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Food & Water Watch • 25 Stillman Street, Suite 200, San Francisco, CA 94107
www.foodandwaterwatch.org • T: +1.415.293.9900 • F: +1.415.293.9941

January 18, 2011

TO: Members of the Ocean Protection Council (OPC)

CC: California Ocean Protection Council staff

RE: ***California Sustainable Seafood Program and AB 1217***

ATTACHED: Appendices 1 – 2

Dear members of the Ocean Protection Council,

Please accept this letter from Food & Water Watch (FWW) as a response to the draft protocol for sustainable seafood labeling in California. FWW is a non-profit consumer advocacy group working with grassroots organizations across the country to create an economically and environmentally viable future. Our Fish Program promotes safer and more sustainable seafood for consumers, while helping to protect the environment and support the long-term well-being of coastal and fishing communities. We prioritize providing consumers with credible information on seafood and sustaining wild fisheries.

We have been engaged with members of the California Sustainable Seafood Initiative Panel (CSSI Panel) since August of 2010 on the issue of developing standards for California's fisheries, and attended the most recent convening of the CSSI panel in Monterey in mid-October. We appreciate the opportunity to comment on this draft protocol.

We are concerned to see that the Marine Stewardship Council (MSC) has been proposed as the foundation for California's sustainable seafood program. We remain unconvinced that the MSC adequately fulfills the mandate of AB 1217 to adhere to Food and Agriculture Organization's "Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries,"[1] (hereafter, FAO's "Guidelines for Marine Capture Fisheries") and believe that the California label should be a state certification: publicly developed, monitored and awarded by the state.

There is a better path to achieving these goals than by involving an outside eco-labeling authority in the state's process. Establishing sustainability through the FAO as a measure of seafood sustainability has been utilized successfully in other U.S. states, including both Alaska[2] and Hawaii,[3] and we encourage the OPC and OPC staff to explore alternatives to the MSC program.

Food & Water Watch has recently released a report on various seafood eco-labels currently appearing in the marketplace. It is attached as **Appendix 1** of this report. Our analysis reveals a variety of flaws and inadequacies associated with the eco-labels analyzed and suggests that private labels may not be the most appropriate means to convey neutral, credible information about seafood.

Our responses to the draft memorandum are the following:

1. **We agree with OPC staff that California's label must be credible, that it should help improve the sustainability of California's marine fisheries and habitats," and that the label should be "easily understood, transparent and verifiable."**[4]

However, the MSC's current methodology allows for fisheries with below-average scores on any individual criterion (at or above a 60, or a 'D-') to be certified in the expectation that the fishery will improve its practices in these areas.[5] In the meantime, consumers may purchase a product believing it is ecologically sustainable, even if it has not yet achieved sustainability.

FWW strongly urges the OPC to think about the intent of this new label when determining how it will be distributed. A fishery with excessively high rates of bycatch, repeated interactions with marine mammals or one that employs a destructive fishing method should not be awarded sustainable certification in the hopes that it will improve. If the intent of marking seafood with a "California sustainable" label is to help consumers make informed choices, and recognize fisheries with sustainable practices, California fisheries should *not* be awarded an eco-label until each actually meets the standards for sustainability as agreed upon by the OPC. To do otherwise would be misleading to consumers and make the new label little more than a marketing tool.

Additionally, the claim made in the draft protocol that MSC is "likely to have the greatest impact on improving fishery and marine ecosystem health"[6] is itself questionable. A 2008 academic article observed that, in the years the MSC had been in existence, "there has been only one major ecological improvement related to the MSC certification program... and it is unclear if it can be strictly attributed to the direct effects of the MSC program" in the first place.[7]

Criticism of the MSC is, in fact, not just limited to its certification of controversial or questionably sustainable species – as was suggested on pages 10 to 11 of the draft protocol. It goes to the root of the certification process itself. There is an inherent ambiguity to the MSC approach – as evidenced by the scoring guideposts listed on pages 12 and 13 of the draft protocol report. Language like "likely," "highly likely," and "high degree of certainty" is highly subjective in nature and can result in ambiguous scoring by different assessors at different times.

Producing a label that is clear and effectively communicates sustainability to consumers is the top priority of Food & Water Watch in submitting these comments. We strongly urge the OPC to consider alternatives to the MSC.

2. **The MSC does not meet the requirements of California's AB 1217 because it does not fulfill the FAO's "Guidelines for Marine Capture Fisheries."** [8]

FWW analysis has shown some of MSC's standards and certifications do not match the FAO's principles and criteria. In particular:

Principle 2.12[9]

- **FAO**: Label should "communicate truthful information"
- **MSC***: Many fisheries certified to MSC fail to actually meet criteria for sustainability, but label is permitted in the meantime while fisheries are working toward meeting criteria*
    - MSC awards a label before a fishery has met all criteria – meaning consumers may be buying a "certified" product that isn't yet fully compliant

Criteria 28 and 29.5[10]

- **FAO**: The fishery operates "in compliance with the requirements of local, national and international law and regulations," and under an "effective legal and administrative framework"
- **MSC***: Some fisheries certified to MSC have gone against national law*
    - New Zealand hoki, a currently certified fishery, has been found to violate that country's Fisheries Act, which requires that adverse effects on the aquatic environment (such as known bycatch of endangered seabirds) be avoided[11]
    - One study has found that "the MSC re-regulates the coordination of the global fisheries away from public venues and into private arenas"; it "bypasses national laws and marginalizes fisherpeople"[12]

When regulation of fisheries falls under private control, both consumers and coastal communities may suffer. Private control may yield less transparency in the management of a natural resource that is part of the public trust - and a resource that many people depend upon for their livelihoods.

Criterion 29.3[13]

- **FAO**: Requires identification of "adverse impacts of the fishery on the ecosystem"
- **MSC***: Fisheries certified to MSC despite evidence of adverse ecosystem impacts*
    - Alaskan pollock is being considered for re-certification despite a crashing population and concerns about bycatch[14]
    - Also, MSC is currently considering certification for several reduction fisheries. Fish taken for reduction are important food source for marine mammals, birds and predatory fish

Many food-insecure countries globally rely on prey fish as a primary source of protein. Reduction fisheries can take food from both marine wildlife and people that need it most.

Criterion 29.6[15]

- **FAO**: The fishery implements the "precautionary approach" to "protect the 'stock under consideration'"
- **MSC***: Controversial certification of British Columbia sockeye salmon occurred even as Canadian judicial review into collapse of the resource was ongoing*[16]

In addition to this review, please see **Appendix 2** of this report – a supplement to the "De-Coding Seafood Eco-Labels" report, with more information specific to the MSC program. Note that the MSC is found to be deficient with regards to each of the eight categories evaluated for wild fisheries certification, including concerns about: prohibitive costs, ambiguous criteria, and negative impacts on marine mammals.

Given the above issues, we recommend that the OPC and the CSSI panel consider using a publicly developed system to evaluate California's fisheries for the sustainable seafood initiative, since that would address the areas in which MSC falls short, and also would eliminate the need for an outside eco-labeling authority involved in the state's process. FAO Checklists such as those proposed by Dave Anderson at Aquarium of the Pacific may be an example of this public approach.

The California label should be a state certification, publicly developed, monitored and awarded by the state.

