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Aquaculture Stewardship Council
HNK, Arthur van Schendelstraat 650
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The Netherlands

21st October 2017

Re: ASC Salmon Standard Operational Review - 2nd PTI consultation

Dear Mr. Pollard,

SeaChoice and its 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 and PTI technical working group, as well as active stakeholder engagement on ASC audits and projects. Most recently we released the report, Aquaculture Stewardship Council (ASC) Certification in Canada: Technical Report.

Upon review of the consultation papers and proposed PTI revision, we have grave concerns that the ASC is shifting towards an 'excluding the worst' approach. We find the proposal inconsistent with the stated goals of the ASC and the claim to certify industry "best practice".

The suggested "Weighted Number of Medicinal Treatments" metrics represent irrational and dramatic increases in the number of allowed parasiticide treatments under the Salmon Standard. Our review found the "Global Target" would represent up to a 100% increase from the current PTI metric; while the regional "Entry Gate" values would represent an increase of up to 450% (depending on the region).

We are concerned the ASC is weakening the Standard's requirements and lowering the expected level of performance to accommodate industry norms (vs. best practice) in order to increase the number of certified salmon farms.

Our comments and concerns are provided in detail below. We appreciate the opportunity to provide input. If you have any questions or require clarification, we are more than happy to discuss further.

Sincerely,



Kelly Roebuck
SeaChoice representative from Living Oceans Society

ASC Salmon Standard Operational Review
PTI Public Consultation Period 2
SeaChoice Submission

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General Comments

Comment 1: Departure from “best practice” certification

The ASC claims to certify industry ‘best practice’, which is defined in ASC’s Theory of Change (ToC) to be the top 15 per cent of aquaculture operations globally. Furthermore, the stated aim of the operational review is “to ensure continued relevance and effectiveness of the pangasius and salmon standards in terms of inclusion of the industry best practice”. However, on review of the ASC Public Consultation papers, the proposed PTI amendment is inconsistent with ASC’s ‘best practice’ claims. It also appears to be a fundamental shift from ASC’s ToC. We are concerned the ASC is weakening its expected level of performance to accommodate current industry norms (vs. best practices) in order to increase the number of certified farms.

Rationale

The ASC’s ToC states *“a farm must conform to best practice limits with respect to its environmental impact and its adherence to accepted social norms... The ASC standards outline practices, typically as a metric based indicator, that are only found within the best operated farms globally. Collectively they represent a challenging but achievable test for farms willing to demonstrate compliance with the ASC’s farm standards”*.

The proposed PTI amendment is inconsistent with ‘best practice’ as it takes an “excluding the worst performers” approach - allowing up to two-thirds of the global salmon farming industry to be certified immediately.

Suggested Change

Revise the PTI proposal to reflect actual ‘best practice’ (i.e. top 15% - 20% of industry producers). Further details are provided in our following comments.

Comment 2: Shift from global to regional

The shift to regional thresholds ignores the reality that some geographical locations have an inherently lower environmental risk than others in regard to salmon aquaculture. In addition, the justification for the shift relies on the argument that “ecological and environmental features rather than management” are the large reason for the regional treatment frequency variations in the data provided by GSI. From our point of view, the regional treatment frequency variations emphasize the importance of appropriate siting, yet the consultation paper and proposal ignore siting as a fundamental component of effective sea lice management.

Rationale

The proposed shift to regional thresholds appears to be based on the premise that regional PTI scoring variations are “largely due to ecological and environmental features rather than

management". The SAD sea lice technical working group report¹ described the importance of siting:

"Another important issue relates to the optimal location of salmon farms; establishment of "safe sites" should lead to minimizing risks and maximizing benefits to all concerned parties"; and

"Proper siting of farms, or coordinated treatment of farms in a local area, can prevent spread of sea lice from farm to farm, and re-infection from local reservoirs. This may reduce the need for chemical treatment, and lessen the spread of sea lice to wild hosts...."

While the SAD chemical use technical working group report² found:

"...there is a significant potential for salmon farms to impact local waters, especially if poorly sited or poorly managed".

As previously submitted during the first public comment period, we reject the conclusion that siting (be it at the country, region, or ABM level) is beyond the existing management influence of salmon farming companies. The shift to regional thresholds overlooks the fact that some countries/regions/waterbodies/sites are inherently better suited for salmon farming.

Furthermore, having different regional metric requirements would reward some regions with the market advantage of gaining certification, while others in another region with better or same performance do not. This again appears inconsistent with the ASC's claim of certifying global 'best practice'.

Suggested Change

Revise the PTI proposal to reflect actual global 'best practice' and do not allow regional variations. If the ASC does shift to regional metric thresholds, ensure these reflect regional 'best practice' (i.e. top 15% - 20% of industry producers).

