Case No: 2019-0072 Date of visit: 21/06/2019

Time spent on site: 2 hours Main Inspector: [redacted]

Site No: FS1239 Site Name: Grampian
Business No: FB0544 Business Name: Scotland

Case Types: 1 REP 2 DIA 3 4 5 6

Water Temp (°C): 15.3 Thermometer No: T205 FHI 045 completed

Observations: Region: GR Water type: B CoGP MA

Dead/weak/abnormally behaving fish present?	N	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

Contacted by the River Dee Trust [redacted] regarding an Atlantic salmon caught in the River Dee on the Ballogie fishing beat with haemorrhaging on the ventral surface. The fish was not moribund or lethargic and was being kept in a keepnet. A full diagnostic sample was collected. The River Dee has seen high water levels in recent weeks, this means fish do not appear to have any problems getting upriver. It was discussed that some anglers had seen salmon in recent weeks with sea lice still attached to the fish indicating the salmon had been in the river for less than 24hrs that also showed ventral haemorrhaging.

Accompanied by [redacted], all sampling by [redacted] supervised by [redacted]

Case no:	2019-0072	Site No:	FS1239	Date of visit/ Sampling:	21/06/2019	21/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	15:50:00	16:50:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Wet	2	Sunny	3	Cloudy	4	Windy	5	Dry			
Summary samples	HIST	Y	BA	Y	MG	Y	VI	Y	PA	Y	Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	P1										
	Fish nos	1	1										
	Pool Group	P1											
Stock Details	Species	SAL											
	Average weight	3kg											
	Sex	Female											
	Water Type	FW											
	Stock Origin	River Dee											
	Facility No	N/A											

06/2019 Additional Sample Information:

Histology - Additional sample from the haemorrhaged ventral surface for histology. Histology split into two pots. Pot 1: Gill, skin & skeletal muscle, haemorrhaged ventral surface and the damage in the caudal fin. Pot 2: Heart, Liver, Kidney, spleen, pyloric caeca, hind gut. Bacteriology - Two lesion plates taken for each type of plate, Lesion 1: from shallow damage at the haemorrhaged ventral surface, Lesion 2: taken from damage to the ventral surface of the caudal fin.

2 Total Tests assigned 18

Case no: 2019-0072 Site No: FS1239 Method of killing:

Date of visit: 21/06/2019 Inspector(s): [redacted] Sheet Relevant: Y

S for strong presence: **M** for medium presence: **W** for weak presence

Fish Number		F1									
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum	M									
	Base of fins										
	Elsewhere										
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**										
	Zoned										
	Necrotic										
Lesions	**Flank**	W									
	Elsewhere	W									
Vent	**Inflamed**	W									
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**										
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat										
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**										
Swim bladder	**Haemorrhaging**										
	Fluid filled										
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**	W									
	Anaemia										

Case no: 2019-0072

Date of visit: 21/06/2019

S for strong presence: **M** for medium presence: **W** for w

Fish Number											
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**										
	Zoned										
	Necrotic										
Lesions	**Flank**										
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**										
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat										
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**										
Swim bladder	**Haemorrhaging**										
	Fluid filled										
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Additional comments:

Free parasites in the body cavity sampled into 70% ethanol.

No clear open lesions but some areas of shallow damage on the ventral surface and the ventral surface of the caudal fin.

Site No: FS1239

Case No: 2019-0072

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2019-0072 Date of visit: 21/06/2019

Site No: FS1239 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
MG - VHS	0/1	26/06/2019	[redacted]	26/06/2019	[redacted]	02/08/2019	[redacted]	[redacted]
MG - SAV	0/1	26/06/2019	[redacted]	26/06/2019	[redacted]	02/08/2019	[redacted]	[redacted]
MG - ISA	0/1	26/06/2019	[redacted]	26/06/2019	[redacted]	02/08/2019	[redacted]	[redacted]
MG - IPN	0/1	26/06/2019	[redacted]	26/06/2019	[redacted]	02/08/2019	[redacted]	[redacted]
MG - IHN	0/1	26/06/2019	[redacted]	26/06/2019	[redacted]	02/08/2019	[redacted]	[redacted]
MG - PMCV	0/1	04/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
MG - PRV	0/1	04/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
NSIG	1/1	16/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
HPAT	1/1	16/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
MPAT	1/1	16/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
KPAT	1/1	16/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
A. simplex	1/1	16/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
D. latum	1/1	16/07/2019	[redacted]	16/07/2019	[redacted]	02/08/2019	[redacted]	[redacted]
G. salaris	0/1	30/07/2019	[redacted]			02/08/2019	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
REP, DIA	02/08/2019	[redacted]	[redacted]

[redacted]
Dee District Salmon Fishery Board
River Office
Mill of Dinnet
Aboyne
Aberdeenshire
AB34 5LA
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0544	**DATE OF VISIT**	21/06/2019
SITE NO	FS1239	**SITE NAME**	Grampian – River Dee
INSPECTOR	[redacted]	**CASE NO**	20190072

Section 1: Summary

Following notification of the capture of one wild Atlantic salmon showing haemorrhaging on the ventral surface on the River Dee samples were collected for diagnostic purposes.

Histopathology examination revealed mild mytosis and mild cardiomyopathy. The kidney showed some cysts-like structures.

Parasites collected from the body cavity included *Anisakis* sp. and *Diphyllobothrium latum.* The vent showed heavy infestation of *Anisakis simplex*.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Observations

Marine Scotland Science Fish Health Inspectorate was contacted by the Dee District Salmon Fishery Board on the 21 June 2019 regarding a wild Atlantic salmon caught in the River Dee on the Ballogie fishing beat with haemorrhaging on the ventral surface. The fish was not moribund or lethargic and had been line caught. Due to recent concerns regarding wild Atlantic salmon displaying similar clinical signs the decision was taken to collect samples. The fish was kept in a keep net at the river bank until inspectors arrived in the afternoon to conduct a full diagnostic sample.

Externally the fish showed haemorrhaging on the ventral surface and had a small area of possible physical damage on the flank with what looked to be the early stages of a developing lesion. As well as damage to the ventral surface of the caudal fin and the vent was inflamed. Internally a moderate level of free parasites were observed in the body cavity.

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Samples

Samples were collected according to the table below:

Fish number	Pool number	Species	Stage	Origin
F1	P1	Atlantic salmon	2.2+ *	River Dee, near Potarch

* as determined by scale reading, the salmon spent 2 years in freshwater before going to sea as a smolt, it subsequently spent 2+ years at sea before returning to freshwater as an

Results

Bacteriology: Kidney, gill, spleen and lesion material was inoculated onto appropriate media for the isolation of bacteria.

No significant bacteria were isolated.

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV), piscine reovirus (PRV) and piscine myocarditis virus (PMCV).

A general screen was conducted on tissue samples to test for the presence of viral pathogens by cell culture. The result of this test was negative.

Parasitology: Fins were collected to determine the presence of *Gyrodactylus salaris* using light microscopy and molecular techniques (PCR).

No *G. salaris* parasites were detected in the samples examined.

Parasites collected in the body cavity were identified as *Anisakis simplex* and *Diphyllobothrium latum*. Analysis of the sampled vent showed a heavy infestation of *Anisakis simplex.*

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination by light microscopy revealed the following:

Gill: Mild increase of eosinophilic granular cells at the centre of gill filaments.

Skin and Muscle: Multiple small foci of skeletal red fibre degeneration (shrunken fibres and increase in fibre eosinophilia) and some with associated inflammatory cells.

Heart: Several small foci of leucocyte infiltration and degeneration of the myocardial fibres at the vicinity.

Gut and Pyloric caeca: within normal range.

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Pancreas: within normal range.

Liver: Single focus of infiltrating inflammation close to peripheral area and some vascular cuffing.

Kidney: Region (sub capsular) with cysts- like structures filled with proteinaceious material, some surrounded by some haemorrhage.

Spleen: slightly congested.

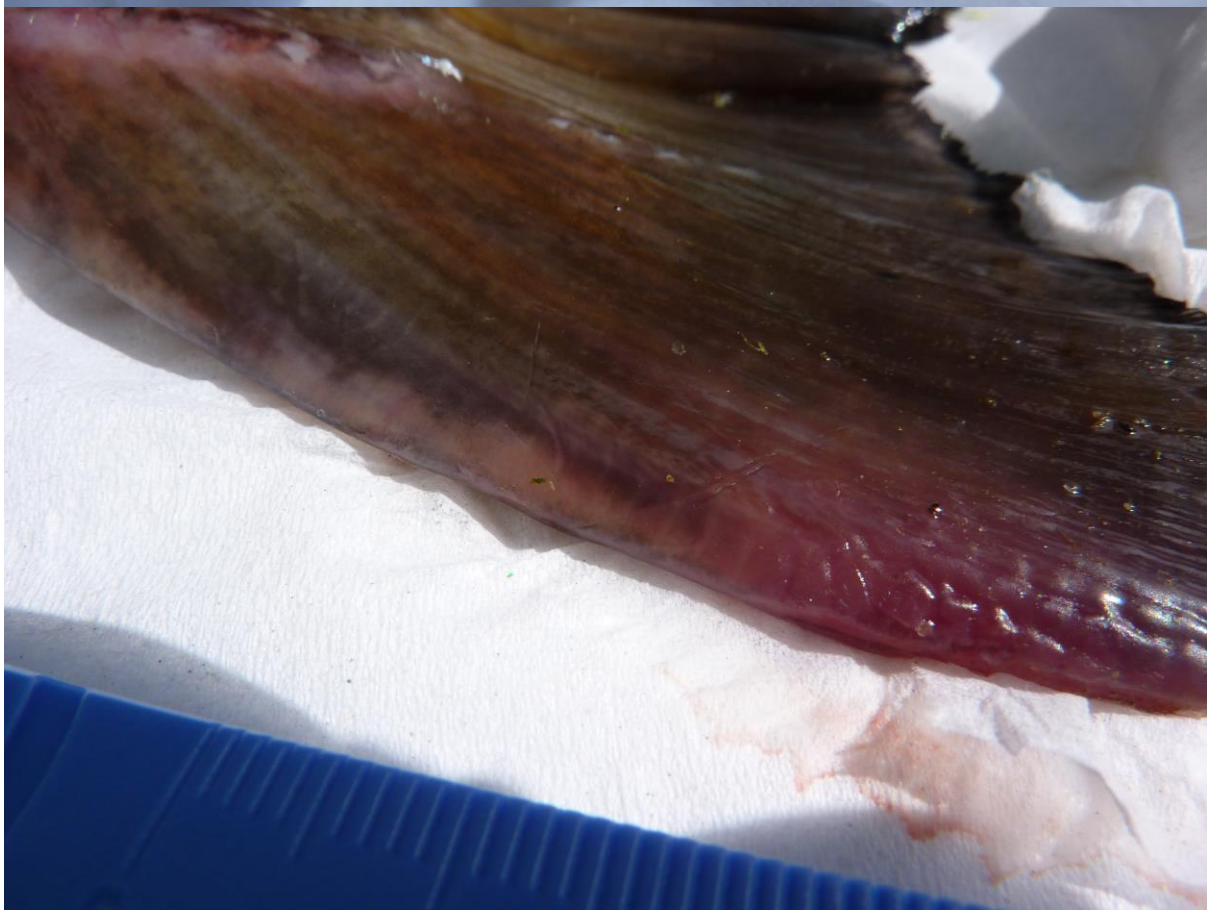
Signed: [redacted] Date: 02/08/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

2019-0072 Wild fish diagnostic River Dee 21/6/2019



Case No: 2019-0169 Date of visit: 03/06/2019

Time spent on site: 1hr Main Inspector: [redacted]

Site No: SS0553 Site Name: Eilean Nam Meann
Business No: SB0224 Business Name: Lismore Shellfish

Case Types: 1 PSI 2 3 4 5 6

Water Temp (°C): Thermometer No: FHI 045 completed N

Observations: Region: ST Water type: S CoGP MA

Dead/weak/abnormally behaving fish present?		If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?		If yes, see additional information/clinical score sheet.
Gross pathology observed?		If yes, see additional information/clinical score sheet.
Diagnostic samples taken?		

