

Annex 1
List of fish welfare indicators from 5 certification schemes

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1.0 Introduction

A recent paper by Amundsen & Osmundsen (2018) generated a database of sustainability indicators for salmon aquaculture (<https://sustainfish.wixsite.com/sustainfishproject/>).

Indicators were selected from eight major certification schemes, mainly in use within Norway, Chile and Scotland. For this report we selected five of the certification schemes which had fish welfare categories:-

Aquaculture Stewardship Council (ASC)

Global Aquaculture Alliance (GAA)/Best Aquaculture Practices (BAP)

Global GAP

Royal Society for the Prevention of Cruelty to Animals (RSPCA)- Farmed Atlantic Salmon

Scottish Salmon Producers Organisation (SSPO)

The data was extracted and categorised from certification scheme audit documents for salmon aquaculture. Amundsen & Osmundsen (2018) discussed with various stakeholders to identify four main categories (domains) as being important and these were further divided into sub-domains to give a total of 28 categories, see Table A.1.

Table A.1 List of categories used in database, split between Domains and sub-Domains

Domains	Economics	Environment	Governance	Culture
Sub-Domains	<ul style="list-style-type: none"> -Labour & Employment -Wealth & Distribution -Financial Performance -Production Costs -Indirect effects on economic activity - Investments in technology & innovation -License and permit conditions 	<ul style="list-style-type: none"> -Abiotic effects -Biotic effects -Emission & Waste -Feed -Energy consumption & GHG emissions -Fish Health & Welfare -Mitigation Methods 	<ul style="list-style-type: none"> -Representations & Negotiation -Coordination of interests & activities -Siting -Transparency & Traceability -Accountability & Enforcement -Social Assurance -Food Safety 	<ul style="list-style-type: none"> -Enquiry & Learning -Respect for native culture -Employee interests & Well being -Social capital for local communities -Equity -Community Integration -Community Contributions

For this report the database was searched for indicators primarily related to fish welfare, using search terms previously identified as being important to fish welfare (Table 5 in main document). These terms are as listed in the Table of Contents above. The indicators were categorised as Direct (D), Indirect (InD) and Regulatory (R) welfare indicators. Direct (D) indicators are those that are measured on the fish themselves (i.e. mortalities , injuries, handling events). Indirect (InD) indicators are measures that indirectly affect the fish and

are mainly associated with environmental parameters or husbandry procedures (i.e. stocking density, water flow) whereas regulatory (R) covers training of staff, documented processes to ensure welfare etc.

A total of 309 indicators were identified from all 5 certification schemes. The indicators listed in Annex 1 were further categorised as being directly auditable by an associated measurement quantity included in the standard, and listed in Annex 2 for ease of reading.

This annex lists all the indicators found and divided by subject (searched terms). The layout of the information for each of the indicators follows that from the database and is shown below:

X Indicator # X.X.X

Indicator reference number from certification scheme

Reference number given to each indicator for the purposes of this report.

Indicator Description

.....

Certification Scheme *Certification scheme where this indicator will be found*

Domain *from database, see Table A.1*

Topic/SubDomain *from database, see Table A.1*

OWI Category *A category given for this report where indicators are further broken down as Regulatory (R), direct (D) or indirect (InD) welfare indicators. Where an indicator is listed as R (D) and R (InD) or R (D, InD) that means the topics the regulation covers is related to both direct and indirect indicators but that indicator would be listed as Regulatory in the summary tables.*

[Amundsen, V. S., & Osmundsen, T. C. \(2018b\). Sustainability Indicators for Salmon Aquaculture. Data in Brief. https://doi.org/10.1016/j.dib.2018.07.043](https://doi.org/10.1016/j.dib.2018.07.043)

Red =ASC
Green= GAA
Blue= Global GAP
Orange=RSPCA
Light blue = SSP

2.0 Stocking Density

Summary

ASC n=2
GAA n=3
Global GAP n=2
RSPCA n=15
SSPO n=2

1 Indicator # 3.1.1

Indicator Participation in an Area-Based Management (ABM) scheme for managing disease and resistance to treatments that includes coordination of stocking, fallowing, therapeutic treatments and information-sharing. Detailed requirements are in Appendix II1.

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R(D, InD)

2 Indicator # 3.4.2

Indicator Accuracy of the counting technology or counting method used for calculating stocking and harvest numbers

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Economics

Topic/SubDomain Investments in Technology & Innovation

OWI Category R (InD)

3 Indicator # 12.5

Indicator The facility shall maintain complete and accurate records of the sources and numbers of juvenile fish (smolts) stocked, stocking dates and all feeds used for each culture unit.

Certification Scheme Global Aquaculture Alliance (GAA)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Feed

OWI Category R (InD)

4 Indicator # 14.1

The applicant's facility shall apply a maximum biomass limit based on performance measures for aquatic animal health and survival records, and any applicable national regulations.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

5 Indicator # 9.9

Indicator The applicant shall apply stocking density criteria based on local conditions, which shall normally be at or below an average 25 kilograms per cubic meter, but may rise higher than this for 5 percent of the production cycle if the fish show other good welfare indicators, and water quality is good.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

6 Indicator # AB. 5.2.10

Indicator Are fish stocks numbers, average weight and total biomass monitored at production unit level?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

7 Indicator # AB. 5.2.14

Indicator Does the farm/hatchery/transport operate according to set densities?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

8 Indicator # T 5.5

Indicator After the required stocking density has been reached, tanks must be filled to the top with good quality water (see FW 1.6 as a reference) from a known source.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

****9 Indicator** Removed 18th December 2019

10 Indicator # SW 1.6

Indicator Extra net cleaning must be adopted and recorded if calculating stocking density down to between 15 and 17 metres.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (InD)

11 Indicator # SW 1.5

Indicator If calculating stocking density between 15 and 17 metres depth, the stockperson must be able to demonstrate that monitoring is taking place in order to ensure that all fish are feeding.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

12 Indicator # T 7.5

Indicator Maximum stocking densities must:

- a) be within 40–50kg/m³ (depending on water quality and size of smolts)
- b) be set so that water quality can be maintained over the length of the journey.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

13 Indicator # M 3.12

Indicator The following accurate and up-to-date records must be maintained:

- a) details of origin of stock, allowing traceability
- b) age of fish
- c) control of other animals
- d) crowding and grading records
- e) calibration records
- f) numbers and weights of fish in each tank/enclosure
- g) estimated current stocking densities in each tank/enclosure
- h) where appropriate, target age and weight at which fish will be transferred to sea or slaughtered (in order to predict final stocking densities)
- i) details of fish and equipment inspections

- j) daily and cumulative mortality (reasons stated)
- k) daily and cumulative culling (reasons stated)
- l) feed consumption
- m) details of any health problems
- n) details of any medication/vaccinations applied
- o) records of smoltification monitoring
- p) SEPA/other regulatory correspondence
- q) records of water quality tests as appropriate to the system
- r) records of net inspections and maintenance
- s) training records
- t) full details of fish movements.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

14 Indicator # FW 1.5

Indicator The following maximum stocking densities must not be exceeded:

Hatchery - 15,000 per California basket/tray

Multi-level - 20,000 eggs per tray

First feeding tank - 10,000/m²

Freshwater production tank:

Liveweight (mean) - Stocking density (kg/m³)

Up to 1gm - 10

>1-5gm - 20

>5-30 - 30

>30 - 50

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

15 Indicator # T 2.8

Indicator The following records must be kept:

- a) time since last handling
- b) time since vaccination
- c) time since last treatment (including anaesthetic)
- d) feed withdrawal time
- e) date of full smoltification
- f) any clinical signs of disease
- g) crowding records
- h) oxygen levels during crowding
- i) numbers of fish in each tank to be transported
- j) stocking densities of tanks being used for transport.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

16 Indicator # T 6.17

Indicator The maximum stocking density in the bucket must be no greater than 400kg/m3.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

17 Indicator # T 9.11

Indicator The maximum stocking density in the well must be based on the live weight of the fish (+/-) 10%.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

18 Indicator # HP 5.12

Indicator The maximum stocking density in the well must be based on the live weight of the fish as follows

Live weight of fish (kg) - Maximum stocking density (kg/m3)

5.0 - 125

4.0 - 110

3.5 - 100

3.0 - 90

2.0 - 75

1.0 - 60

0.1 - 45

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

19 Indicator # T 5.6

Indicator The maximum stocking density must be set so that water quality (see FW 1.6 as a reference) can be maintained for the duration of the journey.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

20 Indicator # T 7.7

Indicator The number of fish to be loaded must be known in order to be able to verify compliance with the stocking density.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

21 Indicator # FW 1.5.1

Indicator The site stocking plan must demonstrate that the facilities can maintain and service the requirements of the stocking densities in FW 1.5

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

22 Indicator # FW 7.4

Indicator The stocking density in freshwater enclosures must not exceed 8 kg/m³.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

23 Indicator # SW 1.4

Indicator With enclosures of 24 x 24 metres or bigger, or the circular equivalent, the maximum depth to which stocking density can be calculated must not exceed 17 metres.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

24 Indicator # 3.91

Indicator FMSs and FMAgs should take into account relevant aspects of the undernoted guidance:

- i. Definition of the area to which the document relates including, where appropriate, local hydrodynamic conditions.
- ii. General aspects of fish health
 - a. Vaccines and vaccination regimes; Dead fish removal and disposal;
 - b. Health status of the FMA inc. any official control(s) in place;
 - c. Health status of fish to be stocked into the FMA;

- d. Physical condition of fish to be introduced;
- e. Veterinary input inc. VHPs and BPs;
- f. Following plans and protocols.
- iii. Sea lice control strategy:
 - a. Treatment plans inc. synchronisation of treatments;
 - b. Treatment medicines;
 - c. Sensitivity testing;
 - d. Data collection and exchange.
- iv. Adherence to agreed stocking densities.
- v. Movement of live fish.
- vi. Harvesting protocols.
- vii. Escapes.
- viii. Exclusion and control of predators.
- ix. Stock inspection and independent oversight of the operation of the FMAg.
- x. Information exchange and communication between FMAg partners.
- xi. Review of the agreement or statement at least every 2 years

Certification Scheme Scottish Salmon Producers Organisation (**SSPO**)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

25 Indicator # 5.72

Indicator Stocking density should be monitored in relation to fish health, fish behaviour and water quality to ensure that fish welfare is not compromised.

