similar petition organised by SumOfUs in Canada was successful in forcing amendments to the Fisheries Act:



The evidence supporting disease-testing is now overwhelming. CTV News reported yesterday (7 May 2018):

Expanding the salmon farming industry yet further [towards a target of 400,000 tonnes by 2030] is not so much a game of ecological roulette but a dead certainty for [ecological ruin].

THE SUNDAY TIMES | Today's sections | Past six days | My articles | Times+

Scotland

Supersizing salmon farms in Scotland 'will be a disaster'

Julia Horton

May 6 2018, 12:01am,
The Sunday Times

Environment

The watchdog wants to lift the restriction on the size of fish farms, to make it viable for the industry to move farms to more remote locations

ALAMY

[Scottish Salmon Watch] sincerely hopes that the Scottish Government reconsiders the lack of testing of salmon farm and processing plant effluents. An audit of Scottish salmon farms and processing plants - as is currently taking place in Canada - would surely be a sensible starting point and would be something that the Scottish Government's ['Strategic Framework for Farmed Fish Health'] could take the lead on. Please close the net on disease-ridden salmon farming.

Yours sincerely,

Don Staniford
[Director of Scottish Salmon Watch]

Cc:

Terry A'Hearn, Chief Executive of the Scottish Environment Protection Agency

SCOTTISH SALMON WATCH

VIRUSES

Appendix 1: Previous Correspondence with the Scottish Government

From: Jill.Barber@gov.scot [mailto:Jill.Barber@gov.scot]
Sent: 26 February 2018 17:11
To: salmonfarmingkills@gmail.com
Subject: Reply from the Scottish Government.

Thank you for your correspondence. Please see the attached reply which includes a reference number for future use.


F20180003271.pdf

Includes:

With regards to fish disease, Piscine Orthoreovirus (PRV) and processing plant effluent, the Scottish Government does not conduct testing of processing effluent for fish pathogens. Many infections which can be carried by farmed fish are present naturally within the wider environment. Scottish Government will continue to consider best available evidence to ensure that the interactions of wild and farmed fish are appropriately managed. Processing plants may pose a risk of concentrating fish pathogens in the environment and these risks can be mitigated by biosecurity protocols. As you are aware, the Code of Good Practice for Scottish Finfish Aquaculture contains a chapter on processing sites and states that drainage from areas where effluent and fish by-products are generated should feed into a disinfection facility, with subsequent treatment and discharge in accordance with CAR license conditions. Scottish Government's fish health inspectorate produced disinfection guidance in 2006 which should be regarded as best practice at fish farm sites and processing plants. The guide can be found online; http://www.gov.scot/Topics/marine/Fish-Shellfish/FHI/healthpractice A copy is also available as an annex to the Code (Annex 4).

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From: Don Staniford [mailto:salmonfarmingkills@gmail.com]
Sent: 10 February 2018 06:49
To: 'scottish.ministers@gov.scot'
Cc: 'Joyce.Carr@scotland.gsi.gov.uk'; 'carmichaela@parliament.uk'; 'MSP'; 'Ruskell M (Mark), MSP'; 'terry.ahearn@sepa.org.uk'; 'hazel.macleod@sepa.org.uk'; 'Neil.Purvis@gov.scot'; 'Helen.McGregor@gov.scot'; 'Alastair.Mitchell@gov.scot'; 'Sandy.Murray@scotland.gsi.gov.uk'; 'kevin.osborn@sepa.org.uk'; 'Edmund Peeler (Cefas)'; 'info@shetland.gov.uk'; 'chief.executive@highland.gov.uk'; 'envhealth@argyll-bute.gov.uk';

'customerservice@orkney.gov.uk'; 'macneila@parliament.uk'; 'ian.blackford.mp@parliament.uk'; 'drew.hendry.mp@parliament.uk'; 'MSP'; 'enquiries@cne-siar.gov.uk'; 'rob.raynard@gov.scot'
Subject: "Government to audit fish processing plants that release bloody waste water" (Vancouver Sun)

Please note news from the Vancover Sun in Canada including:

"The B.C. government will audit 28 fish processing plants after tests confirmed the presence of a contagious fish virus in the bloody waste water released into the ocean by at least two plants. The audit, which should be completed by the start of summer, will include inspection of the 28 facilities to ensure they are using the "best available technology" to deal with effluent. It will also review whether permits contain strong enough environmental protection provisions, according to a recent Ministry of Environment release."