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

Case No: 2019-0169 Site No: SS0553

Date of case: 43619 Inspector(s): [redacted]

Business/site contacts correct? (if no, update site summary sheet) Y

Site Details

Total No facilities: 250 Trays No facilities stocked: 220 Trays

Species	CGI	CGI	CGI	CGI			
Age group	2015	2016	2017	2018			
No shellfish	30,000	200,000	150,000	200,000			
Mean fish Wt	130g	120g	100g	70g			

Next fallow date (site) No plan Next input date (site) August/September 2019

Date of last inspection: (ECI or PSI): 01/09/2015

Any recent increased or atypical mortalities? (last 4 weeks): N

If yes, detail: e.g. site average, max per facility

Any increased mortalities? (since last inspection) N

If yes, detail:

How are mortalities disposed of? Other (detail)

If other detail: Empty shells collected from beach, crushed, and used to fill potholes on site access road.

Are there any diseases on your site? N

If yes, detail:

Have you experienced predation on site? Y

If yes, detail: Occassional predation by oyster catchers.

Has the site experienced increased or abnormal fouling? N

If yes, detail:

Have you observed any invasive species on your site? N

If yes, detail:

Do you have an up to date BMP, and are there any issues? Y

If yes, detail: Site has an up to date BMP, but there are no issues with it.

What quantity of spat fall have you had in the last 12 months? (mussel sites only):

Spat collectors not deployed.

Case Number:	2019-0169	Site No:	SS0553
Date of Visit	03/06/2019	Inspector:	[redacted]

Number of Susceptible species on site

If no susceptible species present = **LOW** risk

If susceptible species present, score for each pathogen

	No	Yes	
Susceptible to Bonamia ostrea (OED)	0	25	
Susceptible to Marteilia refringens (OED, MED)	0	3	
Susceptible to OsHV (CGI)	0	3	3

Sites within a tidal excursion		**1**	**2-5**	**>6**	
Site contacts	Number of sites holding susceptible species within a tidal excursion	0	2	10	2

Live shellfish movements		**0**	**1-2**	**>3**	
Movements on	Frequency of movements on from equivalent MS	0	5	10	5
	Frequency of movements on from equivalent zone or compartment including third country	0	10	20	
	Number of suppliers	0	5	10	5
Movements off	Frequency of movements off within MSS Management Areas	0	1	2	0
	Frequency of movements off outwith MSS Management Areas	0	3	6	3
	Number of destinations	0	3	6	3

Management practices		**None**	**Secure (effluent treatment)**	**Unsecure (no effluent treatment)**	
Water contacts with depuration facilities	Depuration of stock from own sites within MSS management area	0	1	2	0
	Depuration of stock from other businesses sites within MSS management area	0	2	6	0
	Depuration of stock from sites outwith MSS management area	0	4	8	0

Biosecurity	**Number of sites**	**1**	**2 or 3**	**≥ 4**	
Contacts with other sites	Sites operating from single shorebase	0	1	2	0
	Sites sharing staff and equipment	0	1	5	0
			Yes	**No**	
	Disinfection of equipment between sites, use of footbaths etc		0	2	0

Total	21
Risk	

Case No: 2019-0169 Date of visit: 03/06/2019

Site No: SS0553 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp

Report Summary			
Case Type	Date	Insp	2nd Insp
PSI	03/06/2019	[redacted]	[redacted]

marinescotland science

Scottish Government
Riaghaltas na h-Alba
gov.scot

[redacted]
Lismore Shellfish
The Ferry House
Easdale Island
Oban, Argyll
PA34 4TB
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO SB0224
SITE NO SS0553
INSPECTOR [redacted]

DATE OF CASE 03/06/2019
SITE NAME Eilean Nam Meann
CASE NO 20190169

Routine surveillance frequency assessment under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was contacted in accordance with the Aquatic Animal Health (Scotland) Regulations 2009, and to meet the requirements of European Community Council Directive 2006/88/EC.

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated.

The surveillance frequency category of the site was assessed as medium. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every second year. The category of the site will be reassessed on a routine basis and updated as required.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed: [redacted] Date: 03/06/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

R26

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Case No: 2019-0186 Date of visit: 13/06/2019

Time spent on site: 1.5Hrs Main Inspector: [redacted]

Site No: FS1240 Site Name: Highland
Business No: FB0544 Business Name: Scotland

Case Types: 1 DIA 2 3 4 5 6

Water Temp (°C): 12 Thermometer No: T148 FHI 045 completed N

Observations: Region: HI Water type: B CoGP MA:

Dead/weak/abnormally behaving fish present?	N	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

The Cromarty Firth DSFB contacted FHI on 12/06/2019 to report a salmon that had been caught on the r. Conon with haemorrhaging on the undseride. Fish was placed in a keep net and an inspector attended the scene on 13/06/2019. Fish was still alive at time of inspection and did not appear weak. There was slight haemorrhaging on the underside but no other signs. On talking with the fishery board representative, this was the first fish caught with signs of disease on the river and no mortalities have been reported prior to this inspection.

Case no:	2019-0186	Site No:	FS1240	Date of visit/ Sampling:	13/06/2019	13/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	11:30:00	12:00:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Wet	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI	Y	PA	Y	Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1											
	Fish nos	1											
	Pool Group												
Stock Details	Species	SAL											
	Average weight	4.3000											
	Sex	Female											
	Water Type	FW											
	Stock Origin	Wild - River Conon											
	Facility No	n/a											

06/2019 Additional Sample Information:

Fish sampled outside with occassional light rain.

1 Total Tests assigned 16

Case no: 2019-0186 Site No: FS1240 Method of killing: Percussive

Date of visit: 13/06/2019 Inspector(s): [redacted] Sheet Relevant: Y

S for strong presence: **M** for medium presence: **W** for weak presence

Fish Number		1									
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere	W									
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**	W									
	Zoned										
	Necrotic										
Lesions	**Flank**										
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**										
	Granulomas										
	Deformed										
Liver	**Petechial haem**	W									
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	4									
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat	W									
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**	W									
Swim bladder	**Haemorrhaging**	M									
	Fluid filled										
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Case no: 2019-0186

Date of visit: 13/06/2019

S for strong presence: **M** for medium presence: **W** for w

Fish Number											
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**										
	Zoned										
	Necrotic										
Lesions	**Flank**										
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**										
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat										
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**										
Swim bladder	**Haemorrhaging**										
	Fluid filled										
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Additional comments:

Site No: FS1240

Case No: 2019-0186

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2019-0186 Date of visit: 13/06/2019

Site No: FS1240 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
MG_IHNQ	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	05/08/2019	[redacted]	[redacted]
MG_IPN	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	05/08/2019	[redacted]	[redacted]
MG_ISA	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	05/08/2019	[redacted]	[redacted]
MG_SAV	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	05/08/2019	[redacted]	[redacted]
MG_VHS	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	05/08/2019	[redacted]	[redacted]
BA_NSIG	1/1	27/06/2019	[redacted]	28/06/2019	[redacted]	05/08/2019	[redacted]	[redacted]
Myxosporidiosis (MYXO)	1/1	17/07/2019	[redacted]	25/07/2019	[redacted]	05/08/2019	[redacted]	[redacted]
GS	0/1	17/07/2019	[redacted]	25/07/2019	[redacted]	05/08/2019	[redacted]	[redacted]
MG_SPVP	0/1	25/07/2019	[redacted]	25/07/2019	[redacted]	05/08/2019	[redacted]	[redacted]
MG_PRVP	0/1	04/07/2019	[redacted]	25/07/2019	[redacted]	05/08/2019	[redacted]	[redacted]
MG_PMVP	0/1	04/07/2019	[redacted]	25/07/2019	[redacted]	05/08/2019	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA	01/08/2019	[redacted]	[redacted]

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Cromarty Firth Fishery Board
Reay House,
17 Old Edinburgh Road,
Inverness,
IV2 3HF
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0544	**DATE OF VISIT**	13/06/2019
SITE NO	FS1240	**SITE NAME**	Highland – River Conon
INSPECTOR	[redacted]	**CASE NO**	20190186

Section 1: Summary

Following a report from the Cromarty District Salmon Fishery Board on the 12th June 2019 of a fish caught showing lesions and ulcers on the ventral surface, Fish Health Inspectors visited the river on the 13th June 2019. The fish had been placed in a keep net overnight prior to inspection and diagnostic samples were taken.

Histopathology examination revealed myxosporidiosis, which is thought to be incidental. No other significant pathology was found.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Observations

Following reports of a diseased wild Atlantic salmon at the river Conon the fish was examined and diagnostic sampling was carried out.

The ghillie from the river Conon informed the inspectorate of a live fish they had caught with lesions and ulcers on the ventral surface. On talking with the fishery board representative, this was the first fish caught with signs of disease on the river and no mortalities have been reported prior to this inspection.

The fish was still alive at time of inspection and did not appear weak. External examination showed there to be slight haemorrhaging on the ventral surface and gills were slightly pale but no other visible signs. Internally, petechial haemorrhaging was noted of the liver and lack of fat of the pyloric caeca. Haemorrhaging was also noted of the body wall and swim bladder.

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Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Samples

Samples were collected according to the table below:

Fish number	Pool number	Species	Stage	Origin
F1	P1	Atlantic salmon	4.5-6 kg	River Conon

Results

Bacteriology: Kidney, gill and spleen material was inoculated onto appropriate media for the isolation of bacteria.

No significant bacteria were isolated.

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV), piscine reovirus (PRV), piscine myocarditis virus (PMCV) and salmon gill poxvirus (SGPV).

A general screen was conducted on tissue samples to test for the presence of viral pathogens by cell culture. The result of this test was negative.

Parasitology: Fins were collected to determine the presence of *Gyrodactylus salaris* using light microscopy.

No *G. salaris* parasites were detected in the samples examined.

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

- Intestine – Within normal range.
- Pancreas - Within normal range.
- Heart - 2 small thrombi (insignificant) and a small area of increased muscle cell eosinophilia.
- Liver - small focus of fatty hepatocytes (not significant).
- Spleen - Within normal range.
- Kidney - very mild intratubular myxosporidiosis otherwise within normal range.

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- Skin/muscle - one section apparently within normal range apart from a small region where the iridophore layer has been disrupted and with adjacent adipose cells exhibiting increased granularity.