Certification Scheme Scottish Salmon Producers Organisation (**SSPO**)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

3.0 Water Quality

Summary

ASC n=7

GAA n=12

Global G.A.P. n=3

RSPCA n=13

SSPO n=5

1 Indicator # 1.1.4

Indicator Presence of documents demonstrating compliance with regulations and permits concerning water quality impacts

Certification Scheme Aquaculture Stewardship Council (**ASC**)

Standard Salmon Standard
Domain Environment
Topic/SubDomain Abiotic Effects
OWI Category R (InD)

2 Indicator # 2.2.1

Indicator Weekly average percent saturation of dissolved oxygen (DO) on farm, calculated following methodology in Appendix I-4 (twice daily measurement 6am and 3pm but can vary depending on regional and operational practices.)

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD,

3 Indicator # 2.2.2

Indicator Maximum percentage of weekly samples from 2.2.1 that fall under 2 mg/litre DO

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/Subdomain Abiotic Effects

OWI Category InD,

4 Indicator # 2.2.3

Indicator For jurisdictions that have national or regional coastal water quality targets, demonstration through third-party analysis that the farm is in an area recently classified as having “good” or “very good” water quality

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Abiotic Effects

OWI Category R (InD)

5 Indicator # 2.2.4

Indicator For jurisdictions without national or regional coastal water quality targets, evidence of weekly monitoring of nitrogen and phosphorous levels on farm and at a reference site, following methodology in Appendix I-5

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Abiotic Effects

OWI Category R (InD)

6 Indicator # 8.32

Indicator Water quality monitoring matrix completed and submitted to ASC (see

Appendix VIII-2)

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Abiotic Effects

OWI Category R (InD)

7 Indicator # 8.1

Indicator Compliance with local and national regulations on water use and discharge, specifically providing permits related to water quality

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Governance

Topic/SubDomain Accountability & Enforcement

OWI Category R (InD)

8 Indicator # 4.2

Indicator For established farms, the applicant shall provide three years of monitoring data to show that the farm meets or exceeds sediment and water quality criteria specified in 4.1, its operating permits and/or its own monitoring plan at current operating levels.

Certification Scheme Global Aquaculture Alliance (GAA)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Abiotic Effects

OWI Category InD

9 Indicator # 4.3

Indicator For newly established farms, or farms that have expanded and do not yet have enough monitoring data, the applicant shall provide an independent study that characterizes the hydrographic and benthic characteristics of the area and provides a consultant's opinion (without liability) that the farm can meet or exceed sediment and water quality criteria if operated correctly. This opinion shall be verified by reference to sampling results at the next audit.

Certification Scheme Global Aquaculture Alliance (GAA)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Abiotic Effects

OWI Category R (InD)

10 Indicator # 9.4

Indicator Where weather conditions allow, trained staff shall make at least daily inspections and reports on the culture facility, water quality, and behavior and condition of fish.

Certification Scheme Global Aquaculture Alliance (GAA)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD, D

11 Indicator # 9.5

Indicator Staff status reports on the facility, water quality and fish conditions shall be documented, investigated and addressed by the fish health professional and/or farm management.

Certification Scheme Global Aquaculture Alliance (**GAA**)
Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (InD, D)

12 Indicator # 9.8

Indicator The applicant shall be able to demonstrate compliance with a written Water Quality Management Plan described in the implementation requirements above that includes provisions for water quality monitoring, staff training, mitigation measures for poor quality and procedures for the monitoring and control of dissolved oxygen during fish transport.

Certification Scheme Global Aquaculture Alliance (**GAA**)
Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (InD)

13 Indicator # 9.9

Indicator The applicant shall apply stocking density criteria based on local conditions, which shall normally be at or below an average 25 kilograms per cubic meter, but may rise higher than this for 5 percent of the production cycle if the fish show other good welfare indicators, and water quality is good.

Certification Scheme Global Aquaculture Alliance (**GAA**)
Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

14 Indicator # 14.4

Facility staff shall make regular inspections of the culture facility, water quality, and behavior and condition of crustaceans or fish.

Certification Scheme Global Aquaculture Alliance (**GAA**)
Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

OWI Category InD -not in database

15 Indicator # 14.8

Health management procedures shall be defined in a health management plan or operating manual, reviewed and approved by a fish health professional, that includes procedures to avoid the introduction of diseases, protocols for water quality management, health monitoring and disease diagnosis techniques.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

OWI Category R – not in database

16 Indicator # 16.5

Fish and crustaceans shall be harvested and transported in a manner that maintains temperature control.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

OWI Category InD – not in database

17 Indicator # 8.1.2

If fish are hauled live to a processing plant, transport must be implemented without undue delay, and the time and stocking density controlled to provide optimum survival and product quality. These shall include, where necessary, adequate clean water, dissolved oxygen levels and temperature control.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

OWI Category InD – not in database

18 Indicator # 8.1.3

Adequate dissolved oxygen levels shall be maintained. Transport density shall be determined by local conditions, these transport provisions shall apply equally to all suppliers, plant employees and subcontractors.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

OWI Category InD – not in database

19 Indicator # 8.2.1

If animals are held live at processing plants prior to slaughter holding conditions shall be operated to assure adequate animal welfare. These shall include, where necessary, adequate clean water, dissolved oxygen levels and temperature control.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

OWI Category InD – not in database

20 Indicator # AB. 5.2.16

Indicator Does the farm/hatchery/transport and holding facilities have a routine water quality monitoring and control program based on a risk assessment and taking into account potential contamination, fish health & welfare and the production system?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

21 Indicator # AB. 10.1.5

Indicator Has a risk assessment been undertaken to demonstrate that water quality does not compromise food safety and animal health & welfare?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

22 Indicator # AB. 12.1.3

Indicator Is the oxygen level of the holding areas controlled and recorded?

Certification Scheme Global Good Agriculture Practice (GLOBALG.A.P.)

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

23 Indicator # M 3.12 Reg indirect and direct

Indicator The following accurate and up-to-date records must be maintained:

- a) details of origin of stock, allowing traceability
- b) age of fish
- c) control of other animals
- d) crowding and grading records
- e) calibration records
- f) numbers and weights of fish in each tank/enclosure
- g) estimated current stocking densities in each tank/enclosure
- h) where appropriate, target age and weight at which fish will be transferred to sea or slaughtered (in order to predict final stocking densities)
- i) details of fish and equipment inspections
- j) daily and cumulative mortality (reasons stated)
- k) daily and cumulative culling (reasons stated)
- l) feed consumption
- m) details of any health problems
- n) details of any medication/vaccinations applied
- o) records of smoltification monitoring
- p) SEPA/other regulatory correspondence
- q) records of water quality tests as appropriate to the system
- r) records of net inspections and maintenance

- s) training records
- t) full details of fish movements.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Governance

Topic/Subdomain Accountability & Enforcement

OWI Category R (InD, D)

24 Indicator # FW 7.3

Indicator Deterioration of water quality due to fouled nets or over feeding must be avoided.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

25 Indicator # EVQ 1.2

Indicator If water quality departs from the acceptable range, steps must be taken immediately to identify the source of the problems and rectify the situation as quickly as possible.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

26 Indicator # FW 9.34

Indicator Site staff must ensure that the depth and flow of water is closely monitored to ensure that returning fish are not returned to water that is either too shallow, or at an incorrect flow rate, depth or quality.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

27 Indicator # M 3.11

Indicator Stock-keepers must be able to recognise:

- a) visual indicators of poor water
- b) behavioural indicators of poor water quality.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD, D

28 Indicator # FW 1.4

Indicator Supply water must:

- a) be of high quality (see FW 1.6)
- b) if necessary, be filtered or treated with ultra violet radiation.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

29 Indicator # EVQ 1.3

Indicator The Emergency Action Plan must contain provisions to account for potentially catastrophic events that may adversely affect water quality, such as algal or jellyfish blooms.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

30 Indicator # FW 1.6

Indicator The following water quality parameters must be complied with when water quality is managed.