Comment 3: Removal of lobster factor

The original PTI paper (from the 1st public consultation) proposed the removal of the 'lobster factor' for a number of reasons, including the "lack of evidence" that sea lice parasiticides indeed cause harm to lobsters – but failed to provide a scientific assessment. The second public consultation paper states the lobster factor is no longer needed as governmental chemical licensing processes and parasiticide treatment regulations are deemed sufficient. We disagree and are concerned such rationalization may be prompted by a motivation to allow more Atlantic Canada, Norway and Scottish farms to be certified.

¹ Revie, C., Dill, L., Finstad, B. & Todd, C. D. 2009. Sea Lice Working Group Report. -NINA Special Report 39. 117pp.

² Burrige, Les; Weis, Judith S.; Cabello, Felipe; Pizarro, Jaime; Bostick, Katherine / *Chemical use in salmon aquaculture : A review of current practices and possible environmental effects*. In: *Aquaculture*, Vol. 306, No. 1-4, 08.2010, p. 7-23.

Rationale

The negative impacts and potential risk to lobsters from parasitcides was extensively researched during the SAD, yet are not discussed in the discussion paper or amended PTI consultation documents.

The SAD chemical use technical working group report, based on the best scientific information at the time, noted lethality of cypermethrin to American lobsters and that “*Anti-lice treatments lack of specificity and therefore may affect indigenous organisms in the vicinity of anti-lice treatments. For example, the American lobster, a commercially important decapod crustacean native to the waters of the Bay of Fundy, has been shown to be sensitive to most of the therapeutants applied in Canada*”.

This is consistent with three more recent reports by federal scientists. Burrige & Van Geest (2014)³ noted deltamethrin as “extremely toxic” and cypermethrin as “very toxic” to crustaceans. The report also noted Azamethiphos could cause sub-lethal affects, as well as delayed spawning in female lobsters with short-term repeated exposure. Page & Burrige (2014)⁴ estimated lethal concentrations from deltamethrin could be lethal to lobsters up to 10 km and several hours after release. Azamethiphos was found to have lethal concentrations, with potential hazardous effects to lobster, hundreds of metres away from the release. Couillard & Burrige (2015)⁵ found azamethiphos exposure had “both direct effects on neurological function and energy allocation and indirect effect on ability to cope with shipping stress could have significant impacts on lobster population and/or fisheries”.

In addition, a recent study by the Scottish Aquaculture Research Forum assessing the effects of emamectin benzoate on benthic crustacea around salmon farms, found significant reductions in crustacean abundance and richness at the cage edge, AZE and reference stations (SARF 2016).⁶ The ASC’s rationale to defer to government processes and regulations (i.e. chemical licencing and sea lice treatment management) for lobster protection from parasiticide negative impacts

³ Burrige, L.E., and J.L. Van Geest. 2014. A review of potential environmental risks associated with the use of pesticides to treat Atlantic salmon against infestations of sea lice in Canada. DFO Canadian Science Advisory Secretariat Resource Document 2013/050(IV): 25 pp.

⁴ Page, F.H., and Burrige, L. 2014. Estimates of the effects of sea lice chemical therapeutants on non-target organisms associated with releases of therapeutants from tarped net-pens and well-boat bath treatments: a discussion paper. DFO Can. Sci. Advis. Sec. Res. Doc. 2014/103. v+ 36 p.

⁵ Couillard, C.M., and Burrige, L.E., 2015. Sublethal exposure to azamethiphos causes neurotoxicity, altered energy allocation and high mortality during simulated live transport in American lobster. *Ecotoxicology and Environmental Safety*, vol. 115, pp. 291-299.

⁶ SARF098: Towards Understanding of the Environmental Impact of a Sea Lice Medicine –the PAMP Suite, 2016. A study commissioned by the Scottish Aquaculture Research Forum (SARF). <http://www.sarf.org.uk>

is incautious. We note the PTI Technical Working Group did not include a parasiticide toxicity scientist, nor does it appear one was consulted.

Health Canada's Pest Management Regulatory Agency (PMRA) recently approved and granted registration for azamethiphos to control sea lice on farmed salmon.⁷ The objective of their assessments is to determine what is an “acceptable risk” for human and environmental health. In other words, approvals do not equate to ‘no risk’. This is illustrated with PMRA’s acknowledgement of the pesticide’s toxicity to lobster: “*The PMRA agrees with the conclusions of the Department of Fisheries and Oceans research that azamethiphos is highly toxic to certain marine organisms including lobster.*” Furthermore, the potential posed for cumulative effects is not assessed by the PMRA process: “*The environmental assessment does not assess cumulative effects or additive effects from other stressors when assessing the risk of a pest control product.*”

Likewise, we submit deferring to government sea lice management regulation will not guarantee the safety of lobsters from sea lice parasiticide impacts. For example, the SARF (2016) study, discussed above, concluded: “*The evidence suggests that benthic crustacea may not be adequately protected by the current regulation of EMB use in Scottish salmon farms*”.

