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for healthy oceans

AQUACULTURE STEWARDSHIP COUNCIL (ASC) CERTIFICATION IN CANADA:

Technical Report

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SOLUTIONS ARE IN OUR NATURE

Ecology Action Centre

LIVING OCEANS

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List of Acronyms

ABM	Area-Based Management
ASC	Aquaculture Stewardship Council
ASI	Accreditation Standards International
BAP	Best Aquaculture Practices
B.C.	British Columbia
BCSFA	British Columbia Salmon Farmers Association
CAB	Certification Assessment Body
CAR	Certification and Accreditation Requirements
DFO	Fisheries and Oceans Canada
GSI	Global Salmon Initiative
ISEAL	International Social and Environmental Accreditation and Labeling
MSC	Marine Stewardship Council
PAR	Pacific Aquaculture Regulations
SAG	Stakeholder Advisory Group
TAG	Technical Advisory Group
TWG	Technical Working Group

Introduction

Aquaculture certification for environmental and social performance is one of the fastest growing food certification trends in the world. The Canadian market for responsibly-sourced food is increasing and the Canadian salmon industry is positioning itself to reach it. Often referred to as the "gold standard," the Aquaculture Stewardship Council (ASC) certification scheme has seen explosive growth over the past four years. It is actively sought by the Canadian industry.

Both the ASC Salmon Standard and the Certification and Accreditation Requirements (CAR) technical document provide specific indicators and normative references to be applied by independent auditors to each applicant farm. This report reviews how the standard and CAR guidelines are applied by the relevant actors within the scope of Canadian ASC certifications.

Background

There are more than 30 voluntary schemes applicable to farmed seafood certification.[1] Globally, the number of aquaculture products certified between 2003 and 2015 grew at an estimated 76 per cent per year, reaching a retail value of about US$3.6 billion in 2015.[2] The leading species for certification is farmed salmon, which represents 56 per cent of all aquaculture certifications.[3] This is despite the fact that in 2013, farmed salmon represented a mere 3 per cent of all aquaculture worldwide.[4]

By far the fastest growing certification scheme is the ASC, where the number of certifications grew at a rate of 98 per cent year over year from 2012-2015.[5] In comparison, the Global Aquaculture Alliance's Best Aquaculture Practices certification grew at an annual rate of 35 per cent per year from 2008 to 2013.[6] As of June 2017, just over one million metric tonnes[a] of aquaculture product was ASC certified.[7] At 598,146 metric tonnes, farmed salmon is the ASC's leading certified product by volume (and presumably by value).[8] It is also one of the certification scheme's leading logo product per species, at 35 per cent of total ASC-labelled products.[9]

The ASC was founded in 2010 and the Salmon Standard launched in 2012.[10] It was anticipated that only the top 15 per cent of salmon farms globally would be able to meet the certification standard.[11] The first farm was certified in Norway in 2014,[12] and the first farm certification in North America occurred in January 2015.[13]

Often referred to as the "gold standard,"[14] ASC certification and its associated logo are said to "recognise and reward responsible aquaculture."[15] The criteria by which its various species' standards are assessed aim to eliminate, or at least minimize, the environmental and social impacts of aquaculture.[16]

There have been several public pledges by market players with the goal of achieving ASC certification or a sustainability commitment to sell ASC-labelled seafood. Representing approximately half of the global salmon aquaculture industry,[17] the Global Salmon Initiative (GSI) has stated the "ambitious" goal of 100 per cent ASC certification for all members by 2020.[18] In April 2017, the GSI announced that nearly a quarter of their member farms have achieved ASC certification.[19]

[a] 1,182,004MT

ASC Certification Landscape in Canada

The B.C. Salmon Farmers Association (BCSFA) has made a commitment that all its Atlantic salmon farming members will be 100 per cent ASC certified by 2020.[20] The BCSFA represents 48 members, including all three multi-national farmed Atlantic salmon companies.[21] In total, BCSFA member companies operate 109 salmon farm sites in British Columbia (B.C.).[22]

There are currently[b] 17 ASC certified salmon farms in Canada, all of which are in B.C.[23] Eight B.C. salmon farms are currently under assessment for certification.[24] A Nova Scotian salmon farm that underwent the full assessment audit made a "corporate decision"[25] to withdraw from the process in January 2017.

In 2014, Canada's largest retailer, Loblaws Companies Limited, introduced the first ASC-certified farmed salmon to North America.[26] Their 2016 Corporate and Social Responsibility report states that the company actively sells over 200 Marine Stewardship Council- (MSC) and ASC-labelled seafood products.[27] Other examples of major buyers committed to selling ASC-certified products include the world's largest food distributor, Sysco Corporation,[28] and global retailer IKEA.[29]

Canadian government agencies also appear willing to work with ASC certification. For example, the B.C. provincial government seeks to establish a protocol with the ASC for receiving input on aquaculture location siting.[30] And, Fisheries and Oceans Canada (DFO) has suggested the agency's aquaculture reporting requirements have supported the industry's uptake of third-party certifications. [31]

With the 2020 goal of 100 per cent certification on the horizon, the pressure is on both ASC and the industry. The ASC has to ensure there are sufficient qualified Certification Assessment Bodies (CABs, or "third-party assessment contractors") able to process the rapidly-growing number of applicants while at the same time maintaining both the intended stringency of the standard and the credibility and rigour of the process. The farmers have to ensure practices are up to the required criteria, hire CABs, and schedule audits to achieve certification.

[b] As of 5th June 2017

Methodology

Audit data from all ASC-certified Canadian salmon farms were collated from the ASC website. Each farm audit was categorized by type: full (initial) assessment and surveillance audits. Within each audit, each identified non-conformity (major and minor) was recorded by Salmon Standard indicator, criterion and principle. Likewise, ASC approved variance requests were identified and recorded by Salmon Standard indicator, criterion and principle.

Audit evidence and data availability were assessed for key Salmon Standard indicators that rely on performance-based metrics. These in turn were categorized as either recorded, missing, deleted, not raised or not applicable.

Data reported publicly by DFO and on salmon farming companies' websites were collected and compared to audit evidence and data.

The application of the auditor's guidance document, CAR, was recorded for each audit in relation to two CAR requirements: 1) that the auditor should witness the harvest of fish at the time of the initial audit; and 2) that the auditor should assess the complete "unit of certification" as defined at the time of any audit.

Lastly, stakeholder engagement for each audit was recorded by organisation(s) and submission content. The organisational experience of SeaChoice member groups[c] as active ASC stakeholders is drawn upon in this report's discussion.

[c]SeaChoice member groups have been active stakeholders in the ASC and the Salmon Aquaculture Dialogues for more than a decade. This has included Steering Committee representation during the dialogue, membership in the Technical Advisory Group, the sea lice technical working group, as well as active stakeholder engagement on ASC audits and projects.

The ASC Certification Scheme: Components and Actors

The ASC scheme is comprised of a number of components and operated by a number of actors:

The ASC standards

Currently, the Salmon Standard is one of eight ASC species standards that were created in a series of multi-stakeholder processes known as the Aquaculture Dialogues.[32] The ASC is in the process of developing a "Core Standard." The Core Standard marks a strategic shift from the singular species standards created during the Aquaculture Dialogues to a single "harmonized" standard for numerous species.[33] The "standard holder" is the ASC, which may convene processes for amendment of, or case-by-case variance from, the standards. The ASC may also interpret its standards from time to time, on the request of a CAB.

The ASC Supervisory Board, Technical Advisory Group and Technical Working Groups

The ASC appoints and consults with these three multi-stakeholder groups. The Supervisory Board is tasked with the overall supervision of the ASC's general activities.[34] The Technical Advisory Group (TAG) and the various Technical Working Groups (TWGs) are active in the course of special projects to review ASC standards and processes. The TAG advises the Supervisory Board on these matters.[35] The TAG and Supervisory Board Chairs are also members of the Variance Request Committee, and so the ASC consults them on requests for variances for particular audits.[36]

The Certification and Accreditation Requirements (CAR) guidance document[37] and Conformity Assessment Bodies (CABs)

The CAR establishes definitions, requirements and standards to be applied by the accredited CABs when they conduct independent audits of applicant farms. The CAR covers matters such as audit procedures, the quality of acceptable evidence and reporting requirements. CABs are independent certifiers contracted by the aquaculture client; they may also provide representation on the ASC Supervisory Board, TAG and TWGs.[38]

Aquaculture clients

Aquaculture operators apply for certification for individual farms. (They will soon be permitted to apply for certification for groups of farms).[d] They may also provide representation on the ASC Supervisory Board, TAG and TWGs.[39]

Stakeholder engagement

A critical component of the ASC certification scheme is that it confers social licence through the engagement of stakeholders.[40] The certification process calls for robust stakeholder engagement before and during certification and requires a CAB to respond to stakeholder comments.[41] In addition, where CAB response is deemed inadequate, a stakeholder may take a complaint to Accreditation Standards International (ASI) (see below). There are representatives from academia and non-government organisations on the ASC Supervisory Board, TAG and TWGs.[42]

Chain of Custody, the ASC logo and the Marine Stewardship Council (MSC)

Following certification, a farm is entitled to apply the ASC logo to its product and introduce it into the Chain of Custody system shared with MSC. The Chain of Custody system is operated by MSC and is intended to ensure that only product that has been properly certified enters the market bearing these stewardship logos.[43]

[d] The ASC is finalizing the methodologies for group and multi-site certifications.

Accreditation and oversight by Accreditation Standards International (ASI)

CABs are trained in the specific ASC certification scheme by ASC, and they are accredited as auditors by ASI.[44] ASI supervises CABs, acting as a second level of review of individual farm audits in cases where a stakeholder requests the review and makes a case for non-compliance with the standards or the CAR.[45]

International Social and Environmental Accreditation and Labeling (ISEAL) Alliance

The ASC is a member of this alliance, the mandate of which is to strengthen multi-stakeholder sustainability certifications.[46] ISEAL sets credibility standards and publishes and promotes codes of practice. ISEAL employs an independent evaluation process to assess the progress made by its members toward attaining ISEAL standards and goals.

The Audit Process

The ASC audit process begins with a full (initial) assessment audit undertaken by an independent auditor (known as the "Conformity Assessment Body" CAB) hired by the farm operator. If a certificate is awarded, it is valid for three years, during which time two surveillance audits are conducted, typically on an annual basis. A re-certification audit is conducted after the expiry of the certificate.

Stakeholders are given 30 days' notice of the applicant farm's audit date on the ASC website.[47] Stakeholders can submit comments during this period. Following the audit, a draft assessment audit is made publicly available for 10 working days for stakeholder comments. Stakeholder submissions require a response from the CAB, indicating whether or how the stakeholder's comments have been incorporated into the final assessment.[48] A dissatisfied stakeholder may take their complaint to ASI for further review. This usually occurs after the farm has been awarded certification. Stakeholders may contribute further comment at any point in the certification process when a case is made that the farm has ceased to be entitled to certification, or upon a surveillance or re-certification audit.

The ASC Salmon Standard

The ASC Salmon Standard Version 1.1[e] consists of seven principles, 36 criteria and a total of 119 indicators, including an additional section for suppliers of smolt (which include a further seven criteria and 35 indicators).[49]

Table 1. The ASC Salmon Standard hierarchy and the number of principles, criteria and indicators.

