A Position Paper on Certification of Scottish Salmon Farming

[Updated August 2021]

Contents

Introduction

The salmon farming industry in Scotland has grown steadily since the 1970s and constitutes the bulk of Scottish aquaculture, which in 2018 had a turnover of £1.5 billion[1]. Scotland is the 3rd largest producer of Atlantic salmon behind Norway and Chile, with 204,000 tonnes harvested in 2019, an increase of almost 50,000 from 2018 and the highest total ever recorded in Scotland[2].

Given the economic benefits this trade brings, the Scottish Government has made a commitment to support the Aquaculture Industry Leadership Group's growth strategy[3], which sets out their intention to almost double the economic contribution of the sector to over £3 billion, as well as doubling the number of jobs to 18,000 by 2030.

As an environmental charity, Fidra recognise that the salmon farming industry already has a significant impact on Scotland's ecosystems, all of which will be exacerbated through this expansion. As such, for these commitments to be met in a sustainable way all stakeholders, such as industry leads, retailers, NGOs, certification and government bodies etc., must work together at every step of the supply chain to ensure that any expansion is achieved without compromising the environmental integrity of some of Scotland's most rural locations.

In this paper, we will examine the numerous certification and accreditation bodies that seek to approve a variety of environmental or social standards. As a science-based organisation, we will offer our position regarding which certification bodies appear to offer the greatest level of protection for the habitats impacted by Scotland's salmon farming industry.

What is certification and why is it important?

A standard is a documented agreement with the technical specifications, or precise criteria, to be used as a guideline or definition. **Certification** is the procedure of assessing whether there is conformity with a standard. In simple terms answering the question "have the standards been met?". The process of assessing this is usually referred to as an audit. If standards are met, a certificate is awarded. Third-party audits are undertaken by independent organisations, often commercial entities. **Certification Bodies and Conformity Assessment Bodies** are the organisations that assess conformity to a standard and award certificates. **Accreditation** is the procedure for ensuring the competence of the person or company who checks standards are met (and awards a certificate). In simple terms accreditation is akin to certification of the certification body.

Every day we encounter processes and systems that have been certified by a multitude of third-party certification bodies. This ranges from education establishments and courses, health and safety in the workplace to the manufacture of products and the food we buy and eat. These certification bodies analyse and assess steps throughout the supply chains to both limit the level of harm that could come to employees, consumers and the environment, and assure the quality of the product.

Fairtrade was the first certification body, looking to assure customers that products were produced with a fair approach to the farmers producing the raw materials. This was in 1988 and today the Ecolabel Index[4] currently lists 457 ecolabels in 199 countries and 25 industry sectors.

Aquaculture has several certification schemes, with consumer and retailer demand for certified products increasing[5]. For farmed Scottish salmon, the certification bodies primarily consider standards around fish welfare, management and use of chemical treatments, environmental

impact and interactions with wild species such as natural predators and native salmon populations.

These standards can be either a voluntary commitment or a formal obligation required by government and regulatory bodies, such as the Scottish Environmental Protection Agency (SEPA), as part of their licensing agreement.

Are there any problems with certification?

There are hundreds of accreditation schemes that measure a wide range of outputs. Even for the single product of farmed salmon in Scotland there are at least 7 schemes assessed by third-parties independent of retailers, regulators or legislation. The standards of these schemes are universal and in general are intended to enhance sustainability by providing 'additionality' to state regulation, for example through comprehensive requirements[6].

Whilst certification schemes are intended to improve the quality of standards throughout supply chains, it is important to acknowledge the interaction, i.e. that the businesses being accredited pay the certifying body to award their performance. A study of consumer confidence in food assurance schemes indicated this resulted in a level of mistrust of certification, despite supporting the principle[7]. This needs to be taken into account when considering the use of certification schemes to provide greater information to consumers, in particular by retailers.

The payment of the certification body is a significant factor to highlight as we must acknowledge the controversial nature of this relationship. Specifically, we understand that the certification bodies need the payments from companies, in this case salmon producers, for theirs to be a viable business. So where is the line between making performance standards achievable and engaging enough that the salmon producers will continue to pay the fee for this fish to be certified, and when is it too challenging or too costly for them to see this step as a financially viable element of their supply chain?

Another issue with certification is that it is site specific, with the result that the cumulative impact that several farms in one area could be having on the environment may not be adequately considered[8]. This is in addition to the wide range of rigour apparent in the standards, with some making 'recommendations' that do not need to be adhered to. Even where criteria are 'requirements' and must therefore be met to pass that standard, companies can apply for a 'variation' from a required measure. External impacts are also not always considered, such as the use of unsustainably produced feed, transport and processing[9].

Who are the certification bodies and what is their focus?

From our work regarding the Scottish salmon industry over the last few years, Fidra has developed a good understanding around the different types of certification in this sector. This document will set out each one in turn, alphabetically, reviewing their areas of focus and effectiveness, concluding with our recommendations for improving the environmental standards of the Scottish salmon farming industry.

Aquaculture Stewardship Council (ASC)

www.asc-aqua.org

Background

First developed in 2012, the ASC Salmon Standard has had good take up around the world. Currently, as of July 2021, there are 11 farms (6 seawater phase and 5 freshwater phase) in

Scotland certified by ASC, with 1 more seawater phase currently under assessment. Amendments made in December 2019 to the requirement for the freshwater stage of the salmon life cycle to be in a closed system, have made this standard more accessible; yet ASC still require for both fresh and water stages to be certified making the certification process a lengthy one. The ASC has a comprehensive website which lists farms that are certified, as well as those that have been or are applying for certification. A list of ASC certified salmon products available in the UK is accessible and are based on their following 7 principles:

1. legal compliance with national and local laws and regulations
2. preservation of natural habitats, local biodiversity and ecosystem
3. preservation of water resources and quality
4. responsible use of feed and other resources
5. preservation of the diversity of the wild population
6. improved fish health and controlled and responsible use of antibiotics and chemicals
7. farms to be socially responsible toward their workers and the local community.

The requirements are intended to be a starting point for continuous improvement and to be periodically updated to reflect the best available scientific knowledge, management practices and technologies, and the data collected during the certification of farms to the requirements. The requirements call for a high level of transparency around farm-level data and monitoring to assist in these future revisions.

ASC is one of only 2 bodies that require information to be publicly available, with the other being the Soil Association which has a list of certified businesses. The ASC website clearly lists certified farms and publishes their audit reports, which we feel demonstrates a measure of commitment to transparency. However, the audit report has limited detail, with no additional information provided such as the quantity or frequency of chemicals used. As the ASC is the only scheme that lists the farms that it certifies and publishes their audit reports, it is already far more transparent than the other schemes. For further details on ASC please refer to Appendix 1.

Code of Good Practice (CoGP)

www.thecodeofgoodpractice.co.uk

Background

The Code of Good Practice for Scottish Finfish Aquaculture (CoGP) was launched in 2006 as a production standard for the farming of all finfish in Scottish waters and designed as addition to the existing legislation and regulations in Scotland. The Aquaculture and Fisheries (Scotland) Act 2013 stipulates that the definition of 'farm management area' is as stated in the CoGP. The Scottish Salmon Producers Organisation (SSPO) is the industry body for Scottish salmon farming, and at present requires all of its members to adhere to the CoGP. At the time of publication all Scottish salmon farmers are members of the SSPO.

Previous versions of the CoGP have focused specifically on matters arising on fish farms. Yet, the current iteration is structured in a way that highlights good practice in each area of activity. This system breaks down the processes to specific areas and makes the details of the scheme more accessible to the relevant reader. For further details on CoGP please refer to Appendix 2.

Friend of the Sea

www.friendofthesea.org

Friend of the Sea aquaculture certification aims to limit the negative effects of operational elements of the industry. The standard looks to provide salmon farmers with a tool that allows them to develop while also respecting the marine environment and preserving the availability of natural resources.

This certification calls for there to be:

- no impact on critical habitats
- compliance with water quality parameters
- reduction of escapes to negligible levels
- no use of harmful antifouling or growth hormones
- compliance with social accountability
- reduction of carbon footprint.

To find out more details about how Friend of the Sea measure and monitor the above elements, refer to Appendix 3 below.

Global Aquaculture Association Best Available Practice (GAA BAP)

www.bapcertification.org/Home

BAP Salmon Farm Standards

GAA BAP verifies that producers of Scottish salmon are following best practices to deliver their product in the most responsible manner. Best Aquaculture Practices (BAP) is a certification body with a focus on seafood which addresses four key areas throughout the aquaculture supply chain:

1. Environment
2. Society
3. Food safety
4. Animal health and welfare

To find out more details about GAA BAP, refer to Appendix 4 below.

GLOBALG.A.P.

www.globalgap.org/uk_en/

GlobalG.A.P. Aquaculture module

The GLOBALG.A.P. Aquaculture module or standard sets strict criteria for:

- Legal compliance
- Food safety*
- Workers' occupational health & safety
- GLOBALG.A.P. Risk Assessment on Social Practice (GRASP)
- Animal welfare
- Environmental and ecological care**

*This standard has been assessed against the Global Food Safety Initiative (GFSI) obtaining GFSI recognition. GLOBALG.A.P. is the only Aquaculture farming accreditor to do this.

** GLOBALG.A.P. has also been recognised by the Global Sustainable Seafood Initiative's (GSSI) Global Benchmark Tool, which requires producers to successfully complete the 7-step Benchmark Process:

1. **Application**
2. **Desktop Review**: *Independent experts review the application and provided evidence*
3. **Office Visit:** *Independent experts visit the scheme's office to review evidence and complete the interim Benchmark Report*
4. **Benchmark Committee Meeting**: The Benchmark Committee evaluates the Report
5. **Public Consultation**: *The Benchmark Report and the Benchmark Committee's recommendation for recognition go to public consultation*
6. **Recognition Decision by Steering Board**: *The Steering Board takes a decision for GSSI recognition of the scheme based on the final recommendation of the Benchmark Committee.*
7. **Monitoring of Continued Alignment**: *Recognised schemes report any relevant changes to GSSI on an annual basis, in combination with regular reassessments through GSSI*

GLOBALG.A.P. certified products have the option of having a GGN number on the packaging, which can be put into the GGN website to access details of the producer[10]. At present this is limited to the producer name or company, year of establishment, number of employees and country of origin. A new consumer label was introduced in April 2021 with a graphic of a farmer, to clearly indicate a farmed product. As of July 2021 there are 6 Scottish salmon farming companies on the portal.

Read more on the specifics of the GLOBALG.A.P. standard in Appendix 5.

Label Rouge

Label Rouge (Red Label)

Label Rouge's standard specifically awards products based on their supreme taste rather than the performance of the producer. Scottish salmon was the first fish and non-French product to be accredited with this standard.

Label Rouge Scottish salmon producers must also comply with the standards of the Code of Good Practice for Scottish Finfish Aquaculture. To find out more about what this standard does monitor in relation to health and environment, refer to Appendix 6 below.