Here's details on the audit of processing plants via a press release from the Ministry of Environment:

Fish Processing Plant Sector Compliance Audit

Purpose

The purpose of this project is to audit current effluent discharge authorizations within the fish processing plant industry and assess them for compliance against the requirements in those authorizations, as well as the general provisions of the *Environment Management Act* (EMA) to not cause pollution.

The project will also assess the effectiveness of the current framework by:

- Reviewing fish processing industry best practices (locally and world-wide);
- Assessing the effluent being discharged and the adequacy of current pollution control technologies to treat the effluent appropriately; and
- Making recommendations to incorporate new requirements into existing authorizations to ensure the environment is protected.

Background

Currently there are 28 fish processing plants authorized to discharge waste within B.C. The processing of fish creates waste that the fish processing plants discharge as effluent to the environment. This effluent may contain constituents and have properties which have the potential to cause harm when released into the environment. The Ministry of Environment and Climate Change Strategy (ENV), requires site-specific permits to authorize this discharge. Permits are issued by a statutory decision maker and they set various terms and conditions for protection of the environment.

Environmental and human health protection concerns associated with discharges from fish processing plants result from the presence of many parameters including settleable solids, total suspended solids, biological oxygen demand, oil and grease, pH, residual chlorine, phosphorus, nitrogen and coliforms bacteria. Recent media attention has focused on viruses

which have been found in both farmed and wild salmon processing plant discharges. The audit will consider viruses in the context of the likelihood of their presence in the effluent that is being discharged to the environment.

Objectives

1. Determine if current permit holders are in compliance;
2. Determine if current effluent discharge is potentially causing pollution as defined in Section 6(4) of EMA;
3. Determine if current permits contain consistent foundational environmental protection provisions;
4. Determine what is best achievable technology (BAT) in the treatment of effluent including barriers to industry achievement;
5. Provide recommendations for potential future permit amendments; and
6. Identify overlaps and linkages between ENV legislation and enforcement, and that of other agencies/jurisdictions (eg acute toxicity as regulated by the Federal Government).

Timeline for Completion

A report of audit activities will be produced by the end of Spring 2018. Information in the report will be used to inform next steps for this sector.

Reports & Data

- Piscine Orthoreovirus (PRV) test results from Browns Bay Packing Co, Campbell River B.C. and Lions Gate Fish Co, Tofino B.C. (PDF, 1 MB) December 18, 2017
  - Appendix 1: Methodology (PDF)
  - Appendix 2a: Raw data (XLS)
  - Appendix 2b: Synthesis of Results (XLS)
- Lions Gate Fish Co – effluent sample results (XLS) December 6, 2017
- Browns Bay Packing Co – effluent sample results (XLS) December 4, 2017

Here's the news report:

Vancouver Sun, 9 February 2018

Government to audit fish processing plants that release bloody waste water

Glenda Luymes

The B.C. government will audit 28 fish processing plants after tests confirmed the presence of a contagious fish virus in the bloody waste water released into the ocean by at least two plants.

The audit, which should be completed by the start of summer, will include inspection of the 28 facilities to ensure they are using the "best available technology" to deal with effluent. It will also review whether permits contain strong enough environmental protection provisions, according to a recent Ministry of Environment release.

The audit comes after underwater photographer Tavish Campbell filmed a cloud of blood being released into the ocean from two pipes, one near Campbell River and another near Tofino. The Atlantic Veterinary College tested the blood in November and found piscine reovirus (PRV), which has been linked to HSMI, a potentially deadly disease that causes heart lesions and organ hemorrhaging in fish. PRV has been found in both farmed and wild salmon populations, but its prevalence is higher on fish farms.

In December, the government conducted its own tests of the effluent released from Brown Bay Packing and Lions Gate Fisheries and also found the virus.

"British Columbians expect their government to ensure any discharge into the water is safe, and does not threaten wild salmon," Environment Minister George Heyman said in a statement. "The previous government ignored the issue and failed to update regulations or even regularly conduct inspections. That isn't good enough."