ASC SALMON STANDARD		
PRINCIPLE	No. of CRITERIA	No. of INDICATORS
PRINCIPLE 1: COMPLY WITH ALL APPLICABLE NATIONAL LAWS AND LOCAL REGULATIONS	1	4
PRINCIPLE 2: CONSERVE NATURAL HABITAT, LOCAL BIODIVERSITY AND ECOSYSTEM FUNCTION	5	20
PRINCIPLE 3: PROTECT THE HEALTH AND GENETIC INTEGRITY OF WILD POPULATIONS	4	15
PRINCIPLE 4: USE RESOURCES IN AN ENVIRONMENTALLY EFFICIENT AND RESPONSIBLE MANNER	7	21
PRINCIPLE 5: MANAGE DISEASE AND PARASITES IN AN ENVIRONMENTALLY RESPONSIBLE MANNER	4	24
PRINCIPLE 6: DEVELOP AND OPERATE FARMS IN A SOCIALLY RESPONSIBLE MANNER	12	27
PRINCIPLE 7: BE A GOOD NEIGHBOR AND CONSCIENTIOUS CITIZEN	3	8
SECTION 8: STANDARDS FOR SUPPLIERS OF SMOLT	7	35
TOTAL	**43**	**154**

The ASC provides the following definitions for each:

Principle: "The guiding principle for addressing the impact"
Criteria: "The area to focus on to address the impact"
Indicator: "What to measure in order to determine the extent of the impact"[50]

Each indicator stipulates requirements that are defined as: "The number and/or performance level that must be reached to determine if the impact is being minimized."[51] Each requirement is calibrated as either a pass/fail or a defined metric.

[e] Version 1.1 of the ASC Salmon Standard was released in May 2017. The ASC certified farms within this report were assessed under the ASC Salmon Standard Version 1.0.

The Application of the Salmon Standard

The ideal

The ASC may be considered the gold standard of salmon certification schemes because its Salmon Standard states that farms "must meet 100 per cent of the requirements in this document to achieve certification."[52] This is an impressive claim that offers instils trust in consumers interested in making environmentally-responsible food choices.

ASC's process is outlined below. However, it is important to note that despite their strong statement requiring that applicants meet 100 per cent of their requirements, ASC may also offer its applicants a loophole. ASC applicants may be assessed as "conforming," which indicates that they meet ASC requirements. But they can also be assessed as having major or minor "non-conformities." The applicant then has the opportunity to address the non-conformities. However, farms can be nonetheless certified with outstanding, or "open," non-conformities. For example, Arbolito salmon farm in Chile was certified with 62[f] open minor non-conformities.[53]

Applicants can also be granted a variance,[54] which allows them to be excused from meeting certain criterion. These are submitted by the CAB to the ASC's Variance Request Committee for deliberation. An approved variance can allow an auditor to certify an applicant without flagging a non-conformity. See page 15 for an in-depth discussion of the variance process and the associated concerns.

The process

- CABs use the ASC Audit Manual[55] and CAR guidance[56] to assess an applicant for certification.
- If an applicant meets each of the ASC requirements, it is considered "conforming," and receives ASC certification.
- Any instances in which the applicant does not meet ASC standards are marked as non-conforming and graded as either "major" or "minor."
- According to the CAR guidance document, Version 2, major non-conformities should be closed within three months, with a possible extension of an additional three months (i.e. six months in total). Major non-conformities need to be closed before certification is granted.
- According to the CAR guidance document, Version 2, minor non-conformities should be closed within three months; however, they can be extended a by an additional 12 months (i.e. 15 months in total). Farms can be certified with any number of open minor non-conformities.
- In situations not addressed by the Salmon Standard, audit manual or CAR document, or if the auditor believes the evidence indicates an appropriate case for excusing a farm from meeting any of the criterion, the CAB can submit a variance request to the ASC's Variance Request committee.[57] These requests are supposed to be supported by evidence sufficient to enable ASC to conclude that the principles underlying the standard indicator in question are not compromised by the variance. Variance requests allow CABs to seek an ASC interpretation or approved variance to either the standard criterion or CAR requirements.

[f] Applying the CAR's guidelines of one non-conformity per indicator, showed 31 specific indicators with minor non-conformities (open) and 5 major non-conformities (closed).

Identifying Patterns in Canadian ASC Certifications

A Performance-based Standard? Review of Farm-level Metrics

One of the attributes of the Salmon Standard is the inclusion of performance-based, farm-level (not aggregated over a group of farms) metrics. The standard also promotes transparency of these metrics. In addition, the CAR requires CABs to document metrics within the audit report as evidence that the farm demonstrates compliance with the standard.

Eighteen key performance indicators were reviewed to see if a metric was provided in the seventeen B.C. full (initial) assessment audits. Of the key metric indicator requirements reviewed, 52 per cent provided evidence of conformance with the standard. More than one-third (37 per cent) were found to be missing the metric. There was one instance where a metric was purposefully deleted or censored.

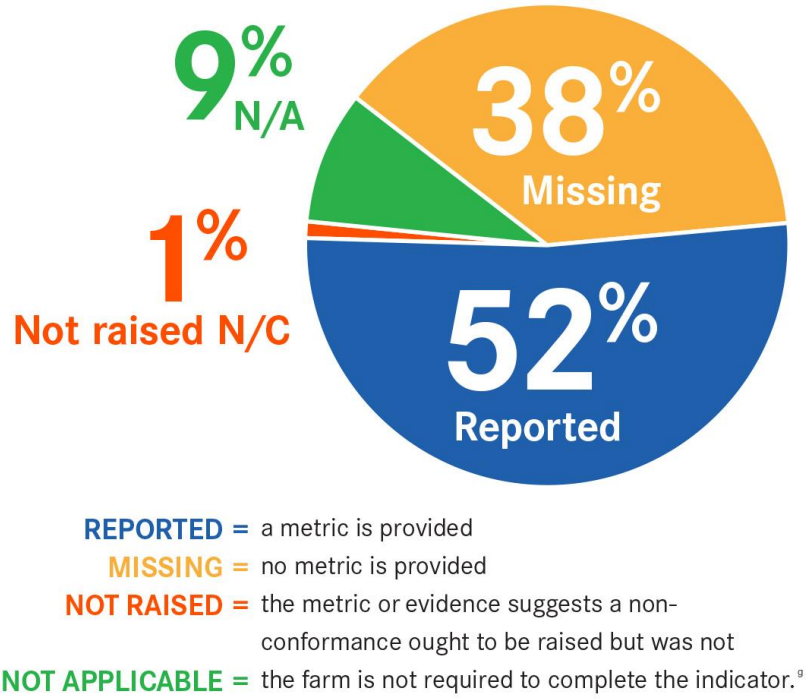


Figure 1. Review of farm-level metrics of select Salmon Standard indicators in initial (full) assessment audit reports

TAG meeting notes from November 2013 show that the ASC acknowledged concerns with audit quality and lack of metrics.[58] These notes indicated that audit reports were incomplete, provided insufficient evidence for compliance, and metric data was missing or inconsistently scored. The ASC has since implemented an internal "Quality Assurance Framework" that includes the review of some ASC draft audits before publication.[59] It is worth noting that no Canadian ASC audit reports seem to have yet been subject to this review. Standardised reporting templates have also been provided to CABs.[60] However, the review of Canadian audits from 2014 to the present date shows that audit quality remains an issue.

[g] Where an audit report noted "N/A" for an indicator that required compliance, this was categorized as "Missing" (i.e. no metric was provided).

In addition to data quality, there is evidence of CABs failing to flag non-compliances where the absence of metric data indicates that they should. There were four noted occurrences where a metric provided or the auditor's notes indicate that a non-conformity ought to have been raised. All were related to Principle 2: Conserve Natural Habitat, Local Biodiversity and Ecosystem Function, Criterion 2.1; Indicators 2.1.2-2.1.3 (benthic monitoring). Two farm audit reports noted benthic sampling results for indicator 2.1.2 showed non-compliance, yet a "recommendation" was made instead of raising the non-compliance.[61] [62] A third farm report noted that compliance could not be assessed for Indicators 2.1.1, 2.1.2 or 2.1.3 as benthic sampling was not yet done; however, a non-conformance was raised only for indicator 2.1.1. Indicators 2.1.2 and 2.1.3 were listed as "conforming."[63]

No detailed information on the Quality Assurance Framework could be found on the ASC website, though it appears to cover two criteria: L1 (report data quality) and L2 (conformance interpretation).[64] However, it remains unclear if the ASC has conducted a review of audits that would enable an assessment of any ambiguity in the CAR or Salmon Standard that could give rise to such a variety of approaches to the same evidentiary issue. The analysis here suggests that an amendment to the CAR and Salmon Standard audit manual may be required.

Non-conformities in Canadian Salmon Farms

On review of 23 audits (17 initial and six surveillance), there have been a total of 167 non-conformities raised by the auditors in B.C. ASC-certified farms, of which 46 were raised as major non-conformities and 121 as minor.[h]

Major non-conformities

Nearly two-thirds (30 out of 46) of the major non-conformities raised relate to Principle 2 (conserve natural habitat, local biodiversity and ecosystem function), Indicators 2.1.1-2.1.3 (benthic monitoring). These non-conformities were raised because benthic sampling had not been done. This in turn, is because the audits were conducted before the farms were ready to harvest: benthic sampling is required to be conducted at peak biomass (harvest time). This is but one of several indicators that cannot be met when audits are conducted prior to harvest. These non-conformities are "closed" when sampling is conducted. However, upon review of the final audit reports, no metrics from the sampling results could be found to demonstrate compliance to the benthic indicator requirements (as illustrated in Figure 1 above). In other words, the reports lack detail and evidence of compliance.

Six of the major non-conformities relate to Principle 3 (protect the health and genetic integrity of wild populations), Criterion 3.1 (introduced or amplified parasites and pathogens). More specifically, all four major non-conformities are raised with respect to Indicator 3.1.7 ("In area of wild salmonids, maximum on-farm lice levels during sensitive periods for wild fish"). In two of the earlier audits where a non-conformity was raised, applications were made to ASC for variances, which were subsequently granted. It is now routine for CABs to cite one of these variance reference numbers instead of raising a non-conformity.

[h] Where audit reports grouped more than one indicator under the one non-conformity report, these were separated to reflect the true number of non-conformities. Where audit reports listed the same indicator in two or more non-conformity reports, these were merged as one non-conformity; where two or more minor non-conformities were given for the same indicator, these were elevated to one major non-conformance. This is in accordance with the CARv2.0 Annex A which requires one non-conformity report per indicator requirement and two or more minors to be raised as one major.