Signed: [redacted] Date: 01/08/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

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Website - www.gov.scot/Topics/marine/science

Case No: 2019-0189 Date of visit: 13/06/2019

Time spent on site: 1.5Hrs Main Inspector: [redacted]

Site No: FS1240 Site Name: Highland
Business No: FB0544 Business Name: Scotland

Case Types: 1 DIA 2 3 4 5 6

Water Temp (°C): 11 Thermometer No: T148 FHI 045 completed N

Observations: Region: HI Water type: B CoGP MA:

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

Kyle of Sutherland DSFB contacted FHI on 13/06/2019 to report a moribund salmon that had just been caught on the river Cassely with severe lesions, haemorrhaging and patched of fungus. FHI inspected and samples taken the same day. The fish was dead on arrival but had been alive earlier in the day. Full set of samples taken as time of death was unknown. Three fish had already been handed into the fishery board and frozen. Fish handed in had haemorrahging on the underside and in the fins but no lesions. These fish were not sampled.

Case no:	2019-0189	Site No:	FS1240	Date of visit/ Sampling:	13/06/2019	13/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	13:50:00	14:30:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Wet	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI	Y	PA	Y	Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1											
	Fish nos	1											
	Pool Group												
Stock Details	Species	SAL											
	Average weight	3.0000											
	Sex	Female											
	Water Type	FW											
	Stock Origin	Wild - River Cassley											
	Facility No	n/a											

06/2019 Additional Sample Information:

Time of death unknown. Fish was alive at ~08:00 but was dead at time of inspection (13:30). Histo samples taken. Fish was sampled outside with occassional light rain and midges.

1 Total Tests assigned 20

Case no:	2019-0189	Site No:	FS1240	Method of killing:	Unknown
Date of visit:	13/06/2019	Inspector(s):	[redacted]	Sheet Relevant:	Y

S for strong presence: **M** for medium presence: **W** for weak presence

Fish Number		1									
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere	M									
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**	S									
	Zoned										
	Necrotic										
Lesions	**Flank**	M									
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**	S									
	Granulomas										
	Deformed										
Liver	**Petechial haem**	W									
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	5									
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat	W									
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**	W									
Swim bladder	**Haemorrhaging**	W									
	Fluid filled	S									
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Case no: 2019-0189

Date of visit: 13/06/2019

S for strong presence: **M** for medium presence: **W** for w

Fish Number											
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**										
	Zoned										
	Necrotic										
Lesions	**Flank**										
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**										
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat										
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**										
Swim bladder	**Haemorrhaging**										
	Fluid filled										
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Additional comments:

Fish checked by gillie at 08:00 morning of inspection and was still alive. Was dead at time of inspection 13:30. Histoloy samples taken as time of death unknown so samples may be unsuitable. Fish also covered in patches of fungus.

Site No: FS1240

Case No: 2019-0189

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2019-0189 Date of visit: 13/06/2019

Site No: FS1240 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
MG_IHNQ	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
MG_IPN	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
MG_ISA	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
MG_SAV	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
MG_VHS	0/1	19/06/2019	[redacted]	19/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
BA_AERO SPP	1/1	27/06/2019	[redacted]	28/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
BA_YRUK	1/1	27/06/2019	[redacted]	28/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
BA_FPSY	1/1	27/06/2019	[redacted]	28/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
BA_SAPR	1/1	27/06/2019	[redacted]	28/06/2019	[redacted]	01/08/2019	[redacted]	[redacted]
GS	0/1	17/07/2019	[redacted]	25/07/2019	[redacted]	01/08/2019	[redacted]	[redacted]
NSIG	1/1	17/07/2019	[redacted]	25/07/2019	[redacted]	01/08/2019	[redacted]	[redacted]
SAPR (Histo)	1/1	17/07/2019	[redacted]	25/07/2019	[redacted]	01/08/2019	[redacted]	[redacted]
MG PMC	0/1	04/07/2019	[redacted]	25/07/2019	[redacted]	01/08/2019	[redacted]	[redacted]
MG PRV	0/1	04/07/2019	[redacted]	25/07/2019	[redacted]	01/08/2019	[redacted]	[redacted]
MG_SPVP	1/1	25/07/2019	[redacted]	25/07/2019	[redacted]	01/08/2019	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA	01/08/2019	[redacted]	[redacted]

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Kyle of Sutherland District Salmon Fishery Board
Bank House
Ardgay, Sutherland
IV24 3BG
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0544	**DATE OF VISIT**	13/06/2019
SITE NO	FS1240	**SITE NAME**	Highland – River Cassely
INSPECTOR	[redacted]	**CASE NO**	20190189

Section 1: Summary

Following reports of increased wild Atlantic salmon mortalities from the Kyle of Sutherland District Salmon Fishery Board the Fish Health Inspectorate (FHI) were contacted on the 13th June 2019 to report a moribund salmon that had just been caught on the River Cassely with severe lesions, haemorrhaging and patches of fungus. Unfortunately when the inspector arrived the fish was dead, however a full set of diagnostic samples was taken as time of death was unknown and the fish had been reported to be alive earlier the same day.

Histopathology examination revealed cutaneous saprolegniasis.

The gill sample was screened for salmon gillpox virus (SGPV) by QPCR and tested positive. However, histopathology did not show tissue alteration consistent with clinical SPGV.

Microscopic examination revealed a fungus-like organism matching the characteristics of *Saprolegnia* sp.. However, the level and mixed nature of the growth would not suggest it to be the primary source of the clinical signs observed.

Yersinia ruckeri, *Flavobacterium psychrophilum* and *Aeromonas* sp. were isolated. *Yersinia ruckeri* and *Flavobacterium psychrophilum* are known to be the causative agents of enteric redmouth disease (ERDM) and rainbow trout fry syndrome (RTFS). *Aeromonas* sp. and *Saprolegnia* sp. are more commonly known as opportunist pathogens. However, the level and purity of growth would not suggest they are the primary cause of morbidity in this case.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

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Section 2: Case Detail

Observations

Following reports of increased mortality in wild Atlantic salmon at the River Cassely, one moribund fish was reported, examined and sampled on the 13th June 2019. Three fish with haemorrahging on the underside and in the fins had already been handed in to the Kyle of Sutherland DSFB and had been frozen. These fish were not sampled.

Externally examination of the fish sampled showed haemorrhaging on the ventral surface, severe lesions on the flank and pale gills. A fungus-like infection was also present on the flank and head.

Internally, haemorrhaging was observed on the liver, body wall and swim bladder. The swim bladder was also fluid filled.

Samples

Samples were collected according to the table below:

Fish number	Pool number	Facility number	Species	Stage	Origin
F1	P1	n/a	Atlantic salmon	4.5-6 kg	River Cassely

Results

Bacteriology: Kidney, gill, spleen and lesion material were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated:

- *Yersinia ruckeri* (gill, spleen, kidney & lesion)
- *Flavobacterium psychrophilum* (spleen)
- *Aeromonas* sp. (spleen & kidney)

Saprolegnia sp. a fungal-like (oomycete) organism was also observed on plates taken from gill & kidney material.

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

Fish 1 tested positive by PCR (QPCR) for the following:

Salmon gill poxvirus (SGPV)

Fish Number	**Endogenous control Cp value**	**Cp Values**			**Reported Result (PCR)**
F1	24.86	36.76	36.12	37.66	Positive

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus

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(SAV), viral haemorrhagic septicemia virus (VHSV), piscine reovirus (PRV), piscine myocarditis virus (PMCV).

A general screen was conducted on tissue samples to test for the presence of viral pathogens by cell culture. The result of this test was negative.

Parasitology: Fins were collected to determine the presence of *Gyrodactylus salaris* using light microscopy.

No *G. salaris* parasites were detected in the samples examined.

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

- Heart, intestine, kidney, liver and gills – Within normal range.
- Spleen - very prominent ellipsoids (possibly within normal limits - for large wild salmon)
- Skin/muscle - Saprolegniasis affecting the epidermis with some evidence of penetration into the dermis. Musculature degenerate, query quality of fixation and/or post mortem artefact.

Signed: [redacted] Date: 01/08/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

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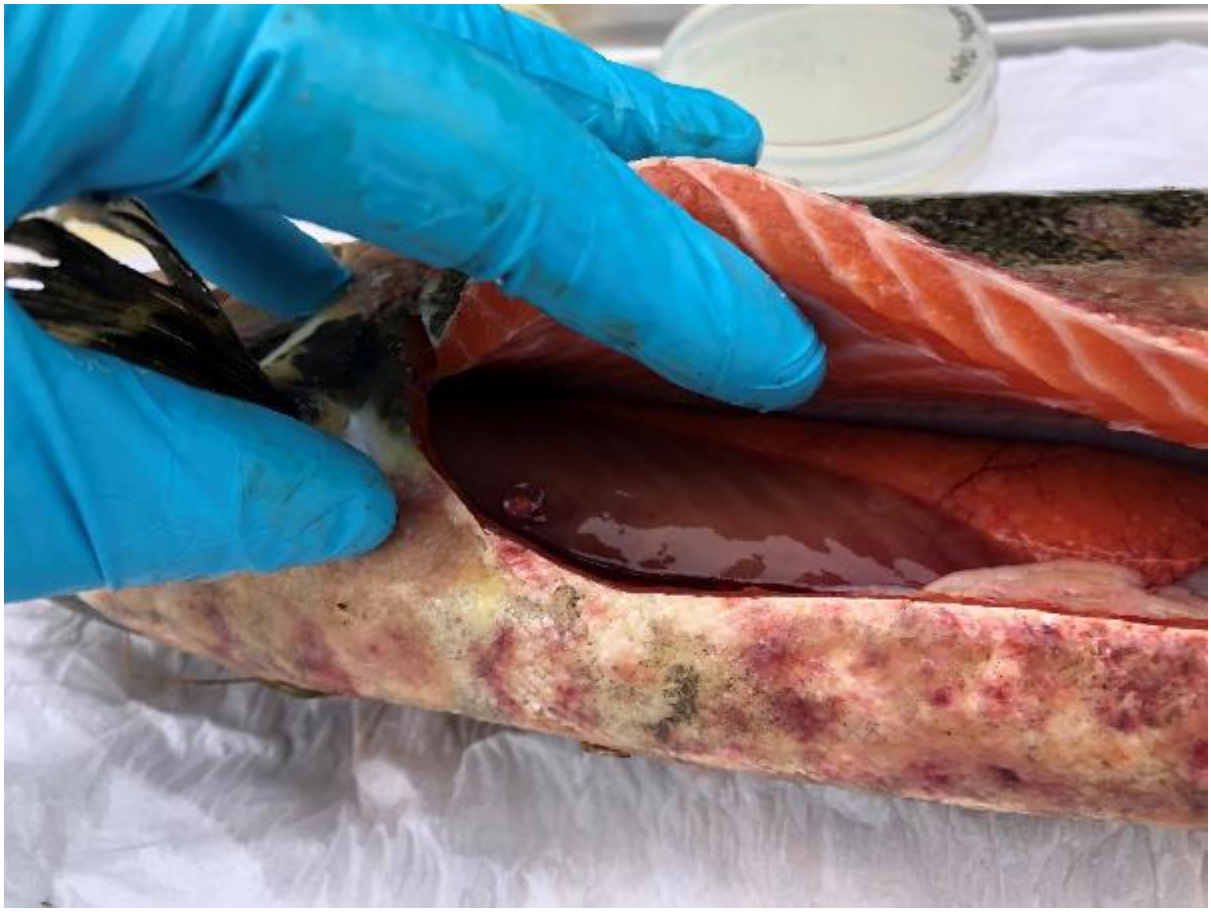
Website - www.gov.scot/Topics/marine/science



Case No: 2019-0212 Date of visit: 04/06/2019

Time spent on site: 1 hour Main Inspector: [redacted]

Site No: FS1240 Site Name: Highland
Business No: FB0544 Business Name: Scotland

Case Types: 1 REP 2 DIA 3 4 5 6

Water Temp (°C): 10.5 Thermometer No: T147 FHI 045 completed

Observations: Region: HI Water type: B CoGP MA

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

River Helmsdale DSFB contacted FHI on 31/05/2019 to report an increase of wild atlantic salmon mortality beginning in May. Bailffs have recovered 50-60 dead and moribund salmon, all affected salmon appear to be fresh run from the sea, with evidence of a fungus-like infection and haemorrhaging/physical damage on the belly. Water levels in the river have been good, it is not expected that there have been any major fluctuations in water temperature over this period.
FHI attended the Helmsdale DSFB hatchery (FS1184) on 04/06/2019. Two fish caught by rod on 03/06/2019 (F1 - Beat 3 above and (F2 - Beat 5 lower) were held in one of the hatchery tanks. Both fish showed evidence of haemorrhaging/physical damage on belly and around vent, the fish appeared in good condition apart from this and were very active in the holding tank. A third fish (F3 - Beat 4 above) was netted from the river on the 04/06/2019 during the inspection, the fish was moribund and showed signs of a fungus-like infection on the head, flank and belly. Sampling carried out on all 3 fish. Fish were dispatched one at a time immediately before sampling.
F1 sampled by JET, F2-3 sampled carried out by NYL, supervised by JET. Casesheet completed by JET.