Soil Association Organic standard

www.soilassociation.org/media/18614/aquaculture-standards.pdf

The Soil Association's standards prioritise organic production, encompassing EU Organic Regulations. The Soil Association sets higher standards than is required by the EU Organic Regulation to ensure the highest performance in the following key areas:

- Animal welfare
- Protecting human and animal health
- Safeguarding the environment

- Protecting the interests of organic consumers

Throughout the auditing standard, a reference point offers information regarding which EU Regulation it responds to, or whether the standard goes beyond these legal requirements.

The Soil Association offer some degree of transparency in that you can search for individual companies under the Search for a Licensee option https://www.soilassociation.org/certification/find-a-licensee/search-for-a-licensee/ . However, this has to be done by individual company, rather than i.e. product. Therefore in order to compile a list of organic salmon farms in Scotland each company name has to be put in individually. For each "Licensee" or site that is listed, it then gives the License Status, Licensee, Farm/Organisation, Address and Licence number. There is no further information. According to the Scottish Governments annual Scottish Fish Farm Production Survey report just 4 of the 224 active sites producing Atlantic salmon were certified organic. This is a marked decrease from 14 in 2010.

A significant aspect of the standard for salmon is that the use of chemical treatments for parasites are restricted to 2 uses per month. While this goes beyond many of the other salmon standards available, it may well contrast with the public concept of organic farming as being 'free of chemicals'. To read more about the details of this standard, refer to Appendix 7.

Royal Society for the Protection of Animals (RSPCA) Assured

www.rspcaassured.org.uk/farm-animal-welfare/salmon-and-trout/

RSPCA Assured | RSPCA welfare standards

The RSPCA sets welfare standards for finfish aquaculture (salmon and trout farming), which must be met for the produce to be accredited as 'RSPCA Assured'. This standard has a focus on fish welfare, focusing on fish health, diet, environment, care and handling. Unlike many other certification bodies, RSPCA Assured audits the transportation stages of farming, as well as the production itself. This ensures a high quality of protection throughout the supply chain.

RSPCA Assured is assessed by external assessors and the RSPCA's farm livestock officers to ensure welfare standards are being met.

Find out more detail about RSPCA Assured in Appendix 8.

Scottish Government Legislation

www.gov.scot/policies/aquaculture/

Numerous Scottish Government bodies and Departments are involved in the regulation of Scottish salmon farming. These include:

- Marine Scotland (MS) and particularly Marine Scotland Science (MSS)
- Scottish Environment Protection Agency (SEPA)
- Scottish Natural Heritage (SNH)
- Fish Health Inspectorate (FHI)

All of the aforementioned bodies act as statutory consultees in the planning process by which new finfish farms are established and existing farms are developed. The FHI has the specific

focus of preventing the introduction and spread of diseases throughout aquaculture and wild populations.

More detail of Scottish Government's legislative processes is given in Appendix 9.

The following schemes are not certification bodies, yet we feel that they ought to be included in this discussion as retailers and producers look to these for guidance or to report on regulated activity.

Ocean Disclosure Project

www.oceandisclosureproject.org

The Ocean Disclosure Project (ODP) works to increase transparency throughout seafood supply chains. The ODP hopes that this will lead to a reduction in environmental impacts from this industry, with 100% of seafood being produced in a sustainable manner.

This scheme was launched in 2015 by the Sustainable Fisheries Partnership (see below) and started with the support and participation of five companies: Asda (UK), Morrisons (UK), and The Co-operative Food UK); and aquaculture feed producers, Biomar and Skretting. As of July 2021, 34 companies covering the UK, Europe and North America have participated in the ODP.

This project is notable in actively prioritising the United Nations' Sustainable Development Goals (SDGs), naturally focusing on Goal 14: Life Below Water. At present, ODP only recognise fishery certifications that have met the benchmark of the Global Sustainable Seafood Initiative. These are:

- Marine Stewardship Council (MSC)
- Iceland Responsible Fisheries Management (IRFM)
- Alaska Responsible Fisheries Management (Alaska RFM)
- Audubon Gulf United (G.U.L.F.) for Lasting Responsible Fisheries Management (RFM)

For farmed fish and shellfish, they recognize certification to these schemes:

- Aquaculture Stewardship Council (ASC)
- BIM Certified Quality Aquaculture (CQA) scheme
- Global GAP

Global Aquaculture Alliance's (GAA) Best Aquaculture Practices (BAP) - 2-star to 4-star*

Sustainable Fisheries Partnership

www.sustainablefish.org

Sustainable fisheries partnership (SFP) is a not-for-profit charity registered in the US working with the seafood industry to increase the sector's sustainability by increasing fish stocks, protecting marine wildlife, and ensuring responsible fish farming.

Founded in 2006, SFP now has a network of over 150 seafood businesses ranging from retail, food service, and processing. Crucially, SFP harnesses the power of the private sector to support marine conservation through increasing the environmental performance of farms.

This partnership uses available and up-to-date information to engage all stakeholders in the supply chain to understand the landscape of the industry, and what steps ought to be taken to

increase sustainable production. One of the ways they do this is through their public database of fisheries, FishSource, which contains information regarding the environmental performance and required improvement. This database contains more than 1,000 entries.

Sustainable Seafood Coalition (SSC)

www.sustainableseafoodcoalition.org

The Sustainable Seafood Coalition (SSC) is not a certification scheme or an eco-label, but a partnership of UK-based businesses that work together to confront problems within seafood supply chains and influence change by offering practical solutions and demonstrating good practice.

Set up in 2011, SSC have worked to ensure a healthy future for our oceans and envisage a future where all fish and seafood sold in the UK comes from sustainable sources.

Worldwide fund for nature (WWF) Sustainable Seafood Charter

WWF Global Seafood Charter

In 2015, the WWF set up a sustainable seafood charter to work with companies who are willing to make progressive commitments to improve their sourcing or production of their seafood and to communicate this to consumers.

The objectives of the WWF Sustainable Seafood Charter are supported by the following key principles:

1. Commitment to increase the traceability and transparency of seafood sourcing and production
2. Commitment to being among the leading seafood sourcing companies
3. Commitment to continuous improvement, in terms of volume and scope of responsibly sourced seafood - WWF expect farms to set an overall objective to become certified to MSC or ASC standards.
4. Commitment to regular publication of progress towards sustainability goals
5. WWF only publicly supports products that are credibly certified. Currently, only the Marine Stewardship Council (MSC) for wild-caught seafood and the Aquaculture Stewardship Council (ASC) for farmed seafood schemes meet WWF's minimum criteria.

So far, nearly 80 global industry partnerships have committed including M&S. Additionally, 550 wild caught fisheries(which is around 30% of the global commercial wild catch) have also committed.

Fidra's position – Conclusions and Recommendations

Table 1 below shows 12 main criteria assessed by certification schemes for farmed salmon. Fidra have evaluated each scheme by a points-based system which demonstrates which scheme 'scores' best. High scores are schemes with criteria requirements that must be adhered to (3=strictest requirements, 2= some requirements). Recommendations which are desirable but not required score 1 point, and criteria which have no requirements or recommendations score 0 points.

Table 1. Main criteria assessed by certification schemes for farmed salmon. Scottish legislation and the Code of Good Practice are included for comparison. Criteria are scored to show those with requirements that must be adhered to (3=strictest; 2), or recommendations which are desirable but not required (1), or that have no requirements or recommendations (0).

	ASC[10]	Friend of the Sea	GAA BAP[11]	Global GAP[12]	Label Rouge	Organic - Soil Association	RSPCA[13] Assured	Code of Good Practice	Scottish Government legislation
Environmental Impact	✓	●	●	●	●	●	●	●	●
Disease	✓	–	●	○	●	●	●	●	●
Treatment	●	●	●	●	●	✓	●	●	●
Feed	●	●	●	●	●	✓	●	●	●
Predators	●	●	●	●	●	○	●	●	✓
Escapes	●	●	●	●	●	●	✓	●	●
MPAs	●	–	○	✓	–	–	○	–	–
Animal Welfare	●	–	●	●	●	●	✓	●	●
Traceability	●	●	●	✓	●	●	●	●	●
Social Responsibility	✓	●	●	●	●	●	–	–	–
Enforcement	●	●	●	●	●	✓	●	●	●
Transparency	✓[14]	–	–	●[15]	–	●[16]	–	–	–
Score (/36)	28	16	21	25	20	24	21	18	19

✓ Strictest requirements; ● Requirements; ○ Recommendations; – No recommendations or requirements

[10] ASC: Aquaculture Stewardship Council
[11] GAA BAP: Global Aquaculture Alliance Best Aquaculture Practice
[12] Global GAP: Global Good Agriculture Practice
[13] RSPCA: Royal Society for the Prevention of Cruelty to Animals
[14] ASC audits for individual farms are published online
[15] Label and code available for consumer: gives basic information on farming company, not to individual farm level
[16] Organic Soil Association Licensees are listed online and can be searched by company

The ASC scheme has the strictest requirements for environmental impact, disease, social responsibility and transparency. Intended as a strong environmental scheme, it requires strict monitoring of a wide range of environmental parameters. A comparison between national regulations of the 4 major salmon producing regions, including Scotland, and the ASC salmon standard found the standard stronger in terms of escape numbers allowed, antibiotic usage and fish resources in feed[11].

Regarding transparency, it is the only certification scheme that lists individual farms that are certified and posts the audit reports online which include details of other certification schemes held by that farm. However, there is still a lack of detail of treatments used, and supporting documents are not available on the website. The ASC scheme is also distinct from the other schemes by having requirements for each of the 12 criteria, while the remaining schemes all have at least one criterion which has recommendations rather than requirements.

The Global GAP scheme has the strictest requirements for Marine Protected Areas (MPAs) and traceability. Considering that these schemes certify an industry based in the marine environment it is concerning that there is only one other scheme, the ASC, which has requirements around MPAs.

Of the remaining criteria, the Soil Association's Organic scheme has the strongest requirements for treatment, feed and enforcement. However, the lack of transparency makes it difficult to assess how effective enforcement is for the majority of the schemes. The audits available for ASC certified farms show that individual sites can be awarded variations from a scheme's standard, which therefore lessens the rigour of that standard.

The RSPCA Assured scheme has the strictest requirements for animal welfare of farmed fish, and escapes. The stocking density in particular is used as the basis for most other standards[12]. The final criteria is that of predators, and unusually in this case the Scottish Government's legislation is stronger than any of the standards, with amendments to the Marine (Scotland) Act 2010 prohibiting the issuing of licences to fish farms to shoot seals[13].

Certification encourages best practice, with many case examples showing improved practices demonstrated by certification processes that were then adopted more widely[14]. In aquaculture it has generally led to improvements in waste management, risk assessments, and mitigation plans and measures[15]. To comply with the audit process has often required better documentation and reporting, giving the opportunity for increased traceability and transparency. However, the majority of schemes in Table 1 score very low for transparency of information, an aspect that has been highlighted in research literature [7, 14]. One of Fidra's main asks is to increase transparency within the aquaculture sector, which will in turn increase accountability and drive adoption of best practice. This is supported by our consumer survey findings where 64% of the public would like to see more information on product labels and 86% would like to know the name of the farm their product was sourced from[16].

