

DON'T TAKE THE BAIT: WHY USDA ORGANIC CERTIFICATION IS WRONG FOR SALMON

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INTRODUCTION

As the global population grows and income levels rise, the demand for meat protein increases.¹ The environmental impacts of land based meat production are well-known² and significant enough that the meat economy “cannot move forward without significant changes in both supply and demand.”³ In what has been called the “blue revolution,” more and more consumers and producers are turning to seafood as an alternative.⁴ Fish are more efficient at converting feed into calories for human consumption and are “more amenable to industrialization.”⁵ In addition, fish is considered a healthier source of meat protein than “fat-laden land animals.”⁶

Unfortunately, natural fisheries are not an inexhaustible resource. Fishing “has wiped out 90% of large fish, including swordfish, cod, marlin, and sharks.”⁷ The annual global catch of fish from natural fisheries has

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¹ See Jonathan Watts, *More Wealth, More Meat. How China's Rise Spells Trouble*, THE GUARDIAN, May 30, 2008, available at <http://www.guardian.co.uk/environment/2008/may/30/food.china1> (noting that meat consumption is rising in developing nations by more than 5% per year) (last visited Feb. 6, 2010).

² See generally Mark Bittman, *Rethinking the Meat-Guzzler*, N.Y. TIMES, Jan. 27, 2008, available at <http://www.nytimes.com/2008/01/27/weekinreview/27bittman.html> (last visited Feb. 6, 2010).

³ PAUL ROBERTS, THE END OF FOOD 310–11 (2008).

⁴ *Id.* at 11. Some of the increase in fish consumption is due to marketing. A number of fish that were previously ignored have been given new names and are now popular sources of food. David A. Fahrenthold, *Tastier Names Trouble for Seafood Stocks*, WASH. POST, July 31, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/07/30/AR2009073002478.html> (last visited Feb. 6, 2010). For example, orange roughy is now widely overfished; it suffered no such threat when it was still known as a “slimehead.” *Id.*

⁵ ROBERTS, *supra* note 3, at 311.

⁶ *Kona Blue Urges NOSB to Set Organic Standards for Finfish*, BUSINESS WIRE, Mar. 27, 2007 [hereinafter *Kona Blue*].

⁷ Rebecca Goldberg & Rosamond Naylor, *Future Seascapes, Fishing, and Fish Farming*, FRONTIERS ECOLOGY & ENV'T (Feb., 2005), at 21.

not exceeded ninety million tons in over ten years.⁸ In 2004, the Food and Agriculture Organization of the United Nations (“FAO”) estimated that over half of all global marine fisheries were already “fully exploited.”⁹ This decrease in catch is not expected to improve; only 17% of fisheries are even capable of increased catch¹⁰ and studies conducted during the late 1990s suggest that fish stocks will show declining yields unless fishing practices change.¹¹

According to the Nature Conservancy, “[u]nsustainable levels of fishing are one of the greatest threats to oceans all over the world.”¹² The modern fishing industry has even been called “the most destructive activity on Earth.”¹³ Overfishing not only depletes the population of large fish that are caught for food, but also has a long-term impact on oceanic biodiversity.¹⁴ Moreover, fishing gears and bottom trawls used in the fishing industry cause habitat degradation¹⁵ and overharvest of some ocean species reduces the ocean’s capacity to filter and detoxify contaminants.¹⁶

Farming fish, or “aquaculture,” is an alternative method of producing fish for human consumption that could potentially relieve pressures on wild fish populations.¹⁷ An aquaculture facility uses an open sea net pen, stocks it with juvenile fish, and raises the fish until they are mature enough for harvest.¹⁸ Sea farming “is the fastest growing sector in the

⁸ ROBERTS, *supra* note 3, at 270.

⁹ Jansen Anderman-Hahn, *Net Pens with Adaptive Management: How to Manage the Expansion of Aquaculture Using the Clean Water Act*, 30 VT. L. REV. 1007, 1010 (2006).

¹⁰ B. FREITAS ET AL., TOO FEW FISH: A REGIONAL ASSESSMENT OF THE WORLD’S FISHERIES (2008), available at http://www.oceana.org/fileadmin/oceana/uploads/dirty_fishing/cut_the_bait/toofewfish4.pdf (last visited Feb. 6, 2010).

¹¹ SUZANNE IUDICELLO ET AL., FISH, MARKETS, AND FISHERMEN: THE ECONOMICS OF OVERFISHING 21 (1999). Ultimately, “today’s fully exploited fisheries are likely to be tomorrow’s over-exploited fisheries.” *Id.* at 22.

¹² The Nature Conservancy, *New Study Finds Heavy Human Impacts on World’s Oceans* (Feb. 14, 2008), <http://www.nature.org/initiatives/marine/press/press3364.html> (last visited Feb. 6, 2010).

¹³ CHARLES CLOVER, THE END OF THE LINE: HOW OVERFISHING IS CHANGING THE WORLD AND WHAT WE EAT 5 (2006).

¹⁴ Tony J. Pitcher, *Fisheries Managed to Rebuild Ecosystems? Reconstructing the Past to Salvage the Future*, ECOLOGICAL APPLICATIONS 601, 603 (2001).

¹⁵ *Id.* at 604.

¹⁶ Juliet Eilperin, *World’s Fish Supply Running Out, Researchers Warn*, WASH. POST, Nov. 3, 2006, at A01, A10.

¹⁷ CLOVER, *supra* note 13, at 303. For example, fish farming is “unquestionably the solution to the possible extinction of bluefin tuna in Europe.” *Id.*

¹⁸ Joanna Blythman, *OFM: Why Organic Salmon is Causing a Nasty Smell*, THE GUARDIAN, Oct. 22, 2006, <http://www.guardian.co.uk/environment/2006/oct/22/food.foodanddrink> (last

animal food-industry.¹⁹ In 2002, sales of farmed fish in the United States exceeded \$1 billion.²⁰ More than a third of the total global commercial fish catch now comes from aquaculture production²¹ and farmed salmon constitute more than half of the salmon that is sold in international markets.²²

At the same time, Americans are increasingly worried about their food and “not only about its price but about its safety, its provenance and its healthfulness. There is a gathering sense among the public that the industrial food system is broken.”²³ Over the last decade, organic food sales have increased 15% or more each year.²⁴ The organic label is attractive because the underlying premise of organic production is that people should “tak[e] no unnecessary risks with the natural environment.”²⁵ This philosophy was part of the movement that led to several state organic certification laws passed in the 1970s.²⁶

The organic market for meat has grown the most quickly.²⁷ This comes as no great surprise as both the environmental impact of meat production and food safety concerns, particularly for beef, have both become better known.²⁸ In terms of environmental harms, beef production requires ten times the average fossil fuel required to produce food²⁹ and

visited Feb. 6, 2010).

¹⁹ Anderman-Hahn, *supra* note 9, at 1007. In fact, “fish farming is the fastest growing form of food production in the world.” CLOVER, *supra* note 13, at 299.

²⁰ Anderman-Hahn, *supra* note 9, at 1007.

²¹ ROBERTS, *supra* note 3, at 270.

²² Goldberg & Naylor, *supra* note 7, at 21.

²³ Michael Pollan, *Farmer in Chief*, N.Y. TIMES MAG., Oct. 12, 2008, available at www.nytimes.com/2008/10/12/magazine/12policy-t.html (last visited Feb. 6, 2010).

²⁴ A. Bryan Endres, *An Awkward Adolescence in the Organics Industry: Coming to Terms with Big Organics and Other Legal Challenges for the Industry's Next Ten Years*, 12 DRAKE J. AGRIC. L. 17, 18 (2007).

²⁵ John Bell Clark, *Impact and Analysis of the U.S. Federal Organic Food Production Act of 1990 with Particular Reference to the Great Lakes*, 26 U. TOL. L. REV. 323, 332 (1995).

²⁶ Endres, *supra* note 24, at 19.

²⁷ *Id.* at 26. In 2005, organic meat sales climbed over 55% and have grown over 150%, since 2002. *Id.*

²⁸ Further evidence of the public's increasing concern for food safety is the popularity of the book *Fast Food Nation* which spent over 100 weeks on the *New York Times* Best Seller List. *Paperback Best Sellers*, N.Y. TIMES, Sept. 26, 2004, at 28. An entire chapter of the book is devoted to describing the pathogens commonly found in ground beef. ERIC SCHLOSSER, *What's in the Meat*, in FAST FOOD NATION: THE DARK SIDE OF THE ALL-AMERICAN MEAL 193 (2001).