3. The third-party certification component of MSC is questionable.

Prominent marine scientists Jennifer Jacquet and Daniel Pauly, along with several other marine scientists, question the third-party notion of MSC's certification process in Nature magazine in September 2010. They wrote: "In our view, the certification system creates a potential financial conflict of interest, because certifiers that leniently interpret existing criteria might expect to receive more work and profit from ongoing annual audits." Their paper states the following: "We believe that, as the MSC increasingly risks its credibility, the planet risks losing more wild fish and healthy marine ecosystems."

Use of the MSC label therefore has the potential to result in misleading labels for consumers in the marketplace. Certifiers that have the incentive to produce further work for themselves may certify questionably sustainable fisheries in order to secure further work (such as annual audits and re-certification down the road); this issue must be addressed if the OPC elects to use MSC for California's sustainable seafood labeling program.

4. The issue of contamination in eco-labeled seafood is not adequately addressed in the draft protocol.

When consumers elect to purchase seafood labeled for sustainability in California, it is likely that they are thinking of a broader concept of sustainability than strictly ecological health. Similar to the way in which an "organic" label on dairy products symbolizes both

ecological sustainability and consumer health benefits (such as restricted use of hormones or antibiotics in animals), a "sustainable" fish product, to most consumers, would also be beneficial – or at least not expressly harmful – to consumer health.

Seafood that is certified and marketed as "sustainable" should not be high in persistent organic pollutants (POPs) such as mercury or polychlorinated biphenyls (PCBs) that can be harmful to human health. With contaminants a leading cause of concern for consumers about seafood in general, it is important that clear information is widely available, and that highly contaminated fish are not promoted in a California seafood campaign.

Given, in particular, that the OPC is mandated to implement a marketing assistance program per AB 1217 after the development of a protocol for labeling of California seafood,[17] it is important that the Council consider the implications of marketing seafood that may be high in contaminants.

Furthermore, FWW urges the OPC to consider food safety and contamination as an aspect of certification that should be included in barcodes and informational materials along with the rest of the traceability components mentioned on page 15 of the draft protocol. The best means to prevent the health risks of exposure to mercury and other contaminants is to provide clear information that is widely available, and well-publicized, and to label highly contaminated fish.

5. **In order to ensure that the money spent by taxpayers will equally benefit all those in the state, it is important that California sustainable seafood labeling information be conveyed to the extent practicable in stores and on shelves – not just online and for smart-phone users.**

Page 5 of the draft protocol suggests that barcodes on California fisheries will link either to smart-phones or to a website to reveal details about traceability in the fishery. Food & Water Watch strongly encourages the OPC to consider that information should be available to all California residents, regardless of socioeconomic status. Not all households can afford regular internet access, and smart-phone usage remains economically inaccessible to many families.

As such, we encourage the OPC to promote availability of information about seafood sustainability and the California labeling program in stores and on shelves to the extent practicable in the final version of this protocol, in order to avoid excluding consumers from access to information about safe and sustainable seafood.

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www.foodandwaterwatch.org • T: +1.415.293.9900 • F: +1.415.293.9941

Thank you for your consideration of these comments. We look forward to continued cooperative work.

Sincerely,

Marie Logan
Researcher / Policy Analyst, Fish Program
Food & Water Watch
mlogan@fwwatch.org
415.293.9919

Please find the following documents attached:

Appendix 1: "De-Coding Seafood Eco-labels: Why We Need Public Standards." Food & Water Watch report. November 2010.

Appendix 2: "Comparison of Seafood Eco-Labels." Food & Water Watch fact sheet. December 2010.

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[1] Food and Agriculture Organization of the United Nations. (2005). *Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries*. Rome: FAO.
[2] Alaska Seafood Marketing Institute. "Certification." Available at http://sustainability.alaskaseafood.org/certification
[3] Hawaii Seafood Council. "Hawaii Seafood Sustainability Statement." Available at http://www.hawaii-seafood.org/sustainability/
[4] Termini McCormick, Valerie and Sam Schuchat; California Ocean Protection Council. "Memorandum: California Sustainable Seafood Initiative – Phase 1." November 29, 2010 at 2.
[5] See Condition 3.4.2 in MSC Methodology: "Where the fishery achieves a score of less than 80, but of at least 60 for any individual Performance Indicator, the certification body shall set one or more conditions for continuing certification." Marine Stewardship Council. "MSC Fisheries Certification Methodology." Version 6, revised September 2006. At Condition 3.4.2 on page 21.
[6] COPC, "California Sustainable Seafood Initiative – Phase 1," at 3.
[7] Ward, Trevor J. "Barriers to biodiversity conservation in marine fishery certification." *Fish and Fisheries*, vol. 9. June 2008 at 175.

[8] Food and Agriculture Organization of the United Nations. (2005). *Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries*. Rome: FAO.
[9] FAO, *Guidelines* at 2.
[10] FAO, *Guidelines* at 6-7.
[11] Highleyman, Scott et al. Wildhavens, Turnstone Consulting and Ecos Corporation. "An Independent Assessment of the Marine Stewardship Council." Prepared for Homeland Foundation, Oak Foundation, and The Pew Charitable Trusts. January 2004 at 11.
[12] Constance, Douglas H., and Alessandro Bonanno. "Regulating the global fisheries: The World Wildlife Fund, Unilever and the Marine Stewardship Council." *Agriculture and Human Values,* vol. 17. June 2000 at 133-135.
[13] FAO, *Guidelines* at 7.
[14] A formal objection to this certification by the Yukon River Drainage Fisheries Association (YRDFA) is ongoing as of October 2010. http://www.msc.org/track-a-fishery/certified/pacific/bsai-pollock/Reassessment-downloads-1/23.9.2010-BSAI-Pollock-Objection-YRDFA.pdf
[15] FAO, *Guidelines* at 8.
[16] The fact that this fishery later in 2010 sustained record runs (occurring several weeks after the certification was deemed effective) should not dissuade from considering this certification a violation of the precautionary approach. At the time of certification and prior, there was no knowledge of, or evidence that such a drastic uptick in the population would occur. See MacLeod, Andrew. "Sockeye Eco-Certification Kicks up Storm." *The Tyee* (British Columbia, Canada). January 21, 2010.
[17] COPC, "California Sustainable Seafood Initiative – Phase 1," at 2.

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Appendix 1: "De-Coding Seafood Eco-labels:

Why We Need Public Standards."

Food & Water Watch

November 2010

De-Coding Seafood Eco-Labels:

Why We Need Public Standards

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About Food & Water Watch

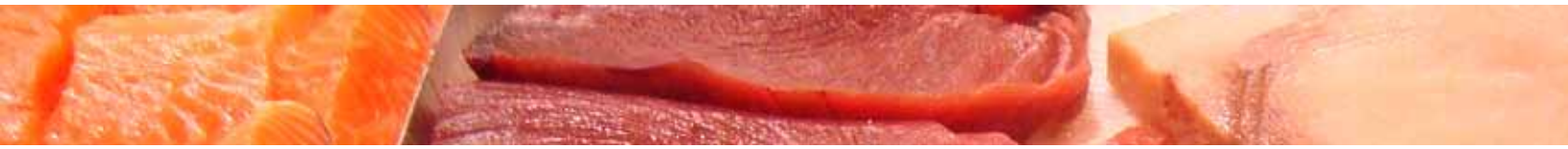
Food & Water Watch works to ensure the food, water and fish we consume is safe, accessible and sustainable. So we can all enjoy and trust in what we eat and drink, we help people take charge of where their food comes from, keep clean, affordable, public tap water flowing freely to our homes, protect the environmental quality of oceans, force government to do its job protecting citizens, and educate about the importance of keeping shared resources under public control.

