



November 3, 2008

Ms. Valerie Frances
Executive Director
National Organic Standards Board
USDA-AMS-TMP-NOP
1400 Independence Ave. SW
Room 4008-So., Ag Stop 0268
Washington DC 20250-0268

Re: Docket # AMS-08-0083

Submitted via regulations.gov

Dear Ms. Frances,

In response to the National Organic Standards Board Livestock Committee's proposed organic aquaculture standards, specifically the recommendations on "Fish Feed and Related Management Issues" and "Net Pens and Related Management Issues," please accept these comments on behalf of Food & Water Watch, a national non-profit consumer advocacy organization. Our members and supporters across the country support organic agriculture and are very concerned with the integrity of the proposed organic standards for seafood. Additionally, Food & Water Watch has worked for several years on fisheries management issues, including the impact of large-scale aquaculture on the environment, fishing communities, and aquatic ecosystems.

As stated in our previous comments on this issue, we are concerned that the pressure on the Board to facilitate the growth of an organic salmon industry in the United States is unduly affecting the standards for aquaculture as a whole. Food & Water Watch believes that not all types of aquaculture are suited for the organic label, because not all types of aquaculture will be able to meet bedrock organic principles of minimizing environmental impacts and protecting biodiversity. There is no entitlement to an organic standard. This means that the NOSB is not obligated to create standards that allow carnivorous fish to be certified organic if this industry cannot meet the basic tenets of organic production.

We believe that the use of wild-caught fish for fishmeal and oil as feed for aquacultured fish is incompatible with the principles of organic production. If only herbivorous fish can meet organic standards, then only herbivorous fish should be allowed the organic label. NOSB must protect the integrity of the organic label – and consumers' trust in that label. The organic label should not be jeopardized by lowering the bar enough for the farmed salmon industry to meet it. What is supposed to set organic certification apart from other labeling programs is the rigor of the standards. Unfortunately, the proposed standard the board is considering is not rigorous

enough to make consumers confident that the organic seal on farm-raised fish lives up to their expectations.

Wild-Caught Fish as Feed

The risk of contamination, impacts on wild fish populations, and damage to marine food chains make the use of wild-caught fish in fishmeal or oil as feed for farm-raised fish incompatible with organic production. While several of the provisions in the proposed standard attempt to get around this by reclassifying aquatic animals as livestock and stretching the limits of the definition of a feed supplement, it is inescapable that carnivorous farmed fish cannot meet the organic standards to which other organic livestock are held. We endorse the comments submitted by the Center for Food Safety that go into much greater detail on the legal issues posed by several pieces of the proposed standards' language on feed supplements and classification of aquatic animals.

Overall, there are several problems with the proposed standard to allow up to 25 percent of the feed for farmed fish to come from fishmeal and oil made from wild-caught fish.

Contaminants: Fishmeal and oil produced from wild-caught fish are the primary routes of entry for contaminants such as PCBs, dioxin, and methyl mercury into farmed fish. These persistent chemicals can accumulate in the bodies of wild fish and when these fish are converted into meal and oil, the toxins are concentrated in the feed. Studies on cod and salmon show that a large portion of the mercury found in feed accumulates in the edible fillet of farmed fish.^{i,ii} In a Japanese study researchers were able to reduce the dioxin in farmed trout by replacing the fish oil in the feed with palm oil.ⁱⁱⁱ

Section 205.252 (m) of the proposed standard, which requires monitoring of fishmeal and oil for heavy metals and persistent bioaccumulative toxins, is based on the admirable intention of limiting consumer exposure to these dangerous contaminants. Unfortunately, it does not do enough to make up for the flawed logic of allowing the use of these ingredients in fish feed. It remains unclear if removing contaminants from fish oil and meal is even feasible. Simply requiring that regulatory levels be observed is not offering organic consumers any more protection than the standards used for conventional aquaculture feed. This is very troubling and does not meet consumers' expectations.