Once inspections and data collection from all 28 facilities is complete, Ministry of Environment staff will review the permits and regulations to require processing plants to use the best technology, said an emailed statement.

The audit is the latest in a series of reviews aimed at the fish farming industry.

In November, the federal government also launched a review in response to Campbell's video. Last week, an independent expert panel headed by Canada's Chief Science Advisor, Dr. Mona Nemer, was created to review the industry and make recommendations "on the appropriate use and consideration of scientific evidence in protecting the marine environment in decision-making on aquaculture."

"Our government understands that Canadians have real concerns around aquaculture," federal Fisheries Minister Dominic LeBlanc said in a statement. "We look forward to the recommendations of the panel … on how science can be better applied to decision making and communicated to the public in support of sustainable aquaculture as we seek to remain a strong, science-based regulator of the aquaculture industry."

Environmental groups have been calling on the provincial government to deny fish farm licences that are up for renewal this spring. In October, Agriculture Minister Lana Popham sent a letter to Marine Harvest warning that the province retains the right to end the company's tenures in the Broughton Archipelago over First Nations concerns that fish farms are damaging the health of wild salmon.

This fall, several Musgamagw Dzawada'enuxw and Namgis members occupied Marine Harvest Canada's aquaculture site on Midsummer Island.

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twitter.com/glendaluymes

http://vancouversun.com/news/local-news/government-to-audit-fish-processing-plants-that-release-bloody-waste-water

Best fishes,

Don

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Read my blog via http://donstaniford.typepad.com/my-blog

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From: Don Staniford [mailto:salmonfarmingkills@gmail.com]
Sent: 08 February 2018 10:05
To: 'scottish.ministers@gov.scot'
Cc: 'Joyce.Carr@scotland.gsi.gov.uk'; 'carmichaela@parliament.uk'; 'MSP'; 'Ruskell M

(Mark), MSP'; 'terry.ahearn@sepa.org.uk'; 'hazel.macleod@sepa.org.uk'; 'Neil.Purvis@gov.scot'; 'Helen.McGregor@gov.scot'; 'Alastair.Mitchell@gov.scot'; 'Sandy.Murray@scotland.gsi.gov.uk'; 'kevin.osborn@sepa.org.uk'; 'Edmund Peeler (Cefas)'; 'info@shetland.gov.uk'; 'chief.executive@highland.gov.uk'; 'envhealth@argyll-bute.gov.uk'; 'customerservice@orkney.gov.uk'; 'macneila@parliament.uk'; 'ian.blackford.mp@parliament.uk'; 'drew.hendry.mp@parliament.uk'; 'MSP'; 'enquiries@cne-siar.gov.uk'; 'rob.raynard@gov.scot'
Subject: PRV in salmon processing plant effluent - positive tests in Canada: testing in Scotland?

Dear Cabinet Secretary for the Environment, Climate Change and Land Reform,

Please find attached the laboratory tests from the British Columbia Government referred to in the news article circulated on Tuesday:
Bloodwater' Released into B.C.'s Coastal Water Contains Deadly Fish Virus, Government Tests Confirm

This includes details of positive tests for piscine reovirus (PRV) in salmon processing plant effluent:

Appendix 2B. Synthesis of results of PRV molecular tests of samples processed from salmon processing plant effluent. Viral Copies/ml is a measure of the abundance of the virus in the sample. Whereas for water samples, this number accurately reflects the number of copies of the virus per ml of water, for pelleted tissue samples, this number would represent both the copies of the virus and transcriptional products from the virus.