Food & Water Watch
1616 P St. NW, Suite 300
Washington, DC 20036
tel: (202) 683-2500
fax: (202) 683-2501
info@fwwatch.org
www.foodandwaterwatch.org

California Office
25 Stillman Street, Suite 200
San Francisco, CA 94107
tel: (415) 293-9900
fax: (415) 904-8394
info-ca@fwwatch.org

De-Coding Seafood Eco-Labels:

Why We Need Public Standards



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Executive Summary

Choosing the best fish to eat can be complicated. People browsing seafood counters or restaurant menus may wonder whether certain fish are both safe and sustainable. In many cases, the more a person knows, the more questions arise: Is this wild or farmed? Local or imported? Produced in an environmentally responsible way? High in mercury? Tainted with antibiotics and chemicals?

In light of these questions, there is a demand for straightforward guidance on seafood. To address the sustainability questions surrounding fish, a number of certification programs have developed sets of standards and labels to evaluate and then market "environmentally friendly" or "sustainably produced" fish.

Meanwhile, many seafood restaurants and retailers have begun sourcing their seafood predominantly or exclusively from fisheries or companies that have been "certified" by eco-labels in an effort to promote their environmental awareness about seafood sustainability to consumers. California's state government has committed to implement a seafood sustainability program that is based on the standards from some of these eco-labels.

But what do these labels really mean? Food & Water Watch examined various seafood certification programs and unfortunately, these labels do not always represent what consumers expect.

Our research reveals a variety of flaws and inadequacies associated with the eco-labels analyzed and suggests that private labels may not be the most appropriate means to convey neutral, credible information about seafood. While the intent to raise awareness about sustainability among seafood suppliers and fish farms is admirable, it is questionable whether these labels are actually increasing sustainability in the marketplace.

This report proposes that in order to provide consumers with much-needed, unbiased and well-regulated information, the federal government should introduce and oversee standards for eco-labeled seafood. Until that time, consumers can use our guidelines and recommendations on safer seafood choices, as well as tips on other seafood-related concerns at the end of this report.

Findings

- The eco-label certification programs reviewed in this report demonstrate inadequacies with regard to some or all of the following: environmental standards, social responsibility and community relations, labor regulations, international law, and/or transparency.
- Eco-labeling programs may cause increased public acceptance of products from controversial farming operations, such as coastal shrimp ponds and open-water aquaculture.
- Eco-labeling programs fail to promote local seafood options or account for the miles that imported seafood travels.
- Existing eco-labels have the potential to override the authority of governments, particularly in developing countries.
- Each of the examined eco-labels that certify wild fisheries fails to meet Food and Agriculture Organization criteria for eco-labeling and certification programs for wild fisheries.
- Financial constraints have affected the ability of some otherwise eligible fisheries to attain certification.
- For some programs, there is a conflict between the intent to promote change within a certain fishery and the product labeling program, which can place a seal of approval on a product from a certified fishery before it has made conditional improvements in ecological performance to actually meet the standards for the label.
- Eco-labels should not be permitted for forage fish. These types of fish are processed into fishmeal and fish oil for use in various products, including animal feed. Depleting forage fish stocks can damage marine food webs and negatively impact food security in developing countries.

Introduction and Background: What's an Eco-Label?

The concept behind eco-labels is to help consumers more easily identify products that are "greener," more "environmentally friendly" or more "sustainable." Eco-labels can be found on a wide array of goods, from cleaning supplies to paper products to seafood. In addition to providing a means of identification for consumers, labeling can also be used as an incentive for industries to clean up their act; if they "go green," they earn the ability to market more easily to the growing body of consumers seeking eco-friendly options.

An official definition, provided here by the International Organization for Standardization, defines eco-labeling as "a voluntary, multiple-criteria based, third-party program that awards a license that authorizes the use of environmental labels on products indicating overall environmental preferability of a product within a particular product category based on life cycle considerations."[i]

In 2009, the environmental marketing firm TerraChoice did a comprehensive survey of more than 2,000 products sold in large North American retail stores. The company found that more than 98 percent of eco-labeled products were misleadingly labeled in some way.[ii] They attributed the misleading labeling to a variety of causes, ranging from lack of proof about the product's environmental benefits or vagueness in use of terms like "natural" or "green," to fictional eco-labeling images (sometimes even designed by the company itself). On occasion, products even claimed to be certified by a particular authority when they were not. [iii]

In the case of fisheries and seafood, eco-labels have emerged in response to the range of controversial issues related to the production and consumption of fish. Poor fisheries management has caused the depletion of many wild fish populations, and imported seafood from countries with lower health, safety and environmental standards can be tainted with dangerous chemicals and antibiotics.[iv] More than half of our seafood now comes from aquaculture — also known as fish farming — and many methods of this type of farming are associated with serious environmental degradation and consumer health risks.[v]

The absence of a U.S. Department of Agriculture (USDA) "organic" standard or any other U.S. government label for seafood has left a large gap in certified seafood, which private companies and organizations are clamoring to fill.

Seafood Eco-Labels

Two primary complications exist for seafood certification. First, as with other products, the definition of ecological sustainability and creation of standards is highly controversial and difficult to come to consensus on. Second, some of these certification programs have additional interests beyond providing consumer guidance. Whether it's an interest in establishing a relationship with a fishery in order to work toward improvement, or getting more eco-certified product on the market, these other interests compete with label neutrality.

Standards, motivations and approaches all differ between various labels. Following is a brief breakdown on those examined in this report.

- The *Marine Stewardship Council* (MSC) was initially created by the World Wildlife Fund for Nature (WWF) and Unilever — once one of the world's largest seafood buyers.[vi] MSC became independent in 1999.[vii] It exclusively certifies wild fisheries[viii] and has traditionally seen certification as a way to form a long-term working relationship with a particular fishery.[ix] MSC states that it bases standards around maintaining sustainable fish stocks, minimizing ecological impact and recognizing effective management.[x]

- *Global Aquaculture Alliance* (GAA) was founded in 1997 by a wide range of international aquaculture companies, chain seafood restaurants including Darden Restaurants (parent company to Red Lobster and Olive Garden, among others), wholesalers like U.S. Foodservice, and agribusiness companies, including big names like Monsanto and Cargill. It is now a powerful industry consortium with hundreds of corporate members.[xi] One of GAA's primary programs is the certification label known as *Best Aquaculture Practices* (BAPs), which was introduced in 2003. GAA uses the *Aquaculture Certification Council* (ACC) as its exclusive certifying body. ACC only certifies farmed fish and produces certification criteria species-by-species.[xii] Among other things, its standards consider environmental and social responsibility, animal welfare, and food safety.[xii]

- *Friend of the Sea* (FOS) was established in 2006 in Italy by the creator of the dolphin-safe tuna label,[xiv] and has quickly gained a sizeable portion of market share in central and southern Europe, although its presence is less visible to consumers in the United States. FOS certifies both farmed and wild fish, and boasts a wide range of certifications, including for fishmeal and oil from forage fisheries, which are an essential part of the marine food chain.[xv]

- *Global Trust Certifications, Ltd*. was established in 2007 to certify fish farms. Their standards are not easily accessible to the public and public use is controlled, creating a certain measure of doubt as to whether the criteria are rigorous enough to withstand independent review.[xvi] According to the company, the label allows producers to demonstrate their "commitment to environmental sustainable development, low impact farming and conservation when producing and processing" seafood.[xvii]

- The *International Fishmeal and Fish Oil Organization* certifies forage fish, or reduction fisheries, through the Global Standards for Responsible Supply, with a focus on sustainability and food safety.[xviii] Reduction fisheries supply the raw materials for fishmeal and oil. Fishmeal and oil are used primarily as ingredients for animal feeds.