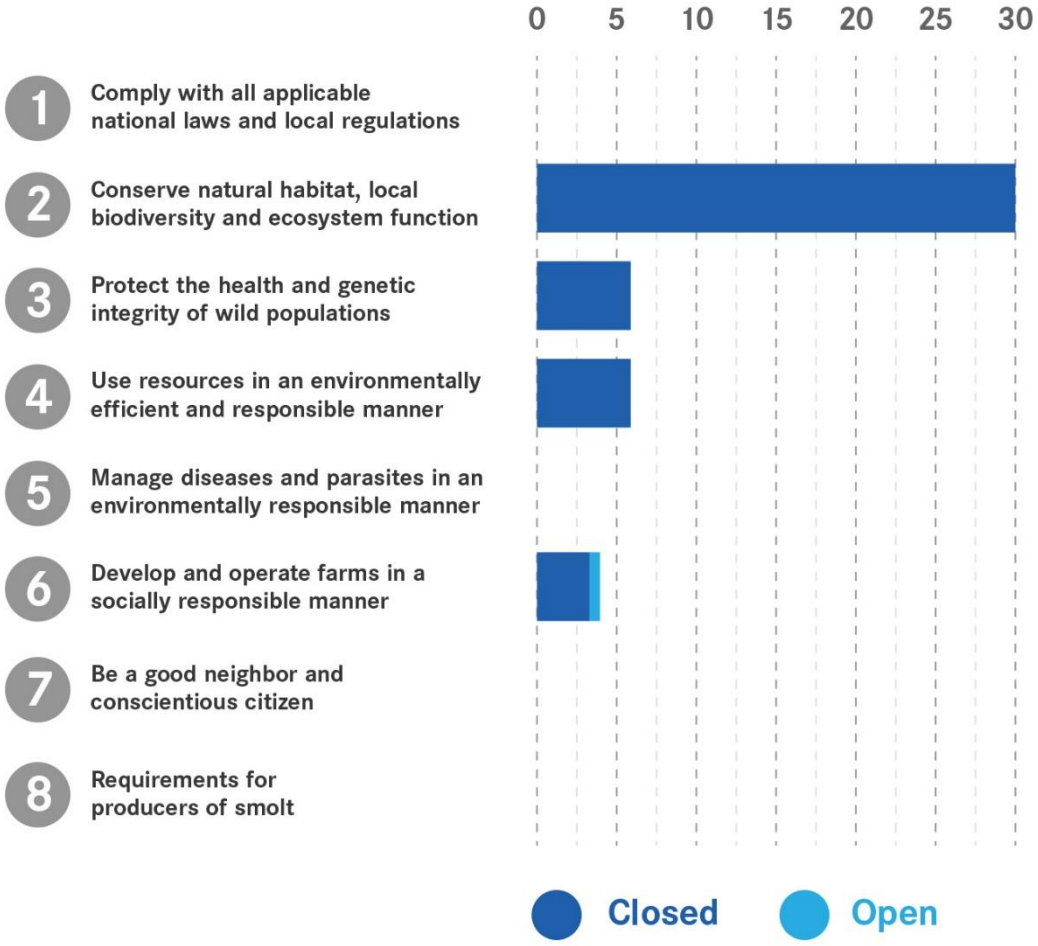
The sea lice variances were decided by the Variance Request Committee. No evidence of consultation with members of the TAG, TWG or other stakeholders could be found on the ASC website. A review of the evidence upon which the variances were apparently based raises important questions both as to process and scientific rigour in the decisions. This is discussed in more detail on p. 15.

Another six major non-conformities are associated with Principle 4 (use resources in an environmentally efficient and responsible manner), Criterion 4.7 (non-therapeutic chemical inputs). Consistent with the examples noted above, these major non-conformities result from audits being performed before copper sediment testing results were available.

The final four major non-conformities are identified under Principle 6 (develop and operate farms in a socially responsible manner). In these instances, two or more minor non-conformities were grouped together and raised as majors. This is consistent with the CAR guidance, which directs that when more than one minor non-conformity is found under the same indicator, they should be elevated to a major.

No major non-conformities were raised for Principles 1, 5, 7 or 8.

Figure 2. Total number of major non-conformities by ASC Salmon Standard principle.



Major non-conformities are required to be closed within three months and before certification is awarded. There is one instance where ASI, the accreditation body, found that the CAB breached this requirement by allowing a farm to be certified with two major non-conformities outstanding over six months.[65] Another three audits were found to have major non-conformities closed after three months.[66] [67] [68]

On review of all audit reports, one major non-conformity remains open. However, there is no "closed" date listed in this non-conformity report indicating a possible oversight by the CAB, as the notes within the report indicate corrective actions were taken.[69]

Minor non-conformities

Twenty-nine minor non-conformities are associated with Principle 4 (use resources in an environmentally efficient and responsible manner) and most commonly found under Criterion 4.7 (non-therapeutic chemical inputs). On review, three farms were yet to complete copper sediment testing, while another two experienced elevated copper levels in sediment samples. Two variance requests were approved by the ASC in relation to background copper levels. These variances mean the farms do not need to meet the standard criterion (34mg) and, instead, are simply required to continue background copper level monitoring at reference stations.[70] [71]

Twenty-six minor non-conformities relate to Principle 3 (protect the health and genetic integrity of wild populations). Of these, 24 are raised under Criterion 3.1 (introduced or amplified parasites and pathogens, with the majority linked to sea lice indicators). The remaining non-conformities were linked to area-based management (ABM) participation.[i]

Principle 2(conserve natural habitat, local biodiversity and ecosystem function) is linked to 25 non-conformities, including indicators specific to benthic monitoring, nutrient release, water quality and wildlife interactions.

Nineteen non-conformities related to Section 8 (requirements for producers of smolt). Interestingly, Indicator 8.4 (maximum total amount of phosphorus released into the environment per metric ton of fish produced over a 12-month period) was the most commonly raised minor non-conformity overall. The phosphorus amounts calculated by companies have been commonly found to be erroneous. To overcome this, recent draft audit reports indicate the CAB's intention to submit a variance request that will allow the farms to use a different calculation.[72] [73]

The remaining minor non-conformities are associated with Principle 6 (develop and operate farms in a socially responsible manner; 14 non-conformities; Principle 5 (manage disease and parasites in an environmentally responsible manner; 7 non-conformities; and Principle 7 (be a good neighbor and conscientious citizen; 1 non-conformity. No minor non-conformities were identified for Principle 1 (comply with all applicable national laws and local regulations).

[i] The Salmon Standard requires "participation in an area-based scheme for managing disease and parasites and resistance to treatments" as outlined in Appendix II-1. The CAB application of ABM indicator 3.1.1 has been inconsistent. Seven of the initial (full assessment) audits were found to have no ABM in place. Six of these were excused by the auditor due to the same company owning the neighbouring farms. The seventh farm was deemed exempt as the closest farm was located 15 kilometres away. Four deferred to DFO's Integrated Management of Aquaculture Plan, referencing the ASC approved variances (no. 145-147). Two farms located along the critically important migration route of the Fraser River sockeye in the Discovery Islands were noted as having an ABM scheme. The audit reports state a Memorandum of Understanding exists between the three large salmon farming companies within the area, with a viral management plan being "the most active element" of the ABM scheme. No further details are provided on how the farms meet the standard's ABM attributes and components.

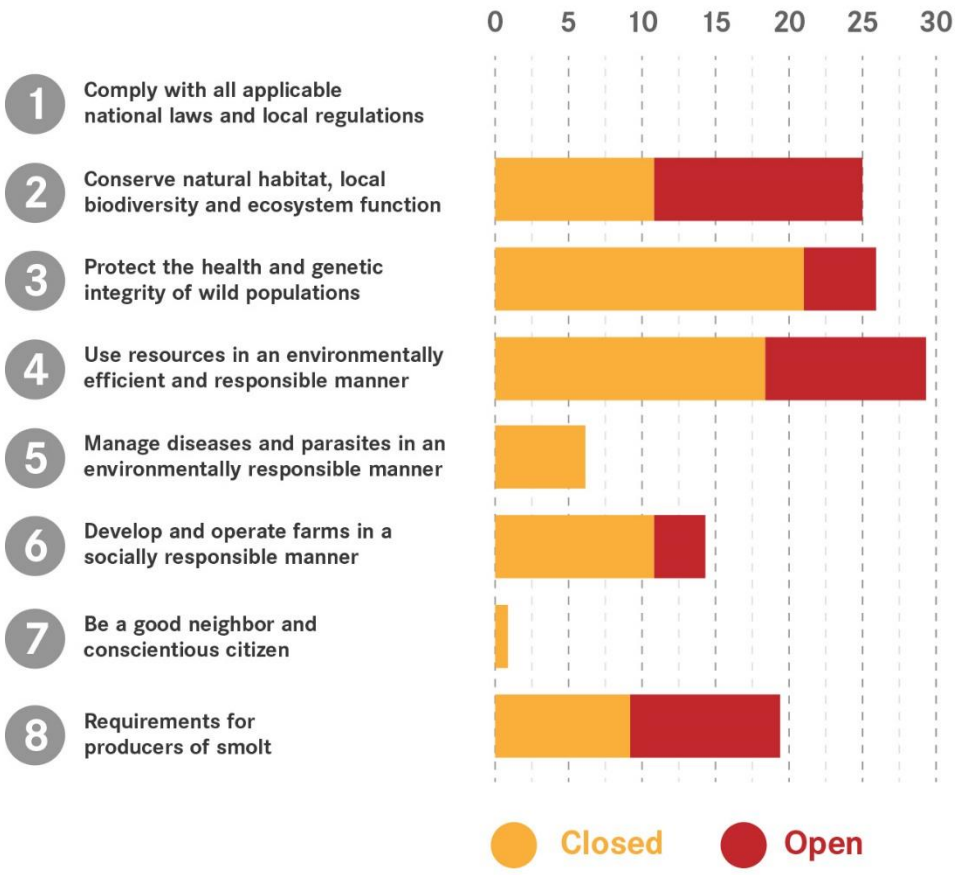


Figure 3. Total number of minor non-conformities by ASC Salmon Standard principle.

On review of all audit reports, 78 minor non-conformities have been closed[j] and 43 remain open.[k]

Variance Requests Enabling Certification of Canadian Salmon Farms

Variance requests allow CABs to seek an ASC interpretation or approved variance from either a standard criterion or CAR requirements. Submitted directly to the ASC, variance requests are reviewed and approved (or not) by the Variance Request (VR) committee.[74] Once a variance has been approved, it can be re-applied to "an identical situation for which an earlier variance request has been submitted and approved".[75]

This raises questions about the variance decision-making process, including whether it is sufficiently expert, inclusive and transparent to maintain scientific and consumer confidence in the standard and the value of the ASC logo.

[j] CAR 17.10.1.1iiiC. requires objective evidence in order to close out minor non-conformities. The application of closure is inconsistent between CABs. Where audit reports stated a non-conformity was "closed" by an action plan but evidence verification was yet to occur (e.g., to be conducted at surveillance audit), these were recorded as "open."
[k] As of 5th June 2017

The Variance Approval Process

On behalf of their client farms, CABs submit variance requests directly to the Variance Review Committee composed of the ASC Standards Director, Chair of ASC TAG, Chair of the ASC Supervisory Board and ASC's CEO. [76] The process lacks stakeholder engagement or third-party oversight. However, there appears to be opportunity for industry and/or individual farm owners to influence the process, including through the submission itself. For example, the sea lice variance request (141)[77] was submitted with a supporting document commissioned by industry.[78]

Variance requests are setting new rules that override the multi-stakeholder agreements made in the Salmon Aquaculture Dialogue. The Salmon Aquaculture Dialogue is a science-based forum that was initiated by World Wildlife Fund in 2004 to engage NGOs and major aquaculture companies to set international standards for salmon farming. A study on certification rule-making by Havice & Iles[79] found that the "ASC's interpretation and adaptation of the rules is revising the Dialogues' compromises." The authors suggest that the separation line between ASC as a standard holder and a standard maker has become blurred.