Sample Name	PRV Detected	Viral Copies/ml	Location	Sample Description	Treatment	Sample Notes
J3205 BB Filter	Yes	1769	Browns Bay Packing Co, Campbell River	Combined Vessel "Bloodwater" and Fish Plant Discharge	0.5mm and 0.25 mm Rotoscreen	Sample very red, and a lot of suspended solids (unable to pass through filter at all w/o spin).Pellet after spin ~sm pea size. Est Discharge rate ~500m3/day (500,000 L/day)
J3205 BB Pellet	Yes	3647	Browns Bay Packing Co, Campbell River	Combined Vessel "Bloodwater" and Fish Plant Discharge	0.5mm and 0.25 mm Rotoscreen	
J3231 LG-V Filter	Yes	37280	Lions Gate Fish Co, Tofino	Fish Transport Vessel "Bloodwater" discharge	None	Sample very red. No to Very little pellet visible after spin. Total Est discharge Vessel + plant = ~30 m3 (30,000 L) /day x 3 days /week
J3231 LG-V Pellet	Yes	363	Lions Gate Fish Co, Tofino	Fish Transport Vessel "Bloodwater" discharge	None	
J3232 LG-P Filter	Yes	13	Lions Gate Fish Co, Tofino	Water discharge from fish processing plant	Fine mesh screen	Sample cloudy white in color. SN much clearer and more able to pass through filter. Pellet ~ pea size. Unable to sample "Floor grate" discharge (6mm grate). Total Est discharge Vessel + plant = ~30 m3 (30,000 L) /day x 3 days /week
J3232 LG-P Pellet	Yes	10954	Lions Gate Fish Co, Tofino	Water discharge from fish processing plant	Fine mesh screen	

Please note that the Fish Site reported in 2015 via "Piscine Reovirus (PRV): An Underestimated Pathogen in the Scottish Salmon Industry?":

Current Piscine Reovirus Status of Scottish Salmon

HSMI has been observed across all farming regions of Scotland, however published information regarding the occurrence of HSMI on Scottish farms is limited to a single report on a suspected outbreak in 2004 and a recent report on HSMI outbreaks in the Shetland Isles from 2005 - 2012.

In the Shetland Isles, the number of HSMI cases from 2005 - 2012 varied between zero and two annually, with resultant mortality reaching 35% during an outbreak on one site. Since testing for this virus became available, some producers have reported up to 95% of their sites consistently testing positive for PRV.

It is believed this virus is fairly ubiquitous across Scottish farms as is the case in Norway. The prevalence of PRV in wild fish populations in Scotland and Ireland remains to be elucidated.

Scientists such as Sandy Murray and Rob Raynard of the Marine Laboratory in Aberdeen (copied in here) will be much better placed to advise you further but this paper may be useful background:

Ferguson HW, Kongtorp RT, Taksdal T, Graham D, Falk K. An outbreak of disease resembling heart and skeletal muscle inflammation in Scottish farmed salmon, *Salmo salar* L., with observations on myocardial regeneration. J Fish Dis. 2005; 119–123. pmid:15705157

Hopefully information from Canada will be used to contextualise any testing conducted on salmon processing plant effluent for infectious diseases and viruses in Scotland. It would certainly be precautionary if the Scottish Government followed up with the BC Government and Federal Government in Canada.

The attached data leads to the question: what testing for infectious diseases (including sea lice), viruses and bacteria is the Scottish Government (or any other agencies) carrying out on salmon processing plant effluent in Scotland?

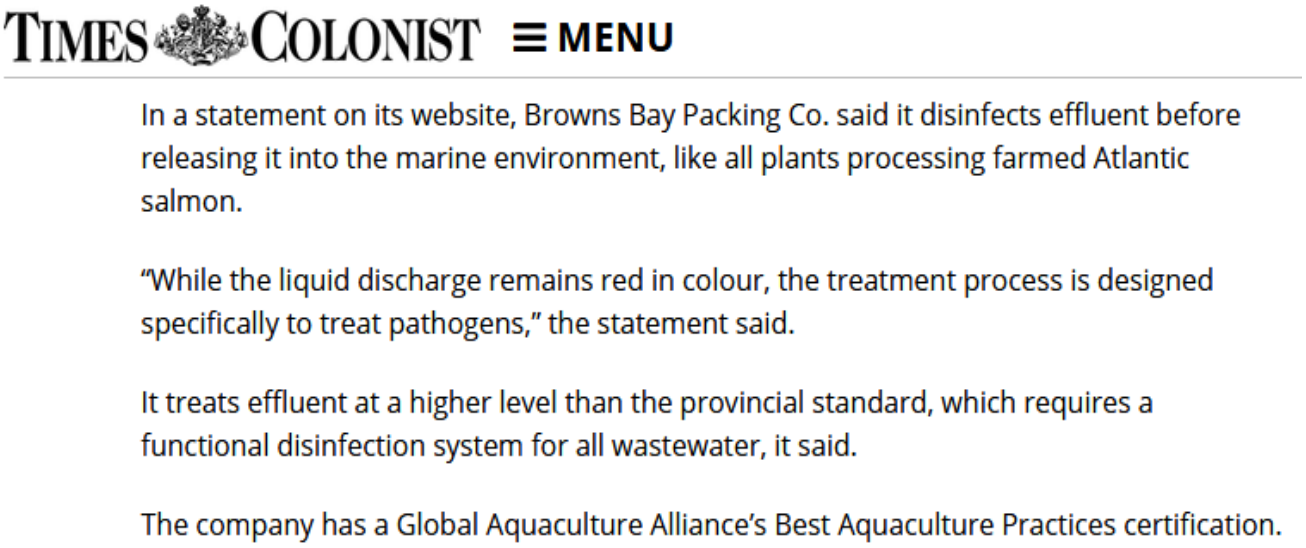
For example, is SEPA, Shetland Isles Council or any other local authorities such as Highland Council, Argyll & Bute, Orkney Islands Council and Comhairle nan Eilean Siar where processing plants are located carrying out any tests? If so, what are they testing for and how many samples?

