

ASC Salmon Standard Operational Review – 3rd Public Consultation

SeaChoice Stakeholder Submission

Section No.	Page	Comment	Rationale (e.g. reference to scientific articles, industry practices)	Proposed change (reword the section as precisely as possible)
Change 8: Criterion 3.1 rationale	4	We agree that an alternative method for monitoring and protecting wild salmon is a necessity in jurisdictions where the handling of wild salmon is prohibited. However, we find the rationale to be weak in evidence requirement specificity, therefore enabling subjective interpretation by CABs.		Define the specific “evidence” that would constitute meeting the requirements of Principle 3.1. E.g. peer review studies; publicly available government monitoring and reporting; etc. for Indicator 3.1.6.
Change 9: Criterion 3.1 rationale	4-5	“Although the audit should coincide with harvest period, it may be undertaken before end of harvest...”. We find this statement to be a contradiction. Stating the audit “should” coincide with witness of harvest has become meaningless in the application of the salmon standard. On review of publicly available ASC salmon standard initial audits, it is the norm for audits to occur before harvest. The witness of harvest is a rare exception. This is compromising the integrity of the salmon standard and the ASC. Furthermore, it is in conflict of The ASC Certification and Accreditation Requirements (CAR) Version 2.0 Process Requirements 17.1.2.1 and 17.4.5 that require <i>all</i> data, records and evidence for <i>all</i> applicable standard requirements be available at audit. When the audit takes place before harvest, the records and evidence for	The allowance for initial audits to occur early, before the harvest, is in conflict with the ASC Certification and Accreditation Requirements (CAR) Version 2.0 which has the following stated Process Requirements (17): 17.1 Unit of Certification <i>17.1.2.1 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;</i> and 17.4 Audit Timing	Remove change 9. Ensure all initial audits are conducted at harvest, meaning all sufficient records and evidence are available for the salmon standard indicators, as per CAR 17.4.5.

		<p>the applicable standard requirements are simply not available.</p> <p>Lastly, “post hoc” or “estimates” at time of audit weakens the rigour of the standard, allowing for the possibility of non-conformances to be missed. This is in conflict with the intent of The Dialogues and the ASC’s stated claim to be “Meaningful: By including science-based performance metrics....”.</p>	<p><i>17.4.5 Audits shall not be conducted until sufficient records/evidence are available for all applicable standard requirements as the minimum.</i></p>	
Change 10: Indicator 3.2.2	5	<p>There can be significant biodiversity concerns associated with the culture of “native” species. Wild salmon populations differ genetically from farmed and there are a number of studies that have demonstrated farmed Atlantic salmon cause significant concerns and risks on these populations. Criterion 3.3 Prevention of Escapes (Page 17) of the draft Core standard recognizes this by stating: “Escaped farmed species... alter the overall pool of genetic diversity through competition with wild fish and interbreeding with local wild stocks of the same population. Genetic diversity is an important conservation issue, as escaped farmed species have the potential to negatively impact the genetic diversity of wild species by interbreeding”.</p>	<p>Wild populations differ genetically from farmed Atlantic salmon. Compared to wild salmon populations, it is recognized that farmed salmon are genetically less diverse^{1 2}. Studies^{3 4} on homogenization hybrids reflect this.</p> <p>Therefore, we propose that farmed Atlantic salmon should be deemed “non-native”. Particularly with the significant concerns associated with the risk of establishment and gene pool degradation of at risk wild salmon populations.</p> <p>For example, studies on wild and escaped farmed salmon in the</p>	<p>Either broaden the definition of “non-native” (“exotic species”) to include genetic differences or incorporate the ‘ecological impacts of native species’ and ‘establishment risk’ to Criterion 3.2 of the ASC salmon standard.</p>

¹ Morris, M, Fraser, D, Heggelin, A, Whoriskey, F, Carr, J, O’Neil, S & Hutchings, J 2008, Prevalence and recurrence of escaped farmed Atlantic salmon (*Salmo salar*) in eastern North American rivers, *Canadian Journal of Fisheries and Aquatic Science*, vol. 65, pp.2807-2826.