The absence of stakeholder engagement opportunities within the ASC variance process raises the concern that the scheme is not entirely meeting its commitments to ISEAL's Standard Setting Code.[80] This is what the code's Credibility Principle "Engagement":

> *ISEAL Standard Setting Code - Clause 6.4 Local Applicability*
> *Desired Outcome: The standard is relevant in the local contexts where it is applied, based in part on input from local stakeholders.*
> *Requirement: Alternatively, where national or regional standards are prepared by the standard-setting organisation as interpretations of international standards, these shall be developed through multi-stakeholder process.*
> *Guidance: These multi-stakeholder processes do not need to be as extensive as the processes for developing international standards since this is a matter of interpreting an existing standard. However, appropriate opportunities for stakeholders to provide input to the process are necessary.*[81]

Local stakeholders were not contacted during the approval process of any Canadian variance request. No opportunity is provided for a stakeholder to engage proactively in a variance request approval.

The case of the sea lice variances (88;141)[82] [83] also raises a question concerning the scientific rigour of the approval process. Sea lice management in B.C. is one of the most hotly-contested scientific issues in aquaculture management, as can be readily ascertained by an objective perusal of the published science on the subject. Yet the two variances granted with respect to indicator 3.1.7 appear to have been based on an unpublished "literature review" commissioned by the B.C. salmon farming industry that is, on its face, an argument rather than an objective review. [84] The document did not undergo a formal peer review, which would have provided some comfort that it is complete and that it fairly summarizes the conflicting views that are noted.

With respect to the transparency of the approval process, the variance requests and the supporting documentation are published on the ASC website, together with reasons supporting the decision.[85] Practice has varied, however, with some requests being published while under consideration and others—notably the sea lice variance—only after the decision has been made. Stakeholders may not even learn that a variance request is in progress and are accordingly denied the opportunity to provide relevant evidence for the Variance Review Committee's consideration.

The Use of Variance Requests in Canadian Certified Farms

A review of ASC's "Variance Request – overview sheet"[86] indicates that a total of 24 requests have been submitted for Canadian farms to the ASC Variance Review Committee since April 2014. Twenty-two of the variances are associated with the Salmon Standard, while two are related to the CAR.[l] All "closed" requests were approved (22 in total), while two remain "open" as of 6 June 2017.

Thirteen variances defer to government regulation in place of the Salmon Standard requirements. This means that farms do not need to meet the ASC Salmon Standard requirements for these indicators; instead, compliance with the regional management regime is substituted.

Table 2. Variance requests that defer to government regime instead of the Salmon Standard.

Indicator	Variance Request Number	Government /Regulation Deferred to
2.1.1; 2.1.2; 2.1.3; 2.1.4	25	DFO PAR/benthic monitoring sampling methodology
2.1.1; 2.1.2; 2.1.3; 2.1.4	26	DFO PAR/benthic monitoring sampling methodology
2.1.1; 2.1.2; 2.1.3; 2.1.4	67	Nova Scotia EMP/benthic monitoring sampling methodology
3.1.7	88	DFO PAR/sea lice threshold
5.4.4	89	CFIA/disease reporting
3.1.7	90	DFO PAR/sea lice threshold
5.4.4	91	CFIA/disease reporting
3.1.7	141	DFO PAR/sea lice threshold
3.1.1c	145	DFO IMAP/area based management
3.1.1c	146	DFO IMAP/area based management
3.1.1c	147	DFO IMAP/area based management
5.4.4	149	CFIA/disease protocols
2.1.2;2.1.3	224[m]	DFO PAR/the absence of macrofaunal and biotic benthic monitoring

DFO= Fisheries and Oceans Canada; CFIA = Canadian Food Inspection Agency; EMP= Environmental Monitoring Program; IMAP = Integrated Management of Aquaculture Plan; PAR = Pacific Aquaculture Regulations

An analysis of the variances used by auditors to certify farms during their initial audit shows that most applied to Principle 3 (protect the health and genetic integrity of wild populations), and all of those applied solely to Criterion 3.1 (introduced or amplified parasites and pathogens). Twenty-six variances (88;141) were applied to Indicator 3.1.7 ("In area of wild salmonids, maximum on-farm lice levels during sensitive periods for wild fish.") As discussed in the major non-conformities section on page 12, this variance defers to DFO's Pacific Aquaculture Regulations (PAR) threshold of 3 motile lice per fish instead of the ASC Salmon Standard requirement of 0.1 female lice per fish.[87] [88] The other nine variances for Criterion 3.1 are applied to Indicator 3.1.1 ("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"). For this indicator, the ASC has allowed variances (variance no. 145-147)[89] [90] [91] to defer to DFO's Integrated Management of

[l] 1 CARv1.0 and 1 CARv2.0

[m] Variance request 224 was still "open" as of 6 June 2017.

Aquaculture Plan as if it were an area-based management scheme as defined in the Salmon Standard.[n]

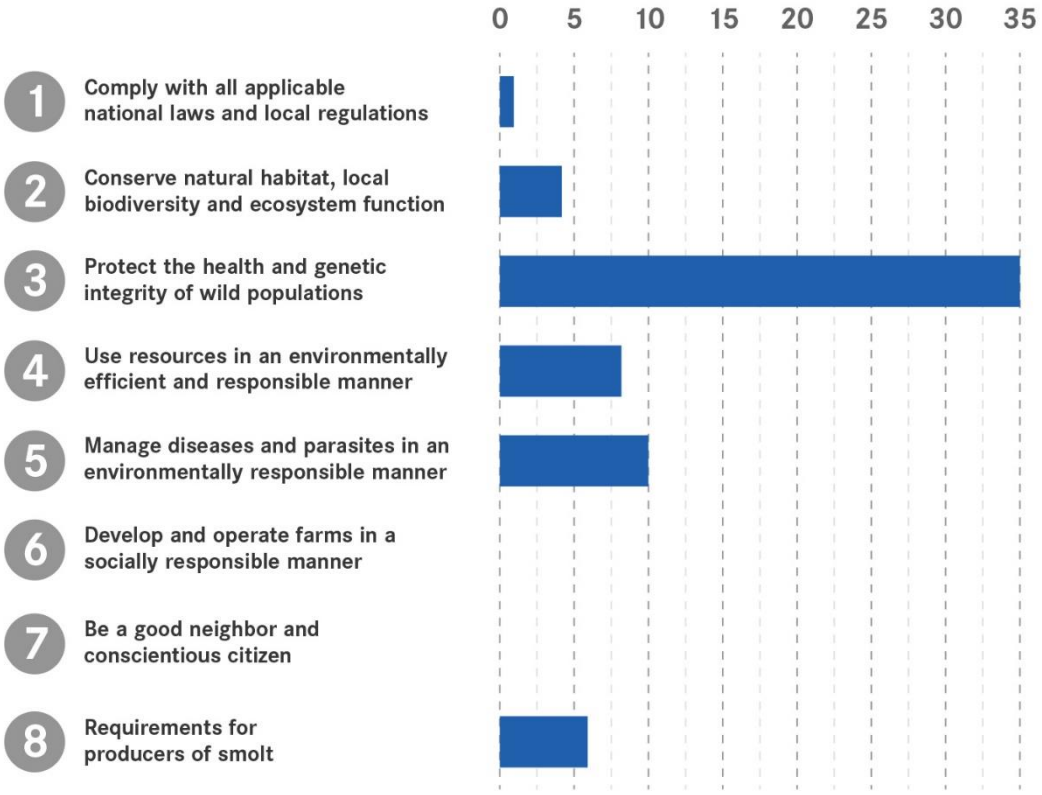


Figure 4. Total number of ASC approved variances applied to the ASC Salmon Standard principles for certified farms.

All B.C. audit reports cite variance approvals. In fact, all certified farms rely on the sea lice variances (Variance numbers 88 and/or 141) for Indicator 3.1.7. This seems to suggest that farms in B.C. would not be certified if not for an ASC approved variance. In fact, DFO's public reporting for industry-reported sea lice counts for the 10 ASC-certified salmon farms operating during the 2016 sensitive juvenile wild salmon migration period[92] indicates that none of the farms would be able to meet the ASC Salmon Standard on-farm lice level requirement of 0.1 female lice per farmed fish. Sea lice counts ranged from 0.2 to 6.6 female lice per farmed fish[o] and would have raised a major non-conformity that could only be cured by harvesting the product prior to certification or treating with parasiticide. For many farms, an additional treatment would have increased their Parasiticide Treatment Index (another criterion of the Salmon Standard) to a level that raised a second major non-conformity.[p]

[n] The ASC provided the following interpretation with their approval: "The intent of the ASC Salmon Standard regarding Criterion 3.1.1 is to address the impact of disease transmission of salmon farms on wild salmon in a collective approach. Details of this approach are spelled out in Appendix II-1 of the ASC Salmon Standard. Complying with the current DFO management plan is in line with the intent of the ASC Salmon Standard (criteria 3.1.1 and Appendix II-1). In order to drive better practices, it is recommended that Cermaq Canada contacts, and discusses with, DFO on the development of an ABM based on Appendix II-1 of ASC Salmon Standard v1.0." It is unknown whether the company has engaged DFO in developing an ABM based on the ASC salmon standard. Meanwhile the approved variances have set a precedent and have now been reapplied to other farms and companies. Yet, a recent peer-reviewed study (Bateman *et al*. 2016) suggests DFO's management policy to be inadequate for meeting ABM requirements for the application and rotation of treatments.

[o] See Appendix A

[p] See Appendix B

Therefore, it is reasonable to conclude that the sea lice variance enables B.C. salmon farms that would not otherwise meet the Salmon Standard to be certified.

Risky Precedents

In total, variances have been applied 64 times for B.C. farms. This is due to the ASC's direction to CABs: "If a certifier encounters an identical situation for which an earlier variance request has been submitted and approved, then the certifier can refer to the earlier variance request in the audit report for its decision."[93] The ASC rationale for the rule appears to be one of decision-making efficiency.[94] In Canadian farm audits, 12 variances have been reapplied to other farms. The result has been that variances have effectively become blanket approvals for regions and/or management regimes, obviating the need for analysis of compliance with the standard.

Approved variances are being reapplied predominantly to the sea lice indicator 3.1.7. Variance nubers 88 and 141 defer to DFO's PAR's 3 motile *L. salmonis* per fish instead of Indicator 3.1.7's threshold of 0.1 female lice per fish during sensitive wild fish migration periods. [95] [96] While the CAR provides for reapplication of a variance in "an identical situation," CABs have interpreted this rule to mean that all farms falling under the same DFO management regime are entitled to the benefit of the variance.

This approach fails to account for potential localized impacts of sea lice to wild juvenile salmonids. We contend that these impacts are not adequately monitored or assessed in B.C. The danger of deferring to a regional management regime lies in the assumption that it is in fact science-based and at least as effective in addressing the principles of the standard as is the metric established for the standard. Former DFO veterinarian Dr. Sonja Saksida wrote the literature review tendered in support of these variance requests. Saskida maintains that the PAR's three motile lice per fish threshold is "not based on scientific evidence."[97] The application of Variances 88 and 141 proves to be an excellent argument for opening the process of approving variance requests to full technical and stakeholder review.