Despite their best intentions, consumers can choose to ignore information and NGO campaigns around the sustainability of products. Retail and food service companies however are very sensitive to negative messaging, and have largely driven the wide array of schemes[17]. It is surprising that the salmon farming industry itself and certification bodies generally limit the information available on which sites are certified and by which schemes, as better communication of this could potentially improve producers' reputations[6]. There remains a lack of transparency

and cohesion around the schemes used, and Fidra has developed 3 Recommendations to address this:

Recommendation 1: development of a sustainability dashboard

Increased transparency will lead to improved accountability and practice and Fidra believe this can be achieved through an online database or 'sustainability dashboard'. Fidra have developed environmental criteria for this dashboard highlighting those considered to be essential and additional ones that are desirable[18].

A well-designed dashboard would showcase what is currently being done at farm level in a clear and transparent way. Hosting all the data in a centralised location and comprehensive format will make it accessible for the use of consumers, retailers, industry, local authority planners and communities local to the fish farms.

Recommendation 2: retailers source from producers that meet strictest criteria

In addition to increased transparency on the environmental impacts of individual salmon farms in Scotland, Fidra would also like to see best practice processes implemented that reduce impacts on the local environment and to ensure regulators adopt robust legislation and effective enforcement. At present retailers should at least be striving to provide salmon that meets all the strictest criteria available through certification and legislation in Scotland, which is therefore certified by the ASC, Global GAP, Soil Association and RSPCA Assured, and has an Excellent regulatory compliance record including Good or Excellent benthic survey results[19].

Recommendation 3: retailers label salmon products with name of source farm

To show true accountability to the consumer, the supply chain of farmed Scottish salmon must be entirely transparent. The clearest way to do this is to label individual Scottish salmon products with the name of the farm that produced the salmon. Combined with a sustainability dashboard and comprehensive information on levels of certification and regulatory compliance, the consumer can then make an informed choice.

Appendix 1 - ASC

Environmental impact (Allowable Zone of Effect, Waste)

- Faunal index score indicating good to high ecological quality in sediment outside the AZE, (e.g. benthic quality index (BQI) score >=15 OR Infaunal Trophic Index (IT) score ≥ 25)
- Definition of a site-specific AZE, following the sampling methodology outlined in Appendix I-1 based on a robust and credible modelling system (required within 3 years of publication of ASC Salmon Standard.)
- 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

Biodiversity

- Evidence of an assessment of the farm's potential impacts on biodiversity and nearby ecosystems – Requirement: Yes
- Allowance for the farm to be sited in a protected area or High Conservation Value Areas (HCVAs) – Requirement: None

Non-biological waste from production

- Presence and evidence of a functioning policy for proper and responsible treatment of non-biological waste from production (e.g., disposal and recycling) – Requirement: Yes [responsible treatment will depend on remoteness of farm and infrastructure available – never dumping into the ocean].
- Evidence that non-biological waste (including net pens) from grow-out site is either disposed of properly or recycled – Requirement: Yes

Energy consumptions and greenhouse gas emissions

- Presence of an energy use assessment verifying the energy consumption on the farm and representing the whole life cycle at sea (measured in kilojoule/mt fish/production cycle)
- Records of greenhouse gas (GHG) emissions on farm and evidence of an annual GHG assessment
- Documentation of GHG emissions of the feed used during the previous production cycle (within 3 years)

Disease & parasites

- 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. Requirement: Yes
- A demonstrated commitment to collaborate with NGOs, academics and governments on areas of mutually agreed research to measure possible impacts on wild stocks. Requirement: Yes
- Establishment and annual review of a maximum sea lice load for the entire ABM and for the individual farm. Requirement: Yes
- Frequent on-farm testing for sea lice, with test results made easily publicly available within seven days of testing
- In areas with wild salmonids, evidence of data and the farm's understanding of that data, around salmonid migration routes, migration timing and stock productivity in major waterways within 50 kilometres of the farm

Health of farmed fish

- Evidence of a fish health management plan for the identification and monitoring of fish diseases, and parasites and environmental conditions relevant for good fish health, including implementing corrective action when required.
- Site visits by a designated veterinarian at least four times a year, and by a fish health manager at least once a month
- Percentage of dead fish removed and disposed of in a responsible manner (100%)

- Percentage of mortalities that are recorded, classified and receive a post-mortem analysis (100%)
- Maximum unexplained mortality rate from each of the previous two production cycles, for farms with total mortality > 6% (<=≤40% of total mortalities)
- A farm-specific mortalities reduction program that includes defined annual targets for reductions in mortalities and reductions in unexplained mortalities

Biosecurity management

- Evidence that all salmon on the site are a single year class [exception for contained farms, >95% water recirculation… (100%)
- 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
- Evidence of compliance with the OIE Aquatic Animal Health Code
- If an OIE-notifiable disease is confirmed on the farm, evidence that:
    1. the farm has, at a minimum, immediately culled the pen(s) in which the disease was detected
    2. the farm immediately notified the other farms in the ABM
    3. the farm and the ABM enhanced monitoring and conducted rigorous testing for the disease
    4. the farm promptly made findings publicly available

Sea Lice

- Frequent (weekly during and just prior to sensitive wild salmonid periods, then monthly unless too cold <4C) on-farm testing for sea lice, with test results made easily publicly (e.g. post on a website) available within seven days of testing
- In areas with wild salmonids (44 areas within 75 km of a wild salmon migration route or habitat), evidence of data and understanding of data around salmonid migration routes, migration timing and stock productivity in major waterways within 50 km of the farm
- In areas of wild salmonids, monitoring of sea lice levels on wild out-migrating salmon juveniles or on coastal sea trout or Artic char, with results made publicly available.
- No use of non-native species for sea lice control or on-farm management purposes

Chemicals

Non-therapeutic chemical inputs

- For farms that use copper-treated nets, evidence that nets are not cleaned or treated in situ in the marine environment
- For any farm that cleans nets at on-land sites, evidence that net-cleaning sites have effluent treatment
- For farms that use copper nets or copper-treated nets, evidence of testing for copper level in the sediment outside of the AZE
- Evidence that the type of biocides used in net antifouling are approved according to legislation in the European Union, or the United States, or Australia
- Allowance for use of therapeutic treatments that include antibiotics or chemicals that are banned in any of the primary salmon producing or importing countries – (NONE)
- Percentage of medication events that are prescribed by a veterinarian (100%)
- Allowance for prophylactic use of antimicrobial treatments (NONE)
- Allowance for use of antibiotics listed as critically important for human medicine by the World Health Organization (WHO108) -NONE

MPAs

- Allowance for the farm to be sited in a protected area or High Conservation Value Areas (HCVAs) – (NONE) – includes MPAs and other similar protective areas. Exception of IUCN categories V or VI

Predators

- Number of days in the production cycle when acoustic deterrent devices (ADDs) or acoustic harassment devices (AHDs) were used – 0 [within 3 years of publication of salmon standard]
- Prior to the achievement of 2.5.1, if ADDs or AHDs are used, maximum percentage of days in the production cycle that the devices are operational - <=40%
- Number of mortalities of endangered or red-listed marine mammals or birds on the farm – 0
- Evidence that the following steps were taken prior to lethal action against a predator:
    1. All other avenues were pursued prior to using lethal action
    2. Approval was given from a senior manager above the farm manager
    3. Explicit permission was granted to take lethal action against the specific animal from the relevant regulatory authority [except where human safety is endangered]
- Evidence that information about any lethal incidents on the farm has been made easily publicly available
- Maximum number of lethal incidents on the farm over the prior two years (<9, with no more than 2 being marine mammals)
- In the event of a lethal incident, evidence that an assessment of the risk of lethal incident(s) has been undertaken and demonstration of concrete steps taken by the farm to reduce the risk of future incidences

Feed

- Timeframe for all fishmeal and fish oil used in feed to come from fisheries certified under a scheme that is an ISEAL member and has guidelines that specifically promote responsible environmental management of small pelagic fisheries (<5years after date of ASC publication).
- Prior to achieving 4.3.1, demonstration of third-party verified chain of custody and traceability for the batches of fishmeal and fish oil which are in compliance with 4.3.2.
- Feed containing fishmeal and/or fish oil originating from by-products or trimmings from IUU (illegal, unregulated, and unreported) catch or from fish species that are categorized as vulnerable, endangered or critically endangered, according to the IUCN Red List of Threatened Species – NONE [except where regionally the species has been assessed as ‘non-vulnerable’.

Non-marine materials in feed

- Presence and evidence of a responsible sourcing policy for the feed manufacturer for feed ingredients that comply with recognized crop moratoriums and local laws
- Percentage of soya or soya-derived ingredients in the feed that are certified by the Roundtable for Responsible Soy (RTRS) or equivalent78 (100% within 5 years of standard publication)

Escapes

Non-native species

- *(preventing accidental introduction)* If a non-native species is being produced, demonstration that the species was widely commercially produced in the area by the date of publication of the ASC Salmon Standard
- Use of non-native species for sea lice control or on-farm management purposes
- Maximum number of escapees in the most recent production cycle (300 -farms must report all escapes, incl date and cause of escape) [rare exemptions made for escapes (once every 10 yrs) proven to be entirely out of farmer’s control]

- Estimated unexplained loss of farmed salmon is made publicly available
- Evidence of escape prevention planning and related employee training, including: net strength testing; appropriate net mesh size; net traceability; system robustness; predator management; record keeping and reporting of risk events (e.g., holes, infrastructure issues, handling errors, reporting and follow up of escape events); and worker training on escape prevention and counting technologies

Traceability

- Evidence of traceability, demonstrated by the feed producer, of feed ingredients that make up more than 1% of the feed. [level of detail to permit feed producer to demonstrate compliance with standards in document]

Wild stocks

- A demonstrated commitment to collaborate with NGOs, academics and governments on areas of mutually agreed research to measure possible impacts on wild stocks
- In areas with wild salmonids, evidence of data and the farm's understanding of that data, around salmonid migration routes, migration timing and stock productivity in major waterways within 50 kilometers of the farm

Social Responsibility

Workers' Rights

- Evidence that workers have access to trade unions (if they exist) and union representative(s) chosen by themselves without managerial interference
- Evidence that workers are free to form organisations, including unions, to advocate for and protect their rights
- Evidence that workers are free and able to bargain collectively for their rights

Child Labour

- Number of incidences of child (under 15, 14 in some developing countries) labour - NONE
- Percentage of young workers (under 18) that are protected (no exposure to hazardous conditions, no more than 10 hours work and school time combined)

Slavery

- Number of incidences of forced, bonded or compulsory labour - NONE

Discrimination

- Evidence of comprehensive and proactive anti-discrimination policies, procedures and practices
- An extensive list of criteria examining Health & Safety, Wages (none below minimum wage, must be working towards basic needs wage), Contracts (all workers on contract), Conflict Resolution, Disciplinary Practices, Working hours and overtime, education and training, CSR.
- Criteria based on 'being a good citizen' include community engagement, respect for indigenous and aboriginal cultures/ traditional territory, community access to resources

Back to top of document.

