

This document contains the final draft principles and revised draft criteria developed by the Salmon Aquaculture Dialogue as of February 2009. The revised draft criteria below are open for public comment via the salmon Dialogue website (www.worldwildlife.org/salmondialogue) until March 6, 2009.

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, 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 are open for public comment via the website until March 6, 2009. They will be presented and discussed at the next meeting of the Dialogue on March 12 – 13, 2009 in Boston.

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. Meeting participants requested that the Steering Committee revisit its decision, which was based on prior stakeholder input, to exclude welfare from the Dialogue standards. The committee discussed the issue and agreed that farmed fish welfare did not fall under the mandate of the Dialogue. 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. While it is not under the mandate of the process, the Steering Committee expects that some aspects of farmed fish welfare could be indirectly improved under the standards. Additionally, there is a potential to partner with other certification programs, including fish welfare, down the line. Wildlife interactions including treatment of and impacts on predators, however, were agreed to clearly fall under the Dialogue and will be addressed under Principle 2 and the associate criteria, indicators and standards.

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, escapes, disease/parasites, 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 biodiversity (wildlife) including predators
- 2.6 Cumulative impacts

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

Relevant impacts: disease/parasites, escapes, chemicals, 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 vegetable raw materials in feed
- 4.4 Non-biological waste from production
- 4.5 Carbon footprint
- 4.6 Non-therapeutic chemical inputs

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

Relevant impacts: disease/parasites, chemical

CRITERIA

- 5.1 Survival and health of farmed fish
- 5.2 Contamination levels and health effects in local non-target organisms
- 5.3 Chemical and antibiotic treatments

- 5.4 Resistance of parasites, viruses, and pathogenic bacteria to medicinal treatments
- 5.5 Biosecurity and hygiene 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
- 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