Parameter - Ova - Alevins - Fry - Parr/Smolt

Oxygen (O₂) mg/l - 7.0 - 7.0 - 7.0 - 7.0

Oxygen (O₂) - >90.0 - >70.0 - >70.0 - >70.0

saturation % in exit

water

Free ammonia - <0.025 - <0.025 - <0.025 - <0.025

(NH₃) mg/l (N/A for

Green eggs)

Carbon dioxide - <10.0 - <6.0 - <6.0 - <10.0

(CO₂) mg/l

Max temp °C - 8.0 - 10.0 to 12.0 - 12.0 to 14.0 - 16.0

Min temp °C - 1.0 - 1.0 - 1.0 - 1.0

pH in inlet water - 5.5 to 8.0 - 5.5 to 8.0 - 5.5 to 8.0 - 5.5 to 8.0

Non-spate - <25.0 - <25.0 - <25.0 - <25.0

suspended solids

(turbidity) mg/l

Nitrite mg/l - <0.2 - <0.2 - <0.2 - <0.2

Nitrate mg/l - N/A - <50.0 - <50.0 - <50.0

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

31 Indicator # T 5.6

Indicator The maximum stocking density must be set so that water quality (see FW 1.6 as a reference) can be maintained for the duration of the journey.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category InD

32 Indicator # FW 5.8

Indicator The water depth must be appropriate to the tank being used in order to be able to maintain optimum water quality levels.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

33 Indicator # HP 5.13 -

Indicator The water quality, husbandry, biosecurity and records kept must conform to those as per the wellboat harvesting standards.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (InD)

34 Indicator # EVQ 1.1

Indicator Water quality composition must be monitored sufficiently frequently, if necessary daily, depending on the system, time of year and lifecycle stage of stock (as specified in the VHWP – see H 1.1).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

35 Indicator # T 9.6

Indicator Wellboats must be equipped with water quality monitoring and maintenance equipment, which must be calibrated so it is working and fit for purpose at all times.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R(InD)

36 Indicator # 5.3

Indicator The siting of farms should be such that there is an adequate supply of water of suitable quality at all times.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

37 Indicator # 5.4

Indicator Where appropriate, there should be emergency back-up systems to maintain a high standard of water quality.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

38 Indicator # 5.6

Indicator Farmers should have written contingency plans covering actions to be taken in the event of a serious incident, such as storm damage or water quality problems. These plans should consider both the welfare of the fish and environmental protection.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

39 Indicator # 5.62

Indicator Farmers should ensure that enclosure nets are kept clean in order to avoid water quality problems during crowding.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

40 Indicator # 5.72

Indicator Stocking density should be monitored in relation to fish health, fish behaviour and water quality to ensure that fish welfare is not compromised.

Certification Scheme Scottish Salmon Producers Organisation (**SSPO**)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD, D

4.0 Flow Rate

Summary

ASC n=0

GAA n=0

GlobalG.A.P. n=1

RSPCA n=2

SSPO n=0

1 Indicator # AB. 5.2.15

Indicator Is a risk assessment for animal welfare undertaken? (includes water flow)

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category Ind

2 Indicator # FW 1.7

Indicator Flow rates must be such that fish can comfortably maintain their position in the water column.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

3 Indicator # FW 9.34

Indicator Site staff must ensure that the depth and flow of water is closely monitored to ensure that returning fish are not returned to water that is either too shallow, or at an incorrect flow rate, depth or quality.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (InD)

****4 Indicator** Removed 18th December 2019

5.0 Mortality

Summary

ASC n=4

GAA n=1

GlobalG.A.P. n=6

RSPCA n=7

SSPO n=3

1 Indicator # 5.1.5

Indicator Maximum viral disease-related mortality on farm during the most recent production cycle. Requirement $\leq 10\%$

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D,

2 Indicator # 5.1.6

Indicator Maximum unexplained mortality rate from each of the previous two production cycles, for farms with total mortality $> 6\%$

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D,

3 Indicator # 5.1.7

Indicator A farm-specific mortalities reduction program that includes defined annual targets for reductions in mortalities and reductions in unexplained mortalities

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R

4 Indicator # 5.4.2

Indicator Evidence that if the farm suspects an unidentifiable transmissible agent, or if the farm experiences unexplained increased mortality, the farm has:

1. Reported the issue to the ABM and to the appropriate regulatory authority
2. Increased monitoring and surveillance on the farm and within the ABM
3. Promptly made findings publicly available

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

5 Indicator # 9.11

Indicator The applicant shall demonstrate that mortality rates during transport are monitored, with the numbers used to evaluate transportation methods with the aim of reducing losses.

Certification Scheme Global Aquaculture Alliance (**GAA**)
Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

6 Indicator # AB. 12.2.1

Indicator Does the organization have a plan to monitor and record trends in mortality?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)
Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

7 Indicator # AB. 12.2.2

Indicator For the legal disposal of large-scale mortalities, is there a contingency /action plan in place in the event of a severe disease episode or mass mortality?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)
Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

****8 Indicator #** Removed 18 December 2019

9 Indicator # AB. 5.5.1

Indicator Is mortality inspection and removal from the production units carried out according to the VHP?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)
Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

10 Indicator # AB. 5.5.2

Indicator Are all mortalities and cause of death recorded at production unit level? Are results trended?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R

11 Indicator # AB. 12.2.3

Indicator Are all mortalities recorded on removal from the fish holding area and reasons for death recorded, where known?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R

12 Indicator # AB. 5.2.21

Indicator Is culling of fish done according to prescribed methods respecting animal welfare and the Veterinary Health Plan - VHP (AB 5.2.1)?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

13 Indicator # HP 7.15 (predator)

Indicator There must be positive identification that a seal is causing the problem of fish mortality, or is the cause of compromised fish welfare.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Biotic Effects

OWI Category D

14 Indicator # H 1.8

Indicator If the mortality level is above 0.5% a week (excluding pre-swim up fry) the designated vet or trained and competent fish biologist/fish health manager must be notified and an investigation made as appropriate.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

15 Indicator # HP 2.20

Indicator Mortality checks must be recorded as soon as possible after grading.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

16 Indicator # FW 3.5

Indicator Producers must be able to demonstrate that mortality was below 5% for the previous year, if intending to stock above 15,000.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

17 Indicator # M 3.8

Indicator Relevant staff must demonstrate competence in interpretation of mortality records.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

18 Indicator # M 3.12

Indicator The following accurate and up-to-date records must be maintained:

- a) details of origin of stock, allowing traceability
- b) age of fish
- c) control of other animals
- d) crowding and grading records
- e) calibration records
- f) numbers and weights of fish in each tank/enclosure
- g) estimated current stocking densities in each tank/enclosure
- h) where appropriate, target age and weight at which fish will be transferred to sea or slaughtered (in order to predict final stocking densities)
- i) details of fish and equipment inspections
- j) daily and cumulative mortality (reasons stated)
- k) daily and cumulative culling (reasons stated)
- l) feed consumption

- m) details of any health problems
- n) details of any medication/vaccinations applied
- o) records of smoltification monitoring
- p) SEPA/other regulatory correspondence
- q) records of water quality tests as appropriate to the system
- r) records of net inspections and maintenance
- s) training records
- t) full details of fish movements.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

19 Indicator # HP 2.6

Indicator The grading plan must include:

- a) the reason for the need to grade
- b) a pre-grade risk assessment
- c) the number of fish to be graded per day
- d) the location of fish populations both pre- and post- grade
- e) the pre-grade fasting period
- f) the health status of the fish
- g) the equipment to be used, including the type of grader
- h) expected timetable for completion of the grade
- i) the required number of staff and duties to be performed
- j) the physical characteristics of the site such as water temperature, tides and weather conditions
- k) the training records of the grading team
- l) the requirement for a post grading health check
- m) post grading mortality records
- n) any relevant contingency plans
- o) the agreement and signatures of the site manager and the person in charge of the grading equipment.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

20 Indicator # 3.5

Indicator Where the level of fish mortality exceeds the threshold(s) below, as agreed by the Fish Health Working Group, this should be notified to Marine Scotland's Fish Health Inspectorate and the veterinary surgeon who has the fish under his/her care.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Governance
Topic/Subdomain Accountability & Enforcement
OWI Category R (D)

21 Indicator # 3.4

Indicator Companies should have written procedures to ensure that production staff notify company management immediately when disease is suspected, where abnormal behaviour is evident, or where morbidity or mortality levels are unusually high or subject to rapid increase.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D)

22 Indicator # 3.5

Indicator Where the level of fish mortality exceeds the threshold(s) below, as agreed by the Fish Health Working Group, this should be notified to Marine Scotland's Fish Health Inspectorate and the veterinary surgeon who has the fish under his/her care.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D)

6.0 Grading

Summary

ASC n=0

GAA n=0

Global G.A.P. n=2

RSPCA n=23

SSPO n=4

1 Indicator # AB. 5.2.19

Indicator Are periods of crowding, time out of the water, grading, transport and fasting justified?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

2 Indicator # AB. 5.2.11

Indicator Is size variation within stocks of fish controlled?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on

Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

3 Indicator # HP 2.5

Indicator A written grading plan must be agreed between farm management and site staff and/or grading operator prior to operations commencing. This plan must become a part of the VHWP (see H 1.1).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

4 Indicator # HP 2.7

Indicator All grading equipment must be designed and maintained in order to prevent damaging or causing stress to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

5 Indicator # HP 2.2

Indicator All personnel involved in the grading operation must:

- a) have access to a copy of the current version of the RSPCA welfare standards for farmed Atlantic salmon
- b) be familiar with its content
- c) understand and be able to apply its content.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

6 Indicator # FW 6.6

Indicator All staff must be fully trained and competent to use the chosen grading system.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

7 Indicator # HP 5.1

Indicator All wellboat crew involved in the grading process must have received the appropriate welfare training in addition to their maritime responsibilities.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

8 Indicator # FW 10.2

Indicator An assessment of fish condition must be made before the grading process begins, to ensure that they are robust enough to endure the grading procedure, where machines simultaneously grade fish at vaccination.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

9 Indicator # HP 5.9

Indicator Any fish that are placed in the hold after grading must be subjected to an additional welfare risk assessment. Any additional fasting period must be authorised by the veterinary surgeon or health manager.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

10 Indicator # FW 6.2

Indicator Feed withdrawal prior to grading must not exceed 48 hours.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

11 Indicator # HP 2.4

Indicator Grading must only be performed when absolutely necessary.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

12 Indicator # FW 6.4

Indicator Grading must only start when the majority of fish weigh in excess of 1.3 grams.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

13 Indicator # HP 2.22

Indicator Grading operations must not take place if adverse weather conditions are likely to compromise fish welfare.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

14 Indicator # HP 2.9

Indicator Only healthy fish must be subjected to the grading process.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

15 Indicator # HP 2.1

Indicator Only the following grading methods are permitted:

- a) manual grading using traditional 'Y' type boards
- b) passive grading with 'flexi-panels'
- c) automated grading.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

16 Indicator # HP 2.18

Indicator Oxygen levels must:

- a) be monitored and recorded throughout all crowding operations (e.g. grading, vaccinating and treating)
- b) not fall below 7mg/l, with appropriate action taken should this occur.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

17 Indicator # HP 2.10

Indicator Prior to grading, fish must be fasted for the minimum period required in order not to compromise their welfare.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

18 Indicator # M 3.12

Indicator The following accurate and up-to-date records must be maintained:

- a) details of origin of stock, allowing traceability
- b) age of fish
- c) control of other animals
- d) crowding and grading records
- e) calibration records
- f) numbers and weights of fish in each tank/enclosure
- g) estimated current stocking densities in each tank/enclosure
- h) where appropriate, target age and weight at which fish will be transferred to sea or slaughtered (in order to predict final stocking densities)
- i) details of fish and equipment inspections
- j) daily and cumulative mortality (reasons stated)
- k) daily and cumulative culling (reasons stated)
- l) feed consumption
- m) details of any health problems
- n) details of any medication/vaccinations applied
- o) records of smoltification monitoring
- p) SEPA/other regulatory correspondence
- q) records of water quality tests as appropriate to the system
- r) records of net inspections and maintenance
- s) training records
- t) full details of fish movements.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

19 Indicator # HP 3.2

Indicator The grading panels must be pre-checked for signs of wear before grading commences.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

20 Indicator # HP 2.6

Indicator The grading plan must include:

- a) the reason for the need to grade
- b) a pre-grade risk assessment
- c) the number of fish to be graded per day
- d) the location of fish populations both pre- and post- grade
- e) the pre-grade fasting period
- f) the health status of the fish
- g) the equipment to be used, including the type of grader
- h) expected timetable for completion of the grade
- i) the required number of staff and duties to be performed
- j) the physical characteristics of the site such as water temperature, tides and weather conditions
- k) the training records of the grading team
- l) the requirement for a post grading health check
- m) post grading mortality records
- n) any relevant contingency plans
- o) the agreement and signatures of the site manager and the person in charge of the grading equipment.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D, InD)

21 Indicator # HP 4.5

Indicator The grading table must be smooth, with no sharp edges.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

22 Indicator # HP 5.14

Indicator There must be a site grading plan for inspection.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D, InD)

23 Indicator # T 1.4

Indicator There must be good lines of communication between all of those involved in transporting/harvesting/grading fish in order to avoid potential or actual welfare problems occurring with the fish. These communications must include the:

- a) number of fish to be transported
- b) size range of the fish
- c) weight of the fish
- d) current health status of the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

24 Indicator # FW 9.9

Indicator Vaccination Team Leaders and Vaccinators must be able to demonstrate their proficiency in procedures that have the potential to cause pain or distress, including the vaccination technique, hand grading of fish to be culled and their humane euthanasia.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

25 Indicator # HP 3.1

Indicator Where passive grading is used, the size and design of the grading panel must be appropriate for the size of fish that are to be graded, and the enclosure they are contained within.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

26 Indicator # 5.52

Indicator Where pumps, pipes and grading equipment are used, these should be properly designed and correctly set up so that they do not injure or unnecessarily stress fish.

Certification Scheme Scottish Salmon Producers Organisation (**SSPO**)
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

27 Indicator # 5.74

Indicator The avoidance of injury and stress to fish should be a primary consideration when deciding on the method of grading to be employed.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

28 Indicator # 5.75

Indicator Grading equipment should be designed and maintained so as not to damage the fish.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

29 Indicator # 5.76

Indicator Details of planned frequency and procedures for grading should be part of the VHP and BP.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

7.0 Handling

Summary

ASC n=0

GAA n=2

GlobalG.A.P. n=1

RSPCA n=10

SSPO n=2

1 Indicator # 6.2

Indicator Local rules notwithstanding, the applicant shall demonstrate that the farm meets the BAP procedural, performance, documentation and reporting requirements for fish containment required by the Fish Containment Plan outlined under Implementation above, which shall include a classification of the farm site, an engineer's structural report, a mooring certification, an escape risk analysis,

monitoring procedures that respond to the risk analysis, predator deterrence procedures, precautions related to the use of boats, *fish handling procedures* and inventory accounting procedures.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

2 Indicator # 9.7

Indicator The applicant shall exercise care in handling fish and manage them within specified limits for crowding and time out of water, and limit other sources of outside disturbances.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

3 Indicator # AB. 12.1.1

Indicator Do all staff responsible for harvest operations have appropriate training in fish welfare and handling techniques?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

4 Indicator # HP 2.3

Indicator All personnel working with, or handling the fish must be:

- a) trained and fully competent
- b) aware of the needs of the fish
- c) aware of any risks involved and the procedures to address those risks.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

5 Indicator # T 1.5

Indicator All staff working with, or handling fish must be:

- a) trained and competent
- b) aware of their duties
- c) aware of any welfare risks involved.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

6 Indicator # T 2.2

Indicator Any handling of fish must be: a) kept to a minimum b) conducted in such a way as to prevent any unnecessary distress to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

7 Indicator # T 1.7

Indicator Any handling of fish prior to transport must: a) be kept to a minimum b) be conducted in such a way as to prevent any unnecessary distress to the fish c) not result in fish being out of water for more than 15 seconds (unless anaesthetised).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

8 Indicator # S 1.2

Indicator Crowding and handling prior to killing must be kept to an absolute minimum.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

9 Indicator # H 1.5

Indicator Fish condition must be continuously monitored for signs of disease or problems with the environment or handling practices.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

10 Indicator # HP 1.1

Indicator Removal from water and handling must only be carried out when

absolutely necessary.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

11 Indicator # M 2.6

Indicator Stock-keepers must be able to demonstrate their proficiency in procedures that have the potential to cause pain or distress including netting or other handling, crowding and euthanasia.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

12 Indicator # T 2.8

Indicator The following records must be kept:

- a) time since last handling
- b) time since vaccination
- c) time since last treatment (including anaesthetic)
- d) feed withdrawal time
- e) date of full smoltification
- f) any clinical signs of disease
- g) crowding records
- h) oxygen levels during crowding
- i) numbers of fish in each tank to be transported
- j) stocking densities of tanks being used for transport.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

13 Indicator # FW 9.21

Indicator The removal of fish from water or handling of the fish must only be done when necessary.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

14 Indicator # 3.144

Indicator All of those directly involved in handling fish on the day of vaccination, in anaesthesia of fish and in the delivery of vaccines into fish should be appropriately trained and competent.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

15 Indicator # 5.64

Indicator Fish should be inspected daily and dead or moribund fish should be removed, minimising handling to avoid stress to the live fish within the enclosure.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

8.0 Crowding

Summary

ASC n=0

GAA n=1

Global G.A.P. n=1

RSPCA n=9

SSPO n=10

1 Indicator # 9.7

Indicator The applicant shall exercise care in handling fish and manage them within specified limits for crowding and time out of water, and limit other sources of outside disturbances.