Appendix 2 – Code of Good Practice (CoGP)

Environmental Impacts (Zone of Allowable Effect / Waste)

- All water arising from the dead-haul of fish to processing plants should be treated on-shore
- Provision should be made either for the disinfection of water used to transport live fish destined for harvesting, or the safe disposal of the water at sea

Disease & Parasites

- Companies should have a Veterinary Health Plan (VHP) and Biosecurity Plan (BP) covering
- Where level of fish mortality exceeds thresholds of 1.5% weekly/6% 5-week rolling (Site Average Weight under 750g) or 1% weekly/4 % 5-week rolling (Site Average Weight over 750g) as agreed by Fish Health Working Group, it should be notified to MS FHI and the responsible veterinary surgeon

If importing live salmonids:

- Farmers should hold on record, appropriate certification to demonstrate that any salmonids to be imported are free from pathogens
- Farmers should hold records to demonstrate that salmonids to be imported have been vaccinated, where appropriate
- Live salmonids should be held in quarantine for no less than 3 months, during which time their health should be monitored. Farm Management Areas – it is a legal requirement for farmers to be party to a Farm Management Statement or Agreement.
- Where one fish farming company operates within a defined FMA, or where there is more than one company but no signed documented FMA, key aspects of the company's operations which may impact on the health of the farmed fish should be documented in a FMS.
- Where more than one company operates within a defined FMA each company should provide the other with a copy of its dated and up-to-date FMS.
- FMAs may be redefined following agreement by farmers who share the area: decisions to do this should demonstrate that the risks to health within and out with the area are not materially increased.
- All seawater pen sites (including broodstock sites) should adhere to a written fallowing plan.
- The minimum fallow period should be 4 weeks at the end of each cycle.
- Farms within a defined FMA should be fallowed synchronously on a single year class basis
- An exception may be possible, if the following is met: A documented risk assessment including strategies to be followed for pathogen and parasite control in the absence of fallowing.
- Transmission of infectious agents by birds and mammals should be minimised through: 3.128.1 measures designed to exclude birds and mammals, 3.128.2 hygienic procedures for handling dead fish, 3.128.3 feeding practices that minimise wastage, 3.128.4 where there is a risk of contact with seals – which are known to prey on farmed fish – this should be minimised by use of deterrent and other measures

Sea Lice

- Where available, hatchery-reared cleaner fish should be used
- A declaration should be held from companies fishing for wild cleaner fish, for the following:
  1. Use of appropriate bait
  2. Use of otter exclusion devices on nets
  3. Maximum and minimum sizes for all fish kept
  4. Record keeping requirements (catch location, fish caught, etc.)

- Sea lice levels should be monitored on a weekly basis by sampling 25 fish from across the pens (if >5 pens, then 5 fish from each of 5 pens. If <5 pens, 25 fish from across the farm). Results should be communicated weekly to other farmers in the FMA.
- Coordinated spring treatments should be conducted between week 8 and week 10 by all farms within a FMA in their 2nd year of production, if lice are above threshold levels.
- All farms should have CAR licence approval for a full suite of sea lice treatment products and should have provision for fully closed containment procedures, if medicants requiring such procedures are intended to be adopted.
- Auditing compliance against provisions of the National Strategy will be carried out by independent UKAS accredited inspection bodies as part of the audit process for the CoGP. From 2010 sea lice monitoring data will be analysed on a regional basis and published at www.scottishsalmon.co.uk to allow benchmarking to be undertaken.

Predators

- Transmission of infectious agents by birds and mammals should be minimised through: 3.128.4 where there is a risk of contact with seals – which are known to prey on farmed fish – this should be minimised by use of deterrent and other measures
- Recommendations are to use modern tensioned nets for pen construction coupled with ADD where appropriate and effective, plus additional netting or screening systems where they are effective. (ADDs not permitted by some planning consents due to effect on cetaceans)
- Birds should be excluded using nets, strings, scarecrows and other systems
- For seals the use of tensioned or false-bottomed nets is recommended
- The use of seal blinds to cover the dead fish basket is recommended
- The daily removal of any dead fish from the dead-fish basket is recommended
- ADD should be used where and as permitted
- The use of predator nets such as box or cone nets may be used where other measures have failed
- Records of losses to predators and use of predator control systems should be maintained

Feed

- Transmission of infectious agents by birds and mammals should be minimised through feed management plans which minimise wastage by feeding the correct amount to any population of fish in the proper manner and over the correct period of the day
- Untreated raw fish should not be used in seawater lochs
- Where whole fish or parts of fish form part of the diet, they should be pasteurised, irradiated or otherwise processed to make sure they are microbiologically safe

Escapes

- The method used to crowd fish, remove them from pens and harvest them should be assessed for the risk of escapes and, where appropriate, contingency arrangements put in place to minimise the risk.
- Nets should be examined before crowding the fish and at intervals during harvest operations to ensure the absence of defects likely to give rise to escapes and any defects repaired.
- Documented procedures to minimise the likelihood of damage from boats, rafts and equipment moored alongside pens
- Any escape or suspected escape of live fish should be reported immediately to all relevant stakeholders, including the trade body, local District Salmon Fisheries Board and Fisheries Trust (within 48 hours at the latest)

Traceability

- Traceability should be maintained throughout production processes

Animal Welfare

- During wellboat transport, all efforts should be made to ensure factors likely to stress fish are minimised
- Smolts should be in good physical condition when transferred into pens

Human Health

- Written Control Procedures should describe measures in place to prevent unacceptable residues remaining in the edible tissues when fish enter the human food chain

Back to top of document.

Appendix 3 – Friend of the Sea

Standards were last reviewed for the marine standards in 2014 and for the inland standards in 2016.

Environmental Impacts (Zone of Allowable Effect / Waste)

- The organisation shall have appointed at least one employee as responsible of the environmental management of the company
- The procedure shall require at least one yearly check and update of the environmental laws. Documents and registers shall be kept for at least 6 years.
- Control and measurement of environmental footprint shall be carried out at least every six months.
- The procedure shall require simulation of environmental emergency at least once a year.
- Any non-conformities and recommendations will need to be corrected within at least 6 months from detection or notification of non-conformity.

Location

- A license or permit is attained for development of the site as required by national regulation
- Environmental footprint assessment (EFA) carried out as required by national regulation
- In case the national regulations do not require an EFA, the Organisation shall arrange a third party to carry out a study shall verify that critical ecosystems have not been altered

Water quality

- The water quality parameters and the sediment parameters under the sea cages shall comply with the provisions of the existing regulations.
- The Auditor will ask for a copy of the latest analysis of the effluents carried out by the competent national bodies completed with official declaration of conformity with the regulation.
- Water quality parameters monitored at least once every 6 months
- Company keeps registered of results of analysis – kept for at least 5 years
- Distance between lower part of cage and sea bottom shall be at least 15 m – evidence provided

Energy Management

- The Organisation shall keep a register of the energy consumption, updated at least once a year
- The Organisation undertakes to achieve a yearly energy consumption reduction per product unit

Disease & Parasites

- The Organisation does not use drugs for preventive measures
- The use of drugs allowed by the regulation and other chemical compounds is only justified in case of specific issues

Chemicals

- The Organisation does not use toxic anti-vegetative paint. Provide independent scientific assessment that proves non-toxicity

GMO and Growth Hormones

- The use of GMO fish species is not allowed
- The use of growth hormones is not allowed

Hazardous Substances

- Using toxic and persistent chemical compounds (e.g. TBT, Malachite Green, DDT) is forbidden

Predators

Infrastructure

- In order to prevent other organisms, such as birds or other predators, from entering the system, the Organisation must implement screens, filters, cover-up nets or similar
- Control and maintenance procedures, at least every 6 months

Feed

- The Organisation uses animal feed certified by Friend of the Sea, when available on the market for the species
- The Organisation uses animal feed produced by IFFO certified plants such as Responsible Sourcing / Responsible Production

Escapes

Infrastructure

- The average yearly percentage of fish escape assessed is not higher than 0.5% of the total of bred fish, and evidence must be provided.
- 3.4 In case of escapes of animals, the organisation provided procedures for:
  1. Recording escapes records carried out at least once a week also stating the absence of escapes
  2. Promptly notify the competent local authorities – within a max of 30 minutes from detecting the escape
  3. Implement corrective measures to reduce future risks of further escapes due to similar causes – implementation of corrective actions within 6 months from detection or notification of issue

Traceability

- The Organisation records historical data concerning the conversion index of the food
- The Company shall implement a traceability system that allows verifying that the certified products come from approved systems and there is no possibility of exchange with products coming from non-certified systems.

Social Responsibility

- The organisation shall respect human rights, complying with the following:
  1. comply with national regulations and ILO on child labour
  2. Pay the workers adequate salaries compliant at least with minimum legal wages
  3. Grant their workers access to healthcare
  4. Apply the safety measures required by the law
- The organisation should be SA8000-certified. Recommendation only.

Back to top of document.

Appendix 4 – GAA BAP

Environmental Impacts (Zone of Allowable Effect / Waste)

Sediment and Water Quality

- Farms shall be located and operated in such a way that they minimise negative impacts outside a defined sediment impact zone, or on water quality within general vicinity of the farm.
- The applicant shall provide documents that describe local standards for benthic impacts under salmon farms, which shall include the benthic indicator "trigger level" above which the farm would not be in full compliance with the local standard, where this is clearly defined, or with its intent where it is not clearly defined.
- 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, its operating permits and/or its own monitoring plan at current operating levels.
- 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 characterises 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.
- For farms in countries where sediment monitoring is not required and/or a sediment impact zone is not defined as a condition of the farms' operating permits, the applicant shall write and implement a monitoring plan consistent with the provisions under Implementation above.
- Monitoring of sediment conditions shall be undertaken at the time of peak feeding during the production cycle and shall be conducted according to the requirements of the farm's operating permits or its own plan in countries or regions where sediment monitoring is not required, and as specified in the implementation requirements.
- Sediment sampling and analysis performed as part of the monitoring program shall be conducted according to methods generally accepted for such use in the region in which production is occurring.
- The results of sediment monitoring shall be reported to and approved by the appropriate regulators. Where regulatory approval is conditional upon implementing a program of remedial action.
- Data that will enable the farm's feed-based carbon and nitrogen discharges to be calculated shall be collected and recorded and may be required to be submitted to the BAP database for future use in BAP-sponsored research.
- Production cycles, fallowing and nutrient monitoring shall be coordinated with the other neighbouring BAP applicants or certified farms, or with members of an established Area Management Agreement (AMA).

Materials Storage, Handling and Waste Disposal

- The applicant shall have a written Material Storage, Handling and Waste Disposal Plan (MSHWDP) that includes the BAP requirements for proper handling and disposal as outlined in the implementation requirements above and be able to demonstrate compliance with it.
- Farm staff shall be familiar with the MSHWDP and trained in aspects of it they may be required to implement. This will be tested at audit by interview.
- Feed shall be stored so that it is protected from spoilage or infestation by pests and vermin.
- An inventory shall be kept of all hazardous materials or wastes (chemotherapeutants and materials that are hazardous to people) stored on or disposed of by the farm.
- Material safety data sheets shall be available for all hazardous materials.