As GAAIA's Letter to the Cabinet Secretary re. Cooke's violations of the Code of Practice to avoid ISA (26 January 2018) stated: "GAAIA calls on the Scottish Government to investigate this issue including testing of Cooke Aquaculture's blood water effluent for infectious diseases and viruses."

In the context of PRV being detected in salmon processing plant effluent in British Columbia, GAAIA also calls on the Scottish Government to test salmon processing plant effluent in Scotland (not just for PRV but other infectious diseases and viruses).

Note that one of the processing plants in British Columbia where PRV was detected claims to have disinfected effluent and has a Global Aquaculture Alliance's Best Practices certification:

The Times Colonist reported in November 2017:


TIMES COLONIST ≡ MENU

In a statement on its website, Browns Bay Packing Co. said it disinfects effluent before releasing it into the marine environment, like all plants processing farmed Atlantic salmon.

"While the liquid discharge remains red in colour, the treatment process is designed specifically to treat pathogens," the statement said.

It treats effluent at a higher level than the provincial standard, which requires a functional disinfection system for all wastewater, it said.

The company has a Global Aquaculture Alliance's Best Aquaculture Practices certification.

CBC News also reported in November 2017:

Campbell collected blood samples and sent them to the Atlantic Veterinary College for testing, with the co-ordination of independent scientist and activist Alexandra Morton. The tests showed the effluent contains a dangerous fish virus known as Piscine Reovirus (PRV).

The test results has pushed the federal government to act. Fisheries and Oceans Canada has launched a review into what exactly this effluent contains.

- **CBC News**: Deadly salmon disease found in B.C. farmed stock, federal scientists say

But to Morton, the government's lack of response thus far is irresponsible.

"I was shocked at the carelessness of government to allow this amount of blood from farmed salmon which we know are infected with several viruses to pour into the major migration route of all of Canada," she tells Tremonti after watching the footage of Campbell's video.

In view of the infectious diseases and viruses reported during 2017 at Marine Harvest, Scottish Sea Farms and the Scottish Salmon Company surely it is incumbent upon the Scottish Government to co-ordinate testing of processing plants in Scotland?

Please note that FOI replies from the Scottish Government in December 2017 and February 2018 revealed that Scotland's three largest salmon farming companies (Marine Harvest, Scottish Sea Farms and the Scottish Salmon Company) reported the following reasons for mortalities during 2017: Salmon Gill poxvirus, Paranucleospora theridion, gill pathology, complex gill issues, Vibrio anguillarum, Proliferative Gill Disease, Amoebic Gill Disease, Pancreas Disease, fungus, cardiomyopathy syndrome, Haemorrhagic smolt syndrome, Enteric redmouth disease, anaemia as well as HSMI.

Download the data via:
Marine Harvest mort events in 2017
Scottish Salmon Company mort events in 2017
Scottish Sea Farms mort events in 2017

Further data on infectious disease will also be released soon by the Scottish Salmon Producers Organisation - read more via:
Victory for Freedom of Information
Media Update: Scottish Salmon Pledges to Publish Data on Diseases & Lice Infestations

Sadly, the shocking case of Cooke Aquaculture discharging untreated blood water into Shetland waters is probably not an isolated incident of poor control of processing plant effluents.