Environmental Impact: One-third of the global fish catch becomes fishmeal or fish oil, with many industrial fishing fleets taking fish from the ocean faster than the fish can reproduce. From 1988-2003, over-fishing eliminated 99 percent of the South American pilchard, which was commonly turned into fishmeal.^{iv} Additionally, of the top fish species destined for reduction into fishmeal and fish oil, Atlantic herring, Atlantic horse mackerel, blue whiting, capelin, chub mackerel, Japanese anchovy, Peruvian anchovy, and sandeels are all fully exploited or overexploited.^v Aquaculture operations use about half of the world's fishmeal and more than 80 percent of the fish oil.^{vi} In 2003 alone, fish farms consumed about 18 million tons of fish (equivalent to more than 160 billion herring) in the form of fishmeal and oil.^{vii}

Removing wild fish from the ocean to fatten farmed fish reduces food for birds, penguins, whales, other ocean mammals, and larger predatory fish, and disrupts normal ecosystem function – hardly the impact on biodiversity that organic production should be encouraging.

“Sustainable” Fishmeal: Section 205.252 (l), which requires that fishmeal and oil from wild-caught fish come from sustainably-managed fisheries, just like the requirement of monitoring for contaminants, is well-intentioned but does not do enough to make up for the flawed decision of allowing wild-caught fish as feed. The use of fish from the bottom of the wild food chain is not a sustainable practice, no matter where the fish comes from or what fish is used. Simply because meal or oil is made from fish that are not classified as overfished does not make this an environmentally sound practice.

Additionally, the logistical challenge of complying with this provision should not be underestimated. If the production of fishmeal and oil happens at different facilities than where food grade fish are processed, the segregation and tracking required to guarantee that fish oil and meal came from sustainably-managed fisheries would be considerable – and new for this industry.

Labeling Requirement: Section 205.305 (a) (1), which requires the use of a label on certified organic fish fed wild fish at any point in its life, is misguided and does not make up for the flawed decision to allow the use of wild fishmeal and oil. Disclosing the fact that the fish was not fed 100 percent organic feed does not excuse it.

Open Net Pens

Another practice in the proposed standard that we believe is absolutely incompatible with organic production principles is the use of open net pens for growing aquacultured fish. The Organic Aquaculture Symposium held in November 2007 covered this issue extensively, and we urge you to revisit the information presented by the Pure Salmon Campaign and others who outlined the risks to wild fish and the environment posed by escapes and other impacts of open net pens.

Environmental Impact: Open net pen aquaculture releases effluent directly into the ocean. The waste, which includes uneaten feed and feces that contain nitrate, nitrite, ammonia, phosphorous, bacteria, and heavy metals such as mercury, copper, zinc, cadmium, and arsenic, settles in the sediment below the cages. The effects of these nutrient and chemical pollutants have been well documented, and increase with the size and concentration of the aquaculture operation.^{viii}

A Canadian study of a trout cage aquaculture facility found that fingernail clams experienced 100 percent mortality when exposed to the sediment directly below the cage.^{ix} The scientists determined that the mortality could have been due to the increased copper, zinc, and ammonia concentrations in the sediment. Additionally, the clams sank completely into the sediment from under the cage, which likely inhibited their feeding and respiration.

The negative effects of net pen or cage culture are not limited to shallow areas with low rates of water exchange. In open ocean systems with heavy currents, the effluents can travel in the water

column a significant distance from the cage. In fact, a review of existing studies on the environmental effects of offshore aquaculture found that the most significant effects in the water column 100-300 meters from the cage.^x

The proposed standard contains provisions that attempt to put more stringent requirements on the use of open net pens for organic operations. But unfortunately, these provisions amount to little more than a reliance on dilution to take care of pollution problems caused by open net pens. These environmental impacts are unacceptable for organic production. They also are unnecessary because aquaculture wastes can be managed appropriately in closed systems. Closed systems should be the only type of aquaculture even considered under the organic standards.

Natural Behavior: The natural behavior of piscivorous fish was cited in the proposed standard as a reason for allowing wild-caught fish oil and meal into the diet of farm-raised fish that are certified organic. Yet, when it comes to where these fish are raised, the standard of natural behavior is somehow missing. Large carnivorous fish will not be able to express their natural behaviors when confined in open net pens. Therefore, farms raising these fish should not be considered for organic certification.