- Last, but not least, the *Aquaculture Stewardship Council* (ASC) is not yet operational, but already has plans to create standards that would certify 12 species that "have the greatest impact on the environment, highest market value and/or the heaviest trading in the global market." Standards for the ASC are being created during the Aquaculture Dialogues, sponsored by WWF, which are attended by fish farmers, other members of the aquaculture industry, government officials and non-governmental organizations.[xix]

What Does Sustainability Mean for Seafood?

A certification program should be transparent and should represent a clearly defined set of standards that are publicly vetted and easily accessible to everyone. Its primary motivation should be providing neutral and straightforward guidance to consumers. A label that makes vague claims of "sustainability" or being "eco-friendly" should not do so without being able to clearly define and support those assertions.

Although there is no single definition for sustainability or environmental responsibility for seafood, generally, for fish, as with many things, a sustainable choice is both ecologically and socially responsible. For many people, the carbon footprint is an important consideration, and in the case of food, how sustainable a product is for our health (in terms of contaminants and chemicals) can be an equally important issue.

For the purpose of this report, we consider that smart, or "sustainable," seafood choices take the following into account:

1. Ecological Impacts
    a. For wild fish, the fish in question should have a healthy population, and the current level of fishing in the fishery should not threaten other species dependent on that fish for food. Additionally, the fishery should not significantly threaten birds, marine mammals or other animals, or damage the marine habitat. The type of fishing gear used and its impacts on the seafloor and other marine wildlife are also important considerations.
    b. For farmed fish, water, chemical and feed use must be considered, as well as pollution discharge and impacts on wildlife and habitats.
2. Social Impacts
    a. Labor standards must be fair. Working conditions should be safe, and hours reasonable.
    b. Economic, health and safety impacts on surrounding communities must be considered. A farm or fishery should not negatively impact the local economy or public health, and must not cause safety concerns.
    c. Indigenous, traditional and cultural considerations should be upheld.
3. Encouragement of a diversified seafood economy: It is important that the seafood economy represent a variety of fish and shellfish options to benefit fishing communities, consumer health and ecological sustainability. When a few types of fish are marketed heavily, they can eventually become overexploited, resulting in negative ecological effects.
4. Transport and distance of product from the market: Many fish in the United States are imported from faraway places like Asia, or shipped around the world for processing before returning to the United States. Eating local, regional or domestic seafood helps to limit these fossil-fuel-consuming food miles.
5. Health and safety: Seafood must not be farmed with dangerous antibiotics, drugs and chemicals and must not pose the threats associated with contamination that worry many consumers.

Public vs. Private: Who Should Oversee Seafood Certifications?

The seafood certifications discussed in this report are run by private companies or organizations, and operate outside of governmental jurisdiction. Currently, there is only one federally mandated labeling program, country-of-origin labeling (COOL), which applies to seafood in the United States. COOL requires seafood to be labeled with the name of the country in which it was landed (brought to shore by fishing vessels) or farmed. Unfortunately, there are many loopholes in COOL; for example, exempting seafood that has been processed in any way (for instance, seasoned with salt, pepper or herbs) from labeling requirements. Additionally, it does not apply to restaurant menus.[xx]

Various logos used in fish certification programs

USDA "organic" certification does not yet apply to fish, but the agency is currently discussing proposed standards, which are highly controversial. The label applies only to farmed fish, not wild-caught, even though many people feel wild fish is often a preferable seafood option. This makes the label confusing for consumers, as many people feel "organic" is an indicator of higher quality.

Leaving seafood certification in the hands of private entities is problematic for a variety of reasons. First and foremost, it limits the general public's ability to participate in the standards-setting process. Although many certification programs do allow for public comment periods while they are developing their standards or certifying a certain fishery or farm, ultimately, it is the program's decision how to incorporate or use these comments. By comparison, a government entity developing such standards would be required to consider public opinion.

Additionally, private seafood certifiers or standards-setting bodies may face serious conflicts of interest. The incentive to put more "environmentally friendly" seafood on the market, or to establish a relationship with a fishery that many consumers would not yet consider sustainable, might influence some programs to put a label on a product that may not be called eco-friendly by a more neutral judge.

Common Concerns with Seafood Eco-Labels

Keeping the qualifications for sustainable seafood described above in mind, the following are 13 prominent issues that should be addressed in seafood certification. *[Disclaimer: The following section is designed to discuss overarching problems associated with private seafood certification programs, not to provide individual analysis of specific labels. Each concern is associated with at least one program, but they do not all apply to every program.]*

1. Certification of Flawed Fisheries

Some programs use their eco-label as incentive for a fishery or farm to make improvements. For instance, the Marine Stewardship Council (MSC) has traditionally viewed certification as a way to begin a long-term relationship with a fishery, meaning that they expect further improvement to occur after certification takes place.[xxi] After a fishery has been evaluated by a third party according to MSC's standards, the fishery may be granted certification, even if it falls short of certain standards.[xxii] The fishery is given conditions for improvement, but unfortunately, this means that a fishery with significant flaws may still carry the MSC logo, indicating sustainability, before it has achieved any improvements. This creates what is known as the "free-rider" problem, in which fisheries that are flawed, yet certified, get to ride on the reputation of the label.

Some critics have claimed that in many cases, few improvements are made after MSC certification. A 2008 paper observed that "there has been only one major ecological improvement related to the MSC certification program … and it is unclear if it can be strictly attributed to the direct effects of the MSC program" in the first place.[xxiii] In 2010, a widely publicized article written by prominent marine biologists Daniel Pauly, Jennifer Jacquet and colleagues, openly criticized the MSC, explaining that "as the MSC increasingly risks its credibility, the planet risks losing more wild fish and healthy marine ecosystems."[xxiv] The authors cited their concern that certain fisheries seeking the eco-label are not worthy of recognition for their sustainability, and suggested that the organization was in need of major reform if it wanted to fulfill its promise as "the best environmental choice."