²⁹ Leo Horrigan, Robert S. Lawrence & Polly Walker, *How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture*, 110 ENVTL. HEALTH PERSP. 445, 446 (2002) (“The average U.S. farm uses 3 kcal of fossil energy

the United States meat industry in 1997 produced “5 tons of animal waste for every U.S. citizen.”³⁰ Recent years have also seen outbreaks of *E. coli*,³¹ *Salmonella*,³² and Bovine Spongiform Encephalopathy, popularly known as “mad cow disease.”³³ Although organic regulations do not necessarily encourage environmentally friendly production or ensure food safety, there is a public perception that it does.³⁴ Similarly, health concerns about the levels of pollutants in fish, especially salmon³⁵ are leading more consumers to desire organic products.³⁶

In 1990, the federal government passed the Organic Food Production Act (“OFPA”) to regulate organic production and organic certification for agricultural products through the United States Department of Agriculture (“USDA”).³⁷ Agricultural products include “any . . . product derived from livestock that is marketed in the United States for human or livestock consumption.”³⁸ Livestock is defined as cattle, sheep, goats,

in producing 1 kcal of food energy [in feedlot beef production, this ratio is 35:1]”).

³⁰ *Id.* at 449.

³¹ DEPARTMENT OF HEALTH AND HUMAN SERVICES, CENTERS FOR DISEASE CONTROL, MULTISTATE OUTBREAK OF *E. COLI* O157 INFECTIONS LINKED TO TOPP'S BRAND GROUND BEEF PATTIES, (Oct. 26, 2007), <http://www.cdc.gov/ecoli/2007/october/100207.html> (last visited Feb. 6, 2010).

³² Department of Health and Human Services, Centers for Disease Control and Prevention, Investigation Outbreak of Infections Caused by *Salmonella* Saintpaul (Aug. 25, 2008), <http://www.cdc.gov/salmonella/saintpaul/> (last visited Feb. 6, 2010).

³³ Department of Health and Human Services, Centers for Disease Control and Prevention, BSE (Bovine Spongiform Encephalopathy, or Mad Cow Disease) (June 16, 2009), <http://www.cdc.gov/ncidod/dvrd/bse/index.htm> (last visited Feb. 6, 2010). In the United Kingdom, the epidemic “peaked in January 1993 at almost 1,000 new cases per week. Through the end of 2007, more than 184,500 cases of BSE had been confirmed in the United Kingdom alone.” *Id.*

³⁴ Attributes, such as “health benefits, elimination of pesticides, [and] a lower impact on the environment,” are “associated with the organic label, create a brand image and justify the increased cost of the good.” Endres, *supra* note 24, at 32.

³⁵ The pollutants that accumulate in salmon have been shown to increase cancer risks, suppress the immune system, reduce memory and learning functions, and cause diabetes. Jeffery A. Foran et al., *Risk-Based Consumption Advice for Farmed Atlantic and Wild Pacific Salmon Contaminated with Dioxins and Dioxin-like Compounds*, 113 ENVTL. HEALTH PERSPS. 552, 552 (2005).

³⁶ “The healthy, clean and environmentally friendly perception that the Organic seal brings to produce, dairy, meats and other categories could be a boon for seafood departments.” Amy Sung, *Upstream Battle*, SUPERMARKET NEWS, Feb. 25, 2008, at 19.

³⁷ Organic Foods Production Act of 1990, 104 Stat. 3935 (codified as amended at 7 U.S.C. §§ 6501–6522 (2008)).

³⁸ 7 U.S.C. § 6502(1) (2008).

pigs, and fish used for food.³⁹ Current regulations for organic certification are essentially prohibitions on certain inputs used to produce agricultural products.⁴⁰

None of the current regulations describe organic production of fish,⁴¹ though a number of controversial regulations have been proposed.⁴² The debate surrounding organic certification for carnivorous fish such as salmon, an increasingly popular food,⁴³ is particularly contentious. The Pure Salmon Campaign argues that current farm practices are so ecologically detrimental that they “[violate] core organic principles.”⁴⁴ At the same time, aquaculturalists argue that wild caught salmon could never be “organic” because there is no way to certify that the salmon were fed organically raised fish.⁴⁵ More importantly, buying wild caught salmon is not necessarily good for the environment; salmon are among those species that are overfished.⁴⁶ Because the debate over salmon is central to the

³⁹ 7 U.S.C. § 6502(11) (2008).

⁴⁰ See, e.g., 7 C.F.R. §§ 205.105, 205.603, 205.604 (2009).

⁴¹ When consumers request organic farmed salmon, Ana Sortun, chef and owner of Oleana, in Cambridge, Massachusetts, tells them “there is no such thing” and that “the term organic has no meaning . . . when applied to fish.” *Pure Salmon Campaign: American Consumers Being Misled by ‘Organic’ Salmon Sold in the U.S.*, PR NEWSWIRE US, Mar. 12, 2007 [hereinafter *American Consumers Being Misled*].

⁴² FORMAL RECOMMENDATION BY THE NATIONAL ORGANIC STANDARDS BOARD (NOSB) TO THE NATIONAL ORGANIC PROGRAM (NOP), AQUACULTURE: FISH FEED—FISH OIL AND FISH MEAL & RELATED ISSUES (Nov. 19, 2008), available at <http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5074508&acct=nosb> (last visited Feb. 6, 2010) [hereinafter NOSB FORMAL RECOMMENDATION, AQUACULTURE: FISH FEED—FISH OIL AND FISH MEAL]; FORMAL RECOMMENDATION BY THE NATIONAL ORGANIC STANDARDS BOARD (NOSB) TO THE NATIONAL ORGANIC PROGRAM (NOP), AQUACULTURE—NET PENS AND RELATED ISSUES (Nov. 19, 2008), available at <http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5074509&acct=nosb> (last visited Feb. 6, 2010) [hereinafter NOSB FORMAL RECOMMENDATION, AQUACULTURE—NET PENS].

⁴³ Salmon consumption in the United States more than doubled between 1989 and 2004. Gunnar Knapp et al., *Overview of U.S. Salmon Consumption in THE GREAT SALMON RUN: COMPETITION BETWEEN WILD AND FARMED SALMON 126* (2007), available at http://www.user.uaa.alaska.edu/Publications/greatsalmonrun/SalmonReport_Ch_8.pdf (last visited Feb. 6, 2010). Salmon are now “the third most popular seafood in the United States.” CLOVER, *supra* note 13, at 301.

⁴⁴ *Groups Praise Committee Recommendation to Exclude Farmed Salmon from Organic Standards; USDA Urged to Permanently Prohibit Open Net-Cage Systems and Carnivorous Fish from Forthcoming U.S. Organic Aquaculture Standards*, PR NEWSWIRE US, Mar. 26, 2007, available at <http://www.prnewswire.com/news-releases/groups-praise-committee-recommendation-to-exclude-farmed-salmon-from-organic-standards-52180162.html> (last visited Feb. 6, 2010) [hereinafter *Groups Praise Committee Recommendation*].

⁴⁵ Sung, *supra* note 36.

⁴⁶ IUDICELLO ET AL., *supra* note 11, at 25.

discussion regarding regulations, regulations for salmon are the focus of this note.

This note begins with a discussion of the purpose of an organic label and organic certification in terms of protecting the environment, consumers, and producers. Part II describes current organic labeling requirements for livestock. Part III argues that the USDA certified organic label is an imperfect method of encouraging environmental sustainability and informing consumers. Part IV describes proposed regulations that would control organically produced fish. Part V argues that the current and proposed regulations for organically produced fish are ineffective and counterproductive. Finally, Part VI suggests alternative certification agencies and possible alternative regulations for fish.

I. WHY THERE IS A NEED FOR AN ORGANIC LABEL

The organic movement began with several intentions. First, the ultimate purpose of organic production is to leave the environment better off.⁴⁷ The theoretical “over-arching tenet” behind organic farming is “its commitment to taking no unnecessary risks with the natural environment.”⁴⁸ Organic producers avoid toxicity risks by using alternative materials and methods of production.⁴⁹ This philosophy is explicitly written into the federal regulations that govern organic certification.⁵⁰ To qualify as organic, the production practices “must maintain or improve the natural resources of the operation, including soil and water quality.”⁵¹

Second, an organic label theoretically protects consumers who are willing to pay a price premium for organically produced food.⁵² When deciding which products to purchase, “[c]onsumers deserve clear assurance that their choice of organic products supports a safer and more sustainable environment.”⁵³ However, some countries, such as Norway, Ireland,

⁴⁷ Matthew Enis, *Organic Salmon Facing Hurdles*, SUPERMARKET NEWS, Apr. 9, 2007, at 39 (quoting Andrea Kavanagh, director of the Pure Salmon Campaign).

⁴⁸ Clark, *supra* note 25, at 332.

⁴⁹ *Id.* at 334.

⁵⁰ 7 C.F.R. § 205.200 (2008).