² Karlsson, S, Moen, T, Lien S, Glover, KA, Hindar, K, 2011, Generic genetic differences between farmed and wild Atlantic salmon identified from a 7K SNP-chip, *Molecular Ecology Resources*, vol.11(s1), pp.247-253.

³ Fleming, IA, Hindar, K, MjÖlnerÖd, IB, Jonsson, B, Balstad, T, Lamberg, A, 2000, Lifetime success and interactions of farm salmon invading a native population, *Proceedings of the Royal Society of London B: Biological Sciences*, vol.267(1452), pp.1517-1523.

⁴ Hindar, K, Diserud O, 2007, Vulnerability analysis of wild salmon populations towards escaped farm salmon, *Nor Inst Nat Res Rep*, vol. 244, pp.1-45.

	<p>The ASC therefore recognizes this concern, however has failed to incorporate it as an establishment risk. Hence, we find the interpretation of “native” vs. “non-native” (or “exotic species”) under Criterion 3.2 to be flawed. We propose that farmed Atlantic salmon should be deemed “non-native” in areas where wild Atlantic salmon are located due to their genetic differences <i>or</i> that the standard should incorporate the impacts/risks of “native” species into the criterion. For example, ASC certified salmon farms located in the Atlantic have been exempt from the Salmon Standard Indicator 3.2.2 <i>If a non-native species is being produced, evidence of scientific research completed within the past five years that investigates the risk of establishment of the species within the farm’s jurisdiction and these results submitted to ASC for review.</i> Yet many studies have shown farmed Atlantic salmon establishment in the Atlantic (e.g. Canada) as a significant threat to wild salmon populations and genetics. All aquaculture facilities should demonstrate that</p>	<p>Magaguadavic River^{5 6} demonstrated successful inter-breeding, suggesting introgression is leading to genetic homogenization and adaptation loss, with the potential risk to North American wild salmon populations to be “high”⁷. Recent studies by Department of Fisheries and Oceans Canada (DFO) found evidence of interbreeding in 17 out of 18 Newfoundland rivers⁸.</p> <p>ASC incorporating this issue into their criteria would be aligned with Monterey Bay Aquarium’s Seafood Watch aquaculture methodology which includes the assessment of the “Ecological impacts of native and non-native species”. Refer to Escapes: Factor 6.2 Invasiveness⁹.</p>	
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⁵ Morris, M, Fraser, D, Heggelin, A, Whoriskey, F, Carr, J, O’Neil, S & Hutchings, J 2008, Prevalence and recurrence of escaped farmed Atlantic salmon (*Salmo salar*) in eastern North American rivers, *Canadian Journal of Fisheries and Aquatic Science*, vol. 65, pp.2807-2826.

⁶ Carr, JW, Anderson, JM, Whoriskey, FG, Dilworth, T, 1997, The occurrence and spawning of cultured Atlantic salmon (*Salmo salar*) in a Canadian river, *ICES Journal of Marine Science: Journal du Conseil*, vol.54(6), pp.1064-1073.

⁷ Bourret, V, O’Reilly, PT, Carr, JW, Berg, PR, Bernatchez, L, 2011, Temporal change in genetic integrity suggests loss of local adaptation in a wild Atlantic salmon (*Salmo salar*) population following introgression by farmed escapees, *Heredity*, vol.106(3), pp.500-510.