Certification Scheme Global Aquaculture Alliance ([GAA](#))

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

2 Indicator # AB. 5.2.19

Indicator Are periods of crowding, time out of the water, grading, transport and fasting justified?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment

on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

3 Indicator # S 1.2

Indicator Crowding and handling prior to killing must be kept to an absolute minimum.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

4 Indicator # HP 2.17

Indicator Enclosure nets must be kept clean in order to avoid water quality problems during crowding.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

5 Indicator # HP 2.18

Indicator Oxygen levels must:

- a) be monitored and recorded throughout all crowding operations (e.g. grading, vaccinating and treating)
- b) not fall below 7mg/l, with appropriate action taken should this occur.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

6 Indicator # M 2.6

Indicator Stock-keepers must be able to demonstrate their proficiency in procedures that have the potential to cause pain or distress including netting or other handling, crowding and euthanasia.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

7 Indicator # HP 2.19

Indicator Supplementary oxygen and/or aeration must be available for the duration of the crowding procedure.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

8 Indicator # HP 2.8.1

Indicator Sweep nets must be used to crowd a portion of the population rather than crowding the whole enclosure.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

9 Indicator # M 3.12

Indicator The following accurate and up-to-date records must be maintained:

- a) details of origin of stock, allowing traceability
- b) age of fish
- c) control of other animals
- d) crowding and grading records
- e) calibration records
- f) numbers and weights of fish in each tank/enclosure
- g) estimated current stocking densities in each tank/enclosure
- h) where appropriate, target age and weight at which fish will be transferred to sea or slaughtered (in order to predict final stocking densities)
- i) details of fish and equipment inspections
- j) daily and cumulative mortality (reasons stated)
- k) daily and cumulative culling (reasons stated)
- l) feed consumption
- m) details of any health problems
- n) details of any medication/vaccinations applied
- o) records of smoltification monitoring
- p) SEPA/other regulatory correspondence
- q) records of water quality tests as appropriate to the system
- r) records of net inspections and maintenance
- s) training records
- t) full details of fish movements.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

10 Indicator # T 2.8

Indicator The following records must be kept:

- a) time since last handling
- b) time since vaccination
- c) time since last treatment (including anaesthetic)
- d) feed withdrawal time
- e) date of full smoltification
- f) any clinical signs of disease
- g) crowding records
- h) oxygen levels during crowding
- i) numbers of fish in each tank to be transported
- j) stocking densities of tanks being used for transport.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

****11 Indicator** Removed 18th December 2019

12 Indicator # HP 4.7

Indicator The sweep net/crowding device must:

- a) be of an appropriate size
- b) have sufficient floatation
- c) be constructed of knotless mesh.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

13 Indicator # 3.106

Indicator Nets should be examined before crowding the fish and at intervals during harvesting operations to ensure the absence of defects likely to give rise to escapes and any defects repaired.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Biotic Effects

OWI Category InD

14 Indicator # 5.59

Indicator Nets should be checked for tears and damage prior to crowding and any damage detected should be repaired before fish are crowded.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Biotic Effects

OWI Category InD

15 Indicator # 5.56

Indicator A written procedure for crowding of fish should be prepared.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R(D, InD)

16 Indicator # 5.58

Indicator The frequency and duration of crowding should be kept to the minimum.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

17 Indicator # 5.60

Indicator Farmers should monitor fish behaviour during crowding and take action if fish show signs of stress or damage.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

18 Indicator # 5.62

Indicator Farmers should ensure that enclosure nets are kept clean in order to avoid water quality problems during crowding.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

19 Indicator # 5.63

Indicator Farmers should monitor oxygen levels during crowding and take corrective action if levels fall below a critical point for that species (the critical point will vary between species and with environmental factors).

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

20 Indicator # 5.77

Indicator Crowding of fish before collection for transport should be kept to a minimum.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D, InD)

21 Indicator # 5.87

Indicator Crowding fish prior to harvesting should be for the minimum time possible, especially where more than one crowding session is necessary to complete the harvest.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D, InD)

22 Indicator # 5.56

Indicator A written procedure for crowding of fish should be prepared.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Governance
Topic/SubDomain Transparency & Traceability
OWI Category R (D, InD)

9.0 Smolt

Summary

ASC n=2
GAA n=1
Global G.A.P. n=0
RSPCA n=7
SSPO n=4

1 Indicator # 8.13

Indicator Percentage of smolt groups tested for select diseases of regional concern prior to entering the grow-out phase on farm

Certification Scheme Aquaculture Stewardship Council ([ASC](#))

Standard Salmon Standard

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

2 Indicator # 8.14

Indicator Detailed information, provided by the designated veterinarian, of all chemicals and therapeutants used during the smolt production cycle, the amounts used (including grams per ton of fish produced), the dates used, which group of fish were treated and against which diseases, proof of proper dosing and all disease and pathogens detected on the site

Certification Scheme Aquaculture Stewardship Council (**ASC**)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

3 Indicator # 10.7

Indicator All smolts brought into the farm shall be free from diseases and parasites specified in applicable national health regulations, and shall be vaccinated against diseases for which effective vaccines are available prior to stocking.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Governance

Topic/SubDomain Accountability & Enforcement

OWI Category R (D)

4 Indicator # SW 1.7

Indicator After transfer to sea, smolts must not be handled for at least 120 days, for example not crowded, except for veterinary treatments.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

5 Indicator # T 7.5

Indicator Maximum stocking densities must:

a) be within 40–50kg/m³ (depending on water quality and size of smolts)

b) be set so that water quality can be maintained over the length of the journey.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

6 Indicator # FW 8.3.1

Indicator Producers must be able to demonstrate that they have done everything possible to ensure maximum survival when smolts are transferred to sea.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals
(RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

7 Indicator # T 2.8

Indicator The following records must be kept:

- a) time since last handling
- b) time since vaccination
- c) time since last treatment (including anaesthetic)
- d) feed withdrawal time
- e) date of full smoltification
- f) any clinical signs of disease
- g) crowding records
- h) oxygen levels during crowding
- i) numbers of fish in each tank to be transported
- j) stocking densities of tanks being used for transport.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals
(RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D, InD)

8 Indicator # FW 8.2

Indicator The smoltification process must be closely monitored for several weeks as detailed in the Veterinary Health and Welfare Plan (see H 1.1).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals
(RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

9 Indicator # FW 8.3

Indicator The use of hypertonic water (water above 35 parts/1000) for smolt survival testing is prohibited.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals **(RSPCA)**

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

10 Indicator # FW 8.1

Indicator Visual checks and observations must be made for several weeks during the period prior to smolting (silvering, swim pattern, shape).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

11 Indicator # 4.19

Indicator Site managers should demonstrate an awareness of the minimum fish size supplied at smolt input and at other relevant times.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Biotic Effects

OWI Category R (D)

12 Indicator # 3.51

Indicator Decisions to stock marine pens with smolts should be based on a satisfactory outcome from a documented risk assessment.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

13 Indicator # 3.53

Indicator Smolts should be in good physical condition when transferred into pens.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

14 Indicator # 3.54

Indicator The number of different sources of smolts used to stock marine pens should be kept to a minimum.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

10.0 Behaviour

Summary

ASC n=0
GAA n=0
Global G.A.P. n=0
RSPCA n=7
SSPO n=4

1 Indicator # FW 5.9

Indicator As the fish leave the bottom of the tank the water depth must be adjusted to allow natural behaviour.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

2 Indicator # M 2.7

Indicator Stock-keepers must be able to recognise indicators of poor welfare in fish including abnormal behaviour, physical injury and symptoms of disease.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

3 Indicator # M 3.11

Indicator Stock-keepers must be able to recognise:

- a) visual indicators of poor water
- b) behavioural indicators of poor water quality.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D, InD

****4 Indicator** Removed 18th December 2019

5 Indicator # HP 6.4

Indicator There must be a person on the enclosure monitoring the behaviour of the

fish to ensure their welfare.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

6 Indicator # FW 9.10

Indicator Vaccination Team Leaders and members must be able to recognise indicators of poor welfare in fish, including abnormal behaviours, physical injury and symptoms of disease.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

7 Indicator # 3.4

Indicator Companies should have written procedures to ensure that production staff notify company management immediately when disease is suspected, where abnormal behaviour is evident, or where morbidity or mortality levels are unusually high or subject to rapid increase.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

8 Indicator # 5.46

Indicator Farmers should be able to recognise indicators of reduced welfare in fish, including abnormal behaviour, physical injury and symptoms of disease, and take remedial action in the event that such indicators are apparent.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

9 Indicator # 5.60

Indicator Farmers should monitor fish behaviour during crowding and take action if fish show signs of stress or damage.

Certification Scheme Scottish Salmon Producers Organisation (SSPO)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

10 Indicator # 5.72

Indicator Stocking density should be monitored in relation to fish health, fish behaviour and water quality to ensure that fish welfare is not compromised.

Certification Scheme Scottish Salmon Producers Organisation (**SSPO**)

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D, InD

11.0 Cortisol n=0

12.0 Positive welfare n=0

Added extra

13.0 Stress

Summary

ASC n=0

GAA n=1

Global G.A.P. n=3

RSPCA n=12

SSPO n=7

1 Indicator # 9.10

Indicator Fish shall be harvested and transported under conditions directed by the fish health professional and designed to minimize distress.