- Fuel, lubricants and chemicals shall be labelled, stored and disposed of in a safe and responsible manner and marked with warning signs.

Disease & Parasites

Biosecurity and Disease:

- Management Farms shall operate with the aim of preventing infectious disease outbreaks, but when diseases or parasites infect farmed fish, diagnosis and treatment shall be carried out promptly and judiciously under the supervision of a fish health professional in a manner that minimizes impacts on the environment.
- The applicant shall designate an accredited fish health professional to oversee the Fish Health Management Plan, direct the diagnosis and treatment of fish diseases and coordinate activities with neighbouring farms under an AMA. The applicant shall notify the certifying body if the fish health professional changes.
- The applicant shall show that the designated fish health professional has the required licenses and accreditations to act in the farming region.
- 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.
- The fish health professional shall ensure compliance with all legal requirements for disease testing.
- Written procedures for the diagnosis and treatment of disease in fish shall include monitoring for endemic parasitic, bacterial and viral infections.
- The applicant shall adequately train farm staff in applying these biosecurity and health management procedures.
- 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.
- If used, drug treatments shall be based on authorizations by the fish health professional, who shall be guided by the FHMP and principles of best practice for the veterinary profession. The health professional shall prescribe medicines only to treat diagnosed diseases in accordance with instructions on product labels and national regulations.
- Records shall be maintained for every application of drugs and other chemicals that include the date, compound used, reason(s) for use, dose, withdrawal time and harvest date.
- The applicant shall record data on disease outbreaks and actions taken so this information can be made available to the BAP database for future GAA-sponsored research.
- If the applicant is a member of an AMA the farm shall demonstrate compliance with the fish health management requirements of the AMA or, if an AMA is not yet in place, that it coordinates fish health management activities with other BAP-certified farms in an area twice the regulatory minimum separation distance to an upper limit of 5 kilometres.
- The applicant shall demonstrate compliance with national or regional rules designed to minimize parasite reproduction and optimize control.
- The applicant shall accept that if the auditor has concerns about any aspects of how the FHMP is written or implemented, a second opinion can be sought from an independent fish health professional.

Sea Lice

- The applicant shall demonstrate compliance with national or regional rules designed to minimise parasite reproduction and when practical non-chemical treatments for sea lice are developed, their use may become a future BAP requirement.
- Applicants must be able to demonstrate that AMA rules and sea lice management procedures have been written for the protection of wild salmon, as well as the farmed fish. The rules and management shall include monitoring of sea lice loads and the setting of treatment trigger thresholds that take into account key factors such as season, the life cycle stages of farmed and wild fish, and the specific characteristics of the area in question.

Chemicals

Genetically Modified Salmon

- Cage farms shall not stock transgenic fish which are defined as fish that have been genetically modified by artificial transfer of genetic material from a different species. Sex-reversed salmon and their offspring, and organisms created by hybridization and polyploidy are not transgenic salmon.

Antifouling

- If any farm nets are treated with copper or other toxicant-based antifouling materials, cleaning procedures shall collect, treat and dispose of wash water in compliance with national regulations.
- In farms that are shifting from the use of antifoulants to in situ net cleaning, copper-based antifoulant-treated nets may be cleaned in situ if the nets have first been cleaned ashore by approved methods.
- The applicant shall have a written waste reduction plan and be able to demonstrate compliance with it, including a program to test alternatives to the use of toxicant-based antifoulant paints on farm nets.

Food safety

- Antibiotics or chemicals that are proactively prohibited in the producing or importing country shall not be used in feeds or any treatment that could result in harmful residue in fish.
- Documentation shall be available that states all fish in the farm have been grown from smolts reared without the use of proactively prohibited medicines such as malachite green or other substances prohibited in food animals.
- Documents shall be available from feed manufacturers that state antibiotics or other drugs are not present in non-medicated feed, that provide details of drugs or antibiotics in medicated feeds and state that levels of heavy metals and PCBs/ dioxins in feed are below limits for those compounds set by the countries in which the plants operate.
- Documentation shall be available that identifies local parasite species that may infest farmed salmon and which are potentially transmissible to humans, and describes the control measures taken to minimize the risk of such infestation.
- Antibiotics shall only be used to treat diagnosed bacterial disease and shall not be used as growth promoters.
- Where there is a discharge of potential contaminants within 5 kilometres of a farm, the farm shall check for that contaminant in the flesh of exposed fish on at least an annual basis and verify that levels are below those required by the exporting and importing countries.
- Equipment and containers used to harvest and transport fish shall be clean and free of lubricants, fuel, metal fragments and other foreign material.
- Ice in which fish are placed following harvest shall be made from potable water or seawater that has been disinfected to an equivalent standard.

Predators

Predator and Wildlife Interactions

- Farms shall manage physical interactions with wildlife and not reduce the biodiversity of ecosystems.
- Local rules notwithstanding, the applicant shall demonstrate that the farm meets the BAP procedural, performance, documentation and reporting requirements for a written Wildlife Interaction Plan, as described in the implementation requirements above, which shall include a list of local species of concern, expert wildlife interaction risk assessment, procedures to respond to risks and a description of the farm's passive deterrence measures and inspection procedures.
- The applicant shall provide site maps or other current documentation that show the farm is not within geographic areas officially designated "critical" or "sensitive" habitat (or equivalent). If such documentation is not available, the applicant shall provide proof of regulatory authorization of the farm site and operations, as well as a risk assessment of farm/wildlife interactions and related procedures.
- The applicant shall actively favour passive and/or non-lethal methods of predator control. No controls, other than non-lethal exclusion, shall be applied to species listed as "critically endangered" or "endangered" on the IUCN Red List or that are protected by local or national laws, unless specific written permission for such control is granted by the regulator.
- If lethal control is necessary and justified, the applicant shall designate a member of staff to take the action, provide training as needed in humane slaughter methods and only use methods that are legally approved.
- The applicant shall record, and report when required, the species and numbers of all avian, mammalian and reptilian predator mortalities, including accidental mortalities.
- The applicant may only use acoustic harassment devices to control predators if independent expert opinion verifies that their use will not harm endangered, protected or threatened species or any cetaceans, and if they are legally approved and/or permitted for use.

Feed

5. Fishmeal and Fish Oil Conservation

- Farms shall use feeds and feed ingredients produced by responsible methods, accurately monitor feed inputs and minimize the use of fishmeal and fish oil derived from wild fisheries.
- The applicant shall source feed from a BAP-certified feed mill or a feed mill that declares and documents compliance with the BAP feed mill standards criteria for fishmeal and fish oil conservation.
- Documents from feed suppliers shall be available that assure the traceability to source of marine protein and lipid ingredients present in feed at levels of 1% and non-marine ingredients at levels of 10% or greater.
- The facility shall calculate and record a feed-conversion ratio for each year class. 5.5: The facility shall calculate and achieve a final 'fish in: fish out' ratio of 1.5 or less for each year class harvested.
- BAP's new feed standard requires all ingredients to come from sources certified by the MarinTrust* and will require a minimum of 75% of marine ingredients to be from certified sources from 2025, increasing from its current level of 50%.
  *[*MarinTrust, which has recently gained full ISEAL recognition, has set itself the goal of getting 75% of global marine ingredients, certified or in assessment by 2025.]*
- Any uncertified marine Ingredients must, at a minimum, be free from IUU (illegal, unreported and unregulated) material.

Escapes

Control of Escapes

- Deterrence measures against predators should be in place to avoid holes being made in nets.
- Salmon farms shall take all practical steps to prevent escapes and minimise possible adverse effects on aquatic wildlife if escapes occur.

Limiting Impacts of Escapes

- Farms shall not be located in habitat areas officially designated as 'critical' or 'sensitive' with respect to wild salmon unless it can be demonstrated that situation was specifically considered by regulators in granting operating permits and approvals, and consideration was backed up by independent environmental analysis.
- If the farm operates in a jurisdiction where there are government regulations for fish containment, the applicant shall comply with the regulations and provide proof of so doing.
- 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, 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.
- The applicant shall provide documents to show that all staff members have received training in the Fish Containment Plan, which shall be verifiable by training certificates in employees' files and verified at audit by a subset of interviews.
- If an escape is suspected or has occurred since the last audit, the applicant shall provide reports and farm records to show that these incidents were dealt with in a manner consistent with the Fish Containment Plan.
- The farm shall not be located within an area officially designated as "critical" or "sensitive" habitat (or equivalent terminology) with respect to wild salmon unless site-specific, valid, official documentation authorizing an exemption, supported by an environmental impact analysis, can be provided.
- The applicant shall provide documents that prove the species of salmon farmed is approved for farming in that country and that the stocked fish are not transgenic. Where the species farmed is not native or not already farmed, further documents shall be provided to demonstrate that approval for farming is based on the 2005 ICES Code of Practice on Introductions and Transfers of Marine Organisms.

Traceability

- Documents from feed suppliers shall be available that assure the traceability to source of marine protein and lipid ingredients present in feed at levels of 1% and non-marine ingredients at levels of 10% or greater.
- The facility shall keep complete and accurate records for each culture unit and production cycle, including the culture unit identification number, unit area and volume, species stocked and, if applicable, species specifications such as triploid.

Property Rights and Regulatory Compliance

- Farms shall comply with local and national laws and environmental regulations, and provide current documentation that demonstrates legal rights for land use, water use, construction, operation and waste disposal.
- Where applicable, current documents shall be available to prove compliance with laws protecting the resources of indigenous peoples and/or independent agreements the applicant may have made with them.
- Where applicable, current documents shall be available to show compliance with the farm's own industry codes of practice.

Community Relations:

- The applicant shall accommodate local inhabitants by not blocking access to fishing areas and other public resources. Where access is not direct, the applicant shall provide signage and a written access plan demonstrating consideration of biosecurity and employee and public safety.
- The applicant shall clearly identify farm property lines and post signs that warn the public and staff of potential safety hazards.
- The applicant shall demonstrate interaction with the local community to avoid or resolve conflicts through meetings performed annually or more often, committees, correspondence, service projects or other activities.
- The applicant shall record, review and respond helpfully to requests for information received from the public, including sharing of non-proprietary farm data, and to reasonable complaints that are specific to the applicant's operation and provide details in writing of the alleged failing.
- Where applicable, the applicant shall demonstrate dialogue with local native peoples and a process for conflict resolution with them under the laws governing their rights.
- The applicant shall participate in or be working toward participation in an Area Management Agreement, and shall demonstrate compliance with the terms of such an agreement or a projected timeline for establishment of an agreement.
- Where an AMA has not been established, applicants shall demonstrate cooperation on matters of stocking, fallowing, fish health and biosecurity with BAP-certified farms within an area twice the regulatory minimum separation distance to an upper limit of a 5-kilometre radius.

