

This document contains the final draft principles and criteria developed by the Salmon Aquaculture Dialogue as of May 2009. Both the principles and criteria went through two public comment periods and presentation and discussion at Dialogue meetings. Comments collected via the website and in meetings were used by the Steering Committee to revise the document. Principles and criteria are now closed to public comment, until the full suite of principles, criteria, indicators and standards are drafted and opened for comment and revision.

A small group of experts is being commissioned by the Steering Committee to draft indicators built from these final draft principles and criteria. The group of experts and the Steering Committee hope to meeting in late June 2009 to discuss indicators and develop a full suite of indicators that will then be discussed within the full Dialogue.

Background and Definitions

The salmon Dialogue is a science-based forum initiated by World Wildlife Fund (WWF) in 2004. The goal of the Dialogue is to credibly develop measurable, performance-based standards that minimize or eliminate the key environmental and social impacts of salmon farming, while permitting the industry to remain economically viable. The standards can be the basis for an aquaculture certification program. They also can be used to benchmark other standards; incorporated into existing certification programs; adopted for government programs; and, potentially, be the foundation for buyer and investment screens. More information on the Dialogue, including details on the multi-stakeholder Steering Committee that governs the Dialogue, is available at <http://www.worldwildlife.org/salmondialogue>.

The Dialogue is iterative, participatory, process that began with identifying the key environmental and social impacts of salmon production. Next, agreement will be reached on principles, criteria, indicators and standards, with each phase building on the previous phase. These terms are defined in the table below.

	<i>Definition</i>	<i>Non-aquaculture example</i>	<i>Aquaculture example</i>
<i>Impact</i>	The problem we want to minimize	Overweight	Water pollution
<i>Principle</i>	The guiding principle for addressing the impact	Maintain a healthy weight	Conserve and protect water resources
<i>Criteria</i>	The area to focus on to address the impact	Food consumption *	Effluents*
<i>Indicator</i>	What to measure in order to determine the extent of the impact	Calories	Nitrogen concentration in the effluent
<i>Standard</i>	The number and/or performance level that must be reached to determine if the impact is being minimized **	< 10 calories/pound of body weight/day	4 mg/L total nitrogen in effluent

**For this example, only one criteria is listed, even though there often are several criteria for each principle, as well as several indicators for each criteria.*

***A number is not necessary when an indicator cannot be measured (e.g., the indicator for the principle “obey the law,” which might be “documentation of compliance with national and local regulations”).*

One example of principle, criteria, indicator and standard that could be considered in the salmon Dialogue is as follows:

Principle: Manage disease and parasites in an environmentally responsible manner (principle 5 below)
Criteria: Survival and health farmed fish (this would be one of several criteria falling under this principle)
Indicator: Percent mortalities annually (this would be one of several indicators falling under this criteria)
Standard: X% mortalities

History of Development of Principles and Criteria

Draft principles were presented and discussed at the Dialogue meeting in January 2008, then edited based on feedback from that meeting and further Steering Committee discussion. The draft principles were posted on the website for public comment for a 60-day period which ended October 15, 2008, then discussed at the November 2008 Dialogue meeting. Principles were revised a second time based on feedback from the comment period and November meeting. The principles are now closed for comment and revision until the principles, criteria, indicators and standards are drafted and open for comment as a full package.

Revised draft criteria were presented and discussed at the Dialogue meeting in November 2008, and edited based on feedback from that meeting and further Steering Committee discussion. The revised draft criteria below were open for public comment via the website for a 30 day comment period that ended March 6, 2009. They were presented and discussed at the next meeting of the Dialogue on March 12 – 13, 2009 in Boston. Feedback from the meeting and the public comment period were used by the Steering Committee to develop final draft criteria. The indicators to be associated with these criteria will be drafted in the coming months by scientific experts. A draft set of indicators will be presented to the full Dialogue for discussion and feedback once it is developed.

The potential relevant areas of impact, from the seven key impact areas identified in the salmon Dialogue, are listed for each principle in the draft below. However, as the criteria were revised they were streamlined in order to eliminate redundancies and minimize the number of criteria per principle. The full suite of principles and criteria are intended to address the full suite of potential impacts listed.