The Aquaculture Stewardship Council (ASC), meanwhile, will follow a similar model — setting environmental and social standards not at the ideal, but just above the status quo (even if the status quo is quite far from any measure of sustainability). This allows a fishery to enter into the

program and achieve certification with the hope (but not the guarantee) that the status quo will gradually be pushed toward actual sustainability.[xxv]

2. Leaving Out Underfunded Fisheries and Farms

Paying for certification is expensive and many fisheries and farms are not able to finance the cost. Even Alaskan salmon, a very valuable and sustainably managed fishery in the United States, has had difficulties with financing MSC certification. Five species of Alaskan salmon (chinook, chum, coho, pink and sockeye) were first certified in 2000 and collectively have been a key part of the MSC portfolio for a decade. However, in early 2009, the Alaska Department of Fish and Game opted not to continue sponsoring the next phase of recertification. With up to $1 million in anticipated costs for the upcoming five-year certification,[xxvi] few groups seemed willing to sponsor the Alaskan salmon eco-label. Eventually, the Alaska Fisheries Development Foundation confirmed in February 2010 that it would assume the role as MSC's client for Alaskan salmon.[xxvii]

Maine lobster, another nationally recognized fishery, has faced similar issues. In early 2009, Maine Governor John Baldacci proposed creating a commission to pursue MSC certification of the local lobster fishery. Citing the growing number of food retailers that source products from MSC, Baldacci said, "If we fail to take this step towards sustainability, Maine lobsters could be shut out of major markets in this country."[xxviii] Now, to keep lobstermen in business, Maine taxpayers may have to shoulder the burden for this costly private certification.

Meanwhile, certification programs with lower costs may not be scientifically rigorous. For instance, Friend of the Sea (FOS) does not conduct any of its own studies on the fishery or farm in question. Instead, it relies on existing studies produced by the Food and Agricultural Organization of the United Nations, regional fishing management organizations, or national marine research authorities.[xxix] This means that, after reviewing the relevant written material, an auditor simply has to check a "yes" or "no" box to confirm or reject that each of the criteria is fulfilled. He or she can therefore perform a complete review of a resource within just a few days.[xxx] FOS suggests that their evaluation method allows for an expedited review and certification process, and makes the process less expensive for smaller fisheries.[xxxi] Unfortunately, this puts auditing in the hands of someone who may or may not have any expertise in the fishery or farm, and bases it on external documents that may or may not be up-to-date.

FOS requires no peer review after an audit has been completed, meaning there is little room for academic debate or stakeholder participation.

3. Conflicts Resulting from Labels Used for Marketing Purposes

More than just a source of information for consumers, eco-labels are often predominantly used as a marketing tool for seafood companies. Some labeling programs may be dependent, to a certain extent, on certifying an increasing number of fisheries in order to continue building their name and market share.[xxxiii] Thus, there is an inherent conflict between an organization's desire to maintain healthy oceans and a need to grow its own brand name. When these contradictory motives collide, objectionable certifications can result.

Bill Carvalho is the owner of a prominent West Coast seafood company called Wild Planet Foods that celebrates sustainably caught wild seafood. Bill believes that the goal of healthy, thriving fisheries is important, but has doubts about whether international eco-labels can adequately identify sustainable products for consumers around the world. He observes, "I have concerns that eco-labels represent a one-dimensional effort to educate consumers. They highlight only those fisheries that go through the expensive and extensive process of certification. Other best-choice fisheries unable to leap over those hurdles are left behind in anonymity with all uncertified products. A consumer cannot therefore differentiate between a great seafood choice that is simply uncertified, and a terrible choice product that is on everyone's list of seafood products to avoid."[xxxii]

Meanwhile, many seafood restaurants and retailers have begun sourcing their seafood predominantly or exclusively from fisheries that have been "certified" by these eco-labels, in an effort to show consumers they consider the environment and fisheries sustainability when purchasing. For example, Whole Foods has been a supporter and carrier of MSC-certified products almost since the program's inception.[xxxiv]

The increase in eco-label popularity may even give incentive for groups to create new labels for the purpose of marketing products they have a stake in promoting.

4. Inadequate Transparency and Public Input

Some certification programs lack sufficient transparency. For instance, Global Trust Certifications, Ltd. (GTC) lists only their general guidelines on their public website. Distribution of the standards is controlled, and interested members of the public must fill out a copyright disclosure form to gain access to them. The standards have strict limits on an individual's ability to review or generally discuss the material publicly.[xxxv] (In fact, in order for Food & Water Watch to review the GTC certification standards for their eco-label, we would have been required to sign the copyright disclosure form, obliging us to submit this report to GTC for review prior to publication.)

In comparison, MSC, ASC and some other labeling programs are much more transparent, making their standards more readily accessible to the public and holding meetings in which interested stakeholders can participate. However, some stakeholders have complained that after supplying comments regarding proposed certifications, these have not been fully considered and concerns they raised were not addressed. MSC's controversial decision to certify pollock caused the Alaska Oceans Program to conclude that their "objections process is not legitimate."[xxxvi]

5. Failure to Support a Diverse Seafood Economy

As discussed previously, a diverse seafood economy is necessary for supporting both the economic and ecological sustainability of fisheries and seafood consumption.

Extractive industries (such as fishing and fish farming) that wish to operate sustainably should allow for a broad range of participation from many different stakeholders in a community or region. In other words, a range of fishermen and farmers must produce sustainable seafood to maintain diversity and economic benefits. If the industry becomes too consolidated (owned by one or only a handful of fishing corporations) communities will no longer be able to meaningfully participate in the use and management of public resources, and the local economy will suffer. Additionally, focusing the seafood market on only a handful of species threatens those stocks' longevity and disrupts ecological balance to the ocean's food web. To prevent these problems, eco-labels would need to encourage the participation of a range of small-scale, community-based individuals and companies.

6. Failure to Fully Consider Carbon Footprint

By placing a standard seal of approval on a fish, regardless of whether it is consumed in New York, San Francisco, Tokyo, London, Sydney or elsewhere, most eco-labels fail to include "food miles" in their sustainability standards. For example, a consumer in San Francisco concerned with sustainability but unclear on the details of certification may choose eco-labeled New Zealand hoki, rather than uncertified farmed clams — not knowing that the former was flown thousands of miles to the supermarket and the latter was locally grown and collected less than 100 miles from home in a sustainable manner.

The International Coalition of Fisheries Associations estimates that nearly 40 percent of seafood is traded across international borders.[xxxvii] The carbon dioxide emissions, whether generated by sea, road or air, can be immense. In 2004, MSC's Chief Executive Brendan May conceded that all fish would be local in an ideal world. "But it's better to eat sustainably from afar than unsustainably from home waters."[xxxviii]

FOS is the only program evaluated here that addresses the issue of carbon dioxide emissions in seafood transportation. It provides a "carbon footprint calculator" to the seafood industry to estimate the amount of carbon dioxide emitted in the process of catching (or producing) the fish and transporting seafood to its final destination.[xxxix] They offer companies the ability to offset their carbon emissions by investing in forestry, renewable energy or carbon capture technologies — a controversial concept in itself.

7. Pushing Farmed Fish

Certification programs that work exclusively with farmed fish may, intentionally or inadvertently, promote the consumption of farmed fish. Generally, the intention of labeli

ng programs for farmed fish is to distinguish the more sustainable systems from other farming methods associated with various problems. But by exclusively labeling farmed fish, they may send the message that it is better than wild fish. For many types of fish, wild fish from well-managed populations are often a more sustainable option.