Comment 3, above, discussed that some salmon farming locations have an inherently lower environmental risk than others, which emphasizes the importance of appropriate siting. Salmon farms in Atlantic Canada are often sited in very shallow areas that are also known to be juvenile lobster settlement grounds. There are no siting criteria defined by the Nova Scotia regulatory authority, while New Brunswick has minimal criteria. Consequently, precautionarily siting farms to avoid lobster habitat is not done or, at best, is minimal.

Therefore, we submit regulatory processes and management (e.g. medicinal licencing, sea lice management and siting criteria) are not adequate in ensuring the protection of crustacea from negative parasiticide impacts.

Suggested Change

Do not remove potential lobster impacts from the criteria. We suggest a ban on parasiticide application during the moulting period of relevant species in regions where potential impacts could occur. Include a requirement for farms in such regions to map lobster settlement grounds in relation to the farm site location, and that potential impacts were assessed under siting criteria.

⁷ <https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/decisions-updates/registration-decision/2017/azamethiphos-2017-13.html#fn3>

Comment 4: Cumulative impacts ignored

The PTI revision does not address cumulative impacts posed by parasiticide use. This is gravely concerning given the dramatic increase in the number of parasiticide treatments proposed in the consultation papers. As the ASC now shifts to multi-site and group certification schemes, without an ABM Standard or requirements that address cumulative effects, this creates the potential for farms to gain certification despite creating un-tracked and unmitigated cumulative environmental impacts.

Rationale

The ASC standards alone do not adequately address cumulative impacts. Likewise, the PTI consultation paper fails to discuss cumulative impacts, nor include requirements to address them. This is problematic given the dramatic increase in parasiticide treatments the ASC is proposing.

For example: if all sites utilize parasiticides below the ASC site-level threshold yet cause a cumulative impact, all can remain certified. The proposed EG threshold for Chile is 11 sea lice treatments. A recent study (Tucca et al. 2016)⁸ found cypermethrin in sediment near salmon farms in Southern Chile at levels significant enough to pose a risk to benthic invertebrates. BurrIDGE et al. (2010) identified that bath treatments can retain toxicity for substantial periods of time and cited the lack of studies on cumulative effects of parasiticides. We are aware of no study that has filled this identified gap. GSI data shows Chilean sites have an average of nearly 10 parasiticide applications per site, with the majority being bath treatments. The Chilean authority allows up to three treatments per chemical family (of which four are approved currently). This high frequency of sea lice treatments has made Chile vulnerable to parasiticide resistance, as demonstrated by Helgesen et al. (2014).⁹ Therefore, the proposed PTI revision would allow farms to apply high levels of parasiticides causing a potential cumulative effect on the benthic environment and further contribute to resistance concerns – yet be certified.

Scottish research (SARF 2016) has also suggested significant concerns: *“The greater reduction observed when considering the total EMB applied per site indicates that EMB is having a cumulative impact on sensitive groups i.e. that crustacean communities do not recover between EMB treatments. The changes observed at reference stations indicate the impacts are occurring at large scales”*.

Suggested Change

Reduce the allowed number of sea lice treatments to ‘best practice’. Require an acceptable ABM parasiticide load to be more aligned with ASC’s stated ‘best practice’ (see comment 8

Tucca, F., Díaz-Jaramillo, M., Cruz, G., Silve, J., Bay-Schmith, E., Chiang, G. & Barra, R. Toxic Effects of Antiparasitic Pesticides Used by the Salmon Industry in the Marine Amphipod *Monocorophium insidiosum* *Arch Environ Contam Toxicol* 67 (2), 139-148. 2014 Mar 08.

⁹ Helgesen, K. O., Bravo, S., Sevatdal, S., Mendoza, J. and Horsberg, T. E. (2014), Deltamethrin resistance in the sea louse *Caligus rogercresseyi* (Boxhall and Bravo) in Chile: bioassay results and usage data for antiparasitic agents with references to Norwegian conditions. *J Fish Dis*, 37: 877–890. doi:10.1111/jfd.12223

below). Establish a cumulative effect indicator that assesses the number of allowed treatments within the ABM.

SeaChoice also strongly recommends the ASC develop an ABM Standard approach to address this deficiency and to ensure credibility of the standard.

