



National Organic Standards Board (NOSB) Meeting  
April 10, 2013  
Portland Oregon

Testimony of George A. Kimbrell

Good morning. My name is George Kimbrell and I'm senior attorney for the nonprofit Center for Food Safety. As you know, CFS is a public interest, sustainable agriculture organization with 300,000 members across the country that, among other things, works to protect the integrity of the organic standard.

In my few minutes I'm going to provide an alternative perspective on a longstanding, important NOSB issue discussed earlier this morning: organic aquaculture standards. CFS has previously provided detailed written comments and oral testimony on this topic since NOSB's discussions on it began, from 2004-2008 and thereafter; I incorporate in the record all our prior work here.<sup>1</sup>

NOSB developed the current 2007-2008 aquaculture recommendations in a highly acrimonious and controversial process, recommendations that would be illegal if enacted into regulations. I will focus my remarks today on two of the most important issues: 1) the open water net pen aquaculture and 2) the use of fish meal and fish oil from wild forage fish.

Now, the 2006-2007 recommendation of the NOSB Livestock Committee was to prohibit both of these practices from any future organic aquaculture. There was good reasons for doing so, because both practices are inherently unsustainable and hence un-organic, as I will discuss, and that draft was well-supported by the consumer and environmental community. Unfortunately, the final recommendations in 2007-2008 did a 180-degree reversal on these critical issues, recommending that they be allowed in the any future organic aquaculture standard.

This decision was then, and remains to this day, a misguided and unlawful one, which rightfully outraged the organic community. A 2007 sign-on letter of nearly 50 leading consumer, environmental, health, and fishing organizations expressed that strong dissent,<sup>2</sup> as did the first-ever—and to my knowledge only—NOSB meeting protest, in 2008, in which dozens of people paraded thru the meeting with fish-head hats, disrupting the proceedings.<sup>3</sup> With good reason. This Board must be made aware of this past history, if it is not. The past NOSB decision to recommend net pen aquaculture and wild feed is contrary to OFPA, sound science and policy, good governance, organic principles, and consumer expectations of what organic means. Nothing has changed in the time since its adoption, accept the decision has been allowed to fester. It is overdue time to rethink it.

Congress, USDA, NOSB, organic farmers and consumers, and environmental advocates all recognize that creating ecological balance and conserving biodiversity are guiding principles of organic systems. And some aquaculture practices—namely the production of herbivorous fish in

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closed systems—can be compatible with OFPA. USDA should move forward with organic standards for farming these fish only.

However the farming of carnivorous finfish in open net pen systems inherently contradicts organic standards. Not all agricultural practices can be certified as organic. Some, like factory farm CAFOs, are simply incompatible. The same is true with aquaculture: not every form or method of fish farming can be made to be organic.

First, open ocean net pen industrial aquaculture, such as farming of salmon, is an ecologically harmful, unsustainable activity. Period. It results in a plethora of environmental consequences: the escape of farmed fish from their containment, threatening native wild fish populations; the spread of deadly diseases and parasites; the overfishing of wild fish to feed carnivorous farmed fish; and the pollution of our oceans from the inputs and outputs of fish farming.

It is well-accepted in the industry and scientific community that escapes of farmed fish are impossible to avoid due to weather, human error, and marine mammal or bird activity, etc. I've brought a chart as an exhibit to introduce into the record, in which CFS has documented reported annual escapes. In 2011, there were escapes of over 400,000 farmed salmon in Scotland, for example.<sup>4</sup> As such, the recommendation's "goal" of zero escapes is meaningless in net pen, open ocean aquaculture.

