# Seafood Watch® Standard for Salmon Fisheries

# Public comment period – 3: Comment Form

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**Public Comment Guidance:**

Salmonid fisheries are significantly different to typical wild-capture fisheries and have some unique characteristics. In order to ensure that Seafood Watch assessments consider these unique characteristics and the conservation concerns associated with these fisheries we have developed a modified set of criteria for assessing salmon fisheries. One of the major considerations within this set of criteria is the impacts of supplementation from artificial production which is widely used throughout salmonid fisheries across the globe.

This document is the comment form for the second draft of the Seafood Watch Criteria for Salmon Fisheries which can be found here. Please use this document to comment on the salmon specific guidance and scoring identified in blue text.

## Criterion 1 – Impacts on the Species Under Assessment

**Public comment guidance –** During the second public comment period we received comments regarding the appropriateness of MSY-based reference points for salmonid populations for the purposes of determining sustainable populations. An alternative option that we have considered is using Minimum Viable Populations, or Viable Salmonid Populations, which are developed particularly for salmonid populations that are listed under the Endangered Species Act. We have been unable to identify a way of relating MVP-based targets to the MSY-based targets used by fishery managers, and in order to allow effective assessment and ensure consistency with other Seafood Watch assessments we have decided to retain our guidance with respect to MSY-based reference points. We have also considered that it is most likely that concerns about achieving MVP are greatest for ESA listed populations which are already considered a High Concern for abundance using the draft methodology.

**We welcome thoughts and suggestions of how MVP-based assessments could be used and scored in a Seafood Watch assessment.**

We have made some changes to the Productivity and Susceptibility Analysis that we use to determine the vulnerability of a species or population. This method is used to help guide our assessment of abundance in the absence of a formal stock assessment or where abundance is otherwise considered unknown. We have used the PSA that was accepted as part of the Seafood Watch Standard for Fisheries and added a factor for susceptibility. This is in response to comments received during the second public comment period that traditional PSAs do not accurately reflect the vulnerability of salmonids. The changes to the PSA will also be subjected to a public comment period later in 2016 as part of an interim review of the Seafood Watch Standard for Fisheries. Any changes will be made to both standards to ensure consistent vulnerability assessments across all species.

**We welcome comments and suggestions on whether these additions are appropriate and whether alternative factors should be considered.**

**Comments:**

**These criteria are coming along very nicely. It's good you are defining terms; this will help avoid ambiguity.**

**I'm still uncertain whether these criteria will protect "weak stocks", especially ESA-listed ones, in mixed-stock fisheries (most salmon fisheries are mixed-stock). Here is an example. Say you have an ESA-listed stock that is incidentally caught in a fishery. Because it is rare relative to the target species, it makes up a very small component of the fishery, maybe only 1-2% of the catch. Therefore it would not be a "major stock" according to these criteria (on page 16, suggests "major" is 5% of the catch). However, 1 or 2% of a very large catch, say 100,000 fish caught, might still be a substantial % of a rare stock: 2% of 100,000 = 2,000; what if escapement of that stock is only 1,000? You have a fishing rate of over 60% on that weak stock.**

**One way I've seen managers get around this problem is to rank the stocks caught by weakness, and then set some criteria as to a level of weakness (say they choose the 5th weakest stock, so 4 stocks are weaker) and set a fishing mortality rate that is sustainable by that weak stock (if there is one). The fishery would have to be well enough managed and monitored to detect when that mortality rate on that stock is reached.**

**This is, for example, more or less the approach used on sockeye in the lower Columbia non-tribal fisheries (unfortunately these sockeye are also caught in another fishery so it kind of misses in the total catch department, but in isolation it demonstrates my point): ESA listed sockeye are typically less than 0.5% of the sockeye in the Columbia river. They are the weakest stock caught. Only 1% of the ESA-listed sockeye can be caught, there are criteria in place to identify which sockeye are the ESA-listed stock, in-seasoning monitoring occurs, and they can fish until 1% of those are caught: Maybe the ESA stock has an escapement of just over 1,000 fish this year. Maybe they catch just over 3,000 fish total, but when 10 of those were of the ESA stock, only 0.3% of the catch, their limit has been reached.**