For example, GAAIA collated evidence sourced from FOI of serious non-compliances at Wester Ross Fisheries' processing plant in Dingwall:

FOI Dossier on Wester Ross Fisheries Processing Plant in Dingwall (24 March 2014)

- 'Seriously Non-Compliant' effluent & "illegal discharge" causes river of waste, contaminated water, fish scales, sewerage fungus, fish guts and 'odour issues'

GAAIA reported in March 2014:

Global Alliance Against Industrial Aquaculture, 24 March 2014

Fatty Farmed Salmon Causes Stink in Scotland

- FOI reveals 'Seriously Non-Compliant' effluent, "illegal discharge" of grease, fish scales & guts, "pools of blood" and "odour issues" at processing plant

Ullapool, Scotland - A farmed salmon processing plant operated by Wester Ross Fisheries is named and shamed as a source of a decade of environmental pollution, illegal discharges and 'seriously non-complaint' operations. FOI requests were prompted by a whistleblower and former employee at Wester Ross Fisheries who testified to sea lice infestations at the farmed salmon processing plant in Dingwall, Ross-shire.

Read exclusively in The Ross-shire Journal online here

2 ROSS-SHIRE JOURNAL, FRIDAY, MARCH 21, 2014

Ross firm under fire after Scottish Water found 'serious' failings

Fish waste ditched in town's public sewers

By HUGH ROSS

The Wester Ross Fisheries premises in Dingwall.

"It is damning but it's just another example of the salmon industry riding roughshod over the environmental watchdogs."
Don Stamford

The press release cited a scientific paper - "Fish Processing Facilities: New Challenge to Marine Biosecurity in Canada" - published in 2013 in the Journal of Aquatic Animal Health:

"If the physical environment (temp, salt, oxygen etc) is within the rather broad tolerance bounds of lice, survival at least over the short term (weeks eggs /days for lice) is assured," said Dr. John Volpe from the University of Victoria in British Columbia, a co-author of 'Fish Processing Facilities: New Challenge to Marine Biosecurity in Canada' published in the December 2013 issue of the Journal of Aquatic Animal Health. "Our scientific study certainly raises a red flag concerning processing plant wastes and the transfer of diseases and parasites. The sensible solution is to avoid discharges into waterways where wild salmonids are present - and that means Scotland as well as Canada."

"In view of the recent scientific concerns raised in Canada, Protect Wild Scotland urges SEPA, Scottish Water and local authorities across Scotland to convene a task force to tackle the threats of the spread of sea lice and infectious diseases via processing plant effluent," wrote Protect Wild Scotland in a letter (7 March 2014) to Scottish Water, SEPA, Highland Council and other agencies. "Please help protect wild salmonids from the threats posed by processing plants discharging diseased wastes into Scotland's waterways. It beggars belief that no public agency appears to be monitoring for sea lice and infectious diseases in processing plant effluent."

"Scottish Water and SEPA must now stem the toxic tide of water pollution, illegal effluents and infectious diseases being discharged by Wester Ross Fisheries," continued Staniford. "In view of the new scientific evidence showing how processing plant effluents can spread disease and sea lice, there must surely be an immediate halt to discharges. Until monitoring can prove that the effluent is safe then Wester Ross Fisheries should suspend operations."

Protect Wild Scotland's letter of 7 March 2014 to SEPA, Scottish Water, Marine Scotland and local authorites included:

"Sea lice and other disease vectors transmitted from facilities processing farmed fish from across the province may pose a threat to wild salmon populations," said University of Victoria marine ecologist Dr. John Volpe, a co-author of the paper in a press release (19 December 2013). "Our study demonstrates that disease transmission is possible from farmed fish to wild fish through the tissue, blood and mucus released in untreated farmed salmon offal. If live sea lice eggs are pouring out of farmed salmon processing plants, it is likely that infectious bacteria and viruses are as well".

The above study begs various questions for the relevant agencies in Scotland: what action is the Scottish Environment Protection Agency (SEPA), Scottish Water, local authorities or anybody else for that matter taking to tackle the disease threats posed by salmon farming processing plant effluent? Does SEPA, Scottish Water, local authorities even test salmon farming processing plant effluent for sea lice and other infectious diseases?