⁵¹ *Id.*

⁵² Arguably, people who can afford this price premium should pay more for sustainably produced food, not poorer people of the world who are struggling to survive. *See, e.g.*, CLOVER, *supra* note 13, at 300.

⁵³ *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>

and Scotland⁵⁴ certify fish as “organic” and sell it in the United States, even though chemicals have been used to control parasites and diseases.⁵⁵ Without a standard that defines “organic,” it is difficult for consumers in the United States to know what they are actually buying or whether they are willing to pay a price premium.⁵⁶

Third, a regulated organic label protects producers who benefit from charging a price premium for their product.⁵⁷ At the high end, growers can receive up to 250% more for organic products.⁵⁸ It would hardly be fair to allow a producer to charge a premium for food he or she claims is organic, but was not actually organically produced. Although the number of organic producers could increase, the price differential appears to be driven by demand and will likely be preserved even if supply changes.⁵⁹ Like other organic producers, producers of organic fish would also be able to charge a price premium.⁶⁰

II. THE ORGANIC FOODS PRODUCTION ACT AND CURRENT REGULATIONS FOR ORGANIC PRODUCTION OF LIVESTOCK

The Organic Foods Production Act (“OFPA”) was passed in 1990.⁶¹ The OFPA requires the establishment of the National Organic Standards Board (“NOSB”).⁶² The purpose of the NOSB is “to assist in the development of standards for substances to be used in organic production and to advise the Secretary on any other aspects of the implementation of this chapter.”⁶³ Six subcommittees, including one that focuses on livestock issues, work on specific aspects of the organic program.⁶⁴

-standards-be-upheld-for-aquaculture-58544517.html (quoting Urvashi Rangan, PhD, Senior Scientist and Policy Analyst at Consumers Union) (last visited Feb. 6, 2010).

⁵⁴ *American Consumers Being Misled*, *supra* note 41.

⁵⁵ *Groups Praise Committee Recommendation*, *supra* note 44.

⁵⁶ *See id.* (quoting Joseph Mendelson, Legal Director for the Center for Food Safety).

⁵⁷ Gary D. Thompson, *Consumer Demand for Organic Foods: What We Know and What We Need to Know*, 80 AM. J. AGRIC. ECON. 1113, 1115 (1998) (making note of the “large size of many organic price premiums”).

⁵⁸ Timothy A. Park & Luanne Lohr, *Supply and Demand Factors for Organic Produce*, 78 AM. J. AGRIC. ECON. 647, 647 (1996).

⁵⁹ *Id.* at 653.

⁶⁰ *Kona Blue*, *supra* note 6.

⁶¹ Organic Foods Production Act of 1990, 7 U.S.C. §§ 6501–6522 (West 2008).

⁶² Organic Foods Production Act of 1990, 7 U.S.C. § 6518 (West 2008).

⁶³ *Id.*

⁶⁴ Notice of Meeting of the National Organic Standards Board, 73 Fed. Reg. 54,781 (Sept. 23, 2008).

To be labeled or sold as USDA certified organic, agricultural products must be produced and handled in accordance with requirements set forth in the federal regulations that govern the National Organic Program (“NOP”).⁶⁵ Producers who intend to sell organic products are required to “develop an organic production or handling system plan that is agreed to by the producer or handler and an accredited certifying agent.”⁶⁶ The plan describes the producer’s practices and procedures, provides a list of substances that will be used in production, describes monitoring and record-keeping systems that will ensure compliance, and describes “management practices and physical barriers to prevent commingling of organic and nonorganic products.”⁶⁷

To receive or maintain organic certification, agricultural producers must comply with all related regulations;⁶⁸ pay all required fees;⁶⁹ “establish, implement, and update annually an organic production or handling system plan that is submitted to an accredited certifying agent;”⁷⁰ permit inspections and allow certifying agents to have access to all production areas and handling systems;⁷¹ maintain records for a minimum of five years;⁷² and notify the certifying agent of any application or drift of prohibited substances or changes in operations that affect compliance with the regulations.⁷³

The regulations that set the standards for organic agricultural production are essentially lists of permitted and prohibited inputs.⁷⁴ Organic produce must be produced and handled without the use of certain synthetic and nonsynthetic substances.⁷⁵ Processed foods are certified organic if they are produced and handled without the use of nonagricultural substances and nonorganic agricultural substances.⁷⁶ In addition,

⁶⁵ 7 C.F.R. § 205.102 (2009).

⁶⁶ 7 C.F.R. § 205.201 (2009).

⁶⁷ *Id.*

⁶⁸ 7 C.F.R. § 205.400(a) (2009).

⁶⁹ 7 C.F.R. § 205.400(e) (2009).

⁷⁰ 7 C.F.R. § 205.400(b) (2009).

⁷¹ 7 C.F.R. § 205.400(c) (2009).

⁷² 7 C.F.R. § 205.400(d) (2009).

⁷³ 7 C.F.R. § 205.400(f)(1)–(2) (2009).

⁷⁴ Karen Klonsky & Laura Tourte, *Organic Agricultural Production in the United States: Debates and Directions*, 80 AM. J. AGRIC. ECON. 1119, 1119 (1998).

⁷⁵ 7 C.F.R. § 205.105 (a)–(b) (2009). For specific regulations regarding synthetic and nonsynthetic substances, see 7 C.F.R. §§ 205.601–604 (2009).

⁷⁶ 7 C.F.R. § 205.105 (2009). For exceptions to the prohibition against nonagricultural and nonorganic agricultural substances, see 7 C.F.R. §§ 205.605–606 (2009).

the regulations provide standards for handling and processing⁷⁷ and pest management practices.⁷⁸ The certification process includes annual on-site inspections⁷⁹ and annual payment of the certification fee and submissions of information.⁸⁰

III. LIMITATIONS TO ORGANIC REGULATIONS

Unfortunately, current USDA labeling regulations are flawed in several ways. First, the regulations are far removed from the underlying premises of the organic movement.⁸¹ Ideally, an organic label indicates a production philosophy that emphasizes environmental sustainability, good care for the animals, and social awareness.⁸² Before USDA regulations were promulgated, “‘organics’ represented, in large part, a social movement with a commercial consequence.”⁸³

In reality, it would be difficult to mandate an approach to agriculture that truly encompasses the goals of the organic movement because “it is conceptual and open to interpretation.”⁸⁴ The organic labeling requirements are merely lists of acceptable and unacceptable inputs so the primary goals of the organic label are not really met.⁸⁵

Second, although the OFPA purports to assist consumers in choosing products, consumers do not necessarily influence the regulations that are ultimately passed. Meetings for the NOSB are public, but “typical organic food consumers rarely read about the board, its meetings or its interest in their input.”⁸⁶ Consumers may be interested in submitting their comments to the NOSB, but notices are “rarely placed in mainstream

⁷⁷ 7 C.F.R. § 205.270 (2009).

⁷⁸ 7 C.F.R. § 205.271 (2009).

⁷⁹ 7 C.F.R. § 205.403 (2009).

⁸⁰ 7 C.F.R. § 205.406(a) (2009).

⁸¹ The Organic Consumers Association has initiated a “Safeguard Organic Standards” campaign based on the premise that “the U.S. organic community has built a multi-billion dollar alternative to industrial agriculture. Now large corporations, aided and abetted by the USDA and members of Congress, are moving to lower organic standards and seize control.” Organic Consumers Association, SOS: Safeguard Organic Standards, <http://organicconsumers.org/sos.cfm> (last visited Feb. 6, 2010). The campaign implores followers, “For the sake of the earth and our health we must stop them.” *Id.*

⁸² *See* Endres, *supra* note 24, at 32.

⁸³ *Id.* at 21.

⁸⁴ Klonsky & Tourte, *supra* note 74, at 1119.

⁸⁵ *See id.* (noting that these requirements do not further “promot[e] processes devoted to maintaining ecological harmony”).