Certification Scheme Global Aquaculture Alliance (**GAA**)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

2 Indicator # AB. 5.2.2

Indicator Are all pumps, surfaces and equipment that come into contact with fish, included vaccination facilities, suitably designed and operated to avoid physical damage and to ensure minimal stress to the fish?

Certification Scheme Global Good Agriculture Practice (**GLOBALG.A.P.**)

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on

Social Practice (GRASP)
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R (D)

3 Indicator # AB. 5.2.18

Indicator Are fish treated and handled in such a way as to protect them from avoidable pain, stress, injury and disease, at all times?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

****4 Indicator** Removed 18th December 2019

5 Indicator # AB. 12.1.2

Indicator Is the condition of the fish monitored regularly prior to transfer to the point of harvest? Is unnecessary stress of the fish avoided?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

6 Indicator # HP 2.7

Indicator All grading equipment must be designed and maintained in order to prevent damaging or causing stress to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

7 Indicator # FW 9.2

Indicator All vaccination procedures must be conducted with care and with the minimum possible distress caused to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

8 Indicator # FW 9.27

Indicator All vaccination procedures must be conducted with care and with the minimum possible stress to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

9 Indicator # T 2.2

Indicator Any handling of fish must be: a) kept to a minimum b) conducted in such a way as to prevent any unnecessary distress to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

10 Indicator # T 1.7

Indicator Any handling of fish prior to transport must: a) be kept to a minimum b) be conducted in such a way as to prevent any unnecessary distress to the fish c) not result in fish being out of water for more than 15 seconds (unless anaesthetised).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

11 Indicator # T 5.10

Indicator During the journey, if oxygen levels become unstable, the driver must:

- a) be able to visually check the fish for signs of stress
- b) be able to identify the cause of the oxygen instability
- c) take appropriate action to ensure the welfare of the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

12 Indicator # EVQ 2.2

Indicator Fish must be protected from distress caused by high levels of UV light or sudden changes in lighting levels (see EVQ 2.3 and EVQ 2.4).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

13 Indicator # H 5.2

Indicator Marking methods that cause distress or injury to fish must not be used.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

14 Indicator # M 2.6

Indicator Stock-keepers must be able to demonstrate their proficiency in procedures that have the potential to cause pain or distress including netting or other handling, crowding and euthanasia.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

15 Indicator # T 8.5

Indicator The nets at the reception enclosure must:

- a) be set at a sufficient depth to permit inspection
- b) not be so shallow that fish are stressed by strong sunlight.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

16 Indicator # FW 9.9

Indicator Vaccination Team Leaders and Vaccinators must be able to demonstrate their proficiency in procedures that have the potential to cause pain or distress, including the vaccination technique, hand grading of fish to be culled and their humane euthanasia.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

17 Indicator # HP 1.4

Indicator Where pumps and pipes are used these must:

- a) not unnecessarily stress fish
- b) be free from sharp protrusions, kinks and bends that are likely to injure fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

18 Indicator # 3.52

Indicator During wellboat transport, all efforts should be made to ensure factors likely to stress fish are minimised.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

19 Indicator # 3.58

Indicator During wellboat transport, all efforts should be made to ensure factors likely to stress fish are minimised.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

20 Indicator # 5.49

Indicator Different species have different tolerance to being out of water, but the time out of water should never be so long as to produce signs of distress.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

21 Indicator # 5.52

Indicator Where pumps, pipes and grading equipment are used, these should be properly designed and correctly set up so that they do not injure or unnecessarily stress fish.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category InD

22 Indicator # 5.60

Indicator Farmers should monitor fish behaviour during crowding and take action if fish show signs of stress or damage.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

23 Indicator # 5.64

Indicator Fish should be inspected daily and dead or moribund fish should be removed, minimising handling to avoid stress to the live fish within the enclosure.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

24 Indicator # 5.74

Indicator The avoidance of injury and stress to fish should be a primary consideration when deciding on the method of grading to be employed.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/SubDomain Fish Health & Welfare

14.0 Slaughter

Summary

ASC n=0
GAA n=2
Global G.A.P. n=3
RSPCA n=3
SSPO n=0

1 Indicator # 9.12

Indicator Prior to slaughter, fish shall be stunned humanely.

Certification Scheme Global Aquaculture Alliance ([GAA](#))
Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category D

2 Indicator # 14.5

Disease outbreaks shall be managed through rapid diagnosis and treatment, and when necessary, humane slaughter.

Certification Scheme Global Aquaculture Alliance ([GAA](#))
Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards
OWI Category D

3 Indicator # AB. 13.1.3

Indicator Have all harvesting staff received fish welfare training in relation to the slaughter process, including specific training in the stunning and bleeding (when applicable) techniques?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))
Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

4 Indicator # AB. 13.1.2

Indicator Is the slaughter method used specified in the VHP and does it consider fish welfare?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))
Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

5 Indicator # AB. 5.2.20

Indicator Is there feedback relating to animal welfare from slaughter/primary processing to the farm?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))
Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

6 Indicator # S 1.7

Indicator All staff involved with the slaughter/killing process must have received full training and be fully competent in all methods of harvest – dead haul, shore based or cage side.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D)

7 Indicator # M 3.12

Indicator The following accurate and up-to-date records must be maintained:

- a) details of origin of stock, allowing traceability
- b) age of fish
- c) control of other animals
- d) crowding and grading records
- e) calibration records
- f) numbers and weights of fish in each tank/enclosure
- g) estimated current stocking densities in each tank/enclosure
- h) where appropriate, target age and weight at which fish will be transferred to sea or slaughtered (in order to predict final stocking densities)
- i) details of fish and equipment inspections
- j) daily and cumulative mortality (reasons stated)
- k) daily and cumulative culling (reasons stated)
- l) feed consumption
- m) details of any health problems
- n) details of any medication/vaccinations applied
- o) records of smoltification monitoring
- p) SEPA/other regulatory correspondence
- q) records of water quality tests as appropriate to the system
- r) records of net inspections and maintenance
- s) training records
- t) full details of fish movements.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R (D, InD)

8 Indicator # S 1.4

Indicator The method of killing used must rapidly, and without pain and distress, render the fish insensible, until death supervenes.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

15.0 Harvest

Summary

ASC n=0

GAA n=2

GlobalG.A.P. n=7

RSPCA n=7

SSPO n=10

1 Indicator # 9.10

Indicator Fish shall be harvested and transported under conditions directed by the fish health professional and designed to minimize distress.

Certification Scheme Global Aquaculture Alliance ([GAA](#))

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D, InD)

2 Indicator # 14.3

The facility shall define upper limits for time periods of fasting, crowding and time out of water to ensure best welfare practices and provide accurate records showing that these limits are respected.

Certification Scheme Global Aquaculture Alliance ([GAA](#))

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD

3 Indicator # AB. 5.4.4

Indicator Are pre-harvest withdrawal periods for relevant treatments, and for relevant production units, known and strictly adhered to?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D)

4 Indicator # AB. 12.1.1

Indicator Do all staff responsible for harvest operations have appropriate training in fish welfare and handling techniques?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D)

5 Indicator # AB. 13.1.3

Indicator Have all harvesting staff received fish welfare training in relation to the slaughter process, including specific training in the stunning and bleeding (when applicable) techniques?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (D)

6 Indicator # AB. 12.1.2

Indicator Is the condition of the fish monitored regularly prior to transfer to the point of harvest? Is unnecessary stress of the fish avoided?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/Subdomain Fish Health & Welfare

OWI Category D

7 Indicator # AB. 5.4.3

Indicator Is there a system in place to identify batches of fish having received treatment, for which there is a required pre-harvest withdrawal period?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/Subdomain Fish Health & Welfare

OWI Category R (D)

8 Indicator # AB. 5.8.11

Indicator Where there is a fallow period, is disinfection carried out between harvest and restocking?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

9 Indicator # AB. 5.8.3

Indicator Where used, are harvest containers disinfected before re-use and transfer to the growing sites?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment
Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

10 Indicator # S 1.7

Indicator All staff involved with the slaughter/killing process must have received full

training and be fully competent in all methods of harvest – dead haul, shore based or cage side.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

11 Indicator # S 1.9

Indicator Before the beginning of each harvest:

a) the system must be tested to ensure that it is working effectively

b) the results of these checks must be recorded

c) in the case of Freedom Food members the results must be made available to the Freedom Food Assessor or RSPCA Farm Livestock Officer.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

12 Indicator # F 4.1

Indicator For harvest fish, fasting time must:

a) not exceed 72 hours (unless directed by the designated veterinary surgeon for fish welfare reasons)

b) be recorded in the VHWP (see H 1.1).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category D

13 Indicator # T 9.14

Indicator From the 1st January 2016 all new harvest vessels operating under the Freedom Food Scheme must have an effective lice filtration system in place.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D)

14 Indicator # HP 5.13

Indicator The water quality, husbandry, biosecurity and records kept must conform to those as per the wellboat harvesting standards.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (InD)

15 Indicator # T 1.4

Indicator There must be good lines of communication between all of those involved in transporting/harvesting/grading fish in order to avoid potential or actual welfare problems occurring with the fish. These communications must include the:

- a) number of fish to be transported
- b) size range of the fish
- c) weight of the fish
- d) current health status of the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

16 Indicator # S 1.5.2

There must be sufficient time after stunning, and safeguards in place, to:

- a) assess the effectiveness of the stun in all fish
- b) ensure all fish that have not been effectively stunned are re-stunned immediately.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain

Topic/SubDomain

OWI category D

17 Indicator # 3.114

Indicator At the end of each period of harvesting, all equipment should be thoroughly cleaned and disinfected.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

18 Indicator # 3.70

Indicator Movements from more than one farm management area into a single management area should only occur for broodstock or harvesting purposes, (Chapter 1).

