

Case No: Date of visit:

Time spent on site: Main Inspector:

Site No: Site Name:
Business No: Business Name:

Case Types: 1 2 3 4 5 6

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

Observations: Region: WI Water type: S CoGP MA: W-6

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 inspected in response to rapid increased mortality. Week 45 (206,563, 11.32%) and Week 46 (151,275, 8.82%). Mortality at Seaforth has been above the reporting threshold since week 39 2023, Mortality has been attributed to a combination of issues including AGD, PGD, treatment losses and bacterial infection.

Due to time constraints imposed by poor weather on the date of inspection, only 2 pens were inspected for clinical signs of disease. 5 fish were removed for diagnostic sampling from the two pens inspected.

From inspection of the stock, approximately 50 fish in each pen were observed as moribund and lethargic, approximately 30 fish were observed with lesions to the head and flanks. A healthy population of fish was observed shoaling in each pen.

The most recent results reported from the site company vet was on 21/11/2023 which showed positives for *Pasteurella skyensis* and PRV.

Treatments - Tricaine, FW 20/11/2023, Thermolicer 11/11/2023.

Cleanerfish mortality - Week 46 (0, 0%), Week 45 (1,117, 0.36%), Week 44 (3,854, 1.23%), Week 43 (2,363, 0.97%)

Case No: Site No:

Date of Visit: Inspector(s):

Registration/Authorisation Details

1. Business/site details summary checked by site representative?

2. Changes made to details?

Site Details (include cleaner fish for all sections)

Total No facilities	<input type="text" value="10"/>	Facilities stocked	<input type="text" value="9"/>	No facilities inspected	<input type="text" value="2"/>
Species	<input type="text" value="SAL"/>	<input type="text" value="Lump"/>			
Age group	<input type="text" value="Q1 2023"/>	<input type="text" value="2023"/>			
No Fish	<input type="text" value="1,034,605"/>	<input type="text" value="301,511"/>			
Mean Fish Wt	<input type="text" value="1.928kg"/>	<input type="text" value="40g"/>			
Next Fallow Date (Site)	<input type="text" value="09/2023"/>		Next Input Date (Site)	<input type="text" value="03/2025"/>	
Recent (last 4 wks) disease problems?			<input type="text" value="Y"/>	Any escapes (since last visit)?	<input type="text" value="N"/>
If yes, detail:	<input type="text" value="See additional info"/>				

Movement Records

1. Movement records available for inspection?

2. Date of last inspection:

3. Are records complete and correctly entered?

4. Are movement records available for dead fish and waste?

5. Are records complete and correctly entered?

6. Are health certificates for introductions (outwith GB) available?

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?

2. How are mortalities disposed of?

If other detail:

3. Mortality records complete and correctly entered?

4. Recent mortality (last 4 wks):

5. Evidence of recent increased/atypical mortalities?

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

Mortality across the entire site has been elevated above the reporting threshold since week 39 2023. See additional info.

6. Any other peaks in mortality during period checked?

If yes, detail:

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

If yes, detail action:

8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.

Treatments and Medicines Records

1. Recent treatments (see comment)?	<input type="checkbox"/>	Y
If yes, detail:	T.M.S	
If other, detail:		
2. Medicines records available for inspection?	<input type="checkbox"/>	Y
3. Are records complete and correctly entered?	<input type="checkbox"/>	Y
4. Are fish in a withdrawal period?	<input type="checkbox"/>	Y
5. If yes, what treatment(s)?	T.M.S	
If other, detail:		
6. Are medicines stored appropriately?	<input type="checkbox"/>	Y

Biosecurity Records

1. Biosecurity records available for inspection?	<input type="checkbox"/>
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	<input type="checkbox"/>
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any <i>increased (unexplained)</i> mortality at the site been included?	<input type="checkbox"/>
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 <i>how</i> and <i>when</i> that will be notified to Scottish Ministers?	<input type="checkbox"/>
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	<input type="checkbox"/>
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.)?	<input type="checkbox"/>
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	<input type="checkbox"/>
8. Have the biosecurity procedures been adequately implemented on site?	<input type="checkbox"/>
If no, detail:	

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	<input type="checkbox"/>	Y
2. If yes, are results available for inspection?	<input type="checkbox"/>	Y
3. Any significant results?	<input type="checkbox"/>	Y
If yes, detail (if not detailed under recent disease problems).	See additional info	

Records checked between:	15/02/2022 - 21/11/2023
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Case no: Site No: Date of visit/
 Sampling:

Priority samples: VI BA PA MG HI

Time sampling starts/ends: Inspector: VMD No.