Salmon gill poxvirus PCR test carried out after case originally closed. Additional testing carried out due to salmon gillpox virus pathology being observed in another wild fish diagnostic case (2019-0322), gill material from pevious wild fish cases was re-read, with similar gill pathology observed in F3 from this case. PCR test confirmed the result. Updated fish health report issued.

Case no:	2019-0212	Site No:	FS1240	Date of visit/ Sampling:	04/06/2019	04/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	13:00:00	16:00:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA	Y	Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	P1								
	Fish nos	1	2	3	1-3								
	Pool Group	P1	P1	P1									
Stock Details	Species	SAL	SAL	SAL	SAL								
	Average weight	6.8000	4.5000	5.5000									
	Sex	N/A	N/A	N/A	N/A								
	Water Type	FW	FW	FW	FW								
	Stock Origin	River Helmsdale	River Helmsdale	River Helmsdale	River Helmsdale								
	Facility No	N/A	N/A	N/A	N/A								

06/2019 Additional Sample Information:

F3 Bacteriology_Other samples, suspected fungus, samples taken from flank. Parasitology samples F1-F2 - Pectoral fin and vent stored in separate 100% ethanol tubes, F3 vent and fin not sampled as no further ethanol tubes available at time of sampling. F1 - Worm in liver tissue stored in 100% ethanol tube. F3 Worm found in body cavity, stored in histo pot as no further ethanol tubes available at time of sampling. F1-F2 sampled 13:00 - 13:40, F3 sampled 15:30 - 15:50. All fish sampled were dispatched immediately before sampling.

4 Total Tests assigned 16

Case no: 2019-0212 Site No: FS1240 Method of killing: Percussive

Date of visit: 04/06/2019 Inspector(s): [redacted] Sheet Relevant: Y

S for strong presence: **M** for medium presence: **W** for weak presence

Fish Number		F1	F2	F3							
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	Moribund			s							
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum	w	w	w							
	Base of fins	w	w	w							
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	Pale			m							
	Zoned										
	Necrotic										
Lesions	Flank										
	Elsewhere										
Vent	Inflamed	w	m	w							
	Trailing faeces										
Lice Load	Estimate numbers	0	0	0							
Internal Signs											
Ascites	Clear										
	Bloody										
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem	w	w	w							
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem		m								
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged			s							
	Granulomas										
Gut	No food present	s	s	s							
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present	w		w							
	Anaemia										

Case no: 2019-0212

Date of visit: 04/06/2019

S for strong presence: **M** for medium presence: **W** for w

Fish Number											
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**										
	Zoned										
	Necrotic										
Lesions	**Flank**										
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**										
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat										
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**										
Swim bladder	**Haemorrhaging**										
	Fluid filled										
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Additional comments:

F3 Fungus on flank and head

Site No: FS1240

Case No: 2019-0212

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2019-0212 Date of visit: 04/06/2019

Site No: FS1240 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
MG_IHN	0/1	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
MG_IPN	0/1	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
MG_ISA	0/1	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
MG_SAV	0/1	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
MG_VHS	0/1	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
HIST_BACT	1/3	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
HIST_SPAT	1/3	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
HIST_KPAT	1/3	10/06/2019	[redacted]	10/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
BACT_YRUK	1/3	20/06/2019	[redacted]	20/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
BACT_SAPR	1/3	20/06/2019	[redacted]	20/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
BACT_PSFL	1/3	20/06/2019	[redacted]	20/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
BACT_AERO	1/3	24/06/2019	[redacted]	24/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
BACT_AERO	1/3	24/06/2019	[redacted]	24/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
PARA_HEPA	2/3	12/06/2019	[redacted]	12/06/2019	[redacted]	18/07/2019	[redacted]	[redacted]
MG_PRV PMCV	0/3	09/07/2019	[redacted]	11/07/2019	[redacted]	18/07/2019	[redacted]	[redacted]
PARA_ANIP	2/3	11/07/2019	[redacted]	11/07/2019	[redacted]	18/07/2019	[redacted]	[redacted]
PA_GS	0/2	18/07/2019	[redacted]	18/07/2019	[redacted]	18/07/2019	[redacted]	[redacted]
MG_SAL_POX	1/1	02/08/2019	[redacted]	02/08/2019	[redacted]	02/08/2019	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA	18/07/2019	[redacted]	[redacted]
DIA update	02/08/2019	[redacted]	[redacted]

[redacted]
Helmsdale District Salmon Fishery Board
Borrobol
Kinbrace
Sutherland
KW11 6UB

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0544	**DATE OF VISIT**	04/06/2019
SITE NO	FS1240	**SITE NAME**	Highland – River Helmsdale
INSPECTOR	[redacted]	**CASE NO**	20190212

Section 1: Summary

Following a report of increased wild Atlantic salmon mortalities from the River Helmsdale District Salmon Fisheries Board on the 31st May 2019, Fish Health Inspectors visited the river on 4th June 2019. Two fish were caught by rod on 3rd June 2019 and held in tanks at the DSFB hatchery. One moribund fish with evidence of a fungus-like infection was removed from the river on the day of the inspection. All three fish were examined and diagnostic samples were taken.

Histopathology examination revealed mild myositis in F1 and F2. F3 showed an increase in inflammatory cells in the hematopoietic tissue of the kidney (nephritis), marked bacterial necrotising splenitis and minimal myocarditis. Cestoda parasites were seen but are known to live commensally. Myxosporidiosis was observed in the kidney of F1 and is likely incidental.

Parasitology examination identified the presence of cestode postlarvae of the species *Hepatoxylon squali* in F3. A plerocercoid of *H. squali* was also found embedded in the tissue of F1. The vent of F1 also showed heavy infestation of *Anisakis simplex*, while the vent of F2 showed a light infestation of the same parasite. These are not considered to have contributed to morbidity.

Yersinia ruckeri, Aeromonas spp., *Pseudomonas fluorescens* and *Saprolegnia* sp. were all identified on plates taken from F3 showing mixed levels of growth. No significant growth was observed on plates taken from F1 and F2. It should be noted that *Yersinia ruckeri* is a primary fish pathogen and that *Aeromonas* spp. at the level observed would probably have had an impact on the health of F3.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Observations

Following reports of increased mortality in wild Atlantic salmon at the River Helmsdale, three fish were examined and diagnostic sampling was carried out. F1 and F2 were rod-caught on the 3rd June 2019 from Beat 3 above and Beat 5 lower respectively, and held in tanks until the time of sampling. F3 was moribund, and netted from the river (Beat 4 above) on the 4th June 2019 while inspectors were on site.

Bailiffs informed the inspectors that they had recovered between 50-60 dead and moribund salmon from the river since the beginning of May 2019, all of which appeared to be fresh run from the sea. It was also noted that water levels in the river had been good, and no significant fluctuations in water temperature had been recorded over this period.

Externally, haemorrhaging was observed along the ventral surface and the base of the fins in all three fish. The vent in all three fish was also observed to be inflamed and the gills in F3 were markedly pale in colour. F3 showed evidence of a fungus-like infection on the flank and belly.

Internally, petechial haemorrhaging was observed in the liver of all three fish and in the pyloric caeca of F2. The spleen was enlarged in F3 and none of the fish sampled had any food in their gut. Parasites were noted in F1 and F3.

Samples

Samples were collected from 3 fish according to the table below:

Fish number	Pool number	Species	Stage	Origin
F1-3	P1	Atlantic salmon	4.5-6kg	River Helmsdale

Results

Bacteriology: Kidney, gill, spleen and lesion material from F1-3 were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated from fish F3:

- *Yersinia ruckeri* (Kidney, Spleen, Lesion)
- *Aeromonas* spp. (Kidney, Spleen, Lesion)
- *Pseudomonas fluorescens* (Gill)
- *Saprolegnia* sp. (Lesion)

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicemia virus (VHSV), piscine reovirus (PRV) and piscine myocarditis virus (PMCV).

Parasitology: Fins were collected to determine the presence of *Gyrodactylus salaris* using light microscopy.

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

No *G. salaris* parasites were detected in the samples examined.

Parasite found in the body cavity of F1 and F3 was identified as *Hepatoxylon squali*. There was a heavy infestation of the nematode, *Anisakis simplex* in the vent of F1, and a light infestation in the vent of F2.

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen, and kidney were taken from F1-3. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

- Gill: Three small foci of lamellar hyperplasia and lamellar fusion noted in F3. Some lamellar tip clubbing noted in all fish and free blood among gill filament (F2) (likely associated with percussive stunning method).

- Skin & Muscle: Multiple small foci of skeletal red fibre degeneration (shrunken fibres and increase in fibre eosinophilia) and mild focal inflammatory cell infiltration noted in F1 & F2. F2 also showed skeletal white muscle necrosis

- Heart: Three small foci of leucocyte infiltration note in ventricle of F3.

- Gut and pyloric caeca: One Cestoda plerocercoid and intestinal content with bacteria associated.

- Pancreas: Within normal range.

- Liver: Mild to marked diffuse vacuolation (macrovesicular) hepatocyte (F1 & F2).

- Kidney: Some leucocyte infiltration in the hematopoietic tissue of F3. Low intensity of intratubular myxosporidiosis with early spore formation and host response absent (F1).

- Spleen: Marked splenic necrosis with haemorrhage and marked presence of Gram negative rod-shaped bacteria (F3).

Signed: [redacted] Date: 18/07/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

F1

F1

F1

F1

F2

F2

F2

F2

F3

F3

F3

Case No: 2019-0268 Date of visit: 05/06/2019

Time spent on site: 1hr Main Inspector: [redacted]

Site No: SS0575 Site Name: Achnacloich (Site 1)
Business No: SB0130 Business Name: Muckairn Mussels

Case Types: 1 PSI 2 3 4 5 6

Water Temp (°C): Thermometer No: FHI 045 completed N

Observations: Region: ST Water type: S CoGP MA

Dead/weak/abnormally behaving fish present?		If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?		If yes, see additional information/clinical score sheet.
Gross pathology observed?		If yes, see additional information/clinical score sheet.
Diagnostic samples taken?		