Worker Safety and Employee Relations

- Farms shall comply with local and national labour laws to assure adequate worker safety, compensation, and, where applicable, on-site living conditions.

MPAs

- Wildlife in areas designated as "critical" or "sensitive" habitat can be particularly vulnerable to adverse interactions and salmon farms may be required to adopt special precautions if they are permitted to locate in such an area.

Animal Welfare

Animal Health and Welfare

- Procedures shall demonstrate that all operations that involve fish, including "cleaner fish" if used, are conducted with animal welfare in mind.
- Fish welfare shall be overseen and reported on by a designated fish health professional.
- The farm shall be located in waters where salmon would be expected to thrive, and farm facilities shall be clean and orderly.
- Where weather conditions allow, trained staff shall make at least daily inspections and reports on the culture facility, water quality, and behaviour and condition of fish.
- 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.
- When impaired fish and unwanted species are removed, their number, total weight and condition shall be recorded. They shall be killed by humane techniques, with the carcasses disposed of in a manner that ensures biosecurity and in accordance with applicable local and state regulations.
- 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.
- The applicant shall be able to demonstrate compliance with a written Water Quality Management Plan.
- The applicant shall apply stocking density criteria based on local conditions.

- Fish shall be harvested and transported under conditions directed by the fish health professional and designed to minimise distress.
- 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.
- Prior to slaughter, fish shall be stunned humanely.

Enforcement

- To obtain BAP certification, applicants must be audited by an independent, BAP-approved certification body.
- BAP auditors cannot know all laws and regulations that apply to salmon farming in all nations. Participating farms have the responsibility to obtain all necessary documentation for siting, constructing and operating their facilities, and make these available to auditors.

Back to top of document.

Appendix 5 – GLOBALG.A.P.

Environmental Impacts (Zone of Allowable Effect / Waste)

- Risk Assessment on animal welfare is required which includes predation and biotic factors (e.g. algal blooms).
- Emphasis of water quality testing is on microbial parameters (e.g. faecal coliforms)
- Waste disposal routes to be documented according to Environmental Risk Assessment (ERA)
- Waste management system in place according to ERA required
- A biodiversity-inclusive EIA and ERA required
- Environmental Management Plan (EMP) must incorporate regular environmental monitoring
- Monitoring required of benthic biodiversity, chemical indicators and possible chemical residue accumulation in the water body sediment

Blood Waters

All waste blood waters must be collected and treated before disposal, causing no veterinary or environmental threat.

Disease & Parasites

- Veterinary Health Plan (VHP) required.
- All disease occurrences must be registered.
- Written Hygiene Plan required.

Mortalities

- The organisation must have a plan to monitor and record trends in mortality
- There must be a contingency /action plan in place in the event of a severe disease episode or mass mortality. Contingency/action plans must be assessed and must comply with legal requirements where these exist.
- All mortalities will be recorded and removed from the fish holding area.

Sea Lice

- Mitigation methods must be demonstrated through the prevention of escapes and effluent handling.

Chemicals

- VHP must include risk assessment of medicinal residues in relation to food safety issues and potential impact on natural fish stocks around farms.
- Medicines and treatments applied shall exclude the following compounds: Nitrofurans (or its derivates), Triarylmethane dyes (including, but not limited to Malachite green, Crystal violet and Brilliant green), Stilbenes (including, but not limited to Stilbene, Dienestrol, Diethylstilbestrol, Hexoestrol), Chloramphenicol, Nitroimidazoles (including, but not limited to Dimetridazole, Ipronidazole, Metronidazole) or ß-agonists (including, but not limited to Clenbuterol)
- Fish flesh residue analyses to be carried out based on food safety risk assessment to verify compliance with Maximum Residual Limits (MRLs) for approved medicines and to verify no residues of non-approved substances are present.
- Fish flesh to be analysed for substances, required by customer and listed in VHP.
- Lab accredited to ISO 17025 required to carry out testing, or with proof of participation in ring testing.

Food Safety system

Hygiene Method of Packing / Dispatch

- For transportation to the Product Handling Unit (PHU) fish must be transported in clean conditions (containers or pipes), which prevent contamination during handling.
- Lids must be secured to prevent loss of fish and leakage during handling.

- Temperature of product must be reduced as quickly as possible after kill towards the temperature of melting ice.
- If ice comes in contact with the product, is it initially manufactured from potable water according to applicable legislative requirements and transported in hygienic containers.

Post-harvest operations:

- Fish holding facilities, including live fish well boats, must not be contaminated by blood water, factory effluent and/or spillage or discharge from marine traffic.

MPAs

- Sites must not be within a Protected Area, with the exception of IUCN Categories V and VI in which case consent of PA management required.

Predators

- Risk Assessment on animal welfare is required which includes predation and biotic factors (e.g. algal blooms).
- Predator nets shall not allow entanglement.
- Effective predator control plan required and records.
- Legal permit allowing destruction of predators (stating number and species) required and all mortalities recorded.

Feed

- All compound feed must be from a recognised source, certified against Global GAP standard or equivalent.

Escapes

- A contingency plan is required, and records of all escaped fish for last 12 months must be kept, including reporting to the relevant authorities.
- Effective measures must be in place to ensure there is no escape of farmed stock into the local watercourse, or ingress of indigenous species into the fish holding areas.

Traceability

- Domesticated brood stock are recommended but not required to be from Global GAP certified source.
- All fish must have spent entire life on Global GAP registered or approved farms.
- Each product must contain a GAP traceability code allowing consumer to trace the product back to its origin as part of its Chain of Custody (CoC).
    - The company shall maintain an up-to-date list of CoC approved suppliers (GLOBALGAP certified) of suppliers from which it buys certified products.
    - The company shall validate the GGN and CoC Numbers of all its suppliers of GAP certified products in the database.
- All records shall be kept for a minimum of two years or for a period that is one year after the expiry of the product's shelf life or as per legal requirements, whichever is longer.
- Records must allow show validation of traceability at batch level and allow mass-balance calculation.

Social Responsibility

- Evidence that coastal communities are allowed to fish in well-defined area around aquaculture infrastructures, whereby the aquaculture site doesn't prevent fishing vessels to access fishing areas beyond the designated aquaculture area.

Animal Welfare

- Density limits should be set by legislative limits or where there are none by scientific evidence of industry best practice regarding animal and welfare.
- Risk Assessment on animal welfare is required which includes predation and biotic factors (e.g. algal blooms).
- AQ 5.2.22 Management plan for cohabitant species (e.g. cleaner fish in salmon farming) that applies same animal welfare and bio-security principles.

- Oxygen level of holding areas must be controlled and recorded.
- Slaughter method used must be specified in the VHP and consider fish welfare.
- Fish must be effectively stunned prior to bleeding, and immediately become unconscious.

Enforcement

- Company must undertake a minimum of 1 self-assessment per year.
- Effective corrections and corrective actions must be implemented and documented as a result of the self-assessment.
- A person must be nominated for management of this Chain of Custody standard.
- All workers involved in implementation of standard are competent, have received training and there are written instructions of their duties.
- Mass balance equations used to ensure consistency between input and output of a certified product.

Back to top of document.

Appendix 6 – Label Rouge

Feed

- Flours made from animals are not allowed in the feed.
- Feed must be composed of a minimum of 51% of ingredients of marine origin.

Animal Welfare

- The fish must be free from visible malformations.
- Maximum density of 15 kg/m3, which can increase to 20 kg/m3 before harvest.

Back to top of document.

Appendix 7 – Soil Association / Organic

Environmental impact (Allowable Zone of Effect, Waste)

General organic principles

- If the site produces more than 20 tonnes of organic aquaculture product per year (including seaweed) it must have an environmental assessment considering conditions of the site and likely impacts on the immediate environment. *Based on EU guidelines for impact assessment*.
- The site must provide a sustainable management plan drawn up with neighbouring operators for aquaculture. This would include environmental effects, monitoring, measures to minimise negative impacts, details of nutrient discharge, technical equipment survey and repair, a waste reduction schedule, defensive measures against predators and impacts on wild species.

Renewable energy and recycling

- Preferably use renewable energy sources and recycled materials. Where possible the use of residual heat should be limited to energy from renewable sources.

Sea based containment systems

- These systems must be located where water flow, depth and water body exchange rates are adequate to minimise the impact on the sea bed and surrounding water body.
- The containment system must have suitable cage design, construction and maintenance with regard to their exposure to the operating environment.

Production in fishponds, tanks, raceways

- Waste must be monitored at regular intervals and either collected, or the quality of effluent improved, using:
  1. Natural filter beds
  2. Settlement ponds
  3. Biological or mechanical filters
  4. Seaweeds or animals (e.g. bivalves)

Packaging

Minimising environmental impact

- To minimise direct and indirect environmental impacts of your packaging during its life cycle, the site must:
  (a) minimise the amount of material used
  (b) maximise amount of material that can be reused or recycled
  (c) use materials with recycled content where possible
- During inspection, the site must be able to demonstrate that this is the case for each packaging format used.
- Packaging must be reviewed at least every 3 years and evidence of this must be supplied.
- For reusable/reused packaging, the site must:
  (a) make sure it is in good repair
  (b) ensure it is clean and free of contamination
- For any compostable or biodegradable primary packaging (other than paper, cardboard and wood) used, it must:
  (a) Conform with European standards for compostable packaging
  (b) Be clearly labelled to indicate best method of disposal. Note: materials are often derived from genetically modified organisms therefore not permitted.
- Bleached paper or carboard can only be used if it is Totally Chlorine Free (TCF) or Elemental Chlorine Free (ECF). Recycled paper must be Process Chlorine Free (PCF).
- Prohibited packaging materials:
  (a) Unlacquered aluminium foils
  (b) Coatings, dyes, or inks containing phthalates

(c) Polyvinyl chloride (PVC)

Disease & parasites

Animal health management plan

- The site must have an animal health management plan which complies with the Council Directive 2006/88/EC on animal health requirements.
- This plan must detail biosecurity and disease prevention practices and have a written agreement for health counselling with qualified aquaculture animal health services. Visits must take place at least once a year for salmon.

Disease prevention

- The following must be considered and/or be in place:
    - appropriate siting
    - optimal design of holdings
    - application of good management and husbandry practices
    - regular cleaning and disinfection of premises
    - high quality feed
    - appropriate stocking density
    - breed and strain selection
    - Records must be kept of all disease prevention measures giving details of fallowing, cleaning and water treatment.
- Fallowing must take place after each production cycle. (A competent authority will determine if necessary and appropriate duration).
- Cleaning structures during fallowing structures must be emptied, disinfected, and left empty before being used again.
- Uneaten fish, faeces and dead animals must be removed.