The WWF Aquaculture Dialogues program is in the process of setting standards for farmed U.S. seriola and cobia which will be used by the Aquaculture Stewardship Council.[xl] Seriola, or yellowtail, is farmed by Kona Blue Water Farms in Hawaii in open-ocean net pens.[xli] Their operation has been associated with farmed fish escapes, interference with marine mammals and the use of antibiotics to treat infections. It has been largely opposed by the Native Hawaiian community for interfering with traditional respect for and use of the ocean.[xlii] If it obtains an eco-label's seal of approval, many customers may purchase the fish with no knowledge of these concerns.

8. Depletion of Forage Fish

Forage fish, which are near the bottom of the food chain, are an important foundation for almost all ocean life. Without these "prey fish" in our seas, the marine food web could collapse.[xliii] Additionally, many food-insecure countries rely on the same small fish as a key protein source for residents, and fishing for them is a primary means of coastal employment. Overuse of these fish can harm both marine wildlife and people that need these fish most.

These fish are also caught and processed into fishmeal and/or oil, which is used as an ingredient in food for carnivorous farmed fish (fish that eat other fish for protein), such as Atlantic salmon and the fish produced by Kona Blue Water Farms, yellowtail.[xliv] It is also used to feed livestock.

Some programs certify forage fisheries; this allows fishmeal and fish oil manufacturers to claim their product is from a sustainable source. Some labeling standards may not sufficiently consider the role of forage fish in the ecosystem and the effect that its continual extraction will have on other fish, marine animals or seabirds that depend on it for food.

Additionally, some programs that certify farmed fish do not contain adequate standards for the use of wild fish in fish feed. One popular view of fish farming is that it can take the pressure off wild stocks by supplementing our seafood supply. While this can be true for farming mussels, oysters, tilapia or other species that do not require large amounts of wild fish in their diets, certain other farming systems rely on heavy extraction of "lower-value" fish to sustain their farmed stock. This can mean that more fish is put in to the farmed fish than is ultimately produced. For example, to grow one pound of farmed fish may require more than one pound of wild fish as feed. Some certification programs allow farms with a much higher "fish-in-to-fish-out ratio" to gain eco-certification.[xlv]

9. Allowance of Genetic Modification, Antibiotics and Hormones

Although some programs ban genetically engineered (GE) fish, not all do. Further, because infections are common on fish farms, certifications often allow some use of antibiotics. For instance, one set of standards allows both antibiotics and hormones to be used as long as they are used "in accordance with instructions on product labels and national regulations."[xlvi] Unfortunately, some countries may not have strict regulation or enforcement of guidelines for antibiotic and hormone use in animals destined for human consumption.

Right now, the standards pertaining to hormones and GE fish are of most relevance to tilapia production, because the international industry often relies on hormones to rear male-only fish in order to prevent uncontrolled reproduction and achieve speedier growth rates. Using a hormone

called methyltestosterone (MT), some aquaculturists turn genetically male fish into physical females and mate these transgender GE fish with normal males.[xlvii,xlviii] Eventually, a batch of all-male fish is produced.[xlix]

There are serious public health and environmental concerns surrounding the use of MT. The human risks of exposure to this hormone may include liver dysfunction and certain cancers.[l] MT has been documented to persist in the aquatic environment and sediment below fish farms long after being released in the form of medicated feed. This has troubling implications for worker health and the local environment, especially because it is common industry practice in some countries to dredge up pond sediment to "prepare soil" for crop production.[li] MT can also cause skewed sex ratios of untargeted organisms in the local environment.[lii]

10. Threats to Mangrove Ecosystems

Mangroves are the densely shrubby habitats that occur naturally at the border between water and land along many tropical coasts which a wide variety of marine creatures (including fish, birds, turtles and many mammals) call home. They help anchor soil, can provide a buffer from storms and help filter water. Unfortunately, mangroves are frequently destroyed or damaged for development of coastal shrimp farms in South America and Southeast Asia. Mangroves play an important role in coastal ecosystems, and their absence in parts of Southeast Asia may have contributed to the severe effects from the 2004 tsunami in that region.[liii]

The Mangrove Action Project (MAP), which works to manage, protect and restore the rich ecology of coastal mangroves, has been a vocal opponent of certain eco-certifications. Most concerning to MAP is that in one program, mangroves can be removed for "allowable purposes" as long as the farm replants "an area of mangroves three times the size of the area removed." However, mangroves can take dozens of years to fully develop, and replanting may never result in successful growth of a full system. MAP explains that their "years of collective experience in working to counter the negative effects of the shrimp aquaculture industry" has led them to "take a strong stance against this [the Aquaculture Stewardship Council] and other shrimp certification attempts." MAP says that current certification processes "exclude those peoples most affected by the industry's ongoing assaults" and say that ASC's process is "aimed in an inappropriate and environmentally dangerous direction."[liv]

11. Jeopardizing Worker Rights and Safety

With so much seafood produced in developing countries that have less stringent or poorly enforced labor laws, worker wellbeing is a critical issue in seafood production and there is concern that some certification programs may not sufficiently review labor standards. In 2008, the Solidarity Center produced a shocking exposé on laborers at shrimp farms and processing plants in Southeast Asia. The report details egregious human rights abuses in these facilities, including child labor, the total absence of healthcare services or even basic first-aid treatment for most workers, pitifully low wages, and work shifts of up to 26 hours in length.[lv] The Solidarity Center characterizes the creation of the Global Aquaculture Alliance and Aquaculture Certification Council as an attempt to mitigate the negative effects of the industry on its workers, but notes that its standards are sub-par. One of the flaws it documents in the Best Aquaculture Practices, for example, is that the standards do not mention any restrictions on the number of working hours, in an industry where working shifts often exceed 12 hours a day.[lvi] The Solidarity Center also observes that the Best Aquaculture Practices make "no mention of international migrant rights standards or best practices to prevent abuses like debt bondage, forced labor and human trafficking" — all documented abuses mentioned throughout the report.

12. Superseding Governmental Authority

Additionally, there is a concern that by exerting a powerful influence in the marketplace, private eco-labels may, in some cases, steer fisheries management away from the control of national governments — particularly in developing countries. As one study on the Marine Stewardship Council finds, "the MSC reregulates the coordination of the global fisheries away from public venues and into private arenas."[lvii] According to authors, the MSC "bypasses national laws and marginalizes fisherpeople."[lviii]

Even in developed countries, private labels can have an overwhelming effect, such that government laws are pushed aside. The MSC-certified New Zealand hoki fishery, for example, has been found to violate that country's fisheries act, which requires that adverse effects on the aquatic environment — such as its troubled history of deadly interactions with seabirds — be addressed and avoided.[lix] In British Columbia, MSC certified the collapsed Fraser River sockeye salmon fishery,[lx] despite that the fishery was at a fraction of its historic levels. In fact, management of the fishery had been so problematic that in 2009, the prime minister of Canada ordered a judicial

Signs in a New York grocery store.

inquiry into the collapse of the resource.[lxi] (Several weeks later, a once-in-a-century run of over 25 million fish returned to the Fraser River, perhaps smoothing over what might have otherwise remained an extremely controversial certification).[lxii]

13. Incongruence with FAO Guidelines

In 2005, the Food and Agricultural Organization (FAO) of the United Nations set standards for eco-labeling and certification programs for wild fisheries.[lxiii] Often seen as a benchmark, all of the eco-labels mentioned in this report that deal in wild fisheries have favorably compared themselves at one point or another to the FAO guidelines, providing them with an ostensible measure of legitimacy.[lxiv]

However, analysis of each of the aforementioned eco-label programs for wild fisheries against the FAO's guidelines found them lacking. While this review is not meant to be comprehensive, it provides a few examples where the labels fall short of FAO principles.