Lack of Compliance with the Variance: The Case of Variances 88 and 141

When a standard criterion is varied, it is logical to expect that farms would need to demonstrate compliance with the varied criterion in order to achieve and maintain ASC certification. In the case of the sea lice variances, however, the interpretation of the variance is also at issue. One would expect that any farm seeking certification in B.C. would need to demonstrate that it maintained lice levels at or below three motile lice per fish throughout the sensitive period for juvenile wild salmon of March to July, as the variance application threshold indicated.[98] Distressingly, industry-reported sea lice counts show that nine certified farms have exceeded the three motile lice per farmed fish metric during the 2015 and 2016 sensitive period.

Table 3. Months where ASC certified farms breached the PAR 3 motile per farmed fish metric

Farm	Month	Sea Lice count
2015		
Marsh Bay	March 2015	6
Marsh Bay	April 2015	26.2*
Monday Rock	April 2015	12.3
Marsh Bay	May 2015	17.3
Monday Rock	May 2015	5.1
Brent Island	May 2015	4.48
Mussel Rock	May 2015	6.6
Doyle Island	May 2015	3.6
Brent Island	June 2015	4.9
Mussel Rock	June 2015	5.2
Doyle Island	June 2015	5.2
2016		
Marsh Bay	March 2016	3.28
Monday Rock	March 2016	9.5
Bare Bluff	March 2016	3.1
Marsh Bay	April 2016	7.17
Monday Rock	April 2016	19.68
Marsh Bay	May 2016	5.05
Westside	May 2016	5.3
Goat Cove	May 2016	3
Bull Harbour	June 2016	4.5

Source: DFO, Marine Harvest Canada and Cermaq Canada*DFO Audit count

However, these breaches of compliance have not been a barrier to certification. A disclaimer posted on all ASC-certified and in-assessment farms' sea lice counts reports by Marine Harvest Canada explains: "Due to differing circumstances for managing sea lice in British Columbia, Marine Harvest Canada has been granted an exception to indicator 3.1.7; sea lice are instead managed in accordance with our Pacific Aquaculture Regulation [emphasis added]."[99]

On review of the application of the sea lice variance in practice, audit evidence shows that CABs routinely cite the variance number and the PAR regime, but provide no evidence of the actual sea lice levels on the farm or of sea lice counts on wild juvenile salmonids. No compliance with a metric threshold is required; no upper limit on absolute lice abundance or on lice per fish is applied.

This has led to the anomalous situation in which farms with adult *L. salmonis* levels as high as 19 per fish are being certified[100] to a standard that originally required levels of 0.1 female lice per fish. If the PAR threshold of 3 motile lice per fish is "not based on scientific evidence,"[101] it may equally be said that no scientific evidence supports the contention that lice levels seen on certified B.C. salmon farms are without consequence for outmigrating wild salmonids. Arguably, the intent of the sea lice indicator, which is to protect migrating juvenile salmonids from farm-generated increased lice abundance, is frustrated.

The sea lice variances have also had the effect, in their application if not their texts, of replacing a metric indicator with what might loosely be termed a "management objective." This was precisely the

sort of measure that the Aquaculture Dialogues sought to avoid. Compliance with the standards was intended to be measured by science-based, farm-level metric indicators.[102] As the PAR is applied by DFO in B.C., there is no upper limit to the lice levels permitted as long as the farm has a plan to treat or harvest the fish.[103]

The CAR guidance enabling the reapplication of a variance has had the effect, in this case, of amending the Salmon Standard for the entire B.C. salmon farming region in the absence of evidence that the lice levels occurring on farms applying for certification are adequately controlled to protect wild salmonids.

The Application of the Certification Accreditation Requirements (CAR)

The ASC CAR [104] is a technical guidance document for the CABs that outlines the requirements for certification. These auditing "rules" range from auditing timing, findings, certification decisions, chain of custody to reporting requirements that CABs are to follow. CABs are required to adhere to the CAR as a condition of their accreditation.

Auditing Process and Timeline

There is evidence to suggest non-compliant products have entered the marketplace with the ASC logo.[105] Analysis of the auditing process and timeline for the Canadian audits, as well as SeaChoice's stakeholder experience appears to indicate that deficiencies in the CAR and its application are likely the cause.

Initial Audit: Witnessing the Harvest and Providing a Full Cycle of Evidence

The CAR requires that "*The CAB's initial audit should include harvesting activities of the principle product to be audited*."[q]

Guidance for this audit requirement also provides that the auditor may, in the alternative, provide a justification for not witnessing the harvest, so long as harvest activities are witnessed at one of the surveillance audits (i.e. within the three-year validity of the certificate). The CAR states: "If the CAB determines that it is not possible to conduct the initial audit as specified in 17.4.2, the CAB shall: Record this determination in the audit report [and provide] a justification for the alternative timing"[r] and "[a]n audit conducted during the harvesting of the principle product included for certification shall occur at least once during the validity of each certificate."[s]

Only two out of 17 initial full assessment audits confirmed that the auditor actually witnessed the harvest. The "justification" given in several cases was that the farm was not ready to harvest at the date of the audit, which of course begs the question why the audit was scheduled prior to the end of the grow-out cycle.

Another justification provided in ASC audit reports is that the client farm seeks timely ASC market access for the product; they want to have a certified product on the market when they harvest.[106] The CAR lacks guidance for an acceptable justification for not witnessing harvest. However, it appears that the ASC is comfortable with the market access rationale. The ASC used this same rationale in its own variance process when approving an early peak biomass sampling variance (Variance no. 139). In this instance, the Variance Review Committee included amongst its reasons wanting to avoid a delay in the sales of the farm's ASC-certified salmon.[107]

Initial audits have been conducted anywhere from three to six months before harvest. These early audits prevent an analysis of the entire production cycle, providing the auditor with no data at all on which to evaluate compliance with a number of the Salmon Standard's indicators. This practice appears to contravene a clear requirement set out in the CAR: "Audits shall not be conducted until sufficient records/evidence are available for all applicable standard requirements as the minimum."[t]

[q] CAR Normative reference 17.4.2
[r] CAR Normative reference 17.6
[s] CAR Normative reference 17.4.7
[t] CAR Normative reference 17.4.5

An entire production cycle must be completed to have "sufficient records and evidence" to confirm conformance with all applicable Salmon Standard indicators. For example, the benthic monitoring indicators set out in Criterion 2 can only be addressed by sampling conducted at the farm's peak biomass (i.e. harvest). Several indicators rely on similar end-of-cycle calculations, including Estimated unexplained loss (3.4.3); Maximum viral disease-related mortality (5.1.5); Maximum unexplained mortality rate (5.1.6); Maximum farm level cumulative parasiticide treatment index score (5.2.5); Number of treatments of antibiotics (5.2.9); and the Fishmeal/fish oil forage fish dependency ratio (4.2.1/4.2.2). Numerous indicators focus on whether an event occurs beyond a stipulated threshold during a stated period up to and including the production cycle under audit, such as maximum number of lethal incidents (2.5.6); maximum on-farm lice levels (3.1.7); maximum number of escapes (3.4.1); and OIE-notifiable disease occurrence (5.4.4).

The ASC has recognized early auditing as problematic for the Salmon Standard's benthic monitoring indicators, which relies on sampling at peak biomass (i.e. harvest).[108] The ASC identified the following "problems": CAB application inconsistency; CABs commonly applying benthic sampling non-conformities (due to the early auditing); and audit reports typically lacking detail or evidence of compliance.[109] As part of the Salmon Standard's operational review, ASC proposed addressing these concerns by requiring audits to be performed after a farm has reached >75 per cent peak biomass.[110] The CAB is to provide estimated values for the benthic requirements and raise a minor non-conformance. Values are to be validated before certification (2.1.1) or a risk analysis may be performed and verified at the surveillance audit (2.1.2;2.1.3).

While these proposed rules may help to address inconsistencies in CAB application and strengthen report data quality, the use of risk analysis (i.e. predicted values) for indicators 2.1.2 and 2.13 still creates the potential for non-conforming product to be certified (in the event predictions are, in fact, wrong). In addition, these measures fail to address the other
Salmon Standard indicators that require a full production cycle to demonstrate compliance.

A review of the Canadian audits, where evidence and records are provided, indicates they are based on data from the current production cycle at the time of the early audit or the previous production cycle. Consequently, the reports do not provide a full production cycle of data that demonstrates compliance with the Salmon Standard for the most recent cohort of fish.

The CABs have been listing indicators that require a full production cycle of data as "conforming" despite the fact that the farm will have fish in the water for another four to six months after the audit. This creates the potential for non-conforming product to be certified and to enter the market with the ASC logo.

For example, Marsh Bay Farm's early audit resulted in missing the unfortunate deaths of several marine mammals that occurred later in the production cycle (after the audit).[111] The early audit and certification of Marsh Bay allowed for non-conforming product to enter the marketplace with ASC certification. It appears, as long as early auditing continues, the potential for missing non-conformity remains.

Table 4. Marsh Bay Farm: Timeline of certification, sea lion deaths and harvest

PRODUCTION CYCLE 1	
Date	**CERTIFICATION TIMELINE**
24 – 30 April 14	**ASC Full Assessment Audit (early audit)**
20 Jan 15	ASC CERTIFIED
26 Feb 15	**4 California Sea Lions Drowned***
March – May 15	**ASC-certified product enters market (harvesting)**
11 May 15	1 California Sea Lion Drowned*
23 July 15	2 California Sea Lion Drowned*

*MHC reporting

If the initial full assessment audit for Marsh Bay had occurred during the harvest, the marine mammal drownings in February 2015 would have disqualified the farm from certification.

Table 5. Marsh Bay Farm: Alternative timeline if the initial audit was conducted at harvest

PRODUCTION CYCLE 1	
Date	**CERTIFICATION TIMELINE**
26 Feb 15	**4 California Sea Lions Drowned***
March 15	**ASC Full Assessment Audit at harvest– failed to meet criteria. Not certified.**
March – May 15	(Harvesting)
11 May 15	1 California Sea Lion Drowned*
23 July 15	2 California Sea Lion Drowned*

* MHC reporting

During certification: Application of Major Non-conformity

The Marsh Bay Farm was responsible for seven California sea lion deaths.[112] The Salmon Standard requires no more than nine lethal incidents, with a maximum of two marine mammal deaths.[u] The first lethal entanglement event (four sea lions) was on February 26, 2015, and was publicly reported a month later. The additional drownings occurred in May and July 2015. The CAB waited until the next planned surveillance audit (November, 2015) to raise a major non-conformity.[113] During this delay, the farm was able to harvest and sell their first production of fish as ASC certified.

The CAR does not provide guidance for *when* a CAB should raise a major non-conformity arising from events occurring during the validity of a certificate. The auditor in this case chose to wait until the surveillance audit despite having the option to raise the non-conformity as soon as the facts were communicated and made public.

Table 6. Marsh Bay Farm: Timeline of certification, sea lion deaths, harvest and non-compliance raised

[u] Salmon standard indicator 2.5.6

PRODUCTION CYCLE 1	
Date	**CERTIFICATION TIMELINE**
24 – 30 April 14	ASC Full Assessment Audit
20 Jan 15	ASC CERTIFIED
26 Feb 15	4 California Sea Lions Drowned*
March – May 15	ASC-certified product enters market (harvesting)
11 May 15	1 California Sea Lion Drowned*
23 July 15	2 California Sea Lion Drowned*
PRODUCTION CYCLE 2	
Nov 15	**SURVEILLANCE AUDIT #1 and Major Non-Compliance raised**

*MHC reporting

If the alternative scenario of raising the non-conformity at time of knowledge (i.e. in February/March before harvest) had occurred, the result would not have differed. That is, the farm would of still have had the ability to harvest with the ASC certification and there would be no market repercussions due to the raised non-conformity.