At the November 2008 meeting of the Dialogue, animal welfare was raised as an issue of importance to stakeholders at the meeting, both in terms of farmed fish welfare and wildlife interactions including treatment of predators. Wildlife interactions including treatment of and impacts on predators have consistently been agreed to clearly fall under the Dialogue and will be addressed under Principle 2 and the associated criteria, indicators and standards. Early on in the Dialogue process, the Steering Committee had decided to exclude farmed fish welfare from the Dialogue standards. This decision was made based on prior stakeholder input. Meeting participants in November 2008 requested that the Steering Committee revisit its decision. The committee discussed the issue and agreed that farmed fish welfare did not fall under the mandate of the Dialogue and that the Dialogue would not aim to develop a comprehensive fish welfare standard. Farmed fish welfare was not a part of the rationale for establishing the Dialogue, the Steering Committee does not have appropriate expertise on the issue involved, and there already are other fish welfare standards/processes. Additionally, there is a potential to partner with other certification programs, including fish welfare, down the line. *While it is not under the mandate of the process, the Steering Committee expects that some aspects of farmed fish welfare will be indirectly improved under the standards.* Environmental and fish health standards developed through the Dialogue will lay the foundation for fish welfare.

The standards are intended to address key impacts associated with smolt and grow-out phases of the farmed salmon life cycle. The seven areas of key potential negative impact that were identified within the salmon Dialogue are: feed, escapes, nutrient loading & carrying capacity, benthic impacts & siting, disease and parasite transfer, chemical inputs and social impacts (including labor and community impacts). Independent, third-party auditing of farms to verify whether they meet the salmon Dialogue standards will also include a traceability and chain-of-custody component that will be developed outside of the salmon Dialogue.

Final Draft Principles and Criteria

Preamble

The principles serve as a platform to minimize the social and environmental impacts of salmon aquaculture while permitting the salmon farming industry to remain economically viable. These principles, along with the corresponding criteria, indicators and standards which are in development, are applicable at the farm level. Achieving the suite of principles to standards will entail farms having a high level of transparency and regular monitoring of a number of key indicators. Although these are farm-level standards, they are intended to help protect and maintain ecosystem function and ecosystem services in salmon producing areas, with the recognition that aquaculture operations are not solely responsible for total ecosystem health. The standards are intended to be revisited and updated periodically (e.g., every 3 years) to ensure that the standards are based on best available scientific knowledge and management practices and to encourage continuous improvement.

Principle 1: Comply with all applicable international and national laws and local regulations.

CRITERIA

1.1 Compliance with all applicable local, national and international legal requirements and regulations

Principle 2: Conserve natural habitat, local biodiversity and ecosystem function

Relevant impacts: benthic, nutrient loading, siting, chemical inputs

CRITERIA

- 2.1 Benthic biodiversity and benthic effects
- 2.2 Water quality in and near site of operation
- 2.3 Nutrient release from production
- 2.4 Interaction with critical or sensitive habitats and species
- 2.5 Interaction with wildlife including predators
- 2.6 Impacts on biodiversity
- 2.7 Cumulative impacts

Principle 3: Protect the health and genetic integrity of wild populations

Relevant impacts: disease/parasites, escapes, siting

CRITERIA

3.1 Introduced or amplified parasites and pathogens

- 3.2 Introduction of nonnative species
- 3.3 Introduction of transgenic species
- 3.4 Escapes
- 3.5 Interaction with wild salmonid populations/runs

Principle 4: Use resources in an environmentally efficient and responsible manner

Relevant impacts: feed, chemical inputs

CRITERIA

- 4.1 Use of wild fish for feed (dependency on marine protein and lipid sources)
- 4.2 Source of marine raw materials (i.e. origin of fish used in feeds)
- 4.3 Source of non-marine raw materials in feed
- 4.4 Non-biological waste from production
- 4.5 Energy consumption and greenhouse gas emissions (on farm)
- 4.6 Non-therapeutic chemical inputs

Principle 5: Manage disease and parasites in an environmentally responsible manner

Relevant impacts: disease/parasites, chemical inputs

CRITERIA

- 5.1 Survival and health of farmed fish
- 5.2 Contamination levels and health effects in local non-target organisms
- 5.3 Therapeutic treatments
- 5.4 Resistance of parasites, viruses, and bacteria to medicinal treatments
- 5.5 Biosecurity management

Principle 6: Develop and operate farms in a socially responsible manner

Relevant impacts: social impacts

CRITERIA

- 6.1 Freedom of Association and Collective bargaining
- 6.2 Child Labor
- 6.3 Forced, Bonded, or Compulsory Labor
- 6.4 Discrimination
- 6.5 Health and Safety of workers
- 6.6 Wages
- 6.7 Contracts (Labor) including subcontracting
- 6.8 Conflict resolution

Principle 7: Be a good neighbor and conscientious citizen

Relevant impacts: social impacts

CRITERIA

- 7.1 Interaction with local communities and other resource users
- 7.2 Respect for indigenous and aboriginal cultures and traditional territories