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

This site currently holds Pacific oyster stock that is the remnants of a trial that began several years ago after all mussel sites in Loch Etive (including managers other sites (SS0571, SS0303, SS0200 and SS0576 which now no longer have any equipment in the water, with the exception of the moorings)) were cleared in an attempt to eradicate Mytilus trossulus. This site is the only one that currently has any stock. Although this site is authorised for 14 rafts, there is currently only 1 in the water.

The Oysters currently on site are unable to be sold as the Loch is no longer sampled for toxins or E.coli. As a result, the site manager is the only one consuming the stock.

There have been no movements on or off site for several years. The consent for the sites depuration facility has lapsed and so the site no longer depurates any of its stock.

The site manager is hoping the site will be suitable for mussel cultivation in the future, but will be consulting MSS if and when this becomes an option.

Case No: 2019-0268 Site No: SS0575

Date of case: 05/06/2019 Inspector(s): [redacted]

Business/site contacts correct? (if no, update site summary sheet) Y

Site Details

Total No facilities: 1 Raft No facilities stocked: 1 Raft

Species	CGI						
Age group	2014						
No shellfish	1,000						
Mean fish Wt	Unknown						

Next fallow date (site) No plan Next input date (site) No plan

Date of last inspection: (ECI or PSI): 12/05/2016

Any recent increased or atypical mortalities? (last 4 weeks): N

If yes, detail: e.g. site average, max per facility

Any increased mortalities? (since last inspection) N

If yes, detail:

How are mortalities disposed of? Other (detail)

If other detail: No mortalities on site

Are there any diseases on your site? N

If yes, detail:

Have you experienced predation on site? N

If yes, detail:

Has the site experienced increased or abnormal fouling? N

If yes, detail:

Have you observed any invasive species on your site? N

If yes, detail:

Do you have an up to date BMP, and are there any issues? Y

If yes, detail: Site has BMP, no issues reported.

What quantity of spat fall have you had in the last 12 months? (mussel sites only):

Case Number:	2019-0268	Site No:	SS0575
Date of Visit	05/06/2019	Inspector:	[redacted]

Number of Susceptible species on site

If no susceptible species present = **LOW** risk

If susceptible species present, score for each pathogen

	No	Yes	
Susceptible to Bonamia ostrea (OED)	0	25	
Susceptible to Marteilia refringens (OED, MED)	0	3	
Susceptible to OsHV (CGI)	0	3	3

Sites within a tidal excursion		**1**	**2-5**	**>6**	
Site contacts	Number of sites holding susceptible species within a tidal excursion	0	2	10	0

Live shellfish movements		**0**	**1-2**	**>3**	
Movements on	Frequency of movements on from equivalent MS	0	5	10	0
	Frequency of movements on from equivalent zone or compartment including third country	0	10	20	0
	Number of suppliers	0	5	10	0
Movements off	Frequency of movements off within MSS Management Areas	0	1	2	0
	Frequency of movements off outwith MSS Management Areas	0	3	6	0
	Number of destinations	0	3	6	0

Management practices		**None**	**Secure (effluent treatment)**	**Unsecure (no effluent treatment)**	
Water contacts with depuration facilities	Depuration of stock from own sites within MSS management area	0	1	2	0
	Depuration of stock from other businesses sites within MSS management area	0	2	6	0
	Depuration of stock from sites outwith MSS management area	0	4	8	0

Biosecurity	**Number of sites**	**1**	**2 or 3**	**≥ 4**	
Contacts with other sites	Sites operating from single shorebase	0	1	2	0
	Sites sharing staff and equipment	0	1	5	0
			Yes	**No**	
	Disinfection of equipment between sites, use of footbaths etc		0	2	0

Total	3
Risk	

Case No: 2019-0268 Date of visit: 05/06/2019

Site No: SS0575 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp

Report Summary			
Case Type	Date	Insp	2nd Insp
PSI	05/06/2019	[redacted]	[redacted]

[redacted]
Muckairn Mussels
Achnacloich
Connel by Oban
Argyll
PA37 1PR
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO SB0130
SITE NO SS0575
INSPECTOR [redacted]

DATE OF CASE 05/06/2019
SITE NAME Achnacloich (Site 1)
CASE NO 20190268

Routine surveillance frequency assessment under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was contacted in accordance with the Aquatic Animal Health (Scotland) Regulations 2009, and to meet the requirements of European Community Council Directive 2006/88/EC.

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated.

The surveillance frequency category of the site was assessed as low. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every four years. The category of the site will be reassessed on a routine basis and updated as required.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed: [redacted] Date: 05/06/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Case No: 2019-0269 Date of visit: 10/06/2019

Time spent on site: 2 hours Main Inspector: [redacted]

Site No: FS0434 Site Name: Loch Ness
Business No: FB0119 Business Name: Mowi Scotland Ltd

Case Types: 1 MIX 2 PSI 3 4 5 6

Water Temp (°C): Thermometer No: FHI 045 completed N/A

Observations: Region: HI Water type: F CoGP MA

Dead/weak/abnormally behaving fish present?		If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?		If yes, see additional information/clinical score sheet.
Gross pathology observed?		If yes, see additional information/clinical score sheet.
Diagnostic samples taken?		

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

Site currently fallow. Fish will be input in July from Inverpolly. No reported health issues with last cycle of fish.

Site fallow since 18/11/18 - went to Camas Glas.

No mixing since at least 2016 when the current site manager took on site. No plans to MIX in foreseeable future.

Case Number:	2019-0269		Site No:	FS0434	Insp:	[redacted]
Date of Visit	10/06/2019					

		No of movements/supp./dest.				Score
Live fish movements		**0**	**1-5**	**6-10**	**>10**	
Movements on (from out with GB) of susceptible species	Frequency of movements on from equivalent MS	0	5	10	14	0
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	
	Number of suppliers	0	5	10	14	
Movements off	Frequency of movements off	0	3	6	10	6
	Number of destinations	0	3	6	10	3
Exposure via water	**Site contacts**	**0**	**1-5**	**6-10**		
Water contacts with other farms (holding species susceptible to same diseases)	Farm is protected (secure water supply through disinfection or borehole)	0				
	Farm is on-line or in a coastal zone with category I farms upstream or within 1 tidal excursion	1	2	4		1
	Farm is on-line or in a coastal zone with category III farms upstream or within 1 tidal excursion	1	3	6		
	Farm is on-line or in a coastal zone with category V farms upstream or within 1 tidal excursion	1	4	8		
Management practices		**None**	**Secure**	**Unsecure**		
Water contacts with processors	Any processing plant discharging into adjacent waters	0	1	2		0
On farm processing within the rules of the directive	No on farm processing	0				0
	Processing own fish (re-cycling risk)	1				
	Processing fish from MS of equivalent status	2				
	Processing fish from zone or compartment of equivalent status	4				
	Processing fish from Category III farm	8				
	Processing fish from Category V farm	10				
Disposal of fish and fish by-products	Site's own waste only processed.	0				0
	Common processes with other farms	3				
	Collection point for waste from other farms	5				
Use of unpasteurised feeds	No feeding of unpasteurised feed	0				0
	Feeding unpasteurised feed	5				
Biosecurity	**Number of sites**	**1**	**2 or 3**	**≥ 4**		
Contacts with other sites	Sites operating from single shorebase	0	1	2		0
	Sites sharing staff and equipment	0	1	2		
Disinfection of equipment between sites, use of footbaths etc	Yes	0				0
	No	1				
CoGP/Regulator						
Practices in accordance with regulator or industry code of practice	Yes	0				0
	No	3				
Platform access to cages	Yes	0				0
	No	2				
				Total		10
				Rank		LOW

Case No: 2019-0269 Site No: FS0434

Date of case: 10/06/2019 Inspector(s): [redacted]

Business/site contacts correct? (if no update site summary sheet) Y

Site Details

Total No facilities 18 No facilities stocked 0

Species	fallow						
Age group							
No Fish							
Mean Fish Wt							

Next Fallow Date (Site) fallow Next Input Date (Site) july

Date of last inspection: (ECI or PSI) 09/10/2017

Any recent increased or atypical mortalities? (last 4 weeks). N

If yes, detail: e.g. site average, max per cage

Any increased mortalities? (since last inspection.) N

If yes, detail:

How are mortalities disposed of? Incinerated - on site

If other detail:

Any treatments? (since last inspection) Y

If yes, detail: Formalin Pyceze T.M.S.

Other:

Any disease on site? (since last inspection) N

If yes, detail:

Has any animal health surveillance or diagnostic investigations been carried out by, or on behalf of, the business? Y

Any significant results? N

If yes, detail

Is there a history of sea lice issues at the site in previous 4 years N/A

If yes, detail:

Has site been able to keep lice levels below the recommended lice levels? N/A

If no, detail:

Treatment discharge for sea lice in place? N/A

If yes, detail:

Where sea lice treatments have been administered have they had an effect? N/A

If no, detail:

Is a management area agreement in place? N/A

Does your CoGP Farm management area fallow in synchrony? N/A

Any reported escapes? (check prior to phone call) N

Any escapes? (since last inspection) N

If yes, detail: (include date)

Any significant changes to your biosecurity procedures since previous visit?	N
If yes, detail:	

Case No: 2019-0269 Date of visit: 10/06/2019

Site No: FS0434 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp

Report Summary			
Case Type	Date	Insp	2nd Insp
Mix -no report	24/06/2019	[redacted]	[redacted]
PSI	24/06/2019	[redacted]	[redacted]

marinescotland science

Scottish Government
Riaghaltas na h-Alba
gov.scot

[redacted]
Mowi Scotland Ltd
Stob Ban House
Glen Nevis Business Park
Fort William
PH33 6RX
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0119	**DATE OF CASE**	10/06/2019
SITE NO	FS0434	**SITE NAME**	Loch Ness
INSPECTOR	[redacted]	**CASE NO**	20190269

Routine surveillance frequency assessment under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was contacted in accordance with the Aquatic Animal Health (Scotland) Regulations 2009, and to meet the requirements of European Community Council Directive 2006/88/EC.

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated.

The surveillance frequency category of the site was assessed as low. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every third year. The category of the site will be reassessed on a routine basis and updated as required.

No mortality levels exceeding the reporting criteria have been recorded since the last inspection.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed: [redacted] Date: 24/06/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Case No: 2019-0270 Date of visit: 11/06/2019

Time spent on site: 2 hours Main Inspector: [redacted]

Site No: FS0375 Site Name: Loch Damph
Business No: FB0224 Business Name: Torridon Smolts Ltd

Case Types: 1 VMD 2 UNI 3 4 5 6

Water Temp (°C): Thermometer No: FHI 045 completed N/A

Observations: Region: HI Water type: F CoGP MA

Dead/weak/abnormally behaving fish present?	N	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	N	If yes, see additional information/clinical score sheet.
Gross pathology observed?	N	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	N	

UNI/REG only - if unable to carry out intended visit detail reason below:

unable to do VMD sample as fish to small

Additional Case Information:

Fish input 6 days ago from Barvas by lorry. More fish to arrive at the end of June. Previous cycle put to sea in Feb 2019. No reported issues. Small amount of fungus. Formalin water treatment in summer for white spot and costia
Unannounced inspection for VMD. Fish 3g so unable to take samples.