**The take-home is that when there are extremely weak stocks being caught in a mixed-stock fishery, they will be rare and therefore only a small % of the catch – not a "major stock" from the perspective of the fishery. The fishery can be managed according to a "sustainable" harvest rate ON THAT WEAK STOCK, it ends when that allowed impact rate is reached.**

**You can look at the current US v OR fisheries biological opinion (from NOAA) as a reference for this kind of approach to setting fishing limits.**

**The remaining question is how to demonstrate that the impact rate is "sustainable". If it is only 1-5% it may be a rounding error in the monitoring data and difficult to demonstrate whether it is or is not "sustainable" even for a very small stock, but there are cases where much higher harvest rates are currently being used, especially cumulative across all fisheries.**

**Regarding criteria 1.2, fishing mortality. This still assumes that there is some fishing mortality on a weak stock that is "sustainable", but that is not likely true in all cases of weak stocks. As we have discussed, this remains a difficult problem that warrants further research and discussion. Possibly the interim approach, until such questions are resolved, is to allow some "rounding error"-level impact to be considered "sustainable".**

**The question of what is a "stock" is also pertinent: is it an ESU? A population in that ESU? Some salmon fisheries "stocks" include multiple ESUs. For example the "Upriver Bright" fishery stock in the Columbia includes three wild ESUs (Snake (ESA-listed), mainstem Columbia and Deschutes) plus some hatchery-only stocks. The current approach in the Columbia is to set a % allowed impact on the listed ESU and then assume that means the same % impact on each population in that ESU (so say the limit is 2% of the wild fish in the ESU, then assumes no more than 2% of any population is taken, although we don't actually know if that is true). It is easy to reach the limit of what level of stock ID can be detected in-season in the fishery.**

**In salmon fisheries, it is reasonable to ask them what they are calling a "stock", relative to NOAA definitions of ESUs. I don't think there are ESUs described in Alaska, but they are described, whether ESA- listed or not, for all lower US salmon (see NOAA's listing reviews for all salmon from the 1990s). (See my further comments on SMUs, below).**

## Criterion 2 – Impacts on Other Capture Species

Criterion 2 will be assessed according to guidance set forth in the Criteria for Fisheries.

## Criterion 3 – Effectiveness of Fishery Management

Criterion 3 will be assessed according to guidance set forth in the Criteria for Fisheries.

## Criterion 4 – Impacts on the Habitat and Ecosystem

Criterion 4 will be assessed according to guidance set forth in the Criteria for Fisheries.

## Criterion 5 X – Impact of Artificial Production

**Public Comment Guidance for Criterion 5**

Criterion 5X is an exceptional Criterion which is to be assessed only where there is artificial production associated with stocks that are caught and retained within the fishery under assessment.

Previously the assessment of these factors had been combined with the corresponding factors within the fisheries standard; however it was clear that this was preventing the concerns associated with a particular operation from being clearly identified. For example, a well-managed fishery associated with poorly managed hatcheries may receive a moderately effective score and while the overall result may be the same, the case for concern is not clearly identified. By assessing artificial production in a separate criterion we are able to better highlight any causes of concerns and areas that require improvement.

The Criterion is based on recommendations from the Hatchery Scientific Review Group, which is the independent scientific panel of the Pacific Northwest Hatchery Reform Project; a project set up by US Congress to reform hatchery management in the region. While the recommendations set forth by the group may not be appropriate in all instances, we believe that they provide the most comprehensive science-based recommendations that can broadly be applied to the management of artificial production and supplementation of salmonids.

**Feedback:** Please comment below on these proposed changes as well as any other comments on this factor.

**Comments:**

**On page 40 under guiding principles: add productivity ("… reducing diversity, abundance, productivity or genetic integrity…" of wild populations).**

## Factor 5.1 Impact of Artificial Production on Wild Populations

**Public Comment Guidance:** Factor 5.1 assesses the impact or influence that artificial production is having on wild stocks caught within the fishery being assessed.