The environmental impacts of escapes are similarly well-documented: interbreeding and excessive competition for food and habitat with wild stocks,<sup>5</sup> profound loss of biodiversity and fitness,<sup>6</sup> as well as the spread of diseases and parasites such as sea lice. OFPA requires that organic production "promote ecological balance and conserve biodiversity," not harm it.<sup>7</sup>

Net pens are also the source of massive untreated waste discharges, including dissolved organic matter, feces, excess feed, and other contaminants.<sup>8</sup> For example, a 2000 study found that Scotland's 350 marine salmon farms that year produced more sewage waste (measured in terms of nitrogen and phosphorous) than the country's human population.<sup>9</sup>

Net pens are also a densely-packed breeding ground for diseases, which can be transferred to wild fish; outbreaks are difficult to impossible to quarantine. Disease and parasite outbreaks in farmed fish populations have become commonplace in industrial aquaculture, with subsequent harm to wild fish.<sup>10</sup> The aquaculture industry's response to disease and parasites in farmed fish is to dump chemicals into our waters: Farmed fish often receive large doses of antibiotics, pesticides, and fungicides in order to protect them from diseases, parasites, and body fungi.<sup>11</sup> The majority of these chemicals are applied directly into the water, yet little is known about how their release may affect marine ecosystems and other aquatic organisms. Several studies have concluded that reliance on antibiotic applications in fish farming has fostered the development of bacterial antibiotic resistance in our waters.<sup>12</sup>

Now the "organic" net pen recommendation would limit the normal net pen use of harmful chemical cocktails to control disease and parasite outbreaks so common in carnivorous finfish farming. Yet by limiting such chemicals, the organic standard would thus dramatically

increase the likelihood the open net pen farm will act as a reservoir and vector for parasites and diseases, harming both the farmed fish and wild fish. As such, this forced trade-off of negative impacts underscores the activity's unsustainable, un-organic nature.

Organic systems must also promote the health and natural behaviors of livestock;<sup>13</sup> net pen aquaculture is flatly contrary to the natural behavior of many fish, such as salmon, that are migratory. Expectedly, studies show that penned farmed fish have decreased fitness and reproductive success.<sup>14</sup> It is plain that penning up salmon or other anadromous fish in crowded nets does not allow for their natural behavior. Researchers still do not fully understand how salmon, after spending their adult lives traversing thousands of ocean miles, find their way home to their birth streams to complete their life cycle. A healthy salmon run is one of Nature's most awe-inspiring visions. Growing them in crowded net pens is the antithesis of their "natural behavior."

Instead of simply prohibiting the use of ecologically harmful farming methods, we are left with recommended standards that place the organic imprimatur on conventional methods, on an inherently flawed farming practice. The recommendations do include a few attempts to improve things, but they amount to putting lipstick on a pig, using mushy and vague, unenforceable language (such as take all "practicable" measures to minimize escapes). Yet there is no standard for measuring net pen pollution, nor any practicable way to undertake net pen pollution enforcement. The result is that open water net pen aquaculture will be permitted with virtually no mandatory, meaningful, or workable constraints on it. Extensive research on the impacts of net pens on marine ecology has found no solution to their adverse impacts short of using closed, recirculating systems. Putting an organic label on this activity does not change this core fact; it just misleads the public and contravenes the standard.

Salmon and other carnivorous aquaculture also require massive amounts of wild forage fish meal and oil as their main feed. The need for it is driving over-fishing of these fisheries. It currently can take two to six pounds of wild-caught fish to produce one pound of farmed fish; aquaculture is predicted to outstrip the world's fishmeal supply by 2050.<sup>15</sup> As such, aquaculture is not alleviating any pressure on the world's fish stocks; it is only robbing Peter to pay Paul, by eviscerating forage fish stocks. Forage fish play a significant role in our ocean's ecosystems, as, among other things, the base of the food web.<sup>16</sup> Allowing organic systems to support the extirpation of wild forage fish is the antithesis of promoting ecological diversity and conserving biodiversity, as the OFPA standard requires.<sup>17</sup>

Farmed fish also have documented higher amounts of environmental contaminants than wild fish because their feed contains mercury, lead, and persistent bioaccumulative toxins.<sup>18</sup> The recommendation acknowledges the human health risks, but would only require them be removed if found to have contaminants in amounts higher than regulatory levels in commercially available fish meal and oil.<sup>19</sup> Thus the proposed "organic" standard would allow the same level of contaminants in fish meal as those permitted by general industrial aquaculture. This provision is a microcosm of the recommendation as a whole: rather than setting a higher bar for organics, and risk losing the ability to label salmon and other predatory fish as "organic," it merely lowers the organic bar to the existing commercial standards.