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

19 Indicator # 3.71

Indicator Live fish should not be moved into holding pens situated adjacent to a processing plant or harvest station. It is acceptable to hold fish in tanks where the effluent from the tanks is disinfected.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D)

20 Indicator # 3.72

Indicator The use of transport pens for moving fish from farm to harvest station should be limited to the transport of fish through safe water over short distances and within a single FMA.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

21 Indicator # 3.73

Indicator Fish should not be transported from a harvest station to a production site.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

22 Indicator # 3.91

Indicator FMSs and FMAgs should take into account relevant aspects of the undernoted guidance:

- i. Definition of the area to which the document relates including, where appropriate, local hydrodynamic conditions.
- ii. General aspects of fish health
 - a. Vaccines and vaccination regimes; Dead fish removal and disposal;
 - b. Health status of the FMA inc. any official control(s) in place;
 - c. Health status of fish to be stocked into the FMA;
 - d. Physical condition of fish to be introduced;
 - e. Veterinary input inc. VHPs and BPs;
 - f. Following plans and protocols.
- iii. Sea lice control strategy:
 - a. Treatment plans inc. synchronisation of treatments;
 - b. Treatment medicines;
 - c. Sensitivity testing;
 - d. Data collection and exchange.
- iv. Adherence to agreed stocking densities.

- v. Movement of live fish.
 - vi. Harvesting protocols.
 - vii. Escapes.
 - viii. Exclusion and control of predators.
 - ix. Stock inspection and independent oversight of the operation of the FMAg.
 - x. Information exchange and communication between FMAg partners.
 - xi. Review of the agreement or statement at least every 2 years
- Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (D, InD)

23 Indicator # 5.68

Indicator Before transport or harvest, feed should be withheld to reduce metabolic rate and the excretion of waste products, and to eliminate the presence of food and/or faecal material in the gut at harvest, thus minimising the risk of microbiological contamination during processing.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (D)

24 Indicator # 5.69

Indicator The period during which fish are deprived of food to achieve gut clearance prior to certain procedures or harvesting should be appropriate to the species and temperature.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

25 Indicator # 5.70

Indicator Complete withdrawal of food should not be used as a means of conditioning fish prior to harvest.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (D)

26 Indicator # 5.87

Indicator Crowding fish prior to harvesting should be for the minimum time possible,

especially where more than one crowding session is necessary to complete the harvest.
Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (D)

16.0 Feeding

Summary

ASC n=0
GAA n= 2
Global G.A.P. n= 11
RSPCA n= 17
SSPO n= 11

1 Indicator # 14.2 -

Feeding shall be managed to avoid stress caused by under- or overfeeding.

Certification Scheme Global Aquaculture Alliance ([GAA](#))

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

2 Indicator # 9.3 -

Indicator Fish shall be fed feed made by a reputable feed company and subject to the requirements for documentation specified in Section 5.

Certification Scheme Global Aquaculture Alliance ([GAA](#))

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

3 Indicator # AB. 7.3.2 -

Indicator Are feeds, including all medicated feeds, stored and handled in accordance with good practice and manufacturer instructions to minimize any risk of contamination?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

4 Indicator # AB. 7.3.4 -

Indicator Are medicated feeds kept in separate, clearly labeled and identified bulk storage

or bags?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

5 Indicator # AB. 7.3.3 -

Indicator Are there written instructions on how to deal with excess medicated feed and flush feed? Are these instructions followed?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

6 Indicator # AB. 5.8.6 -

Indicator Are vehicles and boats (including all transport systems and associated equipment) used for transporting fish or aquaculture feed, whether owned by the producer or subcontractors, inspected for cleanliness and disinfection according to risk assessed documented procedures and any necessary corrective action taken?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

7 Indicator # AB. 5.4.1 -

Indicator Do all farms maintain dated records of medicines and treatment purchases or deliveries and are records of their administration to stock accurately recorded and up to date? This includes medicated feed.

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

8 Indicator # AB. 5.2.13 -

Indicator Does the farm have a system in place to assure appropriate feeding levels and feed usage records?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on

Social Practice (GRASP)
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (InD)

9 Indicator # AB. 7.1.1

Indicator Do all fish stocks receive a diet, which is suitable for the species farmed?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

10 Indicator # AB. 7.1.3 -

Indicator If the farm uses raw unpasteurized or live feed, is this risk assessed and controlled?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

11 Indicator # AB. 7.2.4 -

Indicator Is all feed used, consumed before the shelf life expires?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

12 Indicator # AB. 7.2.5

Are means taken to avoid over-feeding?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

13 Indicator # AB. 7.3.1 -

Indicator Is specific feed for different species clearly identified?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on

Social Practice (GRASP)
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (InD)

14 Indicator # F 4.2

Indicator After any period of fasting, food must be reintroduced in a way that: a) encourages the fish to resume feeding b) minimises waste c) producers can demonstrate does not compromise fish welfare.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category D

15 Indicator # F 2.1 -

Indicator All feed must be manufactured from constituents that are free from active parasites and known fish pathogens and contamination.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (InD)

16 Indicator # FW 7.3

Indicator Deterioration of water quality due to fouled nets or over feeding must be avoided.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD

17 Indicator # FW 5.2

Indicator Feed must be:

a) available to appetite

b) spread at regular intervals.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category D

18 Indicator # FW 6.2

Indicator Feed withdrawal prior to grading must not exceed 48 hours.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

19 Indicator # FW 8.4

Indicator Feed withdrawal prior to transfer to sea must be no greater than 48 hours.
Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

20 Indicator # F 1.1

Indicator Feeding must be such that the quality, quantity and frequency are optimal for the fish's stage of development.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

****21 Indicator** Removed 18th December 2019

22 Indicator # F 3.2

Indicator Fish must be observed at least once a day during feeding.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

23 Indicator # SW 1.5

Indicator If calculating stocking density between 15 and 17 metres depth, the stockperson must be able to demonstrate that monitoring is taking place in order to ensure that all fish are feeding.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category InD

24 Indicator # FW 7.1

Indicator In some adverse environmental conditions it may be necessary to temporarily withdraw feed to avoid compromising the welfare of the fish through the increased risk of de-oxygenated conditions arising, for example, during an algal bloom. This withdrawal period must be:

a) kept to a minimum
b) recorded in the VHWP (see H 1.1).
Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (D)

25 Indicator # FW 5.3

Indicator Light levels must be such that they allow all fish in the water column to see the feed at all times.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category InD

26 Indicator # F 2.3

Indicator No feedstuffs containing growth regulators or hormones are permitted.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category R (InD)

27 Indicator # F 3.4

Indicator Overfeeding must be avoided.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

28 1Indicator # F 4.3

Indicator Records must be kept of the period for which the fish were fasted and when feed was reintroduced.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))
Standard RSPCA Welfare Standards for Farmed Atlantic Salmon
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

29 Indicator # FW 1.5

Indicator The following maximum stocking densities must not be exceeded:

Hatchery - 15,000 per California basket/tray
Multi-level - 20,000 eggs per tray
First feeding tank - 10,000/m²

Freshwater production tank:

Liveweight (mean) - Stocking density (kg/m³)

Up to 1gm - 10

>1-5gm - 20

>5-30 - 30

>30 - 50

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD

30 Indicator # T 2.8

Indicator The following records must be kept:

- a) time since last handling
- b) time since vaccination
- c) time since last treatment (including anaesthetic)
- d) feed withdrawal time
- e) date of full smoltification
- f) any clinical signs of disease
- g) crowding records
- h) oxygen levels during crowding
- i) numbers of fish in each tank to be transported
- j) stocking densities of tanks being used for transport.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R (D, InD)

31 Indicator # F 3.3

Indicator The person feeding must check that fish on the periphery of the tank or enclosure receive adequate amounts of food.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category R(D)

32 Indicator # 3.12

Indicator Farmers should reduce any risk to fish health associated with the presence of wild birds, mammalian predators and vermin by ensuring the secure storage of feed, good

feeding practice and the secure temporary storage of dead fish.
Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category InD

33 Indicator # 3.122

Indicator Supplementary feed should be made available for the cleaner fish, as required by lice levels within each salmon pen.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category InD

34 Indicator # 3.128

Indicator Transmission of infectious agents by birds and mammals should be minimised through:

- measures designed to exclude birds and mammals from areas where farmed fish are held;
- hygienic procedures for handling dead fish;
- feeding practices that minimise wastage;
- where there is a risk of contact with seals - which are known to prey on farmed fish - this should be minimised through the use of appropriate deterrent measures and other approaches.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category InD