Table 7. Marsh Bay Farm: Alternative timeline in the event the non-compliance had been raised immediately

PRODUCTION CYCLE 1	
Date	**CERTIFICATION TIMELINE**
24 – 30 April 14	ASC Full Assessment Audit
20 Jan 15	ASC CERTIFIED
26 Feb 15	**4 California Sea Lions Drowned***
Feb-March 15	**Major NC raised – 6 months maximum to close (incl. extension)**
March – May 15	**ASC-certified product enters market (harvesting)**
11 May 15	1 California Sea Lion Drowned*
23 July 15	2 California Sea Lion Drowned*

*MHC reporting

This demonstrates that a farm with a valid ASC certificate and a major non-conformity (whether raised or not) that would have prevented its certification can proceed to harvest and continue to legally bear the ASC certification in the marketplace, as well as enter the chain of custody.

Suspension and Revocation Process

If major non-conformities raised during the validity of certification are no barrier for a farm's ability to claim compliance to the ASC certification and, thus, toreap the market benefits of certification, it is incumbent upon us to question the ASC's suspension and revocation processes.

CARv1.0 (under which the Marsh Bay Farm case study timeline falls) provides no guidelines or rules for when a CAB should suspend a certification. Following the delay in raising the major non-conformity, Marsh Bay Farm was suspended on March 25, 2015.[114]

Table 8. Marsh Bay Farm: Timeline of certification, sea lion deaths, harvest, non-compliance raised and suspension dates

PRODUCTION CYCLE 1	
Date	**CERTIFICATION TIMELINE**
24 – 30 April 14	ASC Full Assessment Audit
20 Jan 15	ASC CERTIFIED
26 Feb 15	4 California Sea Lions Drowned*
March – May 15	ASC certified product enters market (harvesting)
11 May 15	1 California Sea Lion Drowned*
23 July 15	2 California Sea Lion Drowned*
PRODUCTION CYCLE 2	
Nov 15 16	SURVEILLANCE AUDIT #1 and Major Non-Compliance raised
25 March 16	Suspended (until June 25)
25 Sep 16	Date by which suspension must have been lifted according to the CAR
Oct – Dec 16	ASC-certified product enters market (harvesting)
Dec 16	SURVEILLANCE AUDIT #2

*MHC reporting

The suspension is assumed to have been lifted in late September 2016—conveniently just before the harvest of the second cohort of fish. The CAR does not provide guidance on what is required for a suspended farm to reattain its certification (i.e. lift the suspension), nor is there a requirement to make such details public. Consequently, no information on how Marsh Bay reattained their certification is available on the ASC website. Marsh Bay Farm's second surveillance audit report was posted early June 2017, nearly six months after the audit in December 2016 despite the CAR requiring the CAB and ASC to make this available on the ASC website 90 working days post audit.[v] The report insinuates the non-conformity was "closed" at the first surveillance audit and fails to mention the farm's suspension or recertification[115] While details remain unknown, the Marsh Bay timeline shows despite the seven sea lion deaths, the raising of a major non-conformity and the suspension, that the farm has *twice* successfully harvested and entered the market with the ASC certification and no repercussions.

The updated CARv2 (which came into effect January 1, 2017) guidance does not solve this issue, but rather allows it to continue: "The CAB shall suspend the certificate if a major non-conformity remains open after six (6) months and follow requirement in Section 7.6 of this document."[w] This guidance reinforces that farms in major non-conformity which would have prevented their initial certification, can harvest and sell their product as ASC certified during the six-month period.

As mentioned earlier, the ASC Salmon Standard states that farms must meet 100 per cent of the standard's requirements to be certified. Yet, the ability to market product as ASC-certified while being in major non-compliance challenges and undermines this assertion. Establishing rules that require immediate suspension and explicitly do not allow farms with raised major non-conformity the ability to harvest with the ASC logo would align the CAR with the intent of the Salmon Standard.

This also raises the question: Are there instances when a farm's certification should be withdrawn immediately? For example: illegal chemical use, WHO-critically important antibiotic use, or high levels

[v] CAR Annex C – Audit Report Requirements
[w] CAR Normative reference 17.10.1.2f)

of marine mammal deaths/sea lice/chemicals/antibiotics that breach the maximum allowed by the standard. When such non-compliance occurs pre-certification, it likely disqualifies the applicant farm. However, once certified, it is unclear where the revocation threshold is. Neither the CAR nor the ASC provides guidance or rules to answer this question. The CAR provides the administrative steps required once a CAB decides to withdraw a certificate and the following definition: "The irrevocable removal by the CAB of all or part of a certificate holder's certification as a result of noncompliance with certification requirements or contractual commitments"[x];however, the CAR falls short of providing guidance on *when* the decision to withdraw a client's certificate is necessary and *when* the CAB should take action.

Furthermore, there is no guidance or rules for when a suspension should progress into a withdrawal (revocation) of the certificate.

[x] CAR Annex A – The ASC Vocabulary

Unit of Certification: Intermediary farms

The operation under assessment for an ASC certificate is referred to as the "unit of certification." The CAR definition of a unit of certification states that it is the "operation that is covered by a certificate. It includes all production and processing sites including the receiving water bodies, any harvest sites such as production ponds, and all storage or processing operations (including subcontracted operations) up to the point where the product enters further chain of custody."[y]

Intermediary farms are commonly used in the B.C. salmon aquaculture industry, and can be referred to as smolt-entry sites, transfer pens, nursery pens or initial grow-out sites. These interim farms are typically used between the hatchery and final grow-out stage.[116]

There is a lack of public reporting of transfers between farms. Therefore, it is challenging to know the full number of operations that use intermediary farms in their production cycles. However, by deciphering sea lice data and audit reports, it can be discerned that at least nine farms were certified without assessment of their intermediary stage facilities.[117] CAB correspondence confirmed that one farm did not use an intermediary site.[118] It is unknown if the remaining seven farms used an intermediary farm during the certified production cycles.

Figure 5. ASC initial full assessment audits: where production cycle gaps have been omitted from audit

Consequently, it appears that only the hatchery and grow-out sites are being assessed in B.C; and as observed above, the assessments of the grow out sites has been routinely truncated by the conduct of audits prior to harvest. Up to a year of production time could be excluded from the production cycle assessed in an ASC audit.[z] For example, in a recent ASC audit report, it was noted that fish from an interim farm were transferred to the final grow-out just two months before expected harvest, with no consideration given to their full production cycle compliance with the Salmon Standard criteria.[119]

[y] CAR Annex A – The ASC Vocabulary
[z] See Appendix C.

Chain of Custody Implications

The CAR requires the CAB to verify whether the company's traceability and segregation systems are sufficient.[aa] Omitting the harvest and intermediary stages of the production cycle from the auditing process could compromise the chain of custody.

Conducting the initial audit at harvest allows the CAB to witness the product entering the chain of custody. However, as it is the norm to conduct early audits (pre-harvest), CABs are relying on written procedures and policies to verify that only certified product is entering the chain of custody.

The ASC directs that only "products that originate in ASC certified operations and are sold through an MSC certified chain of custody, are eligible to carry the ASC logo."[120] The use of intermediary farms in B.C. and their omission from ASC farm audits results in substantial stages of the "certified" product's production cycle being unassessed. B.C. "certified" products may originate from both ASC certified *and* non-certified operations, as intermediary farms play a role within a product's chain of custody. The chain of custody vulnerabilities posed by intermediary farms is not addressed in ASC documents or the MSC chain of custody requirements.

[aa] CAR Normative reference 17.6.6.1

Stakeholder Engagement and Experience

A total of 17 stakeholders were identified as being actively engaged during at least one of the B.C. certified farm's audit processes either via a stakeholder submission or an in-person meeting with the CAB. SeaChoice member groups (Living Oceans Society, David Suzuki Foundation and Ecology Action Centre) and other environmental groups were the most active stakeholders. These stakeholders are responsible for 15 ASC farm audit stakeholder submissions. No independent scientists or academics have engaged during an audit; nor has the ASC itself engaged as a stakeholder on Canadian audits. Other stakeholders included members of the First Nations, a feed company, a commercial veterinary service, a risk management consultant, logistics company and one unidentified stakeholder. These stakeholders were present in two of the 2015 ASC audits: Bare Bluff and McIntyre Lake. [121] [122] Since then, while a diverse range of stakeholders are routinely listed within audit reports as being notified of ASC assessments, only the SeaChoice groups and their environmental group colleagues have remained "active" stakeholders on audits.

As an active stakeholder, SeaChoice has raised concerns about the insufficiency of evidence in draft audit reports to demonstrate the farms' compliance with the standard. SeaChoice has questioned whether the CABs are following the CAR guidance, particularly in relation to the requirements elaborated in this report. No stakeholder submission has resulted in a non-conformity being changed or in the denial of certification by a CAB. The CABs' response to the submissions of stakeholders has been varied, ranging from a complete dismissal of issues raised to a thoughtful rejection of issues raised.

The ASC's Objections Procedure for specific certification processes[123] involves the following:

Step 1: The stakeholder is to *share* their objection to the relevant CAB with the aim to settle in an informal manner;
Step 2: If agreement cannot be reached, the stakeholder should submit an *official objection* with the CAB using the CAB's complaint procedure; and
Step 3: If agreement still cannot be reached, the stakeholder should submit *a complaint* against the CAB to Accreditation Services International (ASI).

Living Oceans Society has submitted six official objections for five ASC certified farms to the relevant CABs. Three complaints for two farms have been filed with ASI. One complaint investigation has been completed and two remain under investigation as of June 2017. For the completed investigation,[124] the public report summary shows ASI recommended two findings be raised in relation to the CAB's failure to meet their CAR obligations. Additionally, ASI decided to supervise the CAB's next audit of the farm in question to follow up on a third aspect of the complaint.

This experience shows that while the direct stakeholder interaction with the CAB is unlikely to yield results, complaints to ASI can provide an effective avenue for stakeholders. However, the timeline associated with the ASC objections procedure is lengthy and cumbersome. For example, Living Oceans submitted the official objection (Step 2) in May 2015 and the formal complaint to ASI (Step 3) in September 2015. The final public investigation report was published on September 13, 2016. In total, the objections procedure can take well over a year. The process requires a substantial commitment of time and resources on behalf of the stakeholder.

Clarifying the role of stakeholders in certification schemes can be a way to ensure emerging issues are effectively heard and addressed; [125] it can also improve public perception of the certification and lend credibility to the logo. Early on (2011), the ASC identified the creation of a Stakeholder Advisory Group (SAG) as a priority. It was envisioned that the "SAG is likely to provide a high-level of advice to the Supervisory Board based on discussions among the stakeholders on critical issues."[126] When

comparing stakeholder participation across certifications, Kalfagianni & Pattberg noted the ASC's plans to form an SAG. [127] However, ASC TAG meeting notes post-2014 disclose no further discussion of the establishment of an SAG. At time of publication, no ASC SAG has been formed.