Finally, the aquaculture recommendation is unlawful and contrary to OFPA because it would permit the use of wild forage fish as feed, despite the fact the statute requires that all livestock have 100% organic feed.<sup>20</sup> This requirement—that organic products be fed 100% organic feed—of course creates a significant legal obstacle to “organic” aquaculture of predatory fish. The farming method is heavily dependent on wild forage fish for the main source of feed for growing large carnivorous fish, and wild is not organic. You simply cannot certify the Pacific Ocean’s forage fisheries.<sup>21</sup> This admission should be enough to show the Board that this type of fish farming simply cannot be made to adhere to organic principles and should be excluded from the aquaculture standard, at least until an organic source of these nutrients can be found and used in a manner in line with the organic standard.

Knowing this, the recommendation acknowledges the 100% organic feed requirement, but instead tries a legal end-run around the standard of 100% feed, by brazenly claiming that the wild forage fish meal and oil will not be “feed” but instead a “feed supplement.”<sup>22</sup> This machination is contrary to law, logic, and science. For predatory fish, smaller forage fish is their main course, the irreducible element of their diet. Only a tortured reading of the definition “fish meal” would suggest that it is a combination of feed nutrients and that use of up to 25% would be a “supplement” to otherwise organic feed. Accordingly, any decision allowing feed to be re-classified as a “supplement” in order to try and certify salmon or other predatory fish farming as organic would be contrary to law.

In conclusion, the USDA organic standard should be neither contrived nor diluted to simply accommodate current industrial aquaculture practices of non-organic, wild fish as feed, or open net pen systems. This Board should do all in its power to rethink that fundamental and grave error, which, if ever made into proposed regulation, would be unlawful, in addition to spawning irreparable damage to the organic brand and to the environment.

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<sup>1</sup> See CFS Comments, NOSB, Comments on Development of Organic Feed Standards for Organic Aquaculture (September 4, 2008); see also CFS Comments, NOSB Livestock Committee, Interim Final Report of Aquaculture Working Group (April 5, 2006); CFS Comments, Invitation for Public Comment on Aquaculture Standards (September 8, 2006); CFS Comments, NOSB Livestock Committee, Recommendation on Aquaculture (March 16, 2007); CFS Comments, NOSB Livestock Committee Recommendation on the Use of Fish; Mean and Fish Oil in Organic Aquaculture (April 4, 2008). All available at <http://www.centerforfoodsafety.org/issues/306/organic-and-beyond>

<sup>2</sup> *Coalition of More Than Forty Groups Sign Letter Urging that ‘USDA Organic’ Standards be Upheld for Aquaculture*, PR NEWSWIRE US, Nov. 1, 2007, <http://www.prnewswire.com/news-releases/coalition-of-more-than-40-groups-sign-letter-urging-that-usda-organic-standards-be-upheld-for-aquaculture-58544517.html>

<sup>3</sup> Georgina Gustin, *Looser Rules on Fish’s Food Prompt Protests*, ST. LOUIS POSTDISPATCH, Nov. 20, 2008, at A4.