Proposed Global Target (GT) & Entry Gate (EG) Values

Comment 5: Data not made publicly available for PTI consultation

To understand the full analysis and rationale for the proposed values, the data set should have been made publicly available to stakeholders for the ASC consultation.

Rationale

The ASC and the Salmon Standard promotes transparency, however, the data set was not made publicly available for review alongside the consultation papers. The data and the associated analysis hold significant weighting and influence on the proposed GT and EG values. Therefore, it is critical that stakeholders have access to the fundamental data that is used for the proposed approach. Providing open and transparent access to data fosters stakeholder confidence in ASC's Operational Reviews.

Suggested Change

Make the data set and analysis publicly available for stakeholder consultation. See our further comments on the data below (comment 6).

Comment 6: Quality of "Global" data and values

The data set used to derive the proposed values is of an extremely limited sample size, outdated and appears incomplete. We also submit it is incorrect to exclude B.C. data to determine the "global" target value and doing so is simply cherry picking. In addition, analysis of the raw data presented to the TWG shows the GT represents the top 28% of producers (without B.C.) and around 50% of global producers when B.C. data is included – not the top 20% as the consultation papers state.

Rationale

The data relied on (582 farms-years; 90% from 2009-2013 and 8% year undefined) raises questions as to its statistical confidence. We find the number of farms and production cycles analyzed to be limited, piecemeal and incomplete. For example, the data includes 61 Pacific Canada farms for a 5-year period. Given there are 60-70 salmon farm sites in B.C. active at any one time, a 300+ farm data set would have been expected for an analysis representing 5-years. We believe this is a reasonable expectation given all three of the large Atlantic salmon producers in B.C. are members of GSI (who provided the raw data to ASC) and sea lice treatment data is provided to the federal government as per licence conditions.

The dataset for Scotland included only 84 observations, with a suggested EG of 9. Yet more recent data shows a different story. For example: the Scottish Fish Farm Production Survey¹⁰ states 207 sites were active during 2016, while Scotland's Aquaculture database¹¹ shows 823 sea lice treatments during the same year. This equates to an average of four sea lice treatments per farm per year.

Meanwhile Norway has increased from 1348 sites in 2011 to 3269 in 2015.¹² Therefore, given the dataset stops at 2013, it is likely not an accurate picture of current practice in Norway.

The GT value was selectively set at 4 by omitting B.C. data from the global data set due to being considered "unrealistically low". While there are certainly legitimate reasons for excluding regions that do not experience sea lice and use of parasiticides (i.e. Australia and New Zealand), excluding an entire region based on its statistical data and treatment model is not. We submit this is simply cherry picking, and the end result does not provide a statistically correct or 'true' global target value.

The proposed GT threshold (4) does not match the claim to be the "top 20% of global producers". As described on page 10 of the PTI consultation paper, a GT treatment threshold includes "28% of farms". Additionally, on review of the raw data presented to the TAG, **when B.C. is included in the global analysis - the GT threshold of 4 equates to the top 50% of farms internationally.**

Therefore, the claim of the GT being the top 20% of global farms and representing 'best practice' is misleading. **Furthermore, on review of the dataset (not including B.C.), the top 20% of farms sits at a GT threshold of 3 treatments per cycle. When including B.C. in the global dataset, the 'true' GT threshold value is 2 treatments per cycle.** These values are more aligned with ASC's stated 'best practice' goals and the Salmon Standard's current PTI values (see comment 7 below).

Suggested Change

Procure data that is robust, complete and is based on current sea lice treatment practices. Include reported PTI data from ASC certified farms for analysis. Furthermore, have a third-party mathematician / statistician review the analysis. Make these data and analysis publicly available (as per comment 5).

Revise the PTI proposal to reflect actual global 'best practice'. If the ASC does shift to regional metric thresholds, ensure these reflect regional 'best practice' (i.e. top 15% - 20% of industry producers).

¹⁰ Munro, L. Wallace, I.N. 2016. Scottish Fish Farm Production Survey, 2015. Marine Science Scotland, September 2016.

¹¹ <http://aquaculture.scotland.gov.uk/>

¹² Hjeltnes B, Walde C, Bang jensen B., Haukaas A (red). The Fish Health Report 2015. The Norwegian Veterinary Institute 2016. Fiskehelserapporten 2015.

Comment 7: No ASC-certified farm PTI data was used

The consultation paper did not include a review of PTI scores for ASC certified salmon farms, which upon review provides a very different perspective from what is presented in the consultation papers. Our high-level review suggests the majority of certified farms are able to meet the current PTI values.