Veterinary Treatments

- If a health problem arises the site may use treatments as follows:
    1. Homeopathic remedies
    2. Plants and plant extracts (not those with anaesthetic effects)
    3. Where these treatments are not appropriate or effective, allopathic treatment must be used as per standard

Allopathic treatment

- Routine prophylactic treatment with synthetic drugs is prohibited. Only use if above treatments ineffective.
- Drug treatments must only be applied a maximum of 1 or 2 times a year, with exemption of vaccines. If production cycle is less than 1 year, sites may treat stock with only one allopathic treatment.
- If aquaculture animals need to be treated with any veterinary medicinal product Farm Managers must inform Soil Association, or their national control authority, before stock is marketed as organic.
- Aquaculture animals must not be sold as organic if they have received more treatments than permitted in these standards.
- You must treat your animals if required by national authority for protection of human and animal health and all records of disease treatments must be kept.

Aeration and oxygen use

- Sites may use aeration to ensure animal health, aerators powered by renewable energy are preferred where possible.
- Sites may use oxygen only for animal health requirements and critical periods of production or transport in the following cases:
    1. Exceptional cases of temperature rise
    2. Fall in atmospheric pressure

3. Accidental Pollution
4. Occasional stock management procedures such as sampling and sorting
5. In order to assure the survival of farmed aquaculture livestock. Use must be recorded in production records.

Bio-fouling

- Sites must remove bio-fouling organisms only by physical means and, where appropriate, return them to sea at distance from the farm.
- Sites must only clean equipment and facilities by physical or mechanical measures.

Parasite treatments

- With exclusion of compulsory control schemes operated by national authorities, sites may use parasite treatments a maximum of twice per year (or once if production cycle is less than 18 months). Approval required for all parasite treatments from certification officer.

Prohibited products

- No organophosphates, ivermectin-based veterinary medicines must be used. If used, the salmon cannot be sold as soil association organic.

Sea Lice

Parasite treatments

- Sites must give preference to the use of cleaner fish for biological control of ectoparasites or freshwater, marine water and sodium chloride solutions. Farms should check with local agencies whether permission is needed to use cleaner fish and outline how to ensure their welfare.

Chemicals

Ensuring Organic Status

- Manager must identify any risk of contamination to organic products from unauthorised or prohibited substances, and ensure measures are in place to reduce contamination.
- Sites must be located in areas that are free from contamination by substances not permitted in organic production, and free from pollution or pollutants that would affect the organic integrity of the product.
- Organic and non-organic production must be adequately separated.
- A competent authority may designate locations or areas which they consider to be unsuitable for organic aquaculture.
- Use of hormones or hormone derivatives is prohibited.
- Sites must be cleaned and disinfected using only products allowed in these standards:
  Ozone, sodium hypochlorite, calcium hypochlorite, calcium oxide, caustic soda, alcohol, potassium permanganate, mixtures of potassium peroxomonosulphate and sodium chloride producing hypochlorous acid.
  List of products allowed in the presence and absence of animals:
  Limestone for pH control, sodium chloride, hydrogen peroxide, sodium percarbonate, organic acids (acetic, lactic, citric), humic acid, peroxyacetic acid, peracetic and peroctanoic acid, iodophores (only in the presence of eggs). *Use of substances to comply with EU legislation*.

Genetic engineering and nanotechnology

- GMOs, or their derivatives, must not be used in organic farming or food processing

Predators

- Defensive and preventative measures taken against predators, in line with national rules and the Habitats Directive.

Feed

- Withdrawing Feed: The maximum starve period before harvest for salmon is 50 degree days.
- Feed must be suitable for carnivorous aquaculture animals with the following priorities:
  1. Feed is organic and of aquaculture origin

2. Fish meal and fish oil are from agricultural trimmings
3. Fish meal and oil ingredients are derived from trimmings of fish already caught for human consumption in sustainable fisheries.
4. Feed products derived from whole fish caught in fisheries certified are deemed 'sustainable' under a scheme recognised by the competent authority according to principles of European law (1380/2013)

- Sites may feed fish astaxanthin (antioxidant) derived primarily from organic sources, such as organic crustacean shells, within the limit of their physiological needs. If organic sources are not available natural sources e.g. Phaffia yeast are permitted.
- Calcified seaweed is prohibited, including lithotamn or maerl.
- All records and lists of ingredients must be kept.

Escapes

- Installations for containing farmed species must be designed, located and operated to minimise risk of escapes.
- If fish escape farm staff must take appropriate action to reduce the impact of the local ecosystem, including recapture where appropriate.
- Records of escape incidents and actions must be kept to reduce the impact on the local ecosystem, including recapture efforts.
- Measures regarding how farms will minimise escapes will be detailed in their aquaculture management plan e.g. net maintenance, design of installation.

Traceability

Record keeping

- Sites must keep clear, accurate records of all farm processing operations at the unit or premises.
- Records must kept of all animals brought onto site with the following information:
  1. Origin
  2. Date of arrival
  3. Conversion period (if relevant)
- As animals leave the site the following information must be documented:
  1. Number of batches
  2. Age of fish
  3. Weight
  4. Destination of animals

Social Responsibility

Employment

- Sites must not use forced or involuntary labour, or child labour where it interferes with their education.
- Soil Association may withdraw certification if working conditions on organic holdings do not meet legal requirements, or flout the UN convention for human rights.
- If sites have 10 or more workers, it is essential to have a policy that ensures the farm complies with legal requirements or the UN convention for Human rights.

Fish stocks

- Locally grown species must be used and breeding must aim to give strains which are more adapted to organic farming conditions, good health and good utilisation of feed resources.
- Farms must document evidence of salmon origin, treatments and date of arrival.
- It is essential that the chosen species can be farmed without causing significant damage to wild stocks.
- When organic aquaculture animals are not available, sites may bring in wild caught or non-organic stock to improve the genetics of your stock or for breeding purposes. Sites must keep these animals under organic management for at least 3 months before they are used for breeding.

Animal Welfare

Meeting the needs of your aquaculture animals

- The developmental physiological and behavioural needs of your aquaculture animals must be met through: husbandry practices, feeding, design of installations, stocking densities and water quality.
- Design and instillation must provide flow rates and physiochemical parameters that protect the animal's health and welfare and provide for their behavioural needs.
- Holding facilities must be designed to cater for the specific needs of the aquaculture animals so they:
    1. Have sufficient space for their wellbeing
    2. Are kept in water of good quality with sufficient oxygen levels
    3. Are kept in appropriate temperature and light conditions

Stocking densities

- Farm managers must consider the welfare of farmed fish and monitor the following:
    1. Fin damage
    2. Other injuries
    3. Growth rate
    4. Normal behaviour and indications of stress
    5. Overall health
    6. Water quality

Aquaculture livestock management

- Handling of aquaculture livestock should be kept to a minimum. When handling is necessary, great care, proper equipment and protocols must be used to avoid stress and physical damage.
- Broodstock must be handled in a way that minimises physical damage and anaesthesia can be used where appropriate.

Harvest and slaughter

- Only slaughter techniques that render fish immediately unconscious and insensible to pain must be used.
- It is essential to take into account harvest sizes, species and production sites when considering optimal slaughter methods.
- Methods that are not allowed: ice, carbon dioxide, suffocation, exsanguination without stunning, operating a rolling harvest where you starve all fish in the holding facility and selectively grade a number for slaughter on a repeated basis, starving stock to modify carcass weight or quality.

Lighting

- Sites may only prolong natural day-length beyond 16 hour days for reproductive purposes and abrupt changes in light intensity must be avoided.

Artificial heating or cooling

- This is only allowed in hatcheries and nurseries. Natural borehole water may be used to heat or cool water at all stages of production.

Rearing on Land

- For land-based rearing, units with flow-through systems must be monitored and the flow rate and water quality controlled. At least 5% of the perimeter (land-water interface) must have natural vegetation.

Transport

- If transporting live fish, manager must ensure welfare of the fish is maintained by:
    1. Transporting fish in suitable tanks with clean water which meets their physiological needs in terms of temperature and dissolved oxygen
    2. Thoroughly cleaning, disinfecting and rinsing tanks before transport

3. Taking precautions to reduce stress (density must not reach level which is detrimental to the species)
4. Records must be kept to demonstrate compliance with these transport requirements.

Enforcement

Inspection

- Soil Association inspectors will assess operations on farms to make sure their standards are met. The inspector will then produce an inspection report with an action summary form. This form will list areas that do not comply with standards, with requests on how farms must improve their performance. Sanctions may be imposed depending on severity of weakness.
- After inspection farms must complete the action summary form highlighting how changes will be made to comply with standards, returning to the Soil Association with additional information before the given deadline.
- If satisfied with the performance, the Soil Association will then issue a new, or continue the existing, license of a site.
- A licence may be suspended or terminated if a completed form is not submitted, or complete, within the deadlines. If a licence is suspended, the product cannot be sold as organic.
- Additional inspections (announced or unannounced) will take place if:
    1. Site managers want to add a new enterprise to the licence
    2. The site requests to move to a new premises
    3. Soil Association receives a complaint about a site
    4. The farm is selected as part of Soil Association's spot inspection programme
    5. Soil Association decide they need to inspect again to ensure correction of non-compliance have been met
    6. The completed risk assessment of site operations suggests the need for an additional inspection

Genetic testing

- If the Soil Association feel there is a risk that traceability has been compromised or contamination has occurred, they may request samples of products, ingredients or other inputs to test for the presence of GMOs.

Back to top of document.

Appendix 8 – RSPCA Assured

Environmental impact (Allowable Zone of Effect, Waste)

- Remove dead fish from the surface as frequently as is necessary, and:
  (a) at least twice a week, unless adverse weather conditions mean this would involve danger to personnel, and,
  (b) at least daily for land-based systems.
- Stock keepers must be able to recognise both visual indicators of poor water quality and, fish behaviour that indicates poor water quality.
- The siting of tanks and enclosures must be carefully considered with regard to fish welfare, personnel safety and minimising adverse effects upon the environment as detailed in the site's Environmental Impact Plan.
- Water quality consumption must be monitored sufficiently frequently, if necessary daily, depending on the system, time of year and lifecycle stage of stock.
- The farm must have an Emergency Action Plan that contains provisions to account for potentially catastrophic events that adversely affect water quality, such as algal or jellyfish blooms.
- Deterioration of water quality due to fouled nets or over feeding must be avoided.

Disease & Parasites

- A written policy is required to avoid spread of disease between different populations of fish, contained within a Veterinary Health and Welfare Plan (VHWP) and is developed with a designated veterinary surgeon.
- The cause of death of all fish must be classified using categories in the VHWP.
- A site specific VHWP must be drawn up:
  (a) at the start of the production cycle or on an annual basis
  (b) by those responsible for the welfare of the fish
  (c) and details of the review must be made available on request
- Fish must be continuously monitored for signs of disease or problems with the environment or handling practices. In the instance where a fish is suffering from physical damage or disease symptoms it must be either segregated or treated.
- If the mortality level is above 0.5% a week, the designated vet or trained and competent fish biologist/fish health manager must be notified and an investigation made as appropriate.