Environmental conditions: 1 2 3 4 5

Summary samples HIST BA MG VI PA Total Samples

Add Fish/Pools - click

Pool/Fish No	F1	F2	F3	F4	F5							
Fish nos	1	2	3	4	5	6	7					
Pool Group												
Species	SAL	SAL	SAL	SAL	SAL	SAL	SAL					
Average weight	1.4kg	1.4kg	1.4kg	1.4kg	1.4kg	1.4kg	1.4kg					
Sex	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Water Type	SW	SW	SW	SW	SW	SW	SW					
Stock Details		Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)	Loch Lochy (FS0150)					
	Stock Origin											
Facility No	12	12	10	10	10	10	10					

Case no: **2023-0076** Site No: **FS1042** Method of killing: **Percussive**
 Date of visit: **21/11/2023** Inspector(s): **[REDACTED]** Sheet Relevant: **Y**

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

Fish Number		F1	F2	F3	F4	F5				
Time sampled after death (if > 45 minutes)						0	15			
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					W				
	Scale Oedema									
Opercula	Shortened									
	Flared									
Haemorrhaging	Throat									
	Ventrum			M		W				
	Base of fins									
	Elsewhere									
Eyes	Exophthalmic		M							
	Enophthalmic (sunken)									
	Cataract									
	Haemorrhagic									
Gills	Pale	S	S	S	S	S				
	Zoned									
	Necrotic									
Lesions	Flank		W	W	M					
	Elsewhere	M				M				
Vent	Inflamed									
	Trailing faeces									
Lice Load	Estimate numbers		2	3	1	4	7			
Internal Signs										
Ascites	Clear									
	Bloody	M	W	M	M	W				
Oedema	In tissues									
Heart	Pale/anaemic									
	Granulomas									
	Deformed									
Liver	Petechial haem					M				
	Gross haem									
	Tissue breakdown									
	Enlarged									
	Colour number(s)		5	4	5	5	5			
	Granulomas									
	Lesions									
Pyloric caeca	Petechial haem	W		W						
	Tubules mauve									
	Lack of fat									
Spleen	Enlarged									
	Granulomas									
Gut	No food present	S	S	S	S	S				
	Yellow pseudo-faeces									
	External haem									
	Internal haem									
Body wall	Haemorrhaging									
Swim bladder	Haemorrhaging			M	M					
	Fluid filled									
Kidney	Swollen									
	Grey									
	Granular									
	Liquefied									
General	Parasites present									
	Anaemia									

Case no:

Date of visit:

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

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	Grey																		
	Granular																		
	Liquefied																		
General	Parasites present																		
	Anaemia																		

Additional comments:

Site No: FS1042
Case No: 2023-0076
Nature of non-compliance:
Action taken (FHI):
Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology



Case No: **2023-0076** Date of visit: **21/11/2023**
 Site No: **FS1042** Inspector: **[REDACTED]**

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 nd Insp
VVIS	5/5	05/01/2024		15/12/2023		18/01/2024		
PSFL	4/5	05/01/2024		15/12/2023		18/01/2024		
VSPE	2/5	05/01/2024		15/12/2023		18/01/2024		
GPAT	5/5	05/01/2024		12/12/2023		18/01/2024		
KPAT	4/5	05/01/2024		12/12/2023		18/01/2024		
AGDQ	2/5	05/01/2024		12/12/2023		18/01/2024		
PNST	5/5	05/01/2024		12/12/2023		18/01/2024		
SPVP	5/5	05/01/2024		12/12/2023		18/01/2024		
ISA	0/5	05/01/2024		12/12/2023		18/01/2024		
VHS	0/5	05/01/2024		12/12/2023		18/01/2024		
IPN	0/5	05/01/2024		12/12/2023		18/01/2024		
IHN	0/5	05/01/2024		12/12/2023		18/01/2024		
PMVP	0/5	05/01/2024		12/12/2023		18/01/2024		
SAV	0/5	05/01/2024		12/12/2023		18/01/2024		
LPAT	5/5	17/01/2024		12/12/2023		18/01/2024		
HPAT	5/5	17/01/2024		12/12/2023		18/01/2024		
EPIT	0/5	17/01/2024		12/12/2023		18/01/2024		
OBAC	1/5	17/01/2024		15/12/2023		18/01/2024		
CGDH	5/5	17/01/2024		15/12/2023		18/01/2023		

Report Summary			
Case Type	Date	Insp	2 nd Insp
DIA, REP	18/01/2024		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0119	DATE OF VISIT	21/11/2023
SITE No	FS1042	SITE NAME	Seaforth
CASE No	20230076	INSPECTOR	██████████

Section 1: Summary

The above site was inspected following reports of increased mortality by the farm operator. During the physical inspection of the site, five fish were removed for diagnostic sampling.