Rationale

ASC certified salmon farms are required to regularly report PTI values to the ASC as per Appendix VI. The ASC Salmon Standard explicitly notes “the data collected from this requirement will also help the SAD set more measurable requirements in the future”. Therefore, we are surprised to see the consultation papers have failed to provide a review of the PTI scores of certified farms to date.

Despite the absence of ASC reported farm data, the consultation paper states “from the perspective of ASC, salmon producers, NGOs and other stakeholders, use of the PTI failed to drive down the use of medicines in sea louse control, failed to help reduce sea lice numbers on farms and failed to slow the development of drug resistance in sea lice populations”. No further explanation or analysis demonstrating the ASC certified farm data and the PTI score’s lack of leverage is provided in the paper.

We reviewed 119 ASC certified farms, encompassing 169 audits. Below is a high-level overview PTI scores per region:

Country	Number of Farms	Number of Audits	PTI Scores (Range)	PTI Score (Mean)	PTI Score (Median)
Pacific Canada	17	23	0-9.6	3.6	3.2
Chile	49	54	0-24	1.24	0
Faroe Islands	4	6	0-28.8	11.46	11.2
Ireland	4	5	0-8	5.44	8
Norway	40	77	0-132	5.76	3.2
Scotland	3	5	0-8.4	3.09	0
TOTAL*	119	169	0-132	3.92	0

*Including two additional farms: 1 Poland and 1 Denmark (both PTI 0)

Only 7 out of the 119 farms recorded exceeding the PTI score (4 Norway; 2 Chile; 1 Faroe Islands). These data suggest overall, certified farms are able to meet the PTI score of 13. The PTI score threshold is equivalent to 2-3 treatments depending on calculation values (such as timing and the type of therapeutant). The PTI score mean and median results suggest farms on average have 1-3 sea lice treatments, with a number of farms operating with no treatments. Consequently, these data suggest the current PTI score is aligned with the ‘true’ 2-3 GT treatment threshold value discussed above (comment 6) and represents the top 20% of farms.

The consultation paper states “the compliance with the PTI should be a challenge to certification not a barrier”. These data show, for the most part, certified farms are able to meet the PTI; meaning the PTI score is likely not a barrier for the top 20% of farms globally. We are concerned the ASC has interpreted the “barrier” in terms of certifying the entire global salmon farming industry which, again, is inconsistent with ‘best practice’ claims.

Suggested Change

Include reported PTI data from ASC certified farms for analysis.

Revise the PTI proposal to reflect actual global ‘best practice’. If the ASC does shift to regional metric thresholds, ensure these reflect regional ‘best practice’ (i.e. top 15% - 20% of industry producers).

Comment 8: The proposed GT & EG values are dramatically higher than the current PTI score

Comparing the currently allowed and proposed sea lice treatments frequencies, the GT will represent an increase of up to 100% and the EG up to 450% of parasiticide use allowed by the Standard. We are concerned the ASC is continually lowering the standard requirements to accommodate industry and not meeting ASC’s standard objective of certifying ‘best practice’.

Rationale

The current PTI score equates to 2-3 sea lice treatments depending on certain calculation values (e.g. timing, therapeutant type, resistance factor, sensitive time). **The proposed GT of 4 sea lice treatments, this represents up to an 100% increase of parasiticide use allowed by the standard.**

The table below illustrates the increase in parasiticide use by regional EG values:

Country	Current PTI treatment frequency allowance	Proposed EG treatment frequency allowance	Increase from PTI
Atlantic Canada	2-3	8	166% - 300%
Pacific Canada		GT (4)	33% - 100%
Chile		11	266% - 450%
Faroe Islands		8	166% - 300%
Ireland		7	133% - 250%
Norway		6	100% - 200%
Scotland		9	200% - 350%

These data show a dramatic increase in parasiticide use allowed by the ASC Salmon Standard with the proposed EG values – in all regions. As per comment 7, the vast majority of currently ASC certified farms are able to successfully meet the PTI score (i.e. 2-3 treatments). The

proposed EG values are excessively high with no reasoning except with what appears to be an attempt to certify more farms.

We find the threshold for B.C. salmon farms (set at the GT of 4 treatments per cycle), a threshold up to 233% higher than industry typical best practice (1.2 treatments), is irresponsible as it encourages and allows for a substantial increase in parasiticide use. Such a proposal contradicts the stated ultimate goal for the PTI indicator: “the ultimate goal would be that farms could meet the ASC Salmon Standard without using therapeutants or without the risk of those therapeutants negatively impacting the environment”. Particularly when combined with the fact sites that are \leq GT “does not need to go further” in improving their treatment frequency (see more under comment 10 below).