⁸⁶ Clark, *supra* note 25, at 333.

newspapers, food co-op mailings, environmental group newsletters or food safety/pesticide advocacy notices.”⁸⁷

Third, USDA organic certification connotes food that is safer even though it may not be.⁸⁸ The Organic Consumers Association goes so far as to tell its members “not only is organic safer, healthier and more nutritious, it’s an important part of being able to . . . reduce food-borne illnesses and diet-related diseases.”⁸⁹ But at the first meeting of the NOSB in 1992, then Assistant Secretary of Agriculture Joann Smith said that OFPA should not be considered a “food safety” law.⁹⁰ She “admonished the board to make sure it did not characterize organic food as safer than regular food, since there is no scientific proof to that effect.”⁹¹ Regrettably, instead of setting high standards, the USDA approach seems to be that the “lowest common denominator” establishes the rule for food safety.⁹²

Fourth, as regulations become less restrictive and less strictly enforced, the meaning of the word “organic” could be destroyed. Regulations are becoming more lax and the list of acceptable nonorganic ingredients and pesticides, the very inputs the organic movement hoped to avoid, has been growing.⁹³ Within the organic community, there is some concern that “dilution of current state and private certification agency standards would undermine the integrity of organic production and also pave the way for conventional farmers to enter the organic industry easily.”⁹⁴ In addition,

⁸⁷ *Id.*

⁸⁸ Rick Moonen, chef and co-owner of RM Seafood at Mandalay Bay Resort & Casino in Las Vegas, Nevada noted that “[t]he word ‘organic’ evokes an image, to the general consumer, of something that was produced in a controlled environment without the use of pesticides and free from harmful contaminants.” *American Consumers Being Misled*, *supra* note 41.

⁸⁹ Organic Consumers Association, OCA Testimony to the NOSB on National Organic Standards (Nov. 17, 2008) *available at* http://www.organicconsumers.org/articles/article_15652.cfm.

⁹⁰ Clark, *supra* note 25, at 331.

⁹¹ *Id.*

⁹² *Id.* at 346 (quoting Carol Tucker Foreman, former Assistant Secretary of Agriculture for Food and Consumer Services who wondered “Why not say, ‘In our industry, the standard will be set by the best guy?’”).

⁹³ Scott J. Wilson, *What is “Organic”?*, L.A. TIMES, June 9, 2007, at A1 (noting the USDA’s consideration of the addition of thirty-eight nonorganic substances to the list of approved source materials for organic products). Ronnie Cummins, executive director of the Organic Consumers Association of Finland, Minnesota called the proposed addition to the list “blatant catering to powerful industry players who want the benefits of labeling their products ‘USDA organic’ without doing the work to source organic materials.” *Id.*

⁹⁴ Klonsky & Tourte, *supra* note 74, at 1124.

the USDA does not enforce the regulations itself; it relies on certifying agents.⁹⁵ This has led to concern that the regulations that are in place are not properly enforced.⁹⁶

Finally, the NOSB is responsible for recommending standards to the Secretary of Agriculture, but the NOSB could be “vulnerable to unwise or contrary appointments to the board.”⁹⁷ The members of the NOSB are appointed by the Secretary of Agriculture.⁹⁸ Fifteen individuals comprise the board, and the OFPA requires a certain number of members to come from specific sectors of the agriculture industry.⁹⁹ Four members must “own or operate an organic farming operation,” two members must “own or operate an organic handling operation,” one member must own or operate “a retail establishment with significant trade in organic products,” three must have “expertise in areas of environmental protection and resource conservation,” three must be representatives from consumer interest groups, one must have “expertise in the fields of toxicology, ecology, or biochemistry,” and one must be “a certifying agent.”¹⁰⁰

Although the statute appears to emphasize experience in organic food production, the NOSB is susceptible to infiltration by big business. In fact, one of the current members is the Senior Manager for Commercialization and Improvement for the Campbell Soup Company.¹⁰¹ Having representatives of big business on the NOSB is potentially dangerous because it could lead to further relaxation of organic standards. Five years after the OFPA was passed, “[c]ompanies that were looking to new organic rules as their ‘jumping in’ opportunity doggedly attended every board

⁹⁵ Wilson, *supra* note 93, at A1.

⁹⁶ Organic Consumers Association, SOS: Safeguard Organic Standards, *supra* note 81. The Organic Consumers Association argues “we need to stop unscrupulous certifiers and USDA bureaucrats from saturating the organic market with fraud.” *Id.*

⁹⁷ Clark, *supra* note 25, at 329.

⁹⁸ 7 U.S.C. § 6518(c) (2009). When there are vacancies on the NOSB, the Agricultural Marketing Service publishes a notice in the Federal Register to request nominations. *See, e.g.*, Nominations for Members of the National Organic Standards Board, 74 Fed. Reg. 10,878 (Mar. 13, 2009). In appointing members, the Secretary considers “demonstrated experience and interest in organic production, handling and retailing; diverse commodity and geographic representation; support of consumer and public interest organizations; demonstrated experience with environmental matters; and such other factors as may be appropriate.” *Id.* at 10,879.

⁹⁹ 7 U.S.C. § 6518(b) (2009).

¹⁰⁰ *Id.*

¹⁰¹ USDA Agricultural Marketing Service, NOSB Members: Steve DeMuri, <http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateN&topNav=NationalOrganicProgram&leftNav=NationalOrganicProgram&page=NOSBMembersDeMuri> (last visited Feb. 6, 2010).

meeting, hoping the standards and allowed materials would give them the chance to use synthetic substances in processed foods and still label them 'organic.'"¹⁰²

Moreover, if production requires an input that is not commercially available in organic form, the producer is permitted to use the nonorganic input while still bearing the organic label if the input is included on the National List.¹⁰³ This loophole means that "large companies have a better chance of winning approval to use nonorganic ingredients because the amount they demand can exceed the small supply of organic equivalents."¹⁰⁴ The regulation was amended in 2007 to include an additional 38 inputs.¹⁰⁵

The organic label is an imperfect method of reaching the goals of the organic movement. The regulations are based only on inputs and do not indicate food safety and thus represent a departure from the movement's philosophy. In addition, the regulations are made with little consumer input, are becoming more lax, and are written by a board that is susceptible to corporate influence.

IV. PROPOSED REGULATIONS FOR AQUACULTURE

At the November 17, 2008 meeting of the NOSB, the Livestock Committee presented recommendations "on the use of fish feed and open net pens in regards to the development of organic aquaculture standards for finfish."¹⁰⁶ The proposed feed regulations require producers to feed aquatic animals food that is consistent with their developmental needs, including feed that contains lipids from fish oil or other omega-3 fatty acids.¹⁰⁷ More importantly, the regulation requires aquaculture feeds to be composed of ingredients that are certified organic,¹⁰⁸ except that non-organic feeds are permitted in decreasing amounts during the first twelve years after the regulation is passed.¹⁰⁹ The regulations also

¹⁰² Clark, *supra* note 25, at 333.

¹⁰³ 7 C.F.R. § 205.606 (2009).

¹⁰⁴ Wilson, *supra* note 93, at A1.

¹⁰⁵ National Organic Program (NOP)—Amendments to the National List of Allowed and Prohibited Substances (Processing), 72 Fed. Reg. 35,137 (June 27, 2007) (enacting an interim final rule).

¹⁰⁶ Notice of Meeting of the National Organic Standards Board, 73 Fed. Reg. 54,782 (Sept. 23, 2008) (providing meeting date and agenda).

¹⁰⁷ NOSB FORMAL RECOMMENDATION, AQUACULTURE: FISH FEED—FISH OIL AND FISH MEAL, *supra* note 42, at § 205.252(c)–(d).

¹⁰⁸ *Id.* at proposed § 205.252(e).

¹⁰⁹ *Id.* at proposed § 205.612(a). Non-organic feed is permitted in the following amounts: 25% during the first five years, 15% during years six through eight, 10% during years nine

include provisions designed to protect populations of smaller fish that are used for feed.¹¹⁰

The net pen regulations include a section requiring an organic production and handling plan¹¹¹ and sections describing healthcare,¹¹² living conditions,¹¹³ and facilities¹¹⁴ for aquatic livestock. The net pens must be located in areas that minimize their impact to the surrounding environment and animal and plant life.¹¹⁵ Though vague, the regulations also address environmental concerns by requiring aquaculturalists to have a waste management plan to minimize adverse impacts.¹¹⁶ Without going into specific detail, the regulations have a few provisions that relate more directly to the care of the animals; organic certification requires aquaculturalists to establish measures to reduce the transmission of diseases¹¹⁷ and to limit the population of fish in the pen to one that “allows the animals to exercise swimming behavior” and “promotes natural behaviors.”¹¹⁸

In November 2008, the NOSB accepted the proposed regulations and recommended them to the NOP for rulemaking action.¹¹⁹ At the time of this writing, USDA has not published an Advanced Notice of Proposed Rule Making in the Federal Register.¹²⁰ As late as December 2008, a USDA

and ten, and 5% during years eleven and twelve. *Id.*

¹¹⁰ Fish meal and oil may not be acquired from any fishery that is in danger of depletion. *Id.* If non-organic fish meal or oil is used, the final product must indicate on the label that it is “[f]ed environmentally responsible wild fish.” *Id.* at § 205.303(b)(1)(i).

¹¹¹ NOSB FORMAL RECOMMENDATION, AQUACULTURE—NET PENS, *supra* note 42, § 205.201.

¹¹² *Id.* at § 205.253.

¹¹³ *Id.* at § 205.254.