Recommendations

This review of ASC-certified Canadian salmon farms found issues with the implementation of the Salmon Standard. Weaknesses with the certification scheme's application were identified that have the potential to erode the credibility of the Salmon Standard and the ASC label as media, consumers and environmental watchdogs become aware of them. Four key areas where improvements to the certification's processes and guidelines should be made are: audit report evidence, variance requests, audit processes and stakeholder engagement.

Specifically, SeaChoice calls on the ASC to implement the following recommendations:

Audit Report Evidence

1. Enhance the Quality Assurance Framework to ensure CABs are:
    a. providing the required metrics to demonstrate compliance with the standard; and
    b. raising non-compliance appropriately and consistently.
2. Ensure global and regional statistical significance in the Quality Assurance Framework methodology.

Variance Requests

3. Incorporate expert and stakeholder input into the variance request approval process to follow ISEAL Code of Practice.
4. Review already approved variances to ensure that they meet the ISEAL Code of Practice. In the event, they do not, reassess the variance following a stakeholder inclusive process (Recommendation 3).
5. Revise the CAR to prevent the application of variances to subsequent applications for certification in the absence of express evidence that "identical situations" exist. Consider stipulating the evidentiary requirements in more detail.
6. Include the application of variances within audits in the quality assurance program to ensure CABs are applying varied criteria to compliance and are not using them as exemptions.

Audit Processes

7. Revise the CAR to stipulate the earliest an audit can occur is >75 per cent peak biomass (as required by the revised Salmon Standard benthic indicators). Likewise, broaden the requirement to raise a minor non-conformity to include all indicators that rely on a full production cycle of data. Closure of these non-conformities should occur before certification is awarded. This is consistent with the stipulation that farms must fulfil 100 per cent of the Standard's requirements in order to be certified.
8. Modify the CAR to require major non-conformities identified during the validity of a certificate to be raised immediately upon identification and, if still open at time of harvest, stipulate that the ASC label should not be used.
9. Amend the CAR to provide further guidance for the suspension, re-instatement and withdrawal of certificates, having specific regard for the timely disclosure of evidence supporting these decisions, transparency and stakeholder engagement. Consider a specific rule that suspension must be enforced at any time the auditor becomes aware of major non-compliance (that would disentitle an applicant on an initial audit of certification) in order to bring the CAR in line with the Salmon Standard that requires 100 per cent compliance with the Standard.
10. Amend the CAR to provide more specific direction to the CABs to ensure that audits assess the entire "Unit of Certification" as defined. Consider a specific direction to include hatchery, nursery and initial grow-out or other intermediary sites in the assessment, accounting for all relevant standard indicators at all sites within the unit of certification.

11. Include the above audit processes recommendations in the quality assurance program to ensure CAB are following processes, guidelines and timelines appropriately.

Stakeholder Engagement

12. Establish a Stakeholder Advisory Group that represents a diverse range of stakeholders. The SAG would allow the opportunity for stakeholders to raise concerns and critical issues to the TAG and ASC Supervisory Board.
13. Establish a process to link identified stakeholders to participation in variance requests (i.e. Recommendation 3).

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Appendices

Appendix A – 2016 Sensitive Period Sea Lice Count for Active ASC Certified Farms

Year	Month	Facility Reference Number	Licence Holder	Site Common Name	Fish Health Zone	Number of Counts Performe	Average L. salmonis motiles per fish	Average L. salmonis females per fish
2016	March	1537	Cermaq	Bare Bluff	2	2	2.5	0.9
2016	March	543	Cermaq	Mussel Rock	2	2	0.1	0.1
2016	March	1237	Marine Ha	Monday Rocks	2	4	9.5	3.7
2016	March	1401	Cermaq	Brent	3	2	2.2	1.2
2016	March	304	Cermaq	Raza	3	2	0.5	0.2
2016	March	306	Cermaq	Venture	3	2	2.4	1.4
2016	March	821	Marine Ha	Glacier Falls	3	2	0.5	0.3
2016	March	7053	Marine Ha	Bull Harbour	3	5	2.3	1.1
2016	March	1351	Marine Ha	Marsh Bay	3	5	2.3	0.7
2016	March	1702	Marine Ha	Goat Cove	4	3	0.1	0
2016	April	1537	Cermaq	Bare Bluff	2	2	0.8	0.3
2016	April	543	Cermaq	Mussel Rock	2	3	0.1	0.1
2016	April	1237	Marine Ha	Monday Rocks	2	4	13.9	6.6
2016	April	1401	Cermaq	Brent	3	3	1.4	0.6
2016	April	304	Cermaq	Raza	3	4	0.3	0.1
2016	April	306	Cermaq	Venture	3	4	1.4	0.7
2016	April	821	Marine Ha	Glacier Falls	3	2	0	0
2016	April	7053	Marine Ha	Bull Harbour	3	2	0.4	0.2
2016	April	1351	Marine Ha	Marsh Bay	3	3	5.8	2.3
2016	April	1702	Marine Ha	Goat Cove	4	3	1.3	0.4
2016	May	1537	Cermaq	Bare Bluff	2	2	0.2	0.1
2016	May	543	Cermaq	Mussel Rock	2	2	0.5	0.3
2016	May	1237	Marine Ha	Monday Rocks	2	0	0	0
2016	May	1401	Cermaq	Brent	3	2	0.5	0.3
2016	May	304	Cermaq	Raza	3	3	0.3	0.1
2016	May	306	Cermaq	Venture	3	2	0.9	0.5
2016	May	821	Marine Ha	Glacier Falls	3	2	0.1	0.1
2016	May	7053	Marine Ha	Bull Harbour	3	3	1.8	0.8
2016	May	1351	Marine Ha	Marsh Bay	3	4	2.9	1.4
2016	May	1702	Marine Ha	Goat Cove	4	4	2.5	1.4
2016	June	1537	Cermaq	Bare Bluff	2	2	0.3	0.1
2016	June	543	Cermaq	Mussel Rock	2	2	0.6	0.4
2016	June	1237	Marine Ha	Monday Rock	2	0		
2016	June	1401	Cermaq	Brent	3	2	0.3	0.2
2016	June	304	Cermaq	Raza	3	2	0.1	0
2016	June	306	Cermaq	Venture	3	2	0.6	0.4
2016	June	821	Marine Ha	Glacier Falls	3	3	0.3	0.1
2016	June	7053	Marine Ha	Bull Harbour	3	2	4.5	2
2016	June	1351	Marine Ha	Marsh Bay	3	2	0.7	0.3
2016	June	1702	Marine Ha	Goat Cove	4	4	1.8	1.1

Appendix B – Parasiticide Treatment Index (PTI) Scores for ASC Certified Farms

The ASC Indicator 5.2.5 *Maximum farm level cumulative parasiticide treatment index (PTI) score as calculated according to the formula in Appendix VII* requires a PTI score ≤ 13. Based on the PTI formula (1 SLICE treatment = 3.2; 2 SLICE treatments = 9.6; 3 SLICE treatments = 16). Therefore, those farms with a PTI score of 9.6 would beach the PTI threshold if a third treatment was applied.

Farm	ASC Certified Production Cycle Number	PTI Score
Marsh Bay	PC1	9.6
Bare Bluff	PC1	0
McIntyre Lake	PC1	0
Duncan Island	PC1	9.6
Doyle Island	PC1	9.6
Monday Rock	PC1	3.2
Mussel Rock	PC1	9.6
Goat Cove	PC1	9.6
Brent Island	PC1	9.6
Glacier Falls	PC1	9.6
Marsh Bay	PC2	9.6
Venture Point Farm	PC1	9.6
Bull Harbour	PC1	3.2
Raza Island	PC1	0

Appendix C - Sheep Passage ASC Audit: Production Timeline (includes 2 Interim farms)

Interim farm # 1 Jackson Pass cohort

Total production cycle excluded from ASC audit: 1 Year

Date	DFO Motile/per fish (industry)	MHC Reporting	Notes
Jan 16			Recent smolt entry* (Recent smolt entry)**
Feb 16	0	0.01	
March 16	0.3	0.33	
April 16	0.5	0.54	
May 16	0.5	0.51	
June 16	0.4	0.29	Management action underway; Survey methodology may vary from sampling design outlined in licence conditions. Additional sampling may have been conducted or pens excluded. Please contact DFO for details. (H202 on pens 1 and 2 only)
13 June 16	H202		
July 16	0.3	0.32	
Aug 16	1.5	1.47	
Sep 16	5.8	5.84	Management action planned
Oct 16	18.5	17.73	Management action underway
23 Oct 16	H202		
Nov 16	10.2	10.17	Management action planned (Treatment pending)
Dec 16	18	17.98	Bi-weekly counts; Management action underway (Site fallow as of Dec 20, 2016) *Transfer to Sheep Pass*

Interim farm #2 Lochalsh cohort

Total production cycle excluded from ASC audit: 6 months

Date	**DFO Motile/per fish (industry)**	**MHC Reporting**	**Notes**
Oct 15	2.4	2.42	Bi-weekly counts* (Treatment being planned)**
Nov 15	8	**8.66**	Management action underway (H202)
20 Nov 15	H202		
Dec 15	0.3	0.33	
Jan 16	0.2	0.21	
Feb 16	0.2	0.20	
March 16	0.4	0.38	
April 16	0.5	0.49	(April 25 start fish transfers to Sheep Pass)
May 16	0		Fallow

Grow out farm Sheep Pass

Date	DFO Motile/per fish (industry)	MHC Reporting	Notes
April 16			(H202 in wellboat from Lochalsh)**
25 April 16	H202		
May 16	0	0.03	Survey methodology may vary from sampling design outlined in licence conditions. Additional sampling may have been conducted or pens excluded. Please contact DFO for details.*
June 16	0.4	0.54	Management action underway; Survey methodology may vary from sampling design outlined in licence conditions. Additional sampling may have been conducted or pens excluded. Please contact DFO for details. (SLICE)
22 June 16	SLICE		
July 16	0.7	0.74	Survey methodology may vary from sampling design outlined in licence conditions. Additional sampling may have been conducted or pens excluded. Please contact DFO for details.
Aug 16	1.6	1.54	2nd count included only two pens
Sep 16	3.4	3.42	Management action planned
Oct 16	10.4	10.61	Management action underway (H202)
30 Oct 16	H202		
Nov 16	1.9	1.69	Survey methodology may vary from sampling design outlined in licence conditions
Dec 16	3.3	3.30	Harvesting; Bi-weekly counts; Management action underway (H202 for fish transferred in from Jackson Pass)
6 Dec 16	H202		
Jan 17		4.63	(H202 and Harvesting)
6 & 7 Jan 17		5.43	
25 Jan 17	H202		
11 & 12 Feb 17		2.35	
14 & 15 Feb 17		1.79	
21 & 22 Feb 17		4.9	(Management action underway)
Feb 17		2.25	(H202 treatments and harvesting ongoing)
1 Mar 17		0.35	
4 Mar 17		0.55	
13 & 15 Mar 17		0.75	
March		0.67	
29 April 17		2.04	

*DFO notes **MHC notes

ASC Response to SeaChoice Report "Aquaculture Stewardship Council (ASC) certification in Canada: Technical Report"

As an organisation borne from a multi-stakeholder process and dedicated to transparency and ongoing improvements to our standards and processes, the ASC is pleased to receive input from those who share our goal to improve the environmental sustainability and social responsibility of the aquaculture industry. The report authored by SeaChoice offers a constructive analysis and will be considered during the review and revision cycles for both the ASC Salmon Standard and the ASC Certification and Accreditation Requirement (CAR) document.