Formalin treatments not recorded in medicine records as a water treatment. No other treatments. Vaccines recorded in book.

Fish on site currently will initially go to sea in September 2019.

Case No: 2019-0270 Site No: FS0375

Date of Visit: 11/06/2019 Inspector(s): [redacted]

Registration/Authorisation Details

1. Business/site details summary checked by site representative? Y
2. Changes made to details? N

Site Details

Total No facilities 20 Facilities stocked 4 No facilities inspected 4

Species	Sal						
Age group	Parr						
No Fish	360,000						
Mean Fish Wt	3g						

Next Fallow Date (Site) March 2020 Next Input Date (Site) Next week - Barvas

Recent (last 4 wks) disease problems? N Any escapes (since last visit)? N

If yes, detail:

Movement Records

1. Movement records available for inspection? Y
2. Date of last inspection: 13/02/2018
3. Are records complete and correctly entered? Y
4. Are movement records available for dead fish and waste? N/A
5. Are records complete and correctly entered? N/A
6. Are health certificates for introductions (outwith GB) available? N/A

Transport Records

1. Are any movements carried out by (or on behalf) of the business (not using a STB)?
If yes, is there a system in place for maintenance of transportation records?

Mortality Records

1. Mortality records available for inspection? Y
2. How are mortalities disposed of? Incinerated - on site

If other detail:

3. Mortality records complete and correctly entered? Y
4. Recent mortality (last 4 wks): One mortality removal since input - 900 mortalities post transfer
5. Evidence of recent increased/atypical mortalities? N

If yes, facility nos/no mortality per facility/no stock per facility/reason:

6. Any other peaks in mortality during period checked? N

If yes, detail:

7. Have increased (unexplained) mortalities been reported to vet or FHI? N/A

If yes, detail action:

8. Have 'mortality events' been reported to FHI? If no, add MRT case and enter on mortality events sheet. N/A

1. Recent treatments (last 4 wks)?	N
If yes, detail:	
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	N
5. If yes, what treatment(s)?	
If other, detail:	
6. Are medicines stored appropriately?	Y

Biosecurity Records

1. Biosecurity records available for inspection?	
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased* (*unexplained)* mortality at the site been included?	
4. Has the action that will be taken in the event that the presence or suspicion of the presence of a listed disease is detected been included and *how* and *when* that will be notified to Scottish Ministers?	
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?	
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	
8. Have the biosecurity procedures been adequately implemented on site?	
If no, detail:	

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	
2. If yes, are results available for inspection?	
3. Any significant results?	
If yes, detail (if not detailed under recent disease problems).	

Records checked between: 25/2/18 - 11/6/19

Case No: 2019-0270 Date of visit: 11/06/2019

Site No: FS0375 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp

Report Summary			
Case Type	Date	Insp	2nd Insp
VMD, UNI	25/06/2019	[redacted]	[redacted]

[redacted]
Torridon Smolts Ltd
Shieldaig
Strathcarron
Ross-shire
IV54 8XN
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0224	**DATE OF VISIT**	11/06/2019
SITE NO	FS0375	**SITE NAME**	Loch Damph
INSPECTOR	[redacted]	**CASE NO**	20190270

Inspection under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015

The above site was visited in accordance with the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015. On this occasion the inspection was unannounced to meet the requirements of European Council Regulation 882/2004. [delete as appropriate.

Samples were not taken to be analysed for veterinary residues as the average weight of the fish (3g) was too small for sampling.

The Inspector did not observe any clinical signs associated with the listed diseases as described in the Aquatic Animal Health (Scotland) Regulations 2009.

Records

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated.

Medicine records were inspected and found to be adequately maintained.

Aquaculture animal and aquaculture animal product movement records were inspected and appeared to be adequately maintained.

Mortality records were inspected and found to be adequately maintained.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Signed: [redacted] Date:25/06/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Case No: 2019-0271 Date of visit: 13/06/2019

Time spent on site: 6 hours Main Inspector: [redacted]

Site No: FS0594 Site Name: Aird
Business No: FB0169 Business Name: The Scottish Salmon Company

Case Types: 1 REP 2 DIA 3 4 5 6

Water Temp (°C): 10 Thermometer No: T146 FHI 045 completed N/A

Observations: Region: HI Water type: S CoGP MA M-17

Dead/weak/abnormally behaving fish present?	Y	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	Y	If yes, see additional information/clinical score sheet.
Gross pathology observed?	Y	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	Y	

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

[redacted] (TSSC vet), [redacted] (TSSC), [redacted] (TSSC biologist), [redacted] (TSSC senior biologist) and [redacted] (APHA vet)
Visit conducted following report from Scottish Salmon Watch in relation to welfare issues on site.

Lump fish on site from Swansea, Otterferry and Ocean matters. - all hatchery reared.

Recent mort figures; wk20 0.24%, wk21 0.2%, wk22 0.48% (post treatment), wk23 0.39% wk24 0.10%

Treatments - 27/5- 29/5/19 thermolicer. 17/4/19 hydrolicer, 5/3/19 hydrolicer, 12/12/18 slice, 24/10/18 hydrogen peroxide, 21/9/18 hydrogen peroxide, 4/9/18 slice, 9/7/18 slice

Reported mort event; 1.29% - bad weather 18th March -14th March

Harvesting live to Arnish - last harvest 17/5/19 - harvesting on going.

Last lice count; 25.55 all stages; adult female 2.66, Optilicer on site today and will treat whole site today and tomorrow. Clearance has been good.

Movement book; Not recording source of cleaner fish; asked to record in future. No further action required.

Site inspection, optilicer (Volt Processor) at cage pumping both salmon and lumpfish. Any damaged fish were being removed and dispatched in a harvest bin with an overdose of anaesthetic. On site inspection approximately 10-15 blind, rubbed and moribund were observed at the cage edges. In about three cages this number was about 15-30 fish. Many of these fish were removed during the inspection and killed with an overdoes of anaesthetic. 5 of these fish were sampled for diagnostic examination. Fish were also viewed with the under water cameras on the barge. No moribund or blind fish were observed on the underwater cameras. APHA have advised the Scottish Salmon Company to remove all affected fish immediately and will be recommending that the company reviews its procedures to ensure that enough staff time is dedicated to inspecting cages and removing moribund fish, particularly during periods where there are increased poor doing fish on site.
A follow up inspection will be scheduled to check that the recommendation has been complied with.

Case No: 2019-0271 Site No: FS0594

Date of Visit: 13/06/2019 Inspector(s): [redacted]

Registration/Authorisation Details

1. Business/site details summary checked by site representative?	N
2. Changes made to details?	N/A

Site Details

Total No facilities		10	Facilities stocked	10	No facilities inspected		8
Species	sal	lum					
Age group	2018 S1	mixed					
No Fish	314,892	37,133					
Mean Fish Wt	4.273 kg	50-75g					
Next Fallow Date (Site)		August 2019	Next Input Date (Site)		Dec/Jan 2019		

Recent (last 4 wks) disease problems? N Any escapes (since last visit)? N

If yes, detail:

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	28/08/2018
3. Are records complete and correctly entered?	N
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	N/A

Transport Records

1. Are any movements carried out by (or on behalf) of the business (not using a STB)?	
If yes, is there a system in place for maintenance of transportation records?	

Mortality Records

1. Mortality records available for inspection?	Y
2. How are mortalities disposed of?	Whole fish - Dundas Chemicals
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	see additional info
5. Evidence of recent increased/atypical mortalities?	N

If yes, facility nos/no mortality per facility/no stock per facility/reason:

6. Any other peaks in mortality during period checked?	Y
If yes, detail:	see additional info
7. Have increased (unexplained) mortalities been reported to vet or FHI?	Y
If yes, detail action:	reported
8. Have 'mortality events' been reported to FHI? If no, add MRT case and enter on mortality events sheet.	Y

1. Recent treatments (last 4 wks)?	Y
If yes, detail:	see additional info
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	TMS
If other, detail:	
6. Are medicines stored appropriately?	N/A

Biosecurity Records

1. Biosecurity records available for inspection?	
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased* (*unexplained)* mortality at the site been included?	
4. Has the action that will be taken in the event that the presence or suspicion of the presence of a listed disease is detected been included and *how* and *when* that will be notified to Scottish Ministers?	
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?	
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	
8. Have the biosecurity procedures been adequately implemented on site?	
If no, detail:	

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	N
If yes, detail (if not detailed under recent disease problems).	

Records checked between:	28/8/18 - 13/6/19

Case no:	2019-0271	Site No:	FS0594	Date of visit/ Sampling:	13/06/2019	13/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	14:30:00	16:00:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI	Y	PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	F5	P1						
	Fish nos	1	2	3	4	5	1-5						
	Pool Group	P1	P1	P1	P1	P1							
Stock Details	Species	SAL	SAL	SAL	SAL	SAL	SAL						
	Average weight	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000						
	Sex												
	Water Type	SW	SW	SW	SW	SW	SW						
	Stock Origin	mixed	mixed	mixed	mixed	mixed	mixed						
	Facility No	mixed	mixed	mixed	mixed	mixed	mixed						

06/2019 Additional Sample Information:

Eye included for fish 4 and 2 in histo pot.

6 Total Tests assigned 4

Case no: 2019-0271 Site No: FS0594 Method of killing: Anaesthetic

Date of visit: 13/06/2019 Inspector(s): [redacted] Sheet Relevant: Y

S for strong presence: **M** for medium presence: **W** for weak presence

Fish Number		1	2	3	4	5					
Time sampled after death (if > 45 minutes)		1-2 hou	1-2 hou	1-2 hou	1-2 hou	1-2 hours					
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic	S	S	S	S	S					
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic	S		S	S	S					
Gills	Pale										
	Zoned										
	Necrotic										
Lesions	Flank	S		S	S						
	Elsewhere										
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers										
Internal Signs											
Ascites	Clear										
	Bloody										
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem										
	Gross haem										
	Tissue breakdown										
	Enlarged			S	S						
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged										
	Granulomas										
Gut	No food present										
	Yellow pseudo-faeces			S							
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2019-0271

Date of visit: 13/06/2019

S for strong presence: **M** for medium presence: **W** for w

Fish Number											
Time sampled after death (if > 45 minutes)											
External Signs											
Behaviour	**Moribund**										
	Lethargic										
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	**Dark**										
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	**Shortened**										
	Flared										
Haemorrhaging	**Throat**										
	Ventrum										
	Base of fins										
	Elsewhere										
Eyes	**Exophthalmic**										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	**Pale**										
	Zoned										
	Necrotic										
Lesions	**Flank**										
	Elsewhere										
Vent	**Inflamed**										
	Trailing faeces										
Lice Load	**Estimate numbers**										
Internal Signs											
Ascites	**Clear**										
	Bloody										
Oedema	**In tissues**										
Heart	**Pale/anaemic**										
	Granulomas										
	Deformed										
Liver	**Petechial haem**										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)										
	Granulomas										
	Lesions										
Pyloric caeca	**Petechial haem**										
	Tubules mauve										
	Lack of fat										
Spleen	**Enlarged**										
	Granulomas										
Gut	**No food present**										
	Yellow pseudo-faeces										
	External haem										
	Internal haem										
Body wall	**Haemorrhaging**										
Swim bladder	**Haemorrhaging**										
	Fluid filled										
Kidney	**Swollen**										
	Grey										
	Granular										
	Liquefied										
General	**Parasites present**										
	Anaemia										

Additional comments:

All fish sampled were blind. Fish 3 "boil" on flank, Fish 4 enlarged gall bladder.