We agree with the following statement from the consultation paper, to wit: “where it is too easy there will be no incentive to improve”. Indeed, such an excessive increase to the B.C. sea lice treatment threshold metric will encourage, not incentivize improvements in, parasiticide use.

The proposed dramatic increase in the Weighted Number of Medicinal Treatments (both the GT in B.C. and EG in other regions) will result in the Salmon Standard losing its credibility.

Suggested Change

Revise the PTI proposal to reflect actual global ‘best practice’. If the ASC does shift to regional metric thresholds, ensure these reflect regional ‘best practice’ (i.e. top 15% - 20% of industry producers).

Proposed ‘conditions’ of improvement

Comment 9: The introduction of “conditions” (i.e. Entry Gate values) is not aligned with the Aquaculture Dialogue’s intent, nor the ASC’s ‘best practice’ claim or Theory of Change Certification conditions were not intended by the Aquaculture Dialogue, which strived for a ‘best practice’ on-farm performance metrics and 100 percent compliance.

Rationale

Our member organisations were represented and involved in the original Aquaculture Dialogues via the SAD Steering Committee. The Aquaculture Dialogues never expressed any intent to use certification conditions; in fact, our understanding is ‘a 100 percent compliance requirement’ was established to prevent the sort of ‘conditional certifications’ often granted by the Marine Stewardship Council.

The entry gate and associated conditions are also inconsistent with the ASC claim of certifying ‘best practice’ as it takes an “excluding the worst performers” approach - allowing up to two-

thirds of the global salmon farming industry to be certified immediately. This approach is also contradictory to ASC's ToC which states farms will be expected to improve practices *before* entering the assessment process in order to reach the top 15% of global performance - the ASC defined 'best practices' level required for certification.

We find this stated 'improvement' approach to be consistent with an Aquaculture Improvement Project (AIP) not a 'best practice' certification.

Suggest Change

Remove "conditions" (i.e. EG values).

Comment 10: Drive to zero use removed

The Salmon Standard explicitly states the ultimate goal of zero parasiticide use. However, in practicality, this goal has been removed with the PTI proposal. Conversely, in some cases, the PTI proposal encourages increased parasiticide use (e.g. B.C.).

Rationale

The rationale for Salmon Standard Criterion 5 states "*The ultimate goal would be that farms could meet the ASC Salmon Standard without using therapeutants or without the risk of those therapeutants significantly negatively impacting the environment*".

Not only does the PTI proposal excessively increase the allowed number of treatments per cycle, but also removes the current *Indicator 5.2.6: For farms with a cumulative PTI ≥ 6 in the most recent production cycle, demonstration that parasiticide load is at least 15% less than that of the average of the two previous production cycles. This requirement was aligned with the ultimate goal to drive farms to zero use.*

Indicator 5.2.6 has been replaced with "*For farms with a WNMT meeting the Entry Gate (EG) but not meeting the Global Target (GT) evidence of reduction in WNMT until the GT is met*"

Put simply, in practicality, the ultimate goal of 'zero' has been removed and replaced with a threshold end goal of 4 (GT).

In addition, farms that commonly treat less frequently than the GT- such as B.C. farms - will be encouraged to increase their frequency of sea lice treatments, therefore undermining the ASC's stated 'ultimate goal of zero'.

As previously submitted during the first PTI public consultations, presentations to the SAD Steering Committee indicated that numerous farms, globally, could meet a "zero use" standard for parasiticides and this was the preferred standard by environmental representatives. The request for a more nuanced indicator came from industry. Additionally, our analysis of PTI data from ASC certified farms (discussed above in comment 7) found many certified farms reported zero parasiticide use.

Suggested Change

ASC should be creating incentives for moving all farms to zero use.

Comment 11: 'Conditions' take an unacceptable number of years to be closed

The proposed conditions and replacement for indicator 5.2.6 means **farms could take up to 15 years to reach the GT frequency of 4 treatments**. We submit that this time-frame is unacceptable for a 'best practice' certification and without justification.

Rationale

Based on the proposed reduction of at least 25% in the WNMT within 6 years from the initial certification date (which is based on two 3-year cycles) and consequent 3-year cycles, the following table lists the number of years a farm at the EG regional threshold would take to reach the GT of 4.

Country	Proposed EG treatment frequency allowance	Years taken to reach GT of 4*
Atlantic Canada	8	12
Pacific Canada	GT (4)	-
Chile	11	15
Faroe Islands	8	12
Ireland	7	9
Norway	6	9
Scotland	9	12

*Based on 3-year cycles as cited as the rationale for the 6-year initial time-period in ASC document

We submit this defeats the proposal's claim that the EG model will reduce parasiticide use in the salmon farming industry by 50%. When factoring in the overall increase of global parasiticide use and resistance, as well as expansion of the industry – these are likely to outpace the small gains made by certified EG farms over the next decade and beyond.