Sea Lice

- Farms must take all reasonable steps to minimise the gravid lice population as per the requirements of the Aquaculture and Fisheries (Scotland) Act 2007.
- Separation of year classes and fallowing of sites must be practised to help control sea lice populations as detailed in the Environmental Impact Plan.
- Sea lice prevention and treatment programmes must be drawn up with the designated vet and fully detailed in the VHWP.
- Sea lice damage to fish must be recorded during lice counts.
- Non-medicinal sea lice removal technologies must be risk assessed against the impact they may have on the welfare of the fish prior to each use of the technology.
- Where the level of fish mortality exceeds 1.5% (under 750g site average weight) or 1.0% (750g+ site average weight), this must be recorded and reported to RSPCA Assured within 72 hours.
- Only the following cleaner fish are permitted at the present time:
  (a) wrasse
  (b) lumpfish

- Exceptional mortality levels or compromises to cleaner fish welfare, arising from any single event must be reported to RSPCA Assured along with records of mortality analysis within 72 hours of the event.
- Enclosures must be fallowed as detailed in the Environmental Impact Plan to allow recovery of the benthos and help to reduce sea lice populations.

Chemicals

- Prophylactic use of medicinal products, where no disease problems exist, is prohibited (except for vaccines agreed with a veterinary surgeon.)
- In cases where medication is required for welfare, treatments must be within current legislation and vet's recommendations.
- Any veterinary medicines used must be licensed in the UK for use in Atlantic salmon or authorised under an Animal Test Certificate or an Animal Test Exemption Certificate issue.
- All farms must have a written pharmaceutical waste policy.
- No feedstuffs containing growth regulators or hormones are permitted for use.
- The use of veterinary medicinal products in food is prohibited, except for essential therapeutic use (a disease outbreak or where welfare will otherwise be compromised as advised by a vet).

MPAs

- The potential for therapeutic agents to affect the environment both locally and more widely, must be given full consideration and all relevant legislation and Codes of Practice must be adhered to.
- The siting of tanks and enclosures must be carefully considered with regard to fish welfare, personnel safety and minimising adverse effects upon the environment as detailed in the Environmental Impact Plan.

Predators

- The shooting of seals is not permitted under normal circumstances. Seals must not be shot other than in exceptional circumstances and as a last resort only when all non-lethal deterrents have been deployed.
- Only the following situations are deemed to be 'exceptional circumstances':
  (a) Sudden damage to nets, ADD systems, and other equipment used to protect the fish from seals (e.g. due to extreme weather), following which a seal is found to be in the act of attacking the salmon (NB repair of all systems needs to be undertaken immediately on detecting the damage).
  (b) Emergency situations where a seal has actually entered the salmon cages and is in the act of attacking the fish within.
- Predator nets must be considered for deployment at high risk sites during high risk periods, and at other times as appropriate if there is a risk of attack.
- Any site that is recognises as having a high risk of attack or has suffered and attack in the past must have a working Acoustic Deterrent Device (ADD). *(ADDs should only be used taking into consideration potential effects on other wildlife, in particular cetaceans.)*
- If an attack takes place on a site with no history of previous attacks, then an ADD must be deployed without delay.
- The producer must be able to demonstrate to the Freedom Food Assessor or the RSPCA Livestock Officer that all of the procedures leading to the point of last resort have been mobilised. *(The repeated shooting of seals without having deployed all the measures leading to a last resort scenario will result in the site being suspended from the scheme.)*
- There must be positive identification that a seal is causing the problem of fish mortality, or is the cause of compromised fish welfare.
- Where it becomes necessary to humanely dispatch a seal as a last resort, the following records must be kept:

(a) details of any animal that has been shot
(b) the number of fish killed before resorting to a lethal method
(c) the number of fish on site

- All required details relating to seal shootings must be provided to RSPCA Assured within 72 hours of the shooting having taken place.
- After every shooting incident, a review of all predator exclusion procedures must be undertaken, and records kept of such reviews.

Feed

- All feed must be manufactured from constituents that are free from active parasites and known fish pathogens and contamination.
- No feedstuffs containing growth regulators or hormones are permitted.
- Veterinary medicinal products in food is prohibited except for essential therapeutic use.

Escapes

- Farms must have a site-specific containment plan in place with the aim of preventing fish escaping and which includes plans for fish recapture.
- Enclosures must be designed and sited in such a way that they are not likely to be damaged by adverse weather conditions.
- Enclosure nets must be regularly checked for holes and fouling and maintained accordingly.

Traceability

- Eggs and juvenile fish must be produced in-house or from another Freedom Food approved supplier.
- Up- to-date records must be maintained regarding the details of the origin of the stock, allowing traceability.

Animal Welfare

- Consideration should be given to stocking tanks to avoid crowding throughout the production cycle to limit grading or handling.
- Grading must only be performed when absolutely necessary.
- A written grading plan must be agreed between the farm management and site staff, and/or grading operator prior to operations, and must become part of the VHWP.
- Only Healthy fish must be subjected to grading.
- Fish must not be crowded for more than 2 hours.
- Oxygen levels must be monitored and recorded throughout all crowding operations and not fall below 7mg/l.
- Minimum depth of the enclosure must be 5 m *(apart from fry in freshwater loch enclosures)*.
- Depth of the net must be such that there is a gap of at least 5 m from the base of the net to the seabed
- With enclosures of 24 x 24 m or bigger, or the circular equivalent, the maximum depth to which the stocking density can be calculated must not exceed 17m.

Genetic Selection and Modification

- Genetic modification techniques are prohibited.

Climate Change

- The issues relating to climate change have the potential to significantly affect the welfare of farm animals. The RSPCA believes that it is now appropriate to react to, think ahead, and consider what can reasonably be done to mitigate, any negative effects that adverse weather conditions may have/be having on the welfare of farm animals now, and in the future.

Back to top of document.

Appendix 9 - Scottish Government legislation

Environmental Impacts (Zone of Allowable Effect / Waste)

- According to the CoGP, it is a legal requirement for farmers to be party to a Farm Management Statement or Agreement.

Disease & Parasites

- Part 1: Scottish Government Ministers can make an order to obtain information in relation to the prevention, control and reduction of parasites.
- Part 2: Containment and treatment of Gyrodactylus salaris must be reported to Scottish Government so that subsequent action can be taken.

Sea Lice

- Farm managers must report average numbers of adult female sea lice (gravid) found per fish on any site in Scotland weekly to the FHI.
- Where reported sea lice counts reach or exceed an average of 2 adult female sea lice per fish, FHI will increase monitoring until either the count is below 2 or reaches the intervention limit of an average of 6 adult female sea lice per fish on any site.

Predators

- Due to the amendment of the Animals and Wildlife (Penalties, Protections and Powers)(Scotland) Act 2020, from 1 February 2021 licences are no longer granted to shoot seals in order protect fish farms.
- Following a review of Acoustic Deterrent Device use on salmon farms received by Ministers on 1 March 2021, a Code of Practice on marine mammal interactions has been developed by Marine Scotland and was put to consultation in June 2021.

Escapes

- Scottish Government Ministers can make an order to obtain information in relation to:
  (a) The containment of fish
  (b) Prevention of escape of fish
  (c) The recovery of escaped fish

Enforcement

- Scottish Government Minister's legal powers are exercised by Marine Scotland's FHI.
- A fish farm located within a farm management area must:
  (a) be party to a farm management agreement or maintain a farm management statement
  (b) have a farm management agreement or statement that contain arrangements for:
    i. fish health management
    ii. management of parasites
    iii. movement of live fish on and off farms
    iv. harvesting of fish
    v. fallowing of farms after harvesting
- Scottish Ministers are to monitor compliance with any approved code such as the CoGP
- A person who receives an enforcement notice commits an offence if they fail to comply with the requirements of that notice and is liable on summary conviction to a fine not exceeding level 4 on the standard scale.

Back to top of document.

References

[1] https://www.scottishsalmon.co.uk/sites/default/files/2020-09/estimation-wider-economic-impacts-aquaculture-sector-scotland.pdf

[2] https://www.gov.scot/publications/scottish-fish-farm-production-survey-2019/

[3] https://aquaculture.scot/

[4] http://www.ecolabelindex.com/

[5] Amundsen, V.S. & Osmundsen, T.C. (2020) Becoming certified, becoming sustainable? Improvements from aquaculture certification schemes as experienced by those certified. *Marine Policy*, **119**, 104097. https://doi.org/10.1016/j.marpol.2020.104097

[6] Olsen, M.S., Thorvaldsen, T. & Osmundsen, T.C. (2021) Certifying the public image? Reputational gains of certification in Norwegian salmon aquaculture. *Aquaculture*, **542**, 736900. https://doi.org/10.1016/j.aquaculture.2021.736900

[7] Eden, S., Bear, C. & Walker, G., 2008. Understanding and (dis) trusting food assurance schemes: consumer confidence and the 'knowledge fix'. *Journal of Rural Studies*, 24(1), pp.1-14. https://doi.org/10.1016/j.jrurstud.2007.06.001

[8] Osmundsen, T.C. *et al* (2020) The operationalisation of sustainability: Sustainable aquaculture production as defined by certification schemes. *Global Environmental Change*, **60**, 102025. https://doi.org/10.1016/j.gloenvcha.2019.102025

[9] Amundsen, V.S., Gauteplass, A.A. & Bailery, J.L. (2019) Level up or game over: the implication of levels of impact in certification schemes for salmon aquaculture. *Aquaculture Economics & Management*, **23:3**, 237-253. https://doi.org/10.1080/13657305.2019.1632389

[10] https://ggn.org/Flori/OurFarms

[11] Luthman, O., Jonell, M. & Troell, M. (2019) Governing the salmon farming industry: Comparison between national regulations and the ASC salmon standard. *Marine Policy*, **106**, 103534. https://doi.org/10.1016/j.marpol.2019.103534

[12] Rey, S., Little, D. & Ellis, M. (2019) *Farmed fish welfare practices: salmon farming as a case study*. GAA publications, 56pp.

[13] https://www.legislation.gov.uk/asp/2010/5/contents

[14] Steering Committee of the State-of-Knowledge Assessment of Standards and Certification. (2012). *Toward sustainability: The roles and limitations of certification.* Washington, DC: RESOLVE, Inc., 427pp.

[15] Vince, J. & Haward, M. (2019) Hybrid governance in aquaculture: Certification schemes and third party accreditation. *Aquaculture*, **507**, 322-328. https://doi.org/10.1016/j.aquaculture.2019.04.041

[16] Fidra survey reveals: UK consumers will pay more for 'sustainably produced' Scottish salmon & feel ill-informed - Best Fishes

[17] Lee, D. (2009) Understanding aquaculture certification. *Revista Colombiana de Ciencias Pecurias*, **22**, 319-329.

[18] https://www.bestfishes.org.uk/two-years-on-from-2-scottish-parliament-inquiries-its-time-to-increase-transparency-and-compliance/

[19] https://www.bestfishes.org.uk/fidra-report-dives-into-the-burden-on-the-benthos/

About Fidra

Fidra shines a light on environmental issues, working with the public, industry and governments to deliver pragmatic, evidence-based solutions to pollution and habitat degradation. Our projects support sustainable societies and healthy ecosystems. The Best Fishes project aims to minimise the environmental impact of salmon farming in Scotland and more information be found here www.bestfishes.org.uk