Case No: 2019-0271 Site No: FS0594

Sea Lice Inspection (Seawater Sites Only)

1. Has the site experienced sea lice problems in the previous 4 years?	
2. Is the CoGP Farm Management Area (or equivalent) fallowed synchronously on a single year class basis?	
3. Does the site have access to a range of licenced in-feed and bath sea lice medications (including deltamethrin, azamethiphos and emamectin benzoate) as well as access to suitable biological and/or mechanical control measures, and can these be deployed in a reasonable period of time?	Y
4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?	
5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)	Y
6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)	Y
7. Are sea lice (*L. salmonis*) record levels below the suggested criteria for treatment in the CoGP during the period that records are inspected? (CoGP Annex 6)	N
8. Have average adult female sea lice (*L. salmonis*) numbers per fish been at a level of 3 or above during the period that records are inspected?	N
If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.	N/A
9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)	N
10. Have therapeutic treatments been administered or other actions taken when *L. salmonis levels* have exceeded the suggested criteria for treatment or where *C. elongatus* is considered to have welfare implications? (CoGP 4.3.82, 5.3.51)	Y
11. Has any other action been taken (where applicable)?	Y
12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?	Y
13. Are treatments, where conducted, carried out in cooperation between participating farms?	Y
14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?	
15. Is there a site specific written lice management procedure with waypoints describing set actions to deal with recognised scenarios during the escalation of a sea lice infestation?	
16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.	Y

Containment Inspection

1. Has the site experienced equipment damage due to predators in the current or previous production cycles?	
2. Are measures in place to mitigate against the predation experienced on site? (Detail below)	
If other, detail below:	
3. Have escape incidents or events been experienced on or in the vicinity of the site since the last FHI inspection?	N
If Yes proceed with questions 4 – 9. If No skip to question 10	
4. Have these been reported to Scottish Ministers?	
5. Have these been reported to local DSFB forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)	
6. Have these been reported to the SSPO and local fisheries trusts forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)	
7. Were methods (if any) used to recover escapees? If yes give detail	
8. If gill nets were deployed was this action agreed with local wild fish interests and was permission given by Scottish Ministers? (Legal, CoGP – 4.4.38, 5.4.18)	
9. What action was taken to prevent and minimise the risk of further escapes? (Not covered in code but could be considered under satisfactory measures of the Act)	
10. Is the site inspected as satisfactory with regards to containment? If no, please detail reason(s)	

Case No: 2019-0271 Date of visit: 13/06/2019

Site No: FS0594 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
MG; IHN, IPN, ISA, SAV, VHS	0/1	20/06/2019	[redacted]	03/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
VSPE	4/5	02/07/2019	[redacted]	03/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
VSPE	3/5	02/07/2019	[redacted]	03/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
NSIG	2/5	02/07/2019	[redacted]	03/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
TENC	1/5	02/07/2019	[redacted]	03/07/2019		17/07/2019	[redacted]	[redacted]
AMGD	1/5	11/07/2019	[redacted]	11/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
COST	1/5	11/07/2019	[redacted]	11/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
GPAT	5/5	11/07/2019	[redacted]	11/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
HPAT	4/5	11/07/2019	[redacted]	11/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
SPAT	3/5	11/07/2019	[redacted]	11/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]
SKIN	3/5	11/07/2019	[redacted]	11/07/2019	[redacted]	17/07/2019	[redacted]	[redacted]

Report Summary			
Case Type	Date	Insp	2nd Insp
DIAG	17/07/2019	[redacted]	[redacted]
REP - no report	17/07/2019	[redacted]	[redacted]

[redacted]
The Scottish Salmon Company
1 Smithy Lane
Lochgilphead
Argyll
PA31 8TA
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0169	**DATE OF VISIT**	13/06/2019
SITE NO	FS0594	**SITE NAME**	Aird
INSPECTOR	[redacted]	**CASE NO**	20190271

Section 1: Summary

The fish health inspectorate accompanied an inspector from the Animal and Plant Health Agency during a visit to Aird. On inspection a number of blind fish with damaged eyes and flank abrasions were observed. Samples were taken for diagnostic examination.

Histopathology examination revealed mild multifocal proliferative pathology on the gills and amoebic cells resembling *Neoparamoeba perurans* (the agent of amoebic gill disease) were also noted in F5. Bacterial dermatitis, very mild myocarditis and mild splenic necrosis was also observed.

Vibrio spp. was isolated but at a level and purity of growth that would not have caused fish morbidity. *Tenacibaculum* sp. was also isolated. This finding may be more significant as survival of this bacterium is poor on agar plates in primary isolation.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Observations

Following a report received by the inspectorate of welfare issues at Aird an inspection was arranged with a veterinarian from the Animal and Plant Health Agency. On inspection of the pens approximately 10-15 blind, rubbed and moribund fish were observed at the surface of each pen. This number increased to approximately 15-30 in three of the pens. During the inspection many of these fish were removed and dispatched with an overdose of aesthetic. While we were on site a boat was present treating the fish. During this procedure any damaged fish were removed and

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Website - www.gov.scot/Topics/marine/science

dispatched in a harvest bin with an overdose of anaesthetic. Five fish removed directly from the pens were retained for diagnostic examination.

All five fish sampled were moribund, lethargic and blind. Externally four had haemorrhaged eyes and three had flank lesions including a “boil” like lesion on fish three. Internally fish three and four had enlarged livers and fish four had an enlarged gall bladder.

Samples

Samples were collected from five fish according to the table below:

Fish number	Pool number	Facility number	Species	Stage	Origin
1-5	1	Mixed	Atlantic salmon	2018 S1 at 4.3kg	Mixed

Results

Bacteriology: Kidney, gill and lesion material from five fish were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated;
Vibrio sp. (isolate A) F1(lesion), F3 and F4 (kidney and lesion), F5 (kidney)
Vibrio sp. (isolate B) F1(lesion), F3 and F4 (kidney and lesion)
Tenacibuculum sp. F1 and F3 (lesion)

The level and purity of growth of *Vibrio* spp. observed would not suggest it would be implicated in fish morbidity. The level of growth of *Tenacibaculum* sp. may be more significant as survival of this bacterium is poor on agar plates in primary isolation.

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), viral haemorrhagic septicemia virus (VHSV), and Salmonid alphavirus (SAV).

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen, kidney and eyes were taken from five fish. The tissue samples were fixed in 10% neutral buffered formalin.

Tissues from 5 Atlantic salmon were examined by light microscopy. The following histopathological changes were observed:

Gill: Mild multifocal interlamellar hyperplasia with occasional spaces (lacunae), mainly noted distally in the gill filament, some lacunae filled with cell debris, lamellar fusion, epithelial spongiosis and lamellar congestion noted on the hyperplastic plaques, lamellar vascular disturbance (F1, F3 & F5) and hypertrophic goblet cells (F1-F5). Few amoebic cells resembling *Neoparamoeba perurans* were noted in F5 and F4 showed several costia-like cells (*Ichthyobodo* sp.) some associated with the lamellar epithelium and some free. One round structure looking like cartilage noted on one of the hyperplasic plaque (F5). Several scattered thrombi and some tip clubbing noted in all fish.

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Skin & Muscle: Absence of epidermal layer (F1) and mild oedema of dermis. Filamentous bacteria that stained Gram negative noted on the upper layer of dermis (F1,F3, F4) and F4 showed some leucocyte infiltration. Single small foci of red fibre degeneration and leucocytes associated in the endomysium (F1).

Heart: Several small nests of basophilic nuclei noted in F2-F5 and small foci of myocardial fibre degeneration note F4 & F5.

Gut and pyloric caeca: Within normal range.

Pancreas: Within normal range.

Liver: Mild diffuse hepatocyte vacuolation (F2& F5).

Kidney: Within normal range.

Spleen: Mild multifocal splenic necrosis (F2 & F5). Slightly congested (F3).

Eye: Within normal range

Signed: [redacted] Date: 17/07/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Case No: 2019-0272 Date of visit: 13/06/2019

Time spent on site: 3 hours Main Inspector: [redacted]

Site No: FS0570 Site Name: Strome
Business No: FB0169 Business Name: The Scottish Salmon Company

Case Types: 1 ECI 2 CNI 3 SLI 4 VMD 5 6

Water Temp (°C): 10.7 Thermometer No: T146 FHI 045 completed Y

Observations: Region: HI Water type: S CoGP MA M-20

Dead/weak/abnormally behaving fish present?	N	If yes, see additional information/clinical score sheet.
Clinical signs of disease observed?	N	If yes, see additional information/clinical score sheet.
Gross pathology observed?	N	If yes, see additional information/clinical score sheet.
Diagnostic samples taken?	N	

UNI/REG only - if unable to carry out intended visit detail reason below:

Additional Case Information:

Fish on site moved to Portree for on-growing Jan 2019 Current fish on site moved on (786 potential brood) from Eport in May 2019. Some Ballan moved into site as well. If these fish are to be stripped they will be moved in July or August possibly to Tulloch Hatchery.

Lice numbers have increased dramatically in the last week. Leps and Caligus. Hydrolicer will be on site this week.

Risk assessments were available for both the movements from Barvas and to Portree.

Movement of dead fish off site recorded in waste management slip. Off whole, Dundas Chemicals; Moss Park.

Previous cycle; Fish moved to Portree at 630g plus lump fish moved. Mort levels 2.545% for the site input to output - Sept 2018 - Jan 2019. Move due to short in number from FW to Portree plus worries about lice history at Strome.

Current stocks; Hydrolice treatment 21/5/19. Alphamax at Uist site (Eport) prior to move.

Current Lice figures; wk 28/5/19 average all stages 5.8, adult females 1. Last week 5/6/19 average all stages 53.4, Adults female 2.2. Wrasse added recently and hyrolicer planed for this week.

BMP; Mortality method and lice count numbers of fish when less that ten cages wrong - updated while on site.

Case No: 2019-0272 Site No: FS0570

Date of Visit: 13/06/2019 Inspector(s): [redacted]

Registration/Authorisation Details

1. Business/site details summary checked by site representative? Y
2. Changes made to details? N

Site Details

Total No facilities 14 Facilities stocked 1 No facilities inspected 1

Species	Sal						
Age group	2017 S1						
No Fish	767						
Mean Fish Wt	8kg						

Next Fallow Date (Site) August Next Input Date (Site) not known

Recent (last 4 wks) disease problems? Y Any escapes (since last visit)? N

If yes, detail: Increase in lice number.

Movement Records

1. Movement records available for inspection? Y
2. Date of last inspection: 17/11/2016
3. Are records complete and correctly entered? Y
4. Are movement records available for dead fish and waste? Y
5. Are records complete and correctly entered? Y
6. Are health certificates for introductions (outwith GB) available? N/A

Transport Records

1. Are any movements carried out by (or on behalf) of the business (not using a STB)? N

If yes, is there a system in place for maintenance of transportation records?