No justification is provided for allowing farms to take so many years to bring their practices in line with the GT. Farms ought to be able to make improvements in each production cycle, which, in a grow-out pen, is typically less than 3 years. For example, B.C. grow-out farms typically experience two cycles within a three-year period (e.g. ASC certified Marsh Bay farm experienced two production cycles during their 3-year certification), due to operating production cycles concurrently.

Suggest Change

Remove “conditions” (i.e. EG values). Revise the PTI proposal to reflect actual global ‘best practice’. If the ASC does shift to regional metric thresholds, ensure these reflect regional ‘best practice’ (i.e. top 15% - 20% of industry producers).

Comment 12: The proposed environmental monitoring lacks appropriate guidance and thresholds

We welcome the proposal to include environmental monitoring of parasiticide residues by farms, however, we find the indicator lacks specificity and the requirement fails to address the results of such monitoring.

Rationale

The Proposed new indicator 5.2.8 states “Evidence of environmental monitoring of the concentrations of parasiticide residues in waters outside the AZE or cumulatively in the benthic sediment outside the AZE”. The indicator does not specify which parasiticide(s) are required to be monitored, nor when sampling should occur. This could allow for farms to selectively monitor and potentially overlook or miss impacts of certain chemicals.

Additionally, the requirement for this indicator is simply “Yes” (i.e. some sort of monitoring is done). The requirement fails to provide a repercussion in the event that monitoring results show high levels of residual parasiticides and/or significant damage. In practicality, damaging farms are not held accountable as long as they are simply monitoring.

Suggested Change

Specify that all parasiticides licenced and used within the region must be monitored (regardless whether or not they were used during the most recent production cycle). Require that the results must demonstrate no or minimal impact on a suite of organisms reasonably chosen for monitoring purposes. Provide for consequences should monitoring disclose residues that exceed minimal impact levels.

Practical application of proposed PTI revision

Comment 13: The exclusion of intermediary farms from ASC compliance obscures the true treatment count per cycle

The proposed PTI values are stated to be per “production cycle” while the data used to determine such values are also presented as “per cycle”. However, in practicality, audit evidence shows CABs typically omit the intermediary stage when assessing a farm’s compliance to the ASC Standard. This results in key compliance metrics and environmental impacts from the production cycle never being assessed correctly or included in ASC reporting. Therefore, the PTI or the proposed WNMT will likely be false and/or underreported for the countries that use intermediary farms in their production cycle.

Rationale

The PTI public consultation papers, the dataset used within and the proposed WNMT (both GT and EG) all refer to sea lice treatment frequency counts *per production cycle*. This is consistent with the ASC Certification Accreditation Requirements (CAR) which defines a ‘unit of certification’ to include all production, harvest and processing up to the point where the product enters the chain of custody. Consequently, it would be expected any sea lice parasiticide treatment during a cohort of fish’s production cycle would be included in the final total count.

Intermediary stages (e.g. smolt-entry site, transfer pen, nursery pen or initial grow-out site) are commonly used during the farmed salmon production cycle in B.C. and Scotland. In practical application of the ASC Salmon Standard, CABs routinely omit intermediary farms from the production cycle assessed in an ASC audit.

SeaChoice’s recent ASC technical report¹³ found up to a year of production time could be excluded from compliance to the ASC Standard and at least nine farms in Canada were certified without assessment of their intermediary stage facilities. In fact, audit evidence for ASC certified Marsh Bay farm shows the CAB underreported the PTI score for the most recent production cycle due to simply omitting the intermediary farm from the assessment and thereby omitting a sea lice treatment. Had the sea lice treatment been included in the production cycle’s PTI score, the Marsh Bay farm would have exceeded the ASC PTI threshold.

The table below illustrates:

Marsh Bay farm: PRODUCTION CYCLE 2 cohort

	Interim Site – Bell Island (start date unknown – fish started entering BI June 2014; continuously stocked until Aug 2015)
27 Oct 14	SLICE TREATMENT 1*
Aug 15	Transferred to Marsh Bay
27 Oct 15	SLICE TREATMENT 2*
27 Apr 16	SLICE TREATMENT 3*

DFO Sea Lice Reporting *MHC reporting

The CAB reported and calculated the PTI based on Slice treatments #2 and #3 only, calculating a PTI score of 9.6.

1X SLICE = Therapeutant factor (4) x Treatment factor (0.8) x Resistance factor (1) x Sensitive Time (1) = 3.2

¹³ Roebuck, K. & Wristen, K. Aquaculture Stewardship Council (ASC) in Canada: Technical Report. SeaChoice, September 2017.

2X SLICE = Therapeutant factor (4) x Treatment factor (0.8) x Resistance factor (2) x Sensitive Time (1) = 6.4
TOTAL for 2X SLICE = 9.6

Applied correctly, including sea lice treatment #1 from Bell Island (the interim site), the true PTI for Marsh Bay's production cycle equates to 16.

3X SLICE = Therapeutant factor (4) x Treatment factor (0.8) x Resistance factor (2) x Sensitive Time (1) = 6.4
TOTAL for 3X SLICE = 16

Therefore, the total PTI score is above the ASC salmon standard indicator 5.2.5 requirement of PTI score ≤ 13

This example demonstrates that until such time as auditors apply the correct interpretation of the 'unit of certification', and therefore, assess the true production cycle, sea lice treatment frequency counts (PTI and the proposed WNMT) will likely be false and underreported. This allows farms that are actually in major non-compliance with the standard to escape accountability – such loopholes threaten the credibility of the Salmon Standard and the ASC itself.

Suggested Change

As per the SeaChoice ASC Technical Report, we submit the following recommendation: 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.

Specifically, for the proposed PTI revision, add language to the Salmon Standard criteria 5 indicators, rationale and audit manual that clearly states a "production cycle" means all treatments (parasiticide and antibiotics) should be counted for that *generation* of fish (i.e. all stages of its lifecycle).

Comment 14: Ill-defined requirements allow for loose CAB application and farms not being held accountable

Present stakeholder concerns with the ASC scheme includes the lack of rules or guidance that ensure CABs are appropriately applying non-conformities, as well as certificate suspension and revocation as needed. We find the proposed indicators and requirements to be ill-defined and lacking the needed guidance.

Rationale

SeaChoice's ASC Technical Report found farms 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. This suggests ASC's suspension and revocation rules are inadequate.

For example, one B.C. farm with a valid ASC certificate farm breached a Standard indicator (one that would have prevented its original certification) and was able to successfully enter the market with the ASC logo twice. The ASC prides itself for being a metric-based Standard however, as this example demonstrates, the so-called '100 percent compliance' metric standard can be abused in the absence of rigorous rules and guidance.

We suggest the proposed indicator 5.2.5 metrics could be abused in practical application and therefore further rules and guidance are necessary. Indicator 5.2.5 requires B.C. farms to meet the GT of 4 sea lice treatments and other regions must meet their specified EG. We find there is no guidance or rule outlined for when a GT or EG farm with a valid ASC certificate *increases* their treatment frequency and thereby breaching the required GT/EG metric.

Suggested Change

SeaChoice's ASC Technical Report recommended the ASC 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.

Specifically, we recommend the ASC build in the stipulation that in the event a GT or EG farm with a current, valid ASC certificate breaches the metric threshold(s), suspension must promptly be actioned.

Comment 15: Allowance for "exceptional events" places an unacceptable amount of discretion on CABs

The consultation papers indicate there will be allowance for flexibility when assessing a farm's compliance with the revised parasiticide requirements. Such an allowance places an unreasonable onus on the CABs to adjudicate whether an event is indeed "exceptional" and, in turn, to be excluded from the WNMT metric calculation. In practicality, this clause could be used as a means for allowing breaches of the WNMT requirements while allowing farms to remain certified.

Rationale

The PTI consultation paper states "the requirements should take into account special circumstances / events which are a reality of production" and the proposed Appendix VII states "exceptional events such as a need to avoid fish welfare issues can be excluded from the calculation if sufficient justification is provided".

These statements allow for too much flexibility in regard to a CAB's interpretation of what would be deemed a 'special circumstance' or 'exceptional event'. In effect, there is no limit for parasiticide use if 'avoiding fish welfare issues' (presumably the only reason one would ever use

a parasiticide) can be used as an excuse to exceed the EG or GT levels proposed. For example, would unusually high sea lice loads be deemed an 'exceptional event'? Using this example in the context of B.C., where certified farms are currently not held to any sea lice metric, this could result in farms remaining certified despite high sea lice loads and an increase in parasiticide use due to the 'special circumstance' of high louse abundance.

The clause allows for an unacceptable level of ambiguity and flexibility, placing an unreasonable amount of responsibility at the discretion of the CAB. Such adjudication is not the role of the CABs, but that of the standard-holder – the ASC. Standard criteria should be based on robust performance-based metrics - to which auditors can measure against and can clearly implement (i.e. not a judgement or interpretation of circumstances).

Suggested Change

Remove this clause.