<sup>4</sup> Scottish Government, *Fish Escapes 2011*, <http://www.scotland.gov.uk/Resource/0038/00389735.pdf>

<sup>5</sup> Kjetil Hindar *et al.*, *Genetic and Ecological Effects of Salmon Farming on Wild Salmon: Modeling from Experimental Results*, 63 J. of Marine Sci., No.7, 2006, at 1234-47; Naylor *et al.*, *Fugitive Salmon: Assessing the Risks of Escaped Fish from Net-Pen Aquaculture*, 55 BioScience, No. 5, May 2005, at 427-3;

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<sup>6</sup> This occurs because farmed fish selected for aquaculture are bred to thrive in controlled, rather than wild, environments. See McGinnity *et al.*, *Fitness Reduction and Potential Extinction of Wild Populations of Atlantic Salmon *Salmo salar* as a Result of Interactions with Escaped Farm Salmon*, 270 Proceedings of Royal Society London of Lond, Series B, 2003, at 2443-2450.

<sup>7</sup> 7 C.F.R. § 205.2 (definition of “organic production”).

<sup>8</sup> See Nat'l Research Council, *Clean Coastal Water: Understanding and Reducing the Effects of Nutrient Pollution* (Nat'l Academy Press 2000); Donald Boesch *et al.*, Pew Oceans Comm'n, *Marine Pollution in the United States 20-39* (2001).

<sup>9</sup> M. MacGarvin, World Wildlife Fund Scotland, *Scotland's Secret? Aquaculture, Nutrient Pollution, Eutrophication and Toxic Algal Blooms* (2000), [www.wwf.org.uk/fileLibrary/pdf/secret.pdf](http://www.wwf.org.uk/fileLibrary/pdf/secret.pdf).

<sup>10</sup> For example, sea lice infestations in salmon aquaculture have wreaked havoc on the wild salmon population. Infectious Salmon Anemia has also plagued the farmed salmon industry. Martin Krkosek *et al.*, *Declining Wild Salmon Populations in Relation to Parasites from Salmon Farm*, 318 Science, No. 5857, Dec. 14, 2007, at 1772-75.

<sup>11</sup> Nat'l Research Council, *Clean Coastal Water: Understanding and Reducing the Effects of Nutrient Pollution* (Nat'l Academy Press 2000).

<sup>12</sup> Ole. E. Heuer *et al.*, *Human Health Consequences of Use of Antimicrobial Agents in Aquaculture*, 49 Clinical Infectious Diseases, no. 8, 2009, at 128-53.

<sup>13</sup> 7 C.F.R. § 205.239(a).

<sup>14</sup> Fleming, A. *et al.* “An experimental study of the reproductive behaviour and success of farmed and wild Atlantic salmon (*Salmo salar*)”. *Journal of Applied Ecology*. 1996. vol. 33: 893-905.

<sup>15</sup> Marine Aquaculture Task Force, Woods Hole Oceanographic Inst., *Sustainable Marine Aquaculture: Fulfilling the Promises, Managing the Risks* 93 (2007); Brian Halweil, *Farming Fish for the Future* 20 (Worldwatch Inst. 2008).

<sup>16</sup> Albert Tacon & Marc Metian, *Fishing for Feed or Fishing for Food: Increasing Global Competition for Small Pelagic Forage Fish*, 38 *Ambio*, No. 6, Sept. 2009, at 294-302.

<sup>17</sup> 7 C.F.R. § 205.2.

<sup>18</sup> Ronald A. Hites *et al.*, *Global Assessment of Organic Contaminants in Farmed Salmon*, 303 *SCIENCE* 226 (2004).

<sup>19</sup> Recommendation Aquaculture Fish Feed – Fish Oil and Fish Meal & Related Issues (November 19, 2008), § 205.252(l).

<sup>20</sup> 7 U.S.C. § 6509(c)(1); *Harvey v. Johanns*, 396 F.3d 28, 43 & n.7 (1st Cir. 2005); 7 C.F.R. § 205.237.

<sup>21</sup> Nor would one want to so certify, since farmed fish fed forage fish generally contain much higher levels of environmental contaminants because the forage fish in polluted waters accumulate these chemicals in their fact; fewer chemicals accumulate in wild salmon because their diet contains less of the contaminated facts.

<sup>22</sup> Recommendation Aquaculture Fish Feed – Fish Oil and Fish Meal & Related Issues (November 19, 2008), § 205.612.