Escapes and Disease: In addition to the impact of the waste that flows out of these facilities, another serious problem comes when diseases and parasites, and/or the fish themselves escape the confines of the net pens. Escaped fish can intermix with or displace wild populations, altering the integrity of the ecosystem. The spread of disease from salmon farms in Norway and the Pacific Northwest was explained at the Organic Aquaculture Symposium in 2007 and we urge you to revisit this impact that open net pens have on surrounding wild fish populations. Additionally, we point you to a new statistic from the “organic” salmon industry in Scotland. According to figures published recently by the Scottish government, in 2008 the total number of Atlantic salmon escapees is 44,657, and an estimated 70 percent of these escapees are from organic fish farms.^{xi}

Consumer Expectations

Consumers have very high expectations about the organic standards in general and the potential standard for farm-raised fish is no exception. The proposed standards being considered by the Board fail to meet organic consumers’ expectations on several fronts.

When they see the organic seal, consumers expect that the food inside the package was raised with methods that minimize environmental impact and promote biodiversity. Yet the proposed standard allows practices that threaten wild fish populations with pollution and disease and encourages the use of forage fish at the bottom of the feed chain for wild fish, marine mammals and birds. Consumers expect organic food to be raised in ways that limit harmful contaminants. Yet the proposed standard allows the use of a significant amount of wild-caught fishmeal and oil, a known route for introducing persistent bioaccumulative toxins into farmed fish. Consumers expect organic products to come from animals that were able to express natural behaviors. Yet the proposed standard allows the use of open net pens to confine large carnivorous fish in a small area. And finally, consumers expect organically raised animals to eat a 100 percent organic diet,

with any additions of non-organic substances to be limited to small amounts of specific nutrients or minerals. Yet the proposed standards allow a quarter of the diet of farmed fish to come from wild fish, far exceeding an average consumers' understanding of the role of a "supplement" should play in an organically-raised animal's diet.

This recommendation is about more than farmed fish. Consumer trust in the integrity of the organic label is at stake. It is not worth risking the trust that the organic community has built with consumers to create a market for an industry that is not able to meet the same standards set for the rest of organic. If the standards for aquaculture include practices that undermine organic principles, consumers will start to question the label as a whole.

We urge the Board members to reject this proposed standard and to limit future recommendations for aquaculture to segments of the industry that can live up to organic principles, namely herbivorous species in closed systems. The use of wild fish as feed and open net pens are incompatible with organic principles and we urge the Board to put this issue to rest by clearly stating that these methods will not be allowed in organic production.

Thank you for the opportunity to comment.

Respectfully submitted,

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Assistant Director
Food & Water Watch

ⁱ Amlund, Heidi, et al. "Accumulation and elimination of methylmercury in Atlantic cod (*Gadus morhua* L.) following dietary exposure." *Aquatic Toxicology*, 83: 323-330, 2007.

ⁱⁱ Chou, Chiu. "A time series of mercury accumulation and improvement of dietary feed in net caged Atlantic salmon (*Salmo salar*)." *Marine Pollution Bulletin*, 54: 720-725, 2007.

ⁱⁱⁱ Aung Naing, et al. "Effect of replacements of fishmeal and fish oil on growth and dioxin contents of rainbow trout." *Fisheries Science*, 73: 750-59, 2007.

^{iv} Ryan, John C. "The wonders of aqua-Alchemy." *World Watch*, September/October 2003.

^v Tacon, Albert. "State of Information of Salmon Aquaculture Feed and the Environment." Report prepared for the Salmon Aquaculture Dialogue.

^{vi} Tacon, Albert et al. "Use of Fishery Resources as Feed Inputs to Aquaculture Development: Trends and Policy Implications." FAO Fisheries Circular No. 1018, Food and Agriculture Organization of the United Nations, Rome, 2006.

^{vii} Ibid. Author estimated that 1 herring = 100g.

^{viii} Brambilla, et al. "A Meramod® model approach from the environmental impact assessment (EIA) of the offshore aquaculture improvement in the Algero Bay (Northwestern Sardinia, Italy)." *Ital. J. Anim. Sci.*, 6(Suppl. 1): 791-793, 2007.

^{ix} Kullman, Marilynn, et al. "A sediment bioassay to assess the effects of aquaculture waste on growth, reproduction, and survival of *Sphaerium simile* (Say) (Bivalvia: Sphaeriidae)." *Aquaculture*, 266: 144-152, 2007.

^x Sará, Gianluca. “Ecological effects of aquaculture on living and non-living suspended fractions of the water column: a meta-analysis.” *Water Research*, 41: 3187-3200, 2007.

^{xi} “Farmed Fish Escapes 2008 (up to 21 September)” <http://www.scotland.gov.uk/Topics/Fisheries/Fish-Shellfish/18692/2008>