35 Indicator # 3.136

Indicator To avoid the possibility of contamination of unmedicated feed with medication, feed bins or hoppers should be emptied and cleaned at the end of a period of medication.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category InD

36 Indicator # 3.146

Indicator Feeding should be withdrawn from fish to be vaccinated for an appropriate period, in accordance with Data Sheet recommendations and fish welfare guidance.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment
Topic/Subdomain Fish Health & Welfare
OWI Category D

37 Indicator # 5.68

Indicator Before transport or harvest, feed should be withheld to reduce metabolic rate and the excretion of waste products, and to eliminate the presence of food and/or faecal material in the gut at harvest, thus minimising the risk of microbiological contamination during processing.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category D

38 Indicator # 5.71

Indicator Feed withdrawal may form part of the response to the onset of adverse environmental conditions and in the treatment of certain diseases (e.g. pancreas disease of Atlantic salmon). Veterinary advice should be sought on this with, as appropriate, feed withdrawal protocols being included in the VHP and BP.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category D

39 Indicator # 6.1

Indicator Farmers should ensure, through labelling information or documentary assurance, that they use feeds that have been formulated for the species and life stage of fish being grown.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD

40 Indicator # 6.2

Indicator To minimise the risk of horizontal transmission of disease, feed deliveries by boat should be undertaken in accordance with Annex 4.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD

41 Indicator # 6.4

Indicator Farmers should have a written feed management plan, which includes the following points:

- Feeding the correct feed size;
- Feeding the correct amount of feed to any population of fish, in the proper manner and over the correct period(s) of the day;
- Regular monitoring of feed conversion efficiency (following sample weighing), and assessment of whether feeding protocols and guidelines to assist farm personnel are effective.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD

42 Indicator # 6.6

1 Indicator Untreated raw fish should not be used as a feeding stuff for fish in seawater lochs.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

Topic/Subdomain Fish Health & Welfare

OWI Category InD

[17.0 Physical Health](#)

Colour changes n=0

Body condition n=0

Opercula n=0

SGR/growth rates n=0

[17.1 Gill](#) SSPO n=1

1 Indicator # 5.48

Indicator If fish are handled, adequate support should be given to the body - live fish should never be held by the gills or tail only.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))

Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs

Domain Environment

OWI Category D

[17.2 Skin condition](#) n=0

[17.3 Snout, scales and fin damage](#) RSPCA n=1, GLOBALGAP=1

1 Indicator # AB. 5.2.12

Indicator Are fish monitored for health indicators and welfare problems affecting

individuals? (including abnormalities)

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

2 Indicator # E 3.5

Indicator Netting used in the construction of enclosures must present a smooth, non-abrasive surface to limit injuries to the snout, fins and scales of fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

17.4 Injury

Summary

ASC n=0

GAA n= 0

Global G.A.P. n= 0

RSPCA n= 6

SSPO n= 0

1 Indicator # HP 7.13

Indicator If an attack has taken place, the fish must be checked for signs of injury as a result of the attack.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

2 Indicator # T 7.6

Indicator If fish counting equipment is in place, it must:

a) be over a de-waterer

b) be fully maintained

c) be regularly calibrated to maintain accuracy

d) be of a design not likely to cause damage or injury to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

3 Indicator # T 2.11

Indicator If fish pumps are to be used, they must be appropriate for the size of the fish being pumped to avoid injury.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

4 Indicator # T 6.5

Indicator The fish must be transferred from the tanks/rearing enclosures without causing injury to fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

5 Indicator # T 2.12

Indicator There must be no joints, kinks, bends or rough internal edges on, or in the pipes which may cause physical injury to the fish.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

6 Indicator # T 7.14

Indicator Water flow through the wells at discharge must:

- a) be sufficient to facilitate movement of the fish
- b) not be so strong as to cause the fish injury.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category InD

17.5 Bleed

Summary

ASC n=0

GAA n=0

Global G.A.P. n= 2

RSPCA n= 1

SSPO n= 0

1 Indicator # AB. 13.1.4

Indicator Are fish effectively stunned prior to bleeding?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

2 Indicator # AB. 13.1.5

Indicator When fish are bled, is this done immediately after stunning? Is the bleeding effective with a monitoring procedure in place?

Certification Scheme Global Good Agriculture Practice ([GLOBALG.A.P.](#))

Standard Integrated Farm Assurance (IFA), Aquaculture Module + Risk-Assessment on Social Practice (GRASP)

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

3 Indicator # S 1.6

Indicator Bleeding must follow within 10 seconds.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals ([RSPCA](#))

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

17.6 Sea Lice

Summary

ASC n=4

GAA n= 1
Global G.A.P. n= 0
RSPCA n= 8
SSPO n= 4

1 Indicator # 3.2.3

Indicator Use of non-native species for sea lice control or on-farm management purposes

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Biotic Effects

OWI Category R

2 Indicator # 3.1.3

Indicator Establishment and annual review of a maximum sea lice load for the entire ABM and for the individual farm as outlined in Appendix II-2

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Governance

Topic/SubDomain Coordination of Interests & Activities

OWI Category R

3 Indicator # 3.1.4

Indicator Frequent on-farm testing for sea lice, with test results made easily publicly available within seven days of testing

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R

4 Indicator # 3.1.7

Indicator In areas of wild salmonids, maximum on-farm lice levels during sensitive periods for wild fish. 0.1 mature female lice per farmed fish

Certification Scheme Aquaculture Stewardship Council (ASC)

Standard Salmon Standard

Domain Environment

Topic/Subdomain Biotic Effects

OWI Category InD

5 Indicator # 10.3

Indicator The applicant shall have written biosecurity and health management plans consistent with the implementation requirements, which shall include procedures for site fallowing, cleaning of farm equipment, visitor and vessel hygiene precautions, sanitary disposal of dead fish, increased vigilance if disease is suspected, sea lice

management procedures and plans for disposal in the event of a mass fish kill, and shall be able to demonstrate compliance with them.

Certification Scheme Global Aquaculture Alliance (GAA)

Standard Best Aquaculture Practices (BAP) - Salmon Farm Standards

Domain Environment

Topic/SubDomain Biotic Effects

OWI Category InD

6 Indicator # EVI 4.1

Indicator Enclosures must be fallowed as detailed in the Environmental Impact Plan to allow recovery of the benthos and help to reduce sea lice populations.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Abiotic Effects

OWI Category R

7 Indicator # H 4.3

Indicator Separation of year classes and fallowing of sites must be practised to help control sea lice populations as detailed in the Environmental Impact Plan (see ENV 1.1).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Governance

Topic/SubDomain Accountability & Enforcement

OWI Category R

8 Indicator # H 4.4

Indicator The producer must, through documented evidence, demonstrate that any co-operative management schemes between operations in the same loch/area aimed at reducing sea lice populations have been entered into.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Governance

Topic/SubDomain Coordination of Interests & Activities

OWI Category R

9 Indicator # H 4.7.1

Indicator Any fish with severe physical damage caused by sea lice grazing must be removed and dispatched humanely without delay.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (RSPCA)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category D

10 Indicator # EVI 4.1

Indicator Enclosures must be followed as detailed in the Environmental Impact Plan to allow recovery of the benthos and help to reduce sea lice populations.

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R

11 Indicator # H 4.5

Indicator Sea lice prevention and treatment programmes must be drawn-up with the designated veterinary surgeon and fully detailed in the Veterinary Health and Welfare Plan (see H 1.1).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category R

12 Indicator # H 4.3

Indicator Separation of year classes and fallowing of sites must be practised to help control sea lice populations as detailed in the Environmental Impact Plan (see ENV 1.1).

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain Environment

Topic/SubDomain Fish Health & Welfare

OWI Category

13 Indicator # H 4.6

Sea lice damage to fish must be recorded during lice counts. This must include:

- a) condition of fish – good/thin
- b) site of lesions
- c) skin condition
- d) fish behaviour – lively/moribund. (RSPCA)

Certification Scheme Royal Society for the Prevention of Cruelty to Animals (**RSPCA**)

Standard RSPCA Welfare Standards for Farmed Atlantic Salmon

Domain

Topic/SubDomain

OWI category D,

14 Indicator # 3.129

Indicator Farmers should prepare and implement a VHP and a BP, which set out biosecurity protocols, preventative measures and treatments (including the use of vaccines, measures for the control of sea lice, etc.) (Annex 2).

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/SubDomain Biotic Effects
OWI Category R

15 Indicator # 3.80

Indicator All companies within the SSPO should provide sea lice data and other information relevant to the management of sea lice to the SSPO at monthly intervals.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R

16 Indicator # 3.84

Indicator Personnel responsible for sea lice management should have received appropriate training.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R

17 Indicator # 3.85

Indicator Personnel responsible for sea lice management should be able to demonstrate competence in lice identification, lice counting and reporting the results of counts.

Certification Scheme Scottish Salmon Producers Organisation ([SSPO](#))
Standard SSPO Code of Good Practice (CoGP) - Seawater Lochs
Domain Environment
Topic/SubDomain Fish Health & Welfare
OWI Category R