¹¹⁴ *Id.* at § 205.255.

¹¹⁵ *Id.* at § 205.201(a)(7)(v) (requiring that the organic production and handling system plan describe steps to be taken to minimize the impact on aquatic ecosystems and wildlife); *id.* § 205.201(a)(7)(xi) (requiring similar requirements for net pens); *id.* at § 205.255(k)(1) (requiring that net pens not interfere with migratory routes, reproductive patterns, or habits of wildlife).

¹¹⁶ NOSB FORMAL RECOMMENDATION, AQUACULTURE—NET PENS, *supra* note 42, at § 205.201(a)(7)(viii) (requiring waste management plan); *id.* at § 205.255(g)(1) (regulating nutrient recycling and discharge levels).

¹¹⁷ *Id.* at § 205.253(a)(3).

¹¹⁸ *Id.* at § 205.254(a)(2).

¹¹⁹ NOSB FORMAL RECOMMENDATION, AQUACULTURE: FISH FEED—FISH OIL AND FISH MEAL, *supra* note 42; NOSB FORMAL RECOMMENDATION, AQUACULTURE—NET PENS, *supra* note 42.

¹²⁰ See the “Today’s News” at the NOP’s website (providing a list of recent NOP actions), USDA Agricultural Marketing Service, National Organic Program, *available at* <http://www.ams.usda.gov> (last visited Feb. 6, 2010) (click on “National Organic Program” hyperlink).

official was unable to say when a final rule would be issued.¹²¹ Thus, it is not clear when, or even if, the proposed regulations will ever go into effect.

V. LIMITATIONS TO REGULATIONS PERTAINING SPECIFICALLY TO FISH

Because the regulations are lists of acceptable and unacceptable inputs, the organic label is not appropriate for wild-caught fish, including salmon. Salmon are migratory and carnivorous.¹²² There is no way to determine what fish a wild-caught fish has eaten during its lifetime and “[f]ish labeled as ‘organic’ that are not fed 100 percent organic feed . . . fall significantly short of consumer expectations and undermine the integrity of the organic label.”¹²³ As George Kimbrell, an attorney for the Center for Food Safety quipped, “It would be really hard to certify the Pacific Ocean.”¹²⁴ Thus, the NOSB determined in 2001 that “organic certification is not appropriate for wild aquatic animals.”¹²⁵

The proposed regulations are also inappropriate for farmed fish. Interested parties from a variety of sectors have spoken out against the proposed regulations.¹²⁶ Even the Pure Salmon Campaign, an organization

¹²¹ Georgina Gustin, *Consumers May Find New Rules a Sticky Issue*, ST. LOUIS POST-DISPATCH, Dec. 15, 2008, at A1.

¹²² Ronald A. Hites et al., *Global Assessment of Organic Contaminants in Farmed Salmon*, 303 SCIENCE 226, 226 (2004), available at http://www.albany.edu/ihe/salmonstudy/salmon_study.pdf (last visited Feb. 6, 2010).

¹²³ *Coalition of More Than Forty Groups Sign Letter Urging that ‘USDA Organic’ Standards be Upheld for Aquaculture*, PR NEWSWIRE US, Nov. 1, 2007 (quoting Urvashi Rangan, Ph.D., Senior Scientist and Policy Analyst at Consumers Union).

¹²⁴ Georgina Gustin, *Looser Rules on Fish’s Food Prompt Protests*, ST. LOUIS POST-DISPATCH, Nov. 20, 2008, at A4.

¹²⁵ Sung, *supra* note 36, at 19.

¹²⁶ Many concerned citizens responded to the NOSB’s request for comments. *See, e.g.*, Letter from Jennifer Barricklow to Valerie Frances, Executive Director, National Organic Standards Board (Nov. 6, 2008), available at <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5074253&acct=nosb> (last visited Feb. 6, 2010) (“As a consumer who puts value and faith in the organic label, I expect fish labeled as organic to meet the same high standards as all other organic products and livestock. Anything less is a disservice to the organic label and American consumers.”); Letter from George A. Kimbrell, Staff Attorney, The Center for Food Safety to Valerie Frances, Executive Director, National Organic Standards Board (Nov. 6, 2008), available at <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5074971&acct=nosb> (last visited Feb. 6, 2010) (“Unfortunately, the latest round of the development of Organic Aquaculture standards . . . does not comply with the high organic standard. CFS has serious issues with both proposals, as they will fatally undercut any future organic aquaculture standard and are inconsistent with organic principles.”); Letter from George H. Leonard, Ph.D., Director, Aquaculture Program, Ocean Conservancy to Valerie Frances, Executive Director, National Organic Standards Board (Nov. 6, 2008), at 2, available at <http://www.ams.usda.gov/AMSV1.0/>

dedicated to improving standards for farm raised fish,¹²⁷ has vocally opposed the proposed regulations.¹²⁸ Both the regulations regarding feed and the regulations regarding net pens have important weaknesses.

The feed regulations pose several problems. First, the regulations do not adequately address the impact that fishing for feed for aquaculture has on wild populations of fish.¹²⁹ About 40% of wild-caught fish are processed into fish meal and fish oil.¹³⁰ Because “about two to five times more wild-caught fish are used in feeds than are harvested from aquaculture,” using small fish to feed large fish through aquaculture causes a net loss in protein.¹³¹ Global wild fish populations are already diminishing, and “species that use more wild fish for feed than are produced by aquaculture increase the pressure” on those populations.¹³²

The proposed regulations initially made an attempt to address this concern. One section of considered language, which did not make it into the final NOP proposal, required that to be certified “organic,” fish must be fed such that “[t]he amount of wild fish that goes into feeding the aquatic animals cannot exceed one pound of wild fish product fed for every pound of live weight of cultured aquatic animals at harvest.”¹³³ It is not clear that the regulation would have truly eliminated the problem of net protein loss.

getfile?dDocName=STELPRDC5074197&acct=nosb (last visited Feb. 6, 2010) (“We believe the most prudent approach is to reject the proposed standards and return to recommendations made by the Aquaculture Working Group and others to exclude wild-caught fish and net pen systems at this time.”).

¹²⁷ The Pure Salmon Campaign believes that “salmon can be farmed safely and with minimal ecological damage, if the industry adopts standards that protect the environment, consumers and local communities. The campaign seeks to transform the salmon farming industry, not merely for it to adopt marginally better ‘best practices.’” Pure Salmon Campaign, About Us, <http://www.puresalmon.org/about.html> (last visited Feb. 6, 2010).

¹²⁸ The “latest” headline for November 18, 2008 at the Pure Salmon Campaign’s website read, “Proposed ‘Organic’ Standards for Fish Fail to Meet Consumer Expectations [sic].” Pure Salmon Campaign, <http://www.puresalmon.org/organic.html> (last visited Feb. 6, 2010).

¹²⁹ Though the regulations do not mention alternatives to fish-based feed, it would be possible to replace some fish-based feed products with plant-based feed. Goldberg & Naylor, *supra* note 7, at 23.

¹³⁰ IUDICELLO ET AL., *supra* note 11, at 14.

¹³¹ Goldberg & Naylor, *supra* note 7, at 23–24.

¹³² Stephen Clapp, *NOSB Votes to Exclude Some Farmed Fish from Organic Standards*, FOOD CHEMICAL NEWS, Apr. 2, 2007, at 19. More specifically, fishing for salmon feed puts pressure on sardine and herring populations. Enis, *supra* note 47, at 39.

¹³³ NATIONAL ORGANIC STANDARDS BOARD (NOSB), PROPOSED ORGANIC AQUACULTURE STANDARDS: FISH FEED AND RELATED MANAGEMENT ISSUES, § 205.252(f) (Sept. 28, 2008), available at <http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5072721> [hereinafter NOSB PROPOSED STANDARDS] (last visited Feb. 6, 2010).

The regulation requires each pound of “wild fish *product*,” not “wild fish,” for each pound of animal harvested.¹³⁴ The regulation did not appear to consider the possibility of waste, nor did it regulate how many pounds of feeder fish caught could be used to produce a pound of “wild fish product.”¹³⁵

Moreover, the proposed regulation does not necessarily reduce the downward pressure on diminishing wild fish populations. Farm raised salmon “are fed large volumes of fish meal before reaching maturity, and those feeder fish have to come from somewhere.”¹³⁶ The proposed regulations do stipulate that fish meal and oil may not be sourced from fisheries that have been classified as “over-exploited” or “overfished,”¹³⁷ but it does not reduce pressure on fish populations overall. It does not prohibit fish meal producers from moving from one fishery to another. If the purpose of aquaculture is to provide a sustainable supply of fish without depleting wild stocks, then a regulation that encourages consumption of farm-raised fish is counterproductive.¹³⁸

Additionally, whether an organic label should ever be used for animals raised in net pens is controversial. Net pens are moored to the ocean floor and are made of a square or circular frame with an inner containment net and outer predator net.¹³⁹ On its face, the regulation is self-contradictory. The proposed regulation requires aquaculture systems to “establish and maintain living conditions as documented in the Organic System Plan that accommodates the health and natural behavior of the aquatic animals.”¹⁴⁰ This is consistent with the regulations for care of livestock which require producers to “establish and maintain livestock living conditions which accommodate the health and natural behavior of animals.”¹⁴¹ The use of net pens directly contradicts this requirement. Net pen

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ Enis, *supra* note 47, at 39.