The ASC has already begun to make improvements through the recently completed Operational Review of the ASC Salmon Standard (v.1.1) and ASC Tilapia Standard (v1.1). To make further progress towards our mission and meet the needs of stakeholders, in May 2017 the ASC established a Programme Integrity Team. The team is charged with strenghtening processes and will conduct due dillenge— including, but not limited to, quality assurance checks and the current and ongoing review of variance request procedures— to ensure ASC standards applied in the field honour the intent and purpose of the programme.

The ASC is not static and we are fully committed to progress and accountability. We take seriously our pledge to maintain best practices and to further review and refine our own standards and processes on an ongoing basis. We actively seek input from diverse interest groups and endeavour to represent their voices through a balance in our standards. Balance is also reflected in our governance as both representatives from the private and public sector serve on the ASC Supervisory Board and our Technical Advisory Group. At the time of writing, we have five members of the Board from independent organisations including academia, environmental NGOs and not-for-profits, and two industry representatives. Our Technical Advisory Group is consulted on updates to standards and also includes conservation groups and NGO's such as the David Suzuki Foundation.

The ASC is still a young programme—the first farm was certified less than five years ago and the first salmon farm achieved recognition in 2013. The standard as applied has the net effect of pushing producers to perform to comprehensive, transparent criteria that is unmatched in any other single jurisdiction. The farms in the programme voluntarily distinguish themselves by achieving and retaining ASC certification. This recognition compels them to match our ambition and advance as our standards and process advance.

It should be noted that the CAR is applied to all species and all realities, so a species specific CAR as suggested by SeaChoice would be against efficiency and consistency within the programme, especially in light of the ongoing process to create an ASC Aligned Standard for all species. However, the organisation has already taken proactive steps—including adopting a quality assurance protocal, investing in a new IT platform to improve auditor reporting and data gathering and updating auditor traning— in consultation with multiple stakeholders and internally, to identify opportunities to further strengthen our programme. Thus, many of the recommendations from SeaChoice align with actions the ASC is already taking or has plans to address in the near term.

ASC response to recommendations made by SeaChoice

Recommedation:

1. Enhance the Quality Assurance Framework to ensure CABs are:
    a. providing the required metrics to demonstrate compliance with the standard
    b. raising non-compliance appropriately and consistently.

ASC Response:

The ASC is currently in the process of stregthening its Quality Assurance (QA) framework.

A. The ASC is taking corrective actions regarding metric reporting. The following changes are already in place or will soon be implemented:

- ✓ **An updated mandatory audit report template featuring more guidance for CABs**
- ✓ **Weekly calls with ASI—to include CABs as appropriate— to raise awareness of correct metrics reporting procedures and other matters**
- ✓ **Greater emphasis will be given to metric reporting during quality assurance (QA) checks**
- ✓ **Procedures for metrics reporting will be included at auditor training**

B. ASC is committed to a process of frequent review for many reasons. Among these is the simple reality that our standard is applied in a very complex operating environment and it is important to assess whether an indicator is effective and applicable on an ongoing basis.

As much as we wish it were, the determination and application of non-conformities is not an exact science. The application is complicated because of the various ways performance indicators interact within a standard, the ways a non-compliance may relate to one or more performance indicators and because what is observed in real time during an audit may vary. Therefore, it is not possible or realistic to apply a strict "if/then" formula for every possible circumstance. Reasons for this include the number of possibilities that an event or action—the "if"—may have occurred, including error, an isolated event or a systematic problem that may seem unconnected to the observed issue.

Despite these realities, the ASC wishes to improve consistency across all of our standards and is developing further auditor guidance to provide clarity on when to raise a non-compliance and how to judge its severity. The guidance in development includes feedback on lessons learned from farm certification reports to illustrate different interpretations and to foster better understanding of the process by developing a baseline for future reference that can be used by CABs.

Recommedation:
2. Ensure global and regional statistical significance in the Quality Assurance Framework methodology.

ASC Response:

ASC is currently developing a new Quality Assurance Framework and Procedure. The document calls for a risk-based approach to sampling audit reports for quality assurance checks. The framework will be made public on the ASC website and is expected to be complete by August 2017.

Recommedation:
3. Incorporate expert and stakeholder input into the variance request approval process to follow ISEAL Code of Practice.

ASC Response:

ASC's variance request (VR) process is in compliance with the ISEAL Assurance Code.

In accordance with the requirements in ISEAL Assurance Code 6.4.8 Exceptions, the VR process is publicly available in the ASC CAR v.2, CABs receive prior VR approval from ASC, the list of approved VRs is publically available on ASC's website, a complaints procedure is in place and all standards review and revisions take approved VRs into account.

ASC wishes to improve the existing system and has been working to more formally document the VR approval process beyond what is necessary for ISEAL compliance. The new process will provide greater detail and allow targeted requests for information to strengthen decision making processes.

The process for the future development of new policies and revisions to ASC standards, other scheme documents and practices— will be included. The VR process will be integrated into this approach. Once implemented, the policy framework will provide a clear decision making process and bring further transparency to the process of approving VRs and other content-related changes. In keeping with our commitment to maintaining a transparent programme, all documents and procedures will be published on ASC's website upon completion.

Recommedation:
4. Review already approved variances to ensure that they meet the ISEAL Code of Practice. In the event, they do not, reassess the variance following a stakeholder inclusive process (recommendation 3).

ASC Response:

ASC is currently conducting a review of its VR process to incorporate learnings into the new procedure for approvals mentioned above and also as part of upcoming standards Operational Reviews.

Reviews of VRs are an on-going process, and requests previously granted on CAR v.1 were reviewed and taken into account during the writing of the recently revised standards. The learnings were incorported into CAR v.2, and the new VR procedure will also reflect these updates in a more systematic manner. In keeping with our dedication to transparency, the list of published VRs on the ASC's website will also be regularly updated.

We also agree that a broader review will be commissioned.

Recommedation:
5. Revise the CAR to prevent the application of variances to subsequent applications for certification, in the absence of express evidence that "identical situations" exist. Consider stipulating the evidentiary requirements in more detail.

ASC Response:

Once complete, the VR approval procedure currently in draft will include guidance to provide CABs with an example of when a previously granted VR can be applied. In addition the VR approval procedure will detail how the decision making process for VRs works.

Recommedation:
6. Include the application of variances within audits in the quality assurance program to ensure CABs are applying varied criteria to compliance and are not as exemptions.

ASC Response:

Review of the approved VRs is one of the control points examined during the QA work done by that team when checking audit reports. We have also already incorporated further guidance for CABs to provide stronger evidence and justification when seeking VRs as part of the new protocols.

Recommedation:
7. Revise the CAR to stipulate the earliest an audit can occur is >75% peak biomass (as required by the revised salmon standard benthic indicators). Likewise, broaden the requirement to raise a minor non-conformity to include all indicators that rely on a full production cycle of data. Closure of these non-conformities should occur before certification awarded. This is consistent with the stipulation that farms must fulfil 100% of the standard's requirements in order to be certified.

ASC Response:

The CAR applies to all species. The changed benthic indicators in the revised Salmon Standard do not contradict CAR requirement 17.4.6 that allows for the initial audit to be conducted outside of the harvest period. Nonetheless, additional guidance on the revised indicators of the Salmon Standard will be provided for consistent application across CABs.

The current CAR v.2 inlcudes requirement 17.1.2.1 which states: "*All clients seeking certification shall have available records of performance data covering the periods of time specified in the standard(s) against which the audit(s) is to be conducted*". A non-conformity can be raised against this requirement of the CAR. ASC will adjust the audit report template to facilitate reporting on CAR related non-conformities as well.

We agree that our approach to nonconfirmites needs further attention and we will continue to review procedures on an ongoing basis.

Recommedation:
8. Modify the CAR to require major non-conformities identified during the validity of a certificate to be raised immediately upon identification and, if still open at time of harvest, stipulate that the ASC label should not be used.

ASC Response:

It is worth noting that there have been incidences of farm certificates being withdrawn or suspended due to major non-conformities identified during the validity of a certificate. As a result, those farms were not able to use the ASC logo on product associated with the impacted sites. However, we acknowledge the supporting material may lack clarity for those who are unfamiliar with the procedure in such an event.

The recommendation touches on two interlinked issues that ASC has been reviewing internally and will bring to the Supervisory Board and Technical Advisory Group once those reviews have concluded. The first action is to bring more clarity on the nature of major non-conformity—i.e. systematic failure of recording a metric vs one time non-complying with a particular metric indicator— which would require the farm to report a failure under the future ASC Aligned Standard. Clearer guidance will be developed as part of the standard creation process to provide clarity on when non-compliance against a particular performance indicator should result in a major non-compliance being raised, including those with metric requirements.

The second issue regards the detection and reporting on those major non-conformities during the validity of a certificate, and the consequence of doing so.This will be addressed during the revison to the CAR. We want to ensure the continued reporting of major NCs during the validity of a certificate and we recognise that adding clear definitions will support our aims.

Recommedation:
9. Amend the CAR to provide further guidance for the suspension, re-instatement and withdrawal of certificates, having specific regard to the timely disclosure of evidence supporting these decisions, transparency and stakeholder engagement. Consider a specific rule that suspension must be enforced at any time the auditor becomes aware of major non-compliance (that would disentitle an applicant on an initial audit of certification) in order to bring the CAR in line with the salmon standard that requires 100% compliance with the standard.

ASC Response:
The ASC will provide CABs and stakeholders with a guidance on the suspension and withdrawal process.This guidance will also be taken into account during the CAR revision processes.

Recommedation:
10. Amend the CAR to provide more specific direction to the CABs to ensure that audits assess the entire 'Unit of Certification' as defined. Consider a specific direction to include hatchery, nursery and initial grow-out or other intermediary sites in the assessment, accounting for all relevant standard indicators at all sites within the unit of certification .

ASC Response:
The ASC Salmon Standard requires smolt production to comply with Principle 8, and certain aspects of hatchery compliance regarding disease management are also already included in the standard. Coverage of nursery and intermediate sites will be considered for the upcoming review and revision cycles that will be initiated with a review of current practices related to use of consecutive sites.

Recommedation:
11. Include the above audit processes recommendations into the quality assurance program to ensure CABs are following processes, guidelines and timelines appropriately.

ASC Response:
All featured improvements and new content will be considered and carried forward, to the extent possible, into the QA procedure.

Recommedation:
12. Establish a Stakeholder Advisory Group that represents a diverse range of stakeholders. The SAG would allow the opportunity for stakeholders to raise concerns and critical issues to the TAG and ASC Supervisory Board.

ASC Response:

The ASC Technical Advisory Group (TAG) has a dual function and currently provides both technical and stakeholder feedback. The ASC Supervisory Board is investigating next steps for the formation of a SAG. This review will also cover possible future interactions of the SAG with both the TAG—which would then shift focus to a purely technical advisory body— and Supervisory Board.

Recommedation:
13. Establish a process to link identified stakeholders to participation in variance requests (i.e.recommendation 3).

ASC Response:

ASC will seek input from beyond the VR committee when appropriate and as established in the procedure that will guide future VR approval processes. Once ready, this procedure will be made public.

David Suzuki Foundation
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