Moreover:

In view of the recent scientific concerns raised in Canada, Protect Wild Scotland urges SEPA, Scottish Water and local authorities across Scotland to convene a task force to tackle the threats of the spread of sea lice and infectious diseases via processing plant effluent.

Please help protect wild salmonids from the threats posed by processing plants discharging diseased wastes into Scotland's waterways. It beggars belief that no public agency appears to be monitoring for sea lice and infectious diseases in processing plant effluent.

In conclusion, what testing and monitoring of infectious diseases and viruses is the Scottish Government currently conducting in relation to processing plant effluents?

Best fishes,

Don

Don Staniford

Director, Global Alliance Against Industrial Aquaculture (GAAIA):
http://www.salmonfarmingkills.com

Read my blog via http://donstaniford.typepad.com/my-blog

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From: Don Staniford [mailto:salmonfarmingkills@gmail.com]
Sent: 06 February 2018 09:27
To: 'scottish.ministers@gov.scot'; 'MSP'
Cc: 'Joyce.Carr@scotland.gsi.gov.uk'; 'carmichaela@parliament.uk'; 'MSP'; 'Ruskell M (Mark), MSP'; 'terry.ahearn@sepa.org.uk'; 'hazel.macleod@sepa.org.uk'; 'Neil.Purvis@gov.scot'; 'Helen.McGregor@gov.scot'; 'Alastair.Mitchell@gov.scot'; 'Sandy.Murray@scotland.gsi.gov.uk'; 'kevin.osborn@sepa.org.uk'
Subject: RE: Addendum to letter re. Cooke's violation: Scientific paper on disease risk from processing plants

Please also note: https://www.desmog.ca/2018/02/05/bloodwater-released-b-c-s-coastal-water-contains-deadly-fish-virus-government-tests-confirm

‘Bloodwater’ Released into B.C.’s Coastal Water Contains Deadly Fish Virus, Government Tests Confirm

By Carol Linnitt • Monday, February 5, 2018 - 15:29

Laboratory testing by the B.C. government has confirmed tens of thousands of litres of bloody effluent released into the ocean from two fish processing plants contained a dangerous virus prevalent in farmed Atlantic salmon in B.C.

Two fish processing facilities that service the farmed fish industry, the Brown’s Bay Packing plant near Campbell River and the Lions Gate Fisheries plant in Tofino, were inspected by the province in early December and laboratory results confirmed the presence of piscine reovirus (PVR), the B.C. Ministry of Environment told DeSmog Canada.

Will the Scottish Government be testing bloodwater from Scottish salmon's processing plants for infectious diseases?

Best fishes,

Don

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From: Don Staniford [mailto:salmonfarmingkills@gmail.com]
Sent: 26 January 2018 12:03
To: 'scottish.ministers@gov.scot'; 'MSP'
Cc: 'Joyce.Carr@scotland.gsi.gov.uk'; 'carmichaela@parliament.uk'; 'MSP'; 'Ruskell M (Mark), MSP'; 'terry.ahearn@sepa.org.uk'; 'hazel.macleod@sepa.org.uk'; 'Neil.Purvis@gov.scot'; 'Helen.McGregor@gov.scot'; 'Alastair.Mitchell@gov.scot'; 'Sandy.Murray@scotland.gsi.gov.uk'; 'kevin.osborn@sepa.org.uk'
Subject: Addendum to letter re. Cooke's violation: Scientific paper on disease risk from processing plants

The attached scientific paper may also be useful as part of any investigation - including:

3.4.4. Risk of rebroadcast infection from the processing plant

Processing plants may act as sources of infection, particularly when a harvest station is associated with the plant. Harvest stations are potential reservoirs of infection, since fish from different farms are in close proximity and the stress of transport will increase the risk of virus shedding. The fish may also be exposed to pathogens in the effluent discharged from a processing plant, even if the discharge is disinfected [9].

When fish are unloaded from well-boats at a processing plant or harvest station, ballast water is taken, which is then be discharged when a new harvest is loaded. If there is ISAV present in the environment it may be transported. A low risk of disease transmission is associated with each journey but the very large number of harvesting vessels visiting a busy processing plant means that is a potentially important source of transmission. These risks only apply to methods M7 and M8, and M1, M5 and M6 if a harvest station is located at the processing plant. Transmission of disease via harvest tubs is also possible.