¹³⁷ NOSB FORMAL RECOMMENDATION, AQUACULTURE: FISH FEED—FISH OIL AND FISH MEAL, *supra* note 42, at § 205.252(l).

¹³⁸ The Ocean Conservancy recommended listing wild fish ingredients in the regulations as “a last, not first, resort.” Ocean Conservancy Letter, *supra* note 126, at 4. Dr. Leonard recommended a three-tiered approach: “byproducts from other organic fish production,” “byproducts from environmentally responsible food grade fisheries,” and then “environmentally-responsible forage fish fisheries.” *Id.*

¹³⁹ U.S. Pub. Interest Research Group v. Atl. Salmon of Me., 257 F. Supp. 2d 407, 410 (D. Me. 2003).

¹⁴⁰ NOSB FORMAL RECOMMENDATION, AQUACULTURE—NET PENS, *supra* note 42, at § 205.254(a).

¹⁴¹ 7 C.F.R. § 205.239(a) (2009).

aquaculture “tak[es] a free-ranging creature genetically programmed to swim the oceans and stick[s] it in a cage.”¹⁴²

Perhaps more importantly, environmentalists “believe that the negative environmental impacts of open net pen aquaculture are inherently incompatible with the goal of organic production to minimize environmental impact.”¹⁴³ Net pens are environmentally problematic for two reasons. First, millions of fish escape the net pens into the ocean.¹⁴⁴ Some escapes have occurred near marine protected areas “where wild salmon and other species are theoretically protected by national and international laws.”¹⁴⁵ Releasing a large number of farmed fish into the open ocean increases competition for food and mates, forcing natural fish to find new habitats.¹⁴⁶ Escaped fish also interfere with the genetics of wild fish populations and “damage the wild fish’s prospects of surviving to reproduce.”¹⁴⁷

Fish kept in overcrowded pens are more likely to be infected with diseases, including sea lice.¹⁴⁸ Thus, escaping fish also “present risks of increasing disease outbreaks, proliferating possible disease transmission routes in the environment and decreasing the immunity of wild fish to disease.”¹⁴⁹ Some disease can spread away from the pen even if the farmed fish do not escape.¹⁵⁰ Worse, some of the diseases from net pens are not treatable.¹⁵¹ Diseases emanating from fish farms “could be the final blow to endangered fish.”¹⁵²

¹⁴² Blythman, *supra* note 18 (quoting Iain Tolhurst, an important figure in the British organic movement).

¹⁴³ Sung, *supra* note 36 (quoting Patty Lovera, assistant director of Food and Water Watch).

¹⁴⁴ The Pure Salmon Campaign obtained data from FOIA requests in Scotland, Norway, Chile, the United States, and Australia that indicated that over 10 million farmed salmon and trout escaped from net pens between 2000 and 2006. Pure Salmon Campaign, *New Data on Escapes from Salmon Farms Reveals Magnitude of Global Problem; Research Shows Current Salmon Farming Practices Run Contrary to Organic Label* (Nov. 27, 2007), http://www.puresalmon.org/pr_11-27-07.html [hereinafter *New Data*] (last visited Feb. 6, 2010).

¹⁴⁵ *Id.*

¹⁴⁶ Anderman-Hahn, *supra* note 9, at 1017.

¹⁴⁷ CLOVER, *supra* note 13, at 312. Domesticated salmon “are fat, listless things that are good at putting on weight, not swimming up fast-moving rivers.” *Id.* Unfortunately, salmon are “particularly prone to reduced fitness as a result of interbreeding with escaped, genetically distinct farmed and hatchery fish.” Goldberg & Naylor, *supra* note 7, at 24.

¹⁴⁸ Anderman-Hahn, *supra* note 9, at 1018.

¹⁴⁹ *New Data*, *supra* note 144.

¹⁵⁰ Anderman-Hahn, *supra* note 9, at 1018 (noting that a recent study found a cloud of sea lice that had infected wild salmon almost nineteen miles away from the farm).

¹⁵¹ *Id.*

¹⁵² *Id.*

Second, net pen aquaculture degrades the environment by releasing waste, feed, and chemicals into the ocean.¹⁵³ For example, “a two-acre salmon farm produces as much organic waste as a town of 10,000 people.”¹⁵⁴ A \$5 billion aquaculture facility would discharge as much nitrogen as the ten million hogs in the total North Carolina hog industry.¹⁵⁵ Unlike waste produced at land based farms, waste from aquaculture facilities is not usually captured.¹⁵⁶ Up to 20% of the feed released into net pens accumulates and can alter the chemical and biological composition of the floor beneath the net pen.¹⁵⁷ This nitrogen-rich waste can cause algal blooms, which can actually kill the salmon and other marine life.¹⁵⁸ Moreover, fish food and its waste is also “laced with sulfa drugs or oxytetracycline,” which can linger in ocean sediments and promote the growth of drug-resistant pathogens.¹⁵⁹

In theory, the proposed regulations would serve as a check on aquaculture facilities and reduce pollution¹⁶⁰ and the risks of disease outbreaks.¹⁶¹ Unfortunately, the regulations have several weaknesses. First, the language is unclear about whether certain chemicals, especially emamectin benzoate, would be permitted as parasiticides.¹⁶² The language regarding contaminants in fish feed is also ambiguous; it requires contaminant levels in fish meal and fish oil to be below regulatory levels, but the FDA has not set levels, so no regulatory requirements exist yet.¹⁶³ Second, as a general matter, open net pen farming systems “[pose] inherent environmental risks that are generally inconsistent with organic production.”¹⁶⁴ The “most prudent approach” would be to exclude net pen systems altogether.¹⁶⁵

¹⁵³ *Id.* at 1012.

¹⁵⁴ Marcia Barinaga, *Fish, Money, and Science in Puget Sound*, 247 *SCIENCE* 631, 631 (1990).

¹⁵⁵ Goldberg & Naylor, *supra* note 7, at 25.

¹⁵⁶ *Id.*

¹⁵⁷ Anderman-Hahn, *supra* note 9, at 1013.

¹⁵⁸ Barinaga, *supra* note 154.

¹⁵⁹ *Id.*

¹⁶⁰ See NOSB FORMAL RECOMMENDATION, AQUACULTURE—NET PENS, *supra* note 42, at §§ 205.201(a)(7)(v), 205.255(g), (k).

¹⁶¹ *Id.* at §§ 205.253(a)(3), 255(a).

¹⁶² Ocean Conservancy Letter, *supra* note 126, at 5.

¹⁶³ *Id.* at 5–6.

¹⁶⁴ *Id.* at 8.

¹⁶⁵ *Id.* at 2. The Ocean Conservancy argues that this approach “would allow a U.S. organic fish industry to develop around low trophic level species such as catfish, tilapia and shellfish, while a reliable source of organic feed is developed and sustainability solutions for net pen aquaculture are explored.” *Id.*

Additionally, organic certification will mislead consumers. Some consumers are willing to pay a price premium for organically produced food because they are concerned about the environmental impacts of production. A recent poll indicated that nine out of ten consumers believe that a farm producing fish labeled “organic” should be required to recover waste and limit pollution.¹⁶⁶ Most consumers do not know how fish are produced and “expect that these animals would come under much stricter environmental controls than those the National Organic Standards Board approved.”¹⁶⁷ Unfortunately, the current regulations are weak enough that they could cause consumers to lose faith in the organic label altogether.¹⁶⁸

Consumer advocacy groups are also concerned that an organic label is misleading in terms of food safety. The regulations accepted by the NOSB in November 2008 explicitly removed the requirement that fish oil used in feed come from organic microorganisms,¹⁶⁹ while the standard for an organic label for other food is that its inputs are 100% organic.¹⁷⁰ Thus, consumers may incorrectly believe that “organic” fish have been fed 100% organic feed.¹⁷¹ Consumers may purchase organic fish without realizing that farmed fish is actually far more likely to contain polychlorinated biphenyls (“PCBs”) and dioxins,¹⁷² the very chemical compounds they hoped to avoid eating.¹⁷³ Much of this difference in contaminant levels is attributable to the fish’s diet.¹⁷⁴ Unlike farmed fish, wild fish do not only eat

¹⁶⁶ ConsumersUnion.org, National Organic Standards Board (NOSB) Decision Today on “Organic” Fish Sets Dangerous Precedent to Gut USDA Organic Program (Nov. 20, 2008), http://www.consumersunion.org/pub/core_food_safety/006363.html (last visited Feb. 6, 2010).