In October 2010, the FAO's Subcommittee on Aquaculture of the Committee on Fisheries approved the first global guidelines for aquaculture certification. These non-binding guidelines, which will go on to the full committee for approval in 2011, are intended to account for animal welfare, environmental impacts and socioeconomic aspects of certifications.[lxv] Several of the principles in these guidelines may be difficult for some of labels reviewed in this report to meet. For instance, they stress the importance of transparency in the standards setting process; call on aquaculture operators to pay for the mitigation of any damages they cause by polluting; suggest that considerations be made for small-scale farmers lacking resources to pay for certification; state that aquaculture should contribute to rural development and food security; and call for consideration of the precautionary approach, which states that risks to the environment, resource and people should be avoided, taking into account existing uncertainties and the potential consequences of being wrong. While the guidelines do lend support to third-party certification and private labeling, the principles included have merit and should be reviewed for government labeling programs.[lxvi]

Comparisons of Eco-Label Programs Against FAO Standards for Wild Fisheries*

	Description of FAO Standard	Explanation of Violation
MSC	Criterion 29.3: Requires identification of "adverse impacts of the fishery on the ecosystem"	Alaska pollock is being considered for re-certification despite a crashing population and some concerns about bycatch and impact to local communities.[lxvii] Also, MSC is currently considering certifying several reduction fisheries, which could be destabilizing to marine ecosystems that depend on forage fish as a primary food source.
	Principle 2.12: MSC certifies fisheries that fail to meet certain criteria. It mandates improvements that must be met in the future, but the label is granted in the meantime, meaning consumers may be buying a certified product that isn't fully compliant yet. This can be seen as failure to fully communicate the label's meaning.	MSC certifies fisheries that fail to meet certain criteria; it mandates improvements that must be met in the future, but label is granted in the meantime, meaning consumers may be buying a certified product that isn't yet fully compliant. This can be seen as a failure to communicate full information.
	Criteria 28 and 29.5: The fishery operates "in compliance with the requirements of local, national and international law and regulations," and under an "effective legal and administrative framework"	Certified New Zealand hoki has been found to violate that country's fisheries act, which requires that adverse effects on the aquatic environment (such as known bycatch of endangered seabirds) be avoided.[lxviii]
	Criterion 29.6: The fishery implements the "precautionary approach" to "protect the 'stock under consideration'"	Controversial certification of British Columbia sockeye salmon occurred even as a Canadian judicial review into collapse of the resource was ongoing.[lxix]
Friend of the Sea	Criterion 29.3: Requires identification of "adverse impacts of the fishery on the ecosystem"	FOS's certification of reduction fisheries, and companies such as Omega Protein that catch massive amounts of menhaden, could be destabilizing to the ecosystem and detrimentally affect water quality in the coastal mid-Atlantic.
	Criterion 59: "Proper records of standards and development activity should be prepared and maintained"	FOS's website does not publicly offer evaluations for many of their certified fisheries and companies; despite serving consumers internationally, some of these evaluations are only available in Italian.
	Criterion 128: The certification body "should carry out periodic surveillance and monitoring at sufficiently close intervals" to verify that the fishery continues to comply with criteria	FOS apparently performs an annual review — of stock status only — in the five years between each certification; many other factors should be taken into consideration to ensure that no other impacts on local ecology (such as the seafloor or new and unanticipated bycatch) are taking place.
IFFO's GSRS	Criterion 29.3: Requires identification of "adverse impacts of the fishery on the ecosystem"	IFFO's certification of fisheries destined for reduction could be destabilizing to marine ecosystems that depend on forage fish as a primary food source.
	Criterion 41: Eco-label standards "should not distort global markets"	Certification of reduction fisheries may distort global markets and cause food insecurity in developing countries.[lxx]

* GAA / ACC, GTC, Ltd., and ASC are not included in this analysis because they only certify aquacultured seafood.

Eco-Label Comparison and Breakdown

Table 1: Concerns Associated with Standards for Certifying Wild Fish, by Label

	MARINE STEWARDSHIP COUNCIL	FRIEND OF THE SEA (WILD CRITERIA)	INTERNATIONAL FISH MEAL AND FISH OIL ORGANIZATION
Prohibitive costs	⚠		
Ambiguous or non-transparent criteria	⚠	⚠	
Insufficient public input	⚠	⚠	⚠
Negative impact on marine animals	⚠	⚠	⚠
No carbon footprint standards	⚠		⚠
Certifies forage fisheries or their products	⚠	⚠	⚠
Free-rider problem	⚠		
Incongruent with FAO criteria	⚠	⚠	⚠

Table 2: Concerns Associated with Standards for Certifying Farmed Fish, by Label

	BEST AQUACULTURE PRACTICES (GAA)	FRIEND OF THE SEA (FARMED CRITERIA)	GLOBAL TRUST*	AQUACULTURE STEWARDSHIP COUNCIL **
Prohibitive costs	⚠		Unknown	TBD
Does not prohibit… GE	⚠		Unknown	TBD
antibiotics	⚠	⚠	⚠	
hormones	⚠		Unknown	
Ambiguous or non-transparent criteria		⚠	⚠	TBD
Insufficient public input	⚠	⚠	⚠	TBD
Certify farms with negative impact on mangrove ecosystems	⚠		Unknown	TBD
No carbon footprint standards	⚠		Unknown	TBD
Insufficient FCR standards		⚠	⚠	TBD
Free-rider problem				⚠
Insufficient worker safety	⚠		Unknown	TBD

*Because Global Trust's standards are not available to the public, it was not possible to verify whether certain concerns apply. Its failing grade on antibiotics and FCR are based on assumptions from the certification of one salmon farm.

** Because the Aquaculture Stewardship Council has not yet issued certifications, several of these categories are not yet determined. Because standards are being created separately for different species, different conditions may apply to each species. The issues with mangrove systems and free-riders are problems expected to arise based on Aquaculture Dialogue standards as currently written.

How Eco-Labels Have Changed the Marketplace

Looking to boost their "green" credibility, retailers and restaurants have turned to eco-labels as a straightforward way to buy and sell only "environmentally friendly" seafood. Wal-Mart, for example, made a splash when it announced in 2006 that it would source all of its wild fish products from MSC-certified fisheries within three to five years.[lxxii] Kroger Company (one of the nation's largest grocery retailers), Wegman's (with locations throughout the East Coast), U.S. Food Service (the second-largest food-service distributor to restaurants, cafeterias, schools and hospitals), and Supervalu (America's fifth-largest food retailer) are other companies that either sell MSC-certified seafood or have begun review processes to consider selling MSC-certified products.[lxxiii,lxxiv,lxxv,lxxvi]

Darden Restaurants, the large U.S. restaurant company that is the owner of a handful of well-known branded restaurants, including Red Lobster and the Olive Garden, committed in 2006 to source shrimp only from farms certified with the BAP seal by GAA.[lxxvii]

Partnerships between eco-labelers, retailers and restaurants can allow eco-labels to capture large amounts of the market, keeping sustainable but uncertified fish out of marketplaces and allowing questionable certified products to be dominant.