Histopathological examination revealed features consistent with mild to moderate, multifocal, hyperplastic branchitis that could be potentially related to environmental insult or amoebic gill disease (AGD), however no *Neoparamoeba perurans* cells were observed.

Moritella viscosa was identified on plates taken from kidney and lesion material. The level and purity of growth of the *Moritella viscosa* isolate would suggest this bacterium would be implicated as the primary source of the lesions and as a primary fish pathogen.

Vibrio sp. was identified on plates taken from kidney material. *Pseudomonas fluorescens* was identified on plates taken from lesion material and from gill material. *Chromobacterium violaceum* was identified on plates taken from kidney material. The level and purity of growth would suggest these bacteria are present as opportunist pathogens.

Five fish tested positive for *Paranucleospora theridion* and salmon gill poxvirus (SGPV) and two fish tested positive for *Neoparamoeba perurans* by qPCR.

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

The site was inspected following reports of high mortality by the farm operator. At the time of visit the site was stocked with 1,034,605 Atlantic salmon at an average weight of 1.93kg.

The site reported significant mortality in weeks 45 (206,563, 11.32%) and 46 (151,275, 8.82%) of 2023. Mortality was attributed to a combination of factors including AGD, proliferative gill disease (PGD), treatment losses, low oxygen and bacterial infection.

On the date of inspection, the weather was poor and the sea state was rough, due to safety concerns only pens 10 and 12 were inspected for clinical signs of disease. From the physical inspection of these pens, approximately 50 fish in each pen were observed as moribund and lethargic, with most moribund and lethargic fish presenting with lesions to the flanks, operculum and around the head.

All fish sampled presented lethargic and moribund prior to removal for sampling. Externally, lice counts ranged from 1 to 7 lice per fish of all stages. F3 and F5 had some mild haemorrhaging to

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the ventrum. The eyes of F2 were exophthalmic and F5 was anorexic. All fish sampled had lesions present and the gills of all five fish sampled were pale.

Internally, all fish sampled had bloody ascites within the body cavity and no food present within the gut. F5 had petechial haemorrhaging to the liver. F3 and F4 displayed some haemorrhaging to the swim bladder and F1 and F3 had petechial haemorrhaging to the pyloric caeca.

Samples

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

Fish number	Facility number	Species	Stage	Origin
F1 – F2	12	Atlantic salmon	1.4 Kg Q1 2023	Loch Lochy (FS0150)
F3 – F5	10	Atlantic salmon	1.4 Kg Q1 2023	Loch Lochy (FS0150)

Results

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

The following bacteria were isolated:

- *Moritella viscosa* : F3 and F4 (Kidney), F1, F2, F3 and F5 (Lesion)
- *Vibrio* sp.: F1 and F2 (Kidney)
- *Pseudomonas fluorescens*: F2, F4 and F5 (Lesion), F1, F4 and F5 (Gill)
- *Chromobacterium violaceum* : F5 (Kidney)

From the tests conducted for *Moritella viscosa* we have evidence which may indicate some resistance to sulphamethoxazole/trimethoprim, however there was no evidence of resistance to amoxicillin, florfenicol or oxytetracycline.

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

Salmon gill poxvirus

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.86	22.35	22.62	22.46	POSITIVE
F2	21.25	32.42	32.96	32.73	POSITIVE
F3	20.10	22.89	22.89	22.95	POSITIVE
F4	20.12	23.76	23.76	23.75	POSITIVE
F5	20.96	28.12	28.14	28.16	POSITIVE

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) and piscine myocarditis virus (PMCV).

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Parasitology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the parasites specified below using real-time PCR (qPCR).

Neoparamoeba perurans (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.86	34.09	35.26	35.26	POSITIVE
F2	-	-	-	-	negative
F3	-	-	-	-	negative
F4	-	-	-	-	negative
F5	20.96	35.38	34.93	37.20	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.86	29.60	29.74	29.51	POSITIVE
F2	21.25	31.40	31.20	31.18	POSITIVE
F3	20.10	30.03	30.10	29.75	POSITIVE
F4	20.12	31.65	29.12	31.67	POSITIVE
F5	20.96	31.42	31.39	31.39	POSITIVE

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen, kidney were taken from F1 – F5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Lamellar hyperplastic branchitis, mild, multifocal (F1-F5) with areas of cellular necrosis (F3) and vascular disturbance (F1). F3 also displayed lamellar adhesions and areas of haemorrhage. F1 and F3 showed few apoptotic cells shedding off potentially associated with gill poxvirus. Presence of few basophilic epithelial inclusions (likely epitheliocystis) F1- F5. Lamellar telangiectasia (F4).

Skin & Muscle: Within normal range.