⁸ <http://www.cbc.ca/news/canada/newfoundland-labrador/farmed-salmon-mating-with-wild-in-nl-dfo-study-1.3770864>

⁹ http://www.seafoodwatch.org/-/m/sfw/pdf/standard%20revision%20reference/2015%20standard%20revision/mba_seafoodwatch_aquaculture%20criteria_final.pdf?la=en

		their species (native or not) are not having an impact on wild population genetics.		
Change 11: Indicators 4.2.1 & 4.2.2	5-8	<p>RE: Policy recommendation “1) FFDR be revised downwards to 1.2 for fishmeal and 2.52 to 2.65 for fish oil”</p> <p>While we support the much needed change to lower the FFDR values for both fish meal (FM) and fish oil (FO), the revised limits are poorly justified and appears to be made on the basis of keeping farms certified and not hindering new farms from becoming certified. We submit this is in conflict to the intent of Principle 4 created by the Salmon Aquaculture Dialogue, that FFDR levels be “set at a level that is achievable by better performers...”. As acknowledged in the Summary of Proposed Changes (p. 7) ASC states, “This implies that the level should be updated to reflect the best performers as their performance improves”. FFDR FM 1.2 and FO 2.52-2.65 does not reflect best performers, but instead reflects industry norms.</p>	<p>The vast majority of GSI companies can easily meet the proposed FFDRs. The data* shows 96% GSI companies achieve an FFDR FM <1.2; 21 or 23 GSI companies have an FFDR FO below 2.5.</p> <p>This does not reflect “best performers”; but instead current industry practice.</p> <p>Lowering the FFDR FM to 1.0 would reflect 83% of GSI; FO to 2.0 would reflect 57% of GSI. This would result in reflecting the “best performers” as stated by Principle 4.</p> <p>*As per the discussion paper available during the Operational Review 2015 public comment period. Refer to our original stakeholder submission dated 18 December 2015.</p>	Truly reflect the “best performers” by revising the FFDR FM to 1.0 and FO to 2.0.

<p>Change 11: Indicators 4.2.1 & 4.2.2</p>	<p>5-8</p>	<p>RE: Policy recommendation “2) That further public consultation is undertaken to consider FFDR ratios for fish meal and fish oil consistent for Chinook salmon” and interim values to be FM 1.27 and FO 3.44. Creating exceptions and separate criteria requirements are not aligned with the intent of the Dialogues, which envisioned standards driving production toward the most efficient and environmentally friendly processes and species. By making a separate criterion requirement for Chinook salmon, the ASC is allowing exceptions for less sustainable practices. In fact, by increasing the FFDR FO from 2.95 to 3.44 for Chinook salmon underlines how the ASC is weakening standards to allow for less sustainable practices. Based on the values listed in the previous discussion paper¹⁰ (NZ King Salmon FM 1.27; FO 3.24 mean values), it appears to be a direct attempt to allow Chinook farms, such as NZ King salmon, to seek ASC certification.</p>	<p>The intent of the Dialogues was to create a standard that drives production towards the most sustainable and efficient processes and species. As per the salmon standard: “Biological and geographic scope to which the Standard applies The ASC Salmon Standard is applicable to species belonging to the genus <i>Salmo</i> and <i>Oncorhynchus</i>, and can be applied to all locations and scales of salmon aquaculture production systems.”</p>	<p>Keep the intent of the Dialogues. The FFDR requirements should be for all salmon species. Exception criteria should not be allowed.</p>
<p>Change 11: Indicators 4.2.1 & 4.2.2</p>	<p>8</p>	<p>RE: 6-month introduction period This does not address the ability for CABs to simply apply a non-conformance to indicators 4.2.1 and 4.2.2 to allow for a further time extension for farms. For example: If a Major NC was applied in the event that a farm exceeded either FM or FO value; the farm would gain an additional 3 months (potentially 6 months). If a Minor NC was</p>		<p>Stipulate the raising of NCs cannot be used as a tactic to defer changes to the 4.2.1 and 4.2.2 requirements.</p>

¹⁰ <http://www.asc-aqua.org/upload/ASC%20Salmon%20FFDR%20paper%20for%20public%20consultation%2005%2011%2015.pdf>

		applied the farm would gain an additional 3 months (potentially 12 months).		
Change 13: Indicator 4.3.5	8-9	This indicator appears to be in contradiction with indicator 4.3.1. Indicator 4.3.1 requires all fishmeal and fish oil to originate from fisheries certified by a scheme who is an ISEAL member (e.g. MSC) (compliance starting June 13, 2017). In contrast, the proposed Indicator 4.3.5 states a "...commitment to continuous improvement of source fisheries" is sufficient. Indicator 4.3.5 also allows for subjectivity by CABs.		Requirements as per indicator 4.3.1 should remain.
Change 14: Indicator 4.4.2	9	The Summary of Proposed Changes Nov16 states the requirements to be 100%, by June 2017. However, the PDF ASC Salmon Standard Operation Review Tracked Changes Nov16 states 100%, by June 2018.		Clarify the date.
Change 19: Definitions of Peak Biomass and Harvested Fish	11	The proposal to allow for peak biomass sampling to occur "during the final quarter of the production cycle (>75% estimate peak biomass)" and to rely on estimations based on "auditable predictions" has no scientific justification or merit. This appears to be a direct response to the number of NCs that are occurring in farm audits for benthic monitoring due to early audits (i.e. not witnessing harvest) and peak biomass sampling data not yet being available. It appears the ASC is aiming to accommodate early peak biomass sampling, in order to make it easier for pre-harvest audits to occur and to avoid NCs. Furthermore, early peak biomass sampling undermines (and allows for weaker	Undermines the criteria and rationale created by the Dialogues. The change has no scientific justification or merit. Undermines (and is weaker than) government regulations that require peak biomass sampling. The allowance for initial audits to occur early, before the harvest (i.e. peak biomass), is in conflict with the ASC Certification and Accreditation Requirements (CAR) Version 2.0 has the following stated Process Requirements (17): 17.1 Unit of Certification	Remove change 19. Ensure all initial audits are conducted at harvest (i.e. peak biomass), meaning all sufficient records and evidence are available for the salmon standard indicators, as per CAR 17.4.5.

		<p>requirements) then many governmental jurisdictions that require peak biomass sampling to occur just at harvest. Lastly, this is compromising the integrity of the salmon standard and the ASC. It is in conflict of The ASC Certification and Accreditation Requirements (CAR) Version 2.0 Process Requirements 17.1.2.1 and 17.4.5 that require <i>all</i> data, records and evidence for <i>all</i> applicable standard requirements be available at audit. When the audit takes place before harvest (i.e. peak biomass), the records and evidence for the applicable standard requirements are simply not available. Trying to override this by using ‘predictions’ and ‘estimates’ is grossly inappropriate.</p> <p>This is in conflict with the intent of The Dialogues and the ASC’s stated claim to be “Meaningful: By including science-based performance metrics...”.</p>	<p><i>17.1.2.1 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; and</i></p> <p>17.4 Audit Timing <i>17.4.5 Audits shall not be conducted until sufficient records/evidence are available for all applicable standard requirements as the minimum.</i></p>	
Change 20: Criterion 2.1 rationale, Appendix I-1	12	<p><i>RE: a) Change in Rationale text</i></p> <p>There is no justification provided for removing the following: “When considering benthic effects, experts recommended measuring effects below the cages and away from the cages, within and outside the AZE”. We submit the removal is not warranted and the intent of the text is to have sampling tested to determine whether the assigned AZE was accurate and to cross-check via sampling outside the predicted zone. This “expert” recommendation was made during the Dialogues.</p>	To keep the rationale text created by the Dialogues.	Do not remove.

<p>Change 20: Criterion 2.1 rationale, Appendix I-1</p>	<p>12-13</p>	<p><i>RE: c) Appendix I-1 replaced</i></p> <p>We note “during peak cage biomass” has been replaced with “during final third of the production cycle”. This appears to be a discrepancy with Change 19 that states >75%. However, more concerning is the early sampling. As per our comments to Change 19, we again submit that the change to early sampling has no scientific justification or merit. This appears to be a direct response to the number of NCs that are occurring in farm audits for benthic monitoring due to early audits (i.e. not witnessing harvest) and peak biomass sampling data not yet being available. It appears the ASC is aiming to accommodate early peak biomass sampling, in order to make it easier for pre-harvest audits to occur and to avoid NCs. Furthermore, early peak biomass sampling undermines (and allows for weaker requirements) then many governmental jurisdictions that require peak biomass sampling to occur just at harvest. Lastly, this is compromising the integrity of the salmon standard and the ASC. It is in conflict of The ASC Certification and Accreditation Requirements (CAR) Version 2.0 Process Requirements 17.1.2.1 and 17.4.5 that require <i>all</i> data, records and evidence for <i>all</i> applicable standard requirements be available at audit. When the audit takes place before harvest (i.e. peak biomass), the records and evidence for the applicable</p>	<p>Undermines the criteria and rationale created by the Dialogues. Has no scientific justification. Undermines (and is weaker than) government regulations that require peak biomass sampling. The allowance for initial audits to occur early, before the harvest (i.e. peak biomass), is in conflict with the ASC Certification and Accreditation Requirements (CAR) Version 2.0 has the following stated Process Requirements (17):</p> <p style="padding-left: 40px;">17.1 Unit of Certification <i>17.1.2.1 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; and</i></p> <p style="padding-left: 40px;">17.4 Audit Timing <i>17.4.5 Audits shall not be conducted until sufficient records/evidence are available for all applicable standard requirements as the minimum.</i></p>	<p>Revert back to “during peak cage biomass”. Ensure all initial audits are conducted at harvest (i.e. peak biomass), meaning all sufficient records and evidence are available for the salmon standard indicators, as per CAR 17.4.5.</p>
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		standard requirements are simply not available.		
Change 20: Criterion 2.1 rationale, Appendix I-1	12-13	RE: <i>c) Appendix I-1 replaced</i> The requirement: “Two stations should be from the cage edge, one at each end of the long axis of the farm” has been removed with no justification. This goes against the Dialogues rationale.	To keep the rationale text created by the Dialogues.	Do not remove.
Change 21: Indicator 2.2.4	13-14	The proposal to change from weekly sampling to quarterly has no justification. Nor has the removal of “...conducted at a depth equivalent to mid-cage depth within and near the center of the net pen array...”. This goes against the Dialogues rationale. In addition, on review of ASC audit reports from B.C., companies that perform water quality sampling as per indicator 2.2.4 are (at least per the audit reports) doing so on a weekly basis. Thus a change is not warranted.	To keep the rationale text created by the Dialogues.	Keep the original sampling requirements.
Change 21: Indicator 2.2.4	14	RE: <i>d) Indicator 2.2.4 footnote 21 and Appendix I-5</i> No rationale or scientific justification are provided for removing NH4 as a monitoring requirement. NH4 is a water monitoring requirement in salmon farming regulations in regions such as Washington State and Scotland. Thus, removing this requirement would result in the standard holding a lower bar than some government regulations. In addition, we note the SAD technical working group on nutrient loading	The salmon standard states (p. 23-24): “The SAD technical working group on nutrient loading identified the potential link between nutrients around salmon farms and harmful algal blooms as one that had yet to be established but around which there remained some uncertainty and for which there was an intuitive concern around the effect of the cumulative anthropogenic nutrient load into coastal waters. The group noted a shortage of field studies to validate	Keep the original sampling requirements. Further proceed with the SAD technical working group on nutrient loading recommendation.

		<p>recommended a nutrient load threshold should be considered when the ASC Salmon Standard is updated. Removing NH4 would be a premature move before the relevant data and process is conducted to determine a new nutrient load threshold.</p>	<p>hypotheses from lab-based work. The data collected under this criterion can be used to help better understand potential linkages around salmon farming, ambient nutrient levels and environmental phenomena such as harmful algal blooms. Farm operators may also find this data useful in management decisions, and it can be useful in ensuring that nutrient inputs from salmon farms and other sources fall within the carrying capacity of the water body. <u>Data collected with regard to BOD and nutrient levels shall be reviewed, and the setting of a threshold related to nutrient loads should be seriously considered when the ASC Salmon Standard is updated.</u></p>	
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