Surprisingly, in the absence of national standards, even state governments have incorporated private certifications into regulations. In October 2009, the state legislature in California enacted a bill that established standards for sustainable fishing practices, as well as a protocol for labeling and marketing of seafood sold in the state. It now gives the state's Ocean Protection Council the authority to set the sustainable seafood standards and create some sort of "California-certified" eco-label, whose logo is yet to be developed.[lxxviii] Although MSC is not explicitly named anywhere in the law, its three principles are used verbatim as guidance in the text of the bill,[lxxix] which would set a problematic precedent for the state if they are adopted without any strengthening.

Target Hits the Mark!

In January 2010, Target announced that it had eliminated farmed salmon from its more than 1,700 stores across the United States and that all sushi containing farmed salmon will be phased out by the end of this year. In its place, they'll be offering wild Alaskan salmon.[lxxx]

This decision to "go wild" will provide consumers an opportunity to purchase healthier, more sustainable seafood — even when buying from a mega-store like Target. Salmon farming is among the worst of environmental offenders when it comes to food production. In a lot of ways, salmon farms can be considered equivalent to the filthy and jam-packed confined animal feeding operations also known as factory farms. They often crowd too many fish into too small a space — in this case, open net pens in the ocean or coastal waterways — resulting in massive water pollution, threats to wild fish, degradation of important habitats and more.

Instead of relying exclusively on sustainability claims made by a certain certification program, Target took an independent step to remove a type of fish it recognized as problematic from its shelves.

Solutions

The lack of a national label or set of standards has allowed private eco-labels to capture large portions of the market, but the findings of this report suggest that private eco-labels are not adequate indicators of sustainable seafood choices for either consumers, restaurants or retailers. The plethora of labels on the market and the divergence of standards between them make it difficult for consumers to understand what they actually mean or know what to choose. Furthermore, these labels have allowed private organizations, and even companies with vested financial interests, to set the standards for sustainability with insufficient public input.

To address this problem, the federal government must step up and offer consumers some meaningful, well-defined and verified claims that can be used to describe environmentally and socially responsible seafood. Specifically:

I. The USDA should begin this process by extending the requirement for country of origin labels to all seafood. This would be achieved by closing the loophole created by the current definition of "processed" that improperly exempts much of the seafood consumed in the United States from mandatory labeling. This labeling would help consumers to distinguish between seafood produced under U.S. regulations and seafood produced in countries where environmental, health, safety and labor standards are often weaker.

II. Another USDA program, "certified organic," does not yet apply to seafood, but there is growing interest in developing organic standards and draft recommendations for farmed seafood are being discussed. Unfortunately, the proposed standards for organic seafood are problematic. For seafood production to live up to the principles of organic production, organic standards would have to:

- exclude production in open-water net pens
- require fully closed/contained systems[lxxxi]
- exclude the use of wild fish as feed
- require a 1:1 or lower fish-in-fish-out ratio
- require organic feed
- prohibit antibiotics, pesticides, hormones and genetic modification
- set standards for energy and water usage in production

III. The FDA should establish a program to define and verify claims made by labels about sustainable seafood. Considerations should include:

- contaminant levels
- the health of the fishery, including stock status, reproducing population and ecosystem interactions
- methods used to catch or raise seafood
- socio-economic impacts
- labor practices

The use of these labeling claims should be based on a verification program conducted by government employees. If

Open-Ocean Aquaculture: Too Big, Too Dirty, Too Dangerous

Open-ocean aquaculture consists of farming fish (usually high-value finfish) in very large, often overcrowded cages or "netpens" in the open water, sometimes miles off the shore. In the United States, industry proponents are pushing to open federal waters (typically three to 200 miles off the coast) to this practice, but legislation has thus far been opposed by environmentalists, consumer advocacy groups, fishermen, and other businesses and community groups. In these industrial fish farms, waste, uneaten feed, and any chemicals or antibiotics used in the operation flow freely from cages into the water. This can potentially cause damage to the seafloor and harm the organisms that live there. Additionally, farmed fish, bred for living in captive conditions, are prone to escape. Escaped fish can interbreed with or overtake wild fish, weakening wild stocks or displacing and outcompeting them for food, habitat and mates. Whether or not fish escape, they can also spread or increase diseases and parasites in wild fish.[lxxi]

the FDA cannot provide the resources to conduct these verifications, the agency could alternatively charge user fees to the processor wishing to use the claim, similar to the fees charged by USDA's Agricultural Marketing Service for its grading and marketing programs. This program would be separate from safety inspections conducted by FDA inspectors.

In the meantime, consumers can use the following questions at grocery stores, markets and restaurants to help assess the quality and sustainability of seafood.

1. ***Was it caught or farmed locally?***
   Often the shorter the distance food travels to get to your table, the less fuel is used to get it to you. You'll also have a better chance of supporting local fishing communities and getting fresher seafood.

2. ***Was it caught or farmed domestically?***
   Seafood safety standards in the United States are stronger than in many other places that supply our imported seafood. Choosing domestic can reduce the likelihood that your fish is contaminated with toxic substances that the United States considers illegal. And of course, you contribute to the U.S. economy.

3. ***Is it farmed or wild?***
   In general, choose wild-caught. If the answer is farmed, see tip # 5 below. Wild fish often carry fewer health risks for consumers than most farm-raised fish because they are not grown in large crowded cages with antibiotics and pesticides. Wild-caught fish aren't always perfect though — some types may contain higher levels of mercury or other pollutants, so consumers (especially parents and women that are pregnant or may become pregnant) should watch for warnings about which fish to choose for themselves and their children.

4. ***How is it caught?***
   Some fishing methods have high levels of bycatch or cause habitat damage. Ask whether the fish has been caught using sustainable methods.

5. ***How is it farmed?***
   Choose types of fish that need few inputs. Farm-raised mussels and clams can grow more easily without chemicals and antibiotics. Ask your grocery or restaurant about the type of farm seafood products came from.

   Avoid open water factory farm-raised finfish that require large amounts of wild fish as feed. Wild fish are used to produce feed for many farmed fish, taking food away from other marine wildlife and people that rely on smaller fish for food. Farmed fish are often grown in large, overcrowded open-water cages where fish waste, excess feed and any chemicals used in the operation flow straight into open waters. This can cause environmental harm and human health problems. Also, the large businesses that grow these fish often overtake independent fishermen and put them out of business, hurting smaller-scale, local fishing communities. Fish farmed in land-based recirculating systems are currently harder to find in the market, but are a more environmentally friendly option.

   When it comes to shrimp, choose U.S. wild (and/or U.S. land-based farmed if available). Avoid imported farm-raised shrimp. The FDA inspects less than 2 percent of seafood imports, meaning a large amount of contaminated shrimp could be reaching U.S. consumers.[lxxxii]

6. ***Is it associated with any contaminants?***
   Overall, try to eat a variety of fish — don't stