

Monterey Bay Aquarium Seafood Watch

Seafood Watch® Criteria for Aquaculture

Summary of comments from Public Consultation 2 and Responses

Preamble

Seafood Watch assesses the sustainability of fisheries and aquaculture by compiling relevant science-based information and evaluating that information against our standards (called 'Criteria' elsewhere on this website). We periodically revise our standards to ensure we account for developments in the scientific understanding of the ecological impacts of fisheries and aquaculture operations, as well as in our understanding of what producers and managers can do to mitigate those impacts. Seafood Watch initiated a public comment period from October 27, 2014 to January 16, 2015, received comments from ENGOs, producers, certification schemes, academia, and other interested stakeholders; Seafood Watch's response to each comment received can be seen [here](#). Revisions to the Aquaculture Criteria were made according to these comments and those of a Technical Advisory Committee, and a revised Criteria was published for further comment.

A second public comment period was initiated from July 2, 2015 to August 2, 2015. Comments were received from ENGOs, producers, and academia.

The comments received during the second public comment period have been grouped together by similar themes or by criterion and are presented in **"bold"**. Seafood Watch has carefully considered all comments received in addition to reviewing many of them with a Technical Advisory Committee. Below we present our responses to all comments received as part of the official Public Comment Period as per the requirements of the ISEAL Code of Good Practice Standards-Setting Code¹.

¹ <http://www.isealalliance.org/our-work/defining-credibility/codes-of-good-practice/standard-setting-code>

General

1. **“A number of social issues exist related to aquaculture, especially in underdeveloped countries outside the US. Among others, those issues of greatest concern relate to unsafe and unfair (going as far as slavery and child labor) conditions for aquaculture workers. Beyond focusing on the environmental sustainability of seafood produced through aquaculture, Seafood Watch should consider including social criteria in rating products of this nature. This notion becomes especially important as Seafood Watch’s regard grows for Ecosystem Based Management principles which consider human dimensions in wild capture fisheries.”**
 - Seafood Watch is aware of the social issues associated with aquaculture and wild fisheries and is working with partners to develop a coordinated and comprehensive approach that provides information to our business partners and consumers.

2. **“How confident can SFW assessors be in reporting of illegal activities? If scoring is based on a “typical” farm, and illegal activities are present, activities at poor performers could be much more serious. Recommend erring on side of precaution unless very strong data shows incidents were contained and no longer occurring.”**
 - Per the conservation-minded mission of the Monterey Bay Aquarium, Seafood Watch does employ a precautionary approach to each assessment, including the occurrence of illegal activities. Confidence in data availability varies with and within each assessment, and is scored – explicitly in Criterion 1 and as a contributing factor in all other criteria – accordingly. Guidance has been added to the *Scope* of the Criteria to address the consideration of past practices, and the occurrence of illegal activities is scored in Criteria 2, 3, 4, and 5.

3. **“Scale of Assessment – Seafood Watch is not ‘required’ to conduct assessments at various scales, it ‘chooses to do so’. Also, the criteria have not been consistently applied at various scales previously because management has sometimes been considered at the assessment scale and not industry scale for individual farm assessments. I had understood that a new Management criterion would be proposed, but it does not appear in the document for consideration.”**
 - The aim of Seafood Watch is to identify better and worse performers within the global aquaculture industry, and while the impacts of all operators within a national industry may allow for uniform scoring, it is imperative to more accurately assess regions or segments of a national industry where the impacts

of production differ. While a Management criterion has not been added to the Aquaculture Criteria, a Management category has been added to Criterion 1 (Data) to assess the quality of management information available, and the presence, robustness, and scope of management systems has been integrated in existing criteria where appropriate. For farm-level assessments, the on-farm management strategies are indeed considered and applied to the scoring, but so too are the local, regional, and national management schemes and regulations under which the farm operates.

4. **“Where a farm has demonstrably different impacts to the ‘typical farm’ it should still be considered in the context of the cumulative impacts of the overall industry. This is mentioned in some criteria, but not consistently.”**
 - The Seafood Watch Aquaculture Criteria has been designed for applicability at all scopes within the range of farm-level assessments to multi-waterbody and national assessments. For large scopes, the (most realistic) aim is to describe the impacts or risk of impacts of the ‘typical’ farm and the collective (i.e. cumulative) impacts of each farm’s localized impacts, with the recognition that some farms operating in the region under assessment will be, with respect to the ‘typical farm,’ better performers and some will be worse performers. While farms that feel they are better performers or operate in a way that has fewer or different impacts from a ‘typical’ farm can be assessed through the Seafood Watch External Assessment Program (EAP), their impacts are still considered as a contribution to the cumulative impacts of the industry. It is the aim of Seafood Watch to assess operations with recognition of their contribution to the cumulative impacts of the industry.

5. **“The issue of illegality should be addressed through understanding of the regulatory framework and the overall industry compliance with the management regime. If non-compliance can be shown to have minimal environmental impact (event at cumulative levels) then potentially SFW could discount it for the purpose of this assessment, but a more constructive route would be for the industry to work with local regulators to legalise the issue – rather than SFW going down the route of ‘condoning’ illegal activities.”**
 - Guidance has been added to the *Scope* of the Criteria to address the consideration of past practices, which includes illegal activity. Furthermore, illegal activity and the resulting ecological impact is scored explicitly in Criteria 2, 3, 4, and 5. Seafood Watch supports and rewards regulation that is based on the best available science, is effective in maintaining the health and functionality

of the ecosystem to which it applies, and encourages the cooperation of stakeholders within the industry to achieve such regulation.

Criterion 1 – Data

6. **“While the majority of data and information should be presented in reports, consideration of proprietary data needs to be made (e.g. feed formulations) - farms should not be penalized for disallowing publishing of this information, given it is provided in confidence to assessor.”**
 - Seafood Watch greatly values the participation of industry in our assessments and recognizes the importance of proprietary information. Where such information is used to justify scoring, it is represented in the text (in whatever form the industry is comfortable with). If industry wishes that information remain confidential and anonymous it cannot be included in the assessment, as SFW publishes (either in raw or aggregated form) all data that is used to justify scores. Furthermore, all Seafood Watch reports are subject to a peer review process wherein those industry members who provided such data and information, among others from the government, academic, and NGO communities, are given the opportunity to review how that information is presented before the report is finalized and published.

7. **“I would strongly suggest that in order to achieve a score of 10 for data then the information should be publicly available.”**
 - Seafood Watch encourages and rewards publically-available information. However, we do not feel that data must be directly publically available (e.g. posted online, in white/grey literature, etc.) for us to have full confidence in its relevance, completeness, quality, and detail, or its ability to fully communicate the impacts of aquaculture production. We do, however, consider data made available to Seafood Watch for inclusion and subsequent publication in a report to then be publically available. For example, fish meal and oil inclusion rates may not be available on a producer’s website, but when shared for inclusion and publication in a Seafood Watch report, this information becomes available to the public.

8. **“Use of the precautionary principle when data is unavailable is valid, deferring to precautionary principle when a wealth of information is available should be avoided.”**
 - A significant effort has been made throughout the Criteria to ensure that emphasis is placed on data availability and quality. For example, Criterion 7

(Disease) has been revised to allow for Evidence-Based or Risk-Based assessment options, the use of which is dictated by the Disease category score (≥ 7.5 out of 10) in the Data criterion, and Criterion 4 has been revised to include the option to improve scoring based on the 5-10-year trend of chemical use.

9. “Data table 2, Disease – should include regulatory approaches to disease minimization and industry/regulatory preparedness for emergency outbreak control, including enforcement.”

- These additions have been included in the revised table.

10. *In reference to “Regulatory (laws and regulations) OR industry management measures, inclusion of zonal or cumulative impact measures, implementation structures, application and enforcement at the individual farm level”: “I think ‘OR’ should be an ‘AND’. At the very least it should be an ‘and/or.’”*

- This has been revised to “and/or.”

Criterion 2 – Effluent

11. “Seafood Watch should use precaution in rating productions within the US where illegal effluent activities are taking place, assigning a “red” rating automatically and when evidence regarding environmental impact is lacking. Productions outside the US may be more difficult to rate, as environmental protection laws may be significantly weaker or potentially non-existent, in these instances, precautionary principles would be ideal, but depend more upon consistent environmental assessments.”

- Seafood Watch cannot condone the use of illegal practices anywhere in the world, regardless of whether the action has an ecological impact or not. Where confidence in data pertaining to Criterion 2 (Effluent) is high (i.e. ≥ 7.5 out of 10 in the Effluent category of Criterion 1), the legality of practices related to effluent discharge, treatment, and disposal are scored according to the Evidence-Based scoring table. Where data availability is poor, or confidence in its ability to comprehensively describe the impacts of effluent discharge is low, Criterion 2 is scored according to the Risk-Based scoring methods, which addresses the potential for illegal activities occurring in Factor 2.2b.

12. “Clarity required on when risk based assessment is used- previous reports with good data scores still using risk-based effluent scoring.”

- The Risk-Based Assessment method is employed when the Effluent category within Criterion 1 (Data) is ≤5 out of 10. In only one report has the Risk-Based Assessment method been used when the data score was >5 out of 10, and it was used in addition to the Evidence-Based Assessment method for additional verification of the impacts of effluent discharge.

13. “A system with low effluent concern should be able to demonstrate effective zonal management. Suggested inclusion: *“Management and/or industry best practices incorporate zonal management practices and account for cumulative impacts.”*

- While an effective zonal management system may be a component, or perhaps even the driving factor, of an industry causing, or having no contribution to, cumulative impacts from effluent discharge at the waterbody/regional scale, it is the data that shows this absence of impact that Seafood Watch considers to be the most important and demonstrable. A causal relationship cannot always be drawn between an industry and its compliance with the management system under which it operates, but the presence, robustness, and enforcement of that management system is acknowledged where appropriate.

Risk-Based Assessment, Factor 2.2

14. “Note: it is considered unacceptable for farms, industries or countries that export farm-raised seafood to be less than fully transparent about the environmental management measures and regulations that control the way the exported seafood was produced.” What is “unacceptable”? Does this result in a critical?

- This text and the scoring options to which it applies have been revised to more clearly communicate the scoring potential of the regulations and management measures based on their robustness, efficacy, and availability to Seafood Watch assessors.

15. “Nets, cages, and pens (as well as ponds) seem to be grouped into a very similar category. Each of these systems produce different levels of pollutants relative to each other in addition to the variety of species with which these systems are employed. It may be more accurate (though obviously more demanding) to divide these systems into separate categories.”

- Nets, cages, and pens are all rearing systems that operate in open water, and as such, discharge highly similar proportions of the waste produced within them. The species and feeding regime is a more significant determinant in the amount of waste produced, and the siting of such systems is a more significant determinant of the discharge footprint and impact of that waste; each of these factors are indeed accounted for in Factor 2.2. Similarly, the discharge of waste from pond systems is scored according to five distinct categories of the rate of pond turnover.

16. “I think the updates to this section are very good and will help clarify the scoring of this factor immensely.”

- We agree, and your compliment is appreciated.

Criterion 3 – Habitat

17. “The weighting of Criterion 3 in favour of 3.1, therefore reducing the importance of the management regime, continues to give precedence to the idea that the actions of farms are more important than an overall (effective) management system that takes more of an ecosystem view/approach. I would suggest these two issues were given equal weighting, especially as the over-riding reasoning for the habitat impact argument is the cumulative impact of an industry rather than of individual farms.”

- Seafood Watch is committed to the notion that the actions, practices, protocols, and data-supported ecological impacts of aquaculture production, at the farm level and the industry level, are the most reliable and effective sources of information when assessing the ecological sustainability of such production. While regulations and management play an important role and are acknowledged throughout the Criteria as having the ability to do so, we consider the evidence of habitat conversion and functionality a more important metric by which to assess impact.

Background and Rationale, Factor 3.2b

18. “This explains the double weighting rationale, but I would push back on it a bit and argue that the rationale that aquaculture operations do not have control over regulatory or management effective for the fact that on the previous page you state that “regulations or management measures” include codes of practice or Best Management Schemes, which can wholly be spearheaded by aquaculture operations.”

- While farm-level management measures are indeed more directly in the hands of farms themselves, farmers generally have less control over the regional and national regulations under which they operate. The text has been revised for more complete consistency.

Criterion 4 – Chemical Use

19. “Scoring for this criterion is much improved from previous versions. Description of ‘significant’ is adequate for objective scoring.”

- We agree, and your compliment is appreciated.

20. “Criterion describes chemical treatments as “products used in aquaculture to kill or control aquatic organisms”. Use of peroxide has been shown very effective for sea lice removal, and is without concerning environmental effects. Use of peroxide rather than veterinary medicines should be encouraged and the description should be adjusted to reflect.”

- The growing use of peroxide to treat sea lice in lieu of other, more ecologically-concerning chemicals is indeed acknowledged where applicable and appropriate. Despite its relatively-benign nature, however, the aim of its use is still adequately described by our current definition of chemical treatments.

21. “Scores appear primarily focused on the performance of individual productions systems and farms rather than a management system and overall cumulative impacts. Suggest a review of this criterion. An effective management system only scores 4.”

- While a management system can be an important and effective component to managing the use of chemicals and their impact on the receiving waterbody, its presence cannot be inherently relied upon for a measure of ecological sustainability. The actual performance (which may or may not be dictated by the management system) of aquaculture operations is a more demonstrable justification for scoring, and data that provides evidence of a low-moderate, low, or no concern for impacts resulting from chemical use can be used to supplement the presence of a management regime.

22. “It remains unclear to me what is considered a ‘demonstrably low need for chemical use’ especially given the rationale that was added above about not identifying ecological limits, but relying on evidence of reduction in use of chemicals.”

- Achieving a Chemical Use score of 8 or 10 out of 10 includes the requirement for the Chemical Use category of the Data Criterion (Criterion 1) to be ≥ 7.5 out of

10. A score of 6 (which includes a “demonstrably low need for chemical use,” may be assigned to those systems or industries whose available data demonstrates that the species or production system generally does not rely on chemicals for production. It is also applicable if the conditions which achieve a higher score are present, but the completeness and/or robustness of the data does not provide enough confidence that the entirety of chemical use and its impacts are fully understood.

23. “Suggestion to include something for scores of moderate or above about public disclosure of chemical use at a farm level (as is required by ASC).”

- While data requirements are not a component of achieving a score of 4 or 6 out of 10, scores of 8 and 10 for Criterion 4 can only be achieved if the Chemical Use category of the Data Criterion (Criterion 1) is ≥ 7.5 out of 10. The scoring requirements for the Data Criterion can be seen in Table 1 of that criterion, and while publically-available information is indeed encouraged and rewarded, it is not a mandatory component of achieving any score.

24. “Further explanation of what is meant by ‘dependent on chemical intervention’ should be provided.”

- Where data specific to the industry under assessment is not available, a proxy for the use of chemicals and their ecological impact must be defined. This proxy can be estimated through the evaluation of chemical use by industries producing other species in similar production systems in the region, or by industries in other regions producing the same species as is under assessment. Where this information suggests that the use of chemicals is an integral part of the farming production regime (e.g., used consistently, the operation would incur non-insignificant stock losses without its use, etc.), *and* the openness of the farming system would result in the discharge of active chemicals or their ecologically-harmful derivatives directly into a receiving waterbody, Seafood Watch considers the risk of ecological impact to be moderately-high.

Criterion 5 – Feed

25. In reference to “unacceptable bycatch or ecosystem impacts” in Critical scoring option: “This should be further qualified with a footnote”

- This is guided by the SFW Standard for Fisheries, which states: “The fishery targets and/or regularly retains overfished, depleted, endangered or threatened species and the fishery is a substantial contributor to mortality of the species,

and management lacks an adequate rebuilding or recovery strategy and/or effective practices designed to limit mortality of these species (for example, overfishing is occurring)” or the “fishery uses destructive practices such as explosives or poison, e.g., cyanide.” This guidance has been reflected in the text.

26. In reference to “aquaculture operations generate or cumulatively contribute to unacceptable fishery practices: “I think this point needs to be further fleshed out... I understand the spirit of the addition, but as stated provides a lot of room for subjectivity”

- This is guided by the SFW Standard for Fisheries, which states: “The fishery targets and/or regularly retains overfished, depleted, endangered or threatened species and the fishery is a substantial contributor to mortality of the species, and management lacks an adequate rebuilding or recovery strategy and/or effective practices designed to limit mortality of these species (for example, overfishing is occurring)” or the “fishery uses destructive practices such as explosives or poison, e.g., cyanide.” This guidance has been reflected in the text.

Criterion 6 – Escapes

Factor 6.1

27. “When a farm uses a different production system, it should still be considered in the context of the wider industry (per the introductory guidance), rather than the guidance given specifically in this section.”

- The criteria are applied consistently across all scales of assessment, taking into account their *relative* contributions to the cumulative impacts of neighboring farms and the larger scale industry.

Criterion 7 – Disease

28. “I understand the motivation to separate this into two method of assessment, but I have some concern that the two assessments are inconsistent with one another, as opposed to complimentary. Unsurprisingly, I try to run the example of farmed salmon through these two decision trees and get different scores. I guess in part it depends on how you assess the data availability for this criterion.”

- Minor revisions to the scoring tables have been made for both Evidence-Based and Risk-Based assessment methods to improve consistency. The types of data used to inform the assessment of Criterion 7 are defined in Table 2 (Data

Description) of Criterion 1, and its availability is scored 0-10 out of 10 according to Table 1 (Data Availability, Quality, and Confidence).

Risk-Based Assessment

29. “Recommend including aspects of management of health on farms as part of scoring mechanism, such as:

- a. Monitoring of fish health- regular screening? Trained staff?**
- b. Adequate fish health management plan in place, and evidence it is followed?**
- c. How is disease detected and treated? Timelines?**
- d. What is the frequency of disease outbreaks? Is information made available?**
- e. What management measures are in place? Thresholds for treatment, or requirements to cull? How are these monitored?**
- f. Is farm level biosecurity adequate to reduce transfer to other farms or animals?**

Farms scoring highly on the above could improve disease score, while those scoring poorly would be penalized. Further, what is the long term trend? Similar to the chemical use criterion, a long term decline in high risk events could be used to improve scores, as it shows improving management.”

- The scoring table has been revised to more comprehensively consider the robustness and efficacy of management systems in controlling the occurrence of disease on the farm, the transmission of disease between farms sites, and the transmission of disease and its impacts to wild fish. The inclusion and scoring corollaries of long-term trend data for on-farm disease occurrence is under consideration.

30. “The disease criterion continues to focus on the physical production system rather than the management system; and the impact of pathogens and parasites on external populations rather than how disease is managed/controlled between aquaculture production sites. In all cases the siting of farms based on reducing pathogen and parasite impacts within a planned industry should be given consideration in the scoring.”

- The scoring table has been revised to more comprehensively consider the robustness and efficacy of management systems in controlling the occurrence of disease on the farm, the transmission of disease between farms sites, and the transmission of disease and its impacts to wild fish.

Criterion 8X – Source of Stock

No comments received

Criterion 9X – Wildlife and predator mortalities

No comments received

Criterion 10X – Escape of unintentionally introduced species

No comments received