Best fishes,

Don

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From: Edmund Peeler (Cefas) [mailto:ed.peeler@cefas.co.uk]
Sent: 26 January 2018 11:20
To: Don Staniford
Cc: Sandy.Murray@scotland.gsi.gov.uk
Subject: RE: Copy of paper, pretty please?

With compliments


munro et al 2003.pdf

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http://www.linkedin.com/pub/edmund-peeler/18/b98/961

From: Don Staniford [mailto:salmonfarmingkills@gmail.com]
Sent: 24 January 2018 17:45
To: Edmund Peeler (Cefas) <ed.peeler@cefas.co.uk>
Subject: Copy of paper, pretty please?

Any chance of a copy of your paper?

http://www.sciencedirect.com/science/article/pii/S0964569102001254#!

Thanks and Best fishes,

Don

Don Staniford

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From: Don Staniford [mailto:salmonfarmingkills@gmail.com]
Sent: 26 January 2018 11:54
To: 'scottish.ministers@gov.scot'; 'MSP'
Cc: 'Joyce.Carr@scotland.gsi.gov.uk'; 'carmichaela@parliament.uk'; 'MSP'; 'Ruskell M (Mark), MSP'; 'terry.ahearn@sepa.org.uk'; 'hazel.macleod@sepa.org.uk'; 'Neil.Purvis@gov.scot'; 'Helen.McGregor@gov.scot'; 'Alastair.Mitchell@gov.scot'; 'Sandy.Murray@scotland.gsi.gov.uk'; 'kevin.osborn@sepa.org.uk'
Subject: Letter re. violation of 'A Code of Practice to avoid and minimise the impact of Infectious Salmon Anaemia' by Cooke Aquaculture Scotland

Cabinet Secretary for the Environment, Climate Change and Land Reform,

Please find attached a letter following this week's revelations (following the publication of FOI documents obtained from SEPA) that Cooke Aquaculture has been guilty of causing "gross" pollution due to "untreated overflow from blood water tanks" and "raw effluent" being discharged from their processing plant into Mid Yell Voe.

The damning disclosure comes in the wake of a shocking video of blood water being discharged from a salmon farming processing plant in Canada which prompted an investigation by the BC Government. CTV News also reported in November 2017 that "The federal government has launched a review after tests showed a contagious fish virus in blood spewing into a B.C. waterway from a fish processing plant".

Discharging untreated blood water and raw effluent is clearly a recipe for disaster, constitutes a significant disease risk and represents a gross breach of the industry's code of practice as well as 'A Code of Practice to avoid and minimise the impact of Infectious Salmon Anaemia'. Lest it be forgotten that the spread of Infectious Salmon Anaemia cost Shetland salmon farmers ca. £1 million in 2008 and cost Scottish salmon farmers £30 million in 1998-9.

Hence GAAIA calls on the Scottish Government to investigate this issue including testing of Cooke Aquaculture's blood water effluent for infectious diseases and viruses.

The attached letter - which provides further evidence - is also available online via: Letter to the Cabinet Secretary re. Cooke's violations of the Code of Practice to avoid ISA (26 January 2018)

For ease of reference, the FOI documents obtained from SEPA are online via:

Environmental Event report re. "raw effluent" and overflowing "blood water" at Cooke's Mid Yell processing plant - January 2017
Photo: Overflowing blood water and "raw effluent" from Cooke's processing plant into Mid Yell Voe
"Poor" SEPA Assessment for "gross" breach at Cooke's Mid Yell processing plant - August 2017
SEPA action points to Cooke "to prevent the overflow discharging untreated effluent directly to Mid Yell Voe" - August 2017

You can also read more details via:

Undercurrent News: "Cooke Scotland plant found to have leaked blood water"
Shetland Times: "Salmon company reacts over 'blood water' issue"
Press Release: "Cooke's Untreated Blood Water is 'Gross' says SEPA"
BBC Radio Shetland on Cooke's "untreated blood water" in Scotland
BBC News: "Shetland salmon packing factory leaks 'blood water' into sea"

Best fishes,

Don

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