Heart: Minor to mild, multifocal, myocarditis (F2, F3). Mild epicarditis (F4, F5). Thrombi (F1, F5). Minor areas of light H&E stain observed in the compact layer (F5).

Gut and pyloric caeca: Some peritonitis (F3).

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, mild, multifocal (F1, F3, F4), some cuffing (F2, F5) and sinusoidal infiltration (F2).

Kidney: Interstitial cell (haemopoietic) necrosis, mild, multifocal with circulating inflammatory cells (F1, F3-F4) and some congested glomeruli (F5).

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Spleen: Some cuffing (F1).

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

Signed:



Date: 12/01/2024

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at [Fish Health Inspectorate Service Charter - gov.scot \(www.gov.scot\)](https://www.gov.scot/policies/fish-health-inspectorate/)

F1







F2







F4

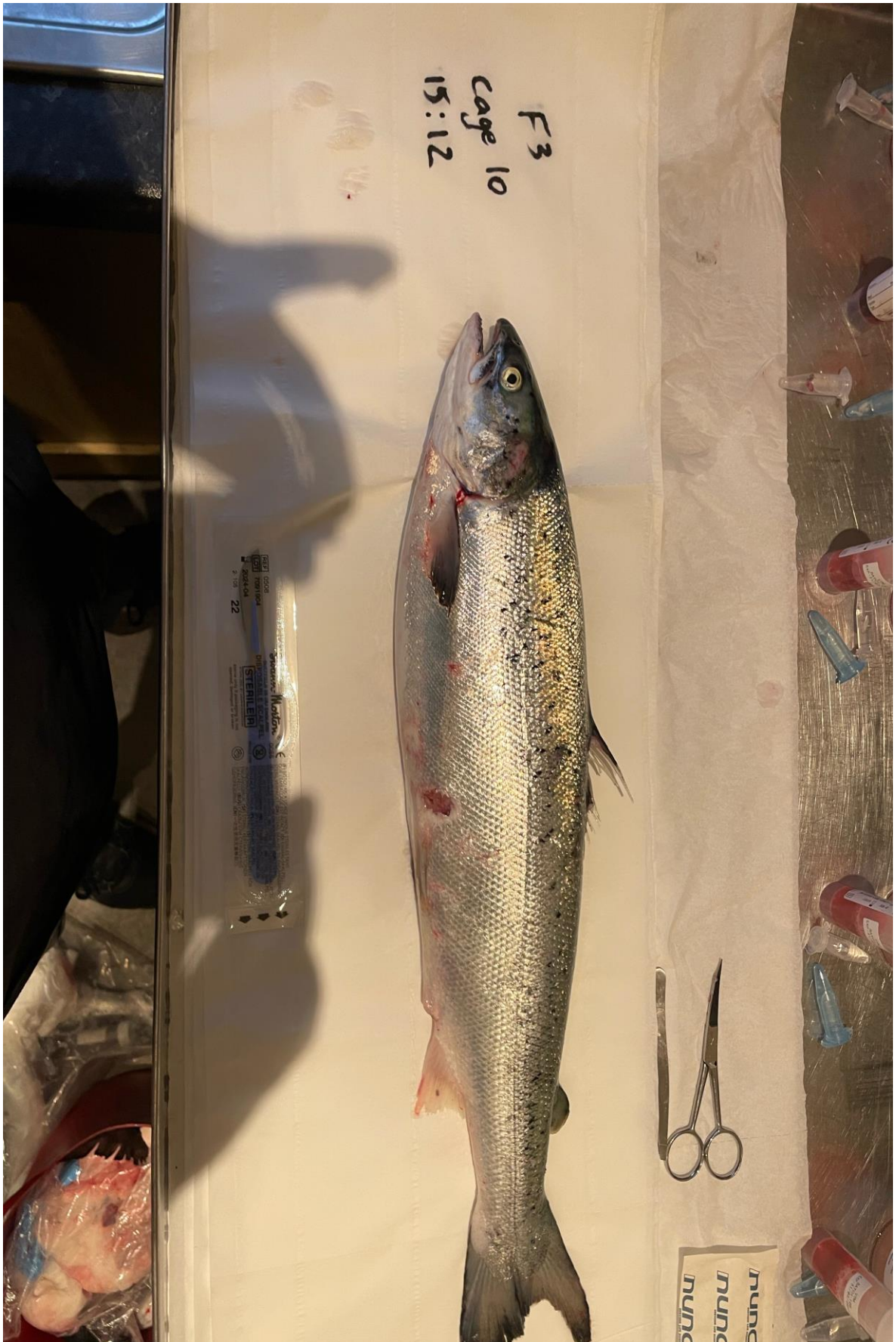








F3







F5