Mortality Records

1. Mortality records available for inspection? Y
2. How are mortalities disposed of? Whole fish - Dundas Chemicals

If other detail:

3. Mortality records complete and correctly entered? Y
4. Recent mortality (last 4 wks): 19 dead since input; 12/5/19
5. Evidence of recent increased/atypical mortalities? N

If yes, facility nos/no mortality per facility/no stock per facility/reason:

6. Any other peaks in mortality during period checked? N

If yes, detail:

7. Have increased (unexplained) mortalities been reported to vet or FHI? N/A

If yes, detail action:

8. Have 'mortality events' been reported to FHI? If no, add MRT case and enter on mortality events sheet. N/A

1. Recent treatments (last 4 wks)?	Y
If yes, detail:	T.M.S.
If other, detail:	also hydolicer
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	TMS
If other, detail:	
6. Are medicines stored appropriately?	Y

Biosecurity Records

1. Biosecurity records available for inspection?	Y
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	Y
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased* (*unexplained)* mortality at the site been included?	Y
4. Has the action that will be taken in the event that the presence or suspicion of the presence of a listed disease is detected been included and *how* and *when* that will be notified to Scottish Ministers?	Y
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	Y
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?	Y
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	Y
8. Have the biosecurity procedures been adequately implemented on site?	Y
If no, detail:	

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	N
If yes, detail (if not detailed under recent disease problems).	

Records checked between:	17/11/16- 11/6/19

Case no:	2019-0272	Site No:	FS0570	Date of visit/ Sampling:	13/06/2019	18/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	15:30:00	16:30:00	Inspector:		VMD No.	7							
Environmental conditions:	1	Indoors	2		3		4		5				
Summary samples	HIST		BA		MG		VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No												
	Fish nos	1											
	Pool Group												
Stock Details	Species	SAL											
	Average weight	8.0000											
	Sex												
	Water Type	SW											
	Stock Origin	Eport											
	Facility No	8											

06/2019 Additional Sample Information:

0 Total Tests assigned 0

Case Number:	2019-0272		Site No:	FS0570	Insp:	[redacted]
Date of Visit	13/06/2019					

		No of movements/supp./dest.				Score
Live fish movements		**0**	**1-5**	**6-10**	**>10**	
Movements on (from out with GB) of susceptible species	Frequency of movements on from equivalent MS	0	5	10	14	0
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	
	Number of suppliers	0	5	10	14	
Movements off	Frequency of movements off	0	3	6	10	10
	Number of destinations	0	3	6	10	3
Exposure via water	**Site contacts**	**0**	**1-5**	**6-10**		
Water contacts with other farms (holding species susceptible to same diseases)	Farm is protected (secure water supply through disinfection or borehole)	0				
	Farm is on-line or in a coastal zone with category I farms upstream or within 1 tidal excursion	1	2	4		2
	Farm is on-line or in a coastal zone with category III farms upstream or within 1 tidal excursion	1	3	6		
	Farm is on-line or in a coastal zone with category V farms upstream or within 1 tidal excursion	1	4	8		
Management practices		**None**	**Secure**	**Unsecure**		
Water contacts with processors	Any processing plant discharging into adjacent waters	0	1	2		0
On farm processing within the rules of the directive	No on farm processing	0				0
	Processing own fish (re-cycling risk)	1				
	Processing fish from MS of equivalent status	2				
	Processing fish from zone or compartment of equivalent status	4				
	Processing fish from Category III farm	8				
	Processing fish from Category V farm	10				
Disposal of fish and fish by-products	Site's own waste only processed.	0				0
	Common processes with other farms	3				
	Collection point for waste from other farms	5				
Use of unpasteurised feeds	No feeding of unpasteurised feed	0				0
	Feeding unpasteurised feed	5				
Biosecurity	**Number of sites**	**1**	**2 or 3**	**≥ 4**		
Contacts with other sites	Sites operating from single shorebase	0	1	2		0
	Sites sharing staff and equipment	0	1	2		1
Disinfection of equipment between sites, use of footbaths etc	Yes	0				0
	No	1				
CoGP/Regulator						
Practices in accordance with regulator or industry code of practice	Yes	0				0
	No	3				
Platform access to cages	Yes	0				0
	No	2				
				Total		**16**
				Rank		MEDIUM

Case No: 2019-0272 Site No: FS0570

Sea Lice Inspection (Seawater Sites Only)

1. Has the site experienced sea lice problems in the previous 4 years?	N
2. Is the CoGP Farm Management Area (or equivalent) fallowed synchronously on a single year class basis?	Y
3. Does the site have access to a range of licenced in-feed and bath sea lice medications (including deltamethrin, azamethiphos and emamectin benzoate) as well as access to suitable biological and/or mechanical control measures, and can these be deployed in a reasonable period of time?	Y
4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?	Y
5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)	Y
6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)	Y
7. Are sea lice (*L. salmonis*) record levels below the suggested criteria for treatment in the CoGP during the period that records are inspected? (CoGP Annex 6)	N
8. Have average adult female sea lice (*L. salmonis*) numbers per fish been at a level of 3 or above during the period that records are inspected?	N
If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.	
9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)	N
10. Have therapeutic treatments been administered or other actions taken when *L. salmonis levels* have exceeded the suggested criteria for treatment or where *C. elongatus* is considered to have welfare implications? (CoGP 4.3.82, 5.3.51)	Y
11. Has any other action been taken (where applicable)?	Y
12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?	Y
13. Are treatments, where conducted, carried out in cooperation between participating farms?	N/A
14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?	Y
15. Is there a site specific written lice management procedure with waypoints describing set actions to deal with recognised scenarios during the escalation of a sea lice infestation?	Y
16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.	Y

Containment Inspection

1. Has the site experienced equipment damage due to predators in the current or previous production cycles?	N
2. Are measures in place to mitigate against the predation experienced on site? (Detail below)	Y
ADDs, top nets, seal blinds	
If other, detail below:	
3. Have escape incidents or events been experienced on or in the vicinity of the site since the last FHI inspection?	N
If Yes proceed with questions 4 – 9. If No skip to question 10	
4. Have these been reported to Scottish Ministers?	
5. Have these been reported to local DSFB forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)	
6. Have these been reported to the SSPO and local fisheries trusts forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)	
7. Were methods (if any) used to recover escapees? If yes give detail	
8. If gill nets were deployed was this action agreed with local wild fish interests and was permission given by Scottish Ministers? (Legal, CoGP – 4.4.38, 5.4.18)	
9. What action was taken to prevent and minimise the risk of further escapes? (Not covered in code but could be considered under satisfactory measures of the Act)	
10. Is the site inspected as satisfactory with regards to containment? If no, please detail reason(s)	Y

Case No: 2019-0272 Site No: FS0570

Date of Visit: 13/06/2019 Inspector: [redacted]

Point of Compliance

1. Is the farm under inspection located within a farm management area? If N, no further questions require completion.	Y

Points of Compliance for Both Farm Management Agreements and Statements

2. Has a current farm management agreement or statement (FMAg/S) been prepared?	Y
3. Is the current FMAg/S available for inspection?	Y
4. Does the FMAg/S identify the relevant farm management area?	Y
5. Does the FMAg/S identify the fish farm site(s) to which it applies?	Y
6. Does the FMAg/S identify the date of commencement of the agreement or statement?	Y
7. Does the FMAg/S identify the date of review?	Y

Arrangements for Fish Health Management

8. Does the FMAg/S identify the minimum health standards for the stocks to be introduced to the area or farm?	Y
9. Does the FMAg/S identify the vaccination requirements for stocks held in the area or farm?	Y
10. Does the FMAg/S identify the species of fish which may be stocked into the area or farm?	Y
11. Does the FMAg/S identify the maximum stocking density of any pen on any farm in the area or the individual farm?	Y
12. Does the FMAg/S identify the arrangements for the storage and disposal of any dead fish from any fish farm in the area or the individual farm?	N

Arrangements for The Management of Sea Lice

13. Does the FMAg/S identify arrangements for the sharing of data on sea lice numbers and treatments?	N/A
14. Does the FMAg/S identify the availability and the use of medicines on farms covered by the agreement of statement?	Y
15. Does the FMAg/S identify any requirements for the sensitivity testing of available treatments for sea lice on farms in the area or individual farms?	Y
16. Does the FMAg/S identify the circumstances under which biological controls and cleaner fish are to be used on farms in the area or individual farms?	Y
17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?	Y

Live Fish Movements

18. Does the FMAg/S identify the circumstances when live fish may be introduced or removed from the area or farm?	Y
19. Does the FMAg/S identify the arrangements for the movement of live fish on and off sites in the area or individual farms?	Y

Harvesting

20. Does the FMAg/S identify acceptable harvest practices on farms in the area or individual farms?	Y

Fallowing

21. Does the FMAg/S identify the dates by which the area or individual farm will be fallow and the earliest date when a farm or area may be restocked?	Y
22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?	Y
23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?	Y

Point of Compliance for Farm Management Agreements Only

24. Does the farm management agreement include arrangements for persons to become, or cease to be, parties to the agreement?	N/A

Management and operation

25. Is the fish farm being managed and operated in accordance with the agreement or statement?	Y
26. What is the version no/date of issue of the FMAg/S?	10/05/2019

Site No: FS0570

Case No: 2019-0272

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2019-0272 Date of visit: 13/06/2019

Site No: FS0570 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp

Report Summary			
Case Type	Date	Insp	2nd Insp
ECI,CNI,SLI,VMD	01/07/2019	[redacted]	[redacted]

[redacted]
The Scottish Salmon Company
1 Smithy Lane
Lochgilphead
Argyll
PA31 8TA
[redacted]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO FB0169
SITE NO FS0570
INSPECTOR [redacted]

DATE OF VISIT 11/06/2019
SITE NAME Strome
CASE NO 20190272

Inspection under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was inspected, in accordance with the Aquatic Animal Health (Scotland) Regulations 2009, and to meet the requirements of European Community Council Directive 2006/88/EC.

All epidemiological units were inspected. On this occasion no samples were taken for disease analysis. The Inspector did not observe any clinical signs associated with the listed diseases as described in the Aquatic Animal Health (Scotland) Regulations 2009.

Records

The surveillance frequency category of the site was assessed as medium. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every second year. The category of the site will be reassessed on a routine basis and updated as required.

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated. The following records were also inspected to ensure that the conditions of authorisation for your Aquaculture Production Business (APB) are being met:

Aquaculture animal and aquaculture animal product movement records were inspected and appeared to be adequately maintained.

Mortality records were inspected and found to be adequately maintained.

No mortality levels exceeding the reporting criteria have been recorded since the last inspection.

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Reports detailing the results of animal health surveillance carried out by or on behalf of the business and/or Marine Scotland were available for inspection.

The biosecurity measures plan for the site was inspected and found to be adequately maintained and implemented.

Inspection under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015

Medicine records were inspected and found to be adequately maintained.

Samples were taken to be analysed for veterinary residues.

Inspection under the Aquaculture and Fisheries (Scotland) Act 2007

The site was also inspected in accordance with the Aquaculture and Fisheries (Scotland) Act 2007, as amended, with respect to section 3 regarding parasites (sea lice), section 4A regarding fish farm management agreements and statements and section 5 regarding containment and escapes.

On this occasion the site was found to be satisfactory with regards to parasites, fish farm management agreements and statements and containment and escapes.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed: [redacted] Date: 28/06/2019

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

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