**Feedback:** We welcome feedback on whether these metrics are realistic and whether they adequate consider the concerns associated with the mixing of wild fish and hatchery origin fish on the spawning grounds.

**Comments:**
**On page 41:**

**The criteria are a bit confusing to me. The minor and moderate ratings refer to "less than 1%" and "less than 5%", which are very good, but then refer to the HSRG pHOS criteria, which could allow a much higher % hatchery fish under some situations (ie, in the minor category, you refer to their criteria "less than or equal to pNOB", which may result in more than 1%). Possibly the issue is that your 1%/5% apply to the entire "management unit" (ie management stock) while the HSRG criteria are applied to a particular wild population? Maybe, for example, there is only one hatchery program associated with one wild population in the management unit and it complies with the HSRG criteria for that one population, and makes up less than 1% of the whole management unit? In any case, this is my interpretation and you might want to clarify what you mean. Possibly a better, consistent definition of management unit would be very helpful here as well as elsewhere in your assessment (see my comment on SMUs also).**

**Keep in mind that the pHOS criteria from the HSRG assumed certain rates of genetic change that are likely not realistic, as indicated by more recent pedigree studies, and therefore their pHOS is likely higher risk than they assumed. On the other hand, many hatchery programs can't meet their criteria anyway, and doing so would be an improvement.**

**On page 42:**

**If the managers don't know pHOS and pNOB, I'm not sure they know the wild juvenile production.**

**I assume that "SMU" is defined? This might help with addressing my previous comment on page 41. Perhaps you could say "less than 1% of the SMU" and meets the HSRG criteria for each individual wild population involved.**

**I looked at your definition of "SMU" on page 60. I think you might want to work on it a bit more to make sure it is clear and applied to the same units across various jurisdictions. I'd suggest you do this by relating the usual harvest management stocks (SMU) to genetic groups (ESUs or equivalent) and wild populations. Here is an example from the Columbia River:**

**SMU = "Upriver Bright Fall Chinook"**
**It has three ESUs = Mainstem Columbia, Deschutes, Snake (which is ESA listed as "threatened").**
**The various wild populations in these ESUs are described in Myers et al. 1996 NOAA Chinook stock status report.**
**This SMU also includes three hatchery-only stocks (PUB, BUB and BPH). These are large individual hatchery programs geographically within the range of the Mainstem Columbia ESU. I'm not sure what their affiliation with this ESU is considered to be.**

**You should be able to expect this same kind of stock structure description for each SMU. You might find that ESUs (or equivalent) and wild populations may not always be described, however, asking the managers if these are described and what their SMU actually includes would be a good thing to do. If these levels of population structure detail are not known, then the fishery is quite information poor, which is risky. How can they measure wild abundance or anything else if they don't know the unit they are measuring? I know the US and Canada have documents that define these (although I'm not sure how developed they are in Alaska), and for at least some areas these are known in Russia and Japan because we've all met and talked about these things.**

## Factor 5.2 Management of Artificial Production

**Public Comment Guidance:** Factor 5.2 assesses the management systems in place for artificial production. Due to the large number of artificial production systems that may be associated with fish caught in any given fishery, the proposal is to assess a 'typical' or 'average' artificial production system. This is consistent with Seafood Watch Aquaculture assessments at a country level where it is not practical to assess the wide range of performance that is often found across an industry. Where there are regional management systems in place, it is likely that most systems operate at a similar level of performance.

**Feedback:** The requirements are based on recommendations from the HSRG. We welcome comments regarding whether these requirements are appropriate; whether it is appropriate to require all of them for a highly effective management plan; whether there are additional requirements that should be considered.

**Comments:**

**On pages 44-45:**

**While I sympathize with your concern about manageability, and I generally agree with your approach here, I'm not sure you can assume "average operations" across the range, at least not yet. Perhaps you should add to your "Highly Effective" a question that asks if this assumption is true. It would be easy for managers to answer because they would have management plans in place and effectively implemented across the range if it is true, and they won't if it's not true.**

**Otherwise factor 5.2 looks good.**