¹⁶⁷ Juliet Eilperin & Jane Black, *USDA Panel Approves First Rules for Labeling Farmed Fish ‘Organic’*, WASH. POST, Nov. 20, 2008, at A21.

¹⁶⁸ *Id.* Patty Lovera, assistant director of Food & Water Watch commented, “A huge part of the growth in organic is driven by people looking for food that comes with assurance. When you start bending the rules, that’s a big risk.” *Id.* Dr. George Leonard, aquaculture director at the Ocean Conservancy added, “There is a very real risk that the decision could undermine consumers’ confidence in the organic label if the goal of sustainable and environmentally friendly fish does not play out in practice.” *Id.*

¹⁶⁹ Compare NOSB FORMAL RECOMMENDATION, AQUACULTURE: FISH FEED—FISH OIL AND FISH MEAL, *supra* note 42, at § 205.252(d), with NOSB PROPOSED STANDARDS, *supra* note 133, at § 205.252(d).

¹⁷⁰ Eilperin & Black, *supra* note 167.

¹⁷¹ “Surveys show that most consumers have little sense of what it would mean to produce organic fish and expect that these animals would come under much stricter environmental controls than those the National Organic Standards Board approved.” Eilperin & Black, *supra* note 167.

¹⁷² Hites et al., *supra* note 122, at 227.

¹⁷³ Foran et al., *supra* note 35, at 552.

¹⁷⁴ Hites et al., *supra* note 122, at 228. Farmed fish are sometimes fed fish that come from

other fish; instead, “their natural diets include a large diversity of organisms.”¹⁷⁵ Under the proposed regulations, consumers will be making food choices based on a label that makes a more dangerous product appear to be safer.

Despite regulators’ best efforts, the current proposed regulations leave much to be desired. They do not apply at all to wild-caught fish. They do not do enough to discourage overfishing or address disease outbreaks and the release of pollutants. The regulations also allow a migratory species to be contained, in direct contradiction to the purposes of the original organic movement. Finally, an organic label for salmon would lead consumers to believe that certified organic fish are better for the environment and safer to eat.

VI. ALTERNATIVES TO ORGANIC CERTIFICATION

Proponents of organic production and consumer organizations should pursue alternative avenues to encourage environmentally friendly fish production. The USDA regulations could be rewritten to address environmentalists’ concerns about fish feed used in aquaculture. For example, the regulations could require a portion of the oil and protein fed to carnivorous fish to come from vegetable sources.¹⁷⁶ A regulation like this could actually help fish farmers; the availability of fish oil is a constraint on the growth of the farmed fish industry.¹⁷⁷ Alternatively, the feed regulations could require salmon to be fed waste from fish that was caught for human consumption.¹⁷⁸

A future alternative may be to certify only robotic cages. Robotic cages are remote control-operated, and unlike current aquaculture facil-

polluted waters, which causes a concentration of contaminants. CLOVER, *supra* note 13, at 299.

¹⁷⁵ Ocean Conservancy Letter, *supra* note 126, at 3.

¹⁷⁶ One Scottish company “believes that it can substitute 75 percent of the fish oils in fish feed with vegetable oils without any ill effects for the salmon.” CLOVER, *supra* note 13, at 311.

¹⁷⁷ Dr. Stuart Barlow, director general of the International Fishmeal and Oil Organization “cautioned that if they didn’t find ways of substituting vegetable oil for fish oil, and to a lesser extent vegetable protein for fish protein, the world would be unable to answer any new demands for fish food.” CLOVER, *supra* note 13, at 302.

¹⁷⁸ Letter from Deborah Brister, Chair, IFOAM Aquaculture Group, to Valerie Frances, Exec. Dir., National Organic Standards Board (Mar. 16, 2007), *available at* http://www.ifoam.org/about_ifoam/professional/pdfs/IFOAMAquacultureGroup_NOSB_Response.pdf (last visited Feb. 6, 2010).

ities, operate in deeper parts of the open ocean.¹⁷⁹ Robotic cages move through the ocean and provide more circulating water, which would address concerns that current aquaculture facilities do not allow fish to move freely.¹⁸⁰ In addition, the robotic cages address many of the environmental concerns regarding aquaculture: the robotic cages allow fish to eat natural food, may generate their own electricity, and could enable farmers to bring the cages closer to major markets, avoiding the carbon footprint of heavy transportation.¹⁸¹

A more drastic alternative would be to allow organic certification only for those fish that are farmed in closed containers on land. Land-based fish farmers use enormous tanks and pumped seawater that is “recirculated and purified using bacteria.”¹⁸² Closed containers “eliminate many of the environmental problems associated with open net-cage fish farms.”¹⁸³ Obviously, there is little chance that the fish will escape and infect wild fish populations with disease or interfere with wild fish genetics.¹⁸⁴ Closed containers also provide aquaculturalists with the ability to treat waste from the facility, “virtually eliminating pollution of the marine environment.”¹⁸⁵

One of the most significant barriers to closed container aquaculture is the startup cost.¹⁸⁶ However, high initial costs could be mitigated by lower long-run production costs. One Norwegian company found that closed container farming was actually 21% cheaper than open net pen farming.¹⁸⁷ The closed containers reduced the amount of feed required by 30–40% and did not require antibiotics or delousing treatments.¹⁸⁸ Moreover, the closed containers could be built near markets, which would lower transportation costs.¹⁸⁹ Finally, because consumers are willing to pay more for certified organic food,¹⁹⁰ closed container fish farmers could recoup

¹⁷⁹ Brian Handwerk, *Giant Robotic Cages to Roam Seas as Future Fish Farms?*, NAT'L GEOGRAPHIC NEWS, Aug. 18, 2009, <http://news.nationalgeographic.com/news/pf/8871954.html> (last visited Feb. 6, 2010).

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² CLOVER, *supra* note 13, at 307.

¹⁸³ *Groups Praise Committee Recommendation*, *supra* note 44.

¹⁸⁴ CLOVER, *supra* note 13, at 307.

¹⁸⁵ Pure Salmon Campaign, Solutions, <http://www.puresalmon.org/solutions.html> (last visited Feb. 6, 2010).

¹⁸⁶ CLOVER, *supra* note 13, at 307.

¹⁸⁷ Pure Salmon Campaign, Solutions, *supra* note 185.

¹⁸⁸ *Id.*

¹⁸⁹ CLOVER, *supra* note 13, at 307.

¹⁹⁰ *See* Park & Lohr, *supra* note 58, at 647; Thompson, *supra* note 57, at 1115.

some of their initial costs if an organic label is provided only to closed container facilities.

Another possible alternative is state certification. Before OFPA was passed, several states had their own organic certification laws.¹⁹¹ Federal regulations currently provide requirements for state organic programs.¹⁹² State organic programs must meet the standards in OFPA, but can be more restrictive.¹⁹³ Although state regulations can be more flexible to adapt to a state's particular environmental characteristics,¹⁹⁴ the major drawback to state regulations is that they may lack uniformity, which "hinder[s] interstate shipment of organically produced foods."¹⁹⁵

A broader approach would be to abandon USDA organic certification and rely instead on private certification. The concept of organic production began as a private movement.¹⁹⁶ Jerome I. Rodale, founder of *Organic Gardening* magazine, led a movement that focused on using natural techniques instead of chemicals in agricultural production.¹⁹⁷ Rodale's followers began labeling and marketing food as "organic."¹⁹⁸ Thus, a movement designed to encourage the production of sustainable, environmentally friendly food would not necessarily have to be based on federal law. In fact, although organic marketing began in the 1970s, the federal government did not create a standard until 1990.¹⁹⁹

A number of private organizations now offer certification for environmentally friendly production.²⁰⁰ Global Ecolabelling Network is a

¹⁹¹ Endres, *supra* note 24, at 19.

¹⁹² 7 C.F.R. § 205.620 (2009).

¹⁹³ *Id.*

¹⁹⁴ 7 C.F.R. § 205.620(c) (2009).

¹⁹⁵ Endres, *supra* note 24, at 19.

¹⁹⁶ *Id.* at 18.

¹⁹⁷ Rodale Inc., About Us: Brief History, <http://www.rodaleinc.com/about-us/brief-history> (last visited Feb. 6, 2010).

¹⁹⁸ Endres, *supra* note 24, at 19.

¹⁹⁹ Organic Foods Production Act of 1990, Pub. L. No. 101-624, 104 Stat. 3935 (codified as amended at 7 U.S.C. §§ 6501-6522 (2006)).

²⁰⁰ For one list of certification programs, see California Green Solutions, Green and Sustainable Certification Programs, <http://www.californiagreensolutions.com/cgi-bin/gt/tpl.h,content=575> (last visited Feb. 6, 2010). Private certification is available for a variety of products. For example, Audubon International has an Eco-Rating Program for Hotels that encourages the hospitality industry to improve their eco-efficiency by enabling consumers to choose hotels that are more environmentally responsible. Audubon International, Audubon Green Leaf Eco-Rating Program, <http://greenleaf.auduboninternational.org/> (last visited Feb. 6, 2010). Also, the Forest Stewardship Council has been certifying sustainable forestry as a response to intergovernment failure at the 1992 Earth Summit. Forest Stewardship Council United States, The History of FSC—US, http://www.fscus.org/about_us/ (last visited Feb. 6,

professional association dedicated entirely to environmental labeling groups²⁰¹ and there are other organizations that certify and label food in particular. For example, the International Federation of Organic Agriculture Movements (“IFOAM”) is an internationally respected body²⁰² that has implemented a system for private, third-party certification of organic agriculture.²⁰³ Through its accreditation program, IFOAM awards accreditation “to certification bodies that use certification standards that meet the IFOAM Basic Standards.”²⁰⁴ The basic standards are not a list of acceptable inputs, but rather are intended to “provide a framework for certification bodies and standard-setting organizations worldwide to develop their own more detailed certification standards which take into account specific local conditions.”²⁰⁵

Private certification of fish production, in particular, could be a viable alternative to government regulation. The Marine Stewardship Council (“MSC”) currently certifies fisheries that are sustainable.²⁰⁶ MSC is an international non-profit organization,²⁰⁷ whose mission is to “to use [its] ecolabel and fishery certification programme to contribute to the health of the world’s oceans by recognising and rewarding sustainable fishing practises, influencing the choices people make when buying seafood, and working with [its] partners to transform the seafood market to a sustainable basis.”²⁰⁸ MSC certification applies only to wild-caught fish; it cannot be

2010). Perhaps more well known, the Leadership in Energy and Environmental Design (“LEED”) Green Building Rating System evaluates and certifies green buildings. U.S. Green Building Council, <http://www.usgbc.org> (last visited Feb. 6, 2010).

²⁰¹ Amy Cortese, *Friend of Nature? Let’s See Those Shoes*, N.Y. TIMES, Mar. 7, 2007, at 5.

²⁰² IFOAM has “observer status” or is accredited by the Food and Agriculture Organization of the United Nations, the United Nations Conference on Trade and Development, the World Trade Organization, the United Nations Environment Program, the Organization for Economic Cooperation and Development, and the International Labor Organization of the United Nations. IFOAM, Official Status, http://www.ifoam.org/about_ifoam/status/index.html (last visited Feb. 6, 2010).

²⁰³ IFOAM, Organic Standards and Certification, http://www.ifoam.org/about_ifoam/standards/index.html (last visited Feb. 6, 2010).

²⁰⁴ IFOAM, The IFOAM Organic Guarantee System, http://www.ifoam.org/about_ifoam/standards/ogs.html (last visited Feb. 6, 2010).

²⁰⁵ IFOAM, The IFOAM Norms, http://www.ifoam.org/about_ifoam/standards/norms.html (last visited Feb. 6, 2010).

²⁰⁶ Blythman, *supra* note 18.

²⁰⁷ Marine Stewardship Council, Governance, <http://www.msc.org/about-us/governance> (last visited Feb. 6, 2010).

²⁰⁸ Marine Stewardship Council, Vision and Mission, <http://www.msc.org/about-us/vision-mission> (last visited Feb. 6, 2010).

used to market farm-raised fish.²⁰⁹ Forty-two percent of wild-caught salmon are produced through an MSC-certified program.²¹⁰ MSC-certified products can be found throughout the food-buying spectrum. Both high-end restaurants²¹¹ and Wal-Mart²¹² offer MSC-certified fish to their customers.

Three principles establish the underlying philosophy of MSC certification: sustainable fish stocks, minimizing environmental impact, and effective management.²¹³ The goal of sustainable fish stocks is met if fishing is limited such that “fishing can continue indefinitely and is not over-exploiting the resources.”²¹⁴ Certified fisheries minimize environmental impact by maintaining “the structure, productivity, function and diversity of the ecosystem on which the fishery depends.”²¹⁵ To meet the effective management requirement, a fishery must “meet all local, national and international laws and must have a management system in place to respond to changing circumstances and maintain sustainability.”²¹⁶

The standard for MSC certification is based on thirty-one performance indicators.²¹⁷ In addition, all companies involved in the supply chain must have the MSC Chain of Custody certification.²¹⁸

The MSC label accomplishes the same goals that an organic label is designed to accomplish. Consumers want to purchase food from eco-friendly suppliers; the response to MSC-certified Chilean bass has been “‘incredible.’”²¹⁹ This gives producers an incentive to use sustainable

²⁰⁹ Marine Stewardship Council, MSC Environmental Standard for Sustainable Fishing, <http://www.msc.org/about-us/standards/msc-environmental-standard> (last visited Feb. 6, 2010).

²¹⁰ CLOVER, *supra* note 13, at 286.

²¹¹ Elisabeth Rosenthal, *A Favorite Meal, Now Offering a Side Order of Environmental Awareness*, N.Y. TIMES, Jan. 15, 2008, at A6.

²¹² Ylan Q. Mui, *At Wal-Mart, 'Green' Has Various Shades; Environmental Push Earns Mixed Results*, WASH. POST, Nov. 16, 2007, at D01. Wal-Mart hopes that it eventually will source all of its wild-caught and frozen fish from MSC-certified fisheries. CLOVER, *supra* note 13, at 296.

²¹³ Marine Stewardship Council, MSC Environmental Standard for Sustainable Fishing, *supra* note 209.

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ *Id.*

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ Florence Fabricant, *Some Chilean Sea Bass Is Labeled Sustainable*, N.Y. TIMES, Nov. 8, 2006, at F12 (quoting David Pilat, the national seafood coordinator for Whole Foods Markets).

methods.²²⁰ Unlike competing state standards, the MSC label is a uniform, consistent standard that is applied to fish products around the world²²¹ and is well respected among consumer groups.²²² MSC has offices on five continents²²³ and uses independent certifiers located in Norway, Argentina, Australia, Canada, the Netherlands, the United Kingdom, and the United States.²²⁴

CONCLUSION

The original organic movement hoped to encourage humane, safe, and environmentally sustainable production of food. To some degree, the Organic Food Production Act of 1990 and the regulations that created organic certification departed from the spirit and philosophy behind the organic movement. The proposed regulations for organic certification for salmon are an additional step away from the ideal. The proposed regulations for fish do not adequately address environmental impacts such as overfishing and the release of harmful pollutants. As a result, consumers will be misled into believing that organically produced fish are environmentally friendly. Over time, producers may be less able to charge a price premium.²²⁵ This is not to say that consumers will have no way of knowing how their food has been produced. Instead, independent certifying agencies are a viable alternative to federal government organic certification.

²²⁰ Marine Stewardship Council, Healthy Oceans, <http://www.msc.org/healthy-oceans> (last visited Feb. 6, 2010). By purchasing a product that is MSC-certified, a consumer “rewards fisheries that support healthy marine environments.” *Id.*

²²¹ Marine Stewardship Council, About Us, <http://www.msc.org/about-us> (last visited Feb. 6, 2010). In fact, MSC has a program devoted specifically to encouraging fisheries in developing nations to adopt sustainable production practices. Marine Stewardship Council, Working with Developing Countries, <http://www.msc.org/about-us/credibility/working-with-developing-countries> (last visited Feb. 6, 2010).

²²² For example, the Organic Consumers Association would recommend that consumers avoid fish that have been certified under lax regulations and to choose MSC-certified fish instead. Organic Consumers Association, OCA Testimony to the NOSB on National Organic Standards (Nov. 17, 2008), http://www.organicconsumers.org/articles/article_15652.cfm.

²²³ Marine Stewardship Council, Offices and Staff, <http://www.msc.org/about-us/offices-staff> (last visited Feb. 6, 2010).

²²⁴ Marine Stewardship Council, Fisheries Assessments, <http://www.msc.org/get-certified/find-a-certifier/fisheries-assessments> (last visited Feb. 6, 2010).

²²⁵ If the organic label loses its value in consumers' eyes, price premiums could go down. Endres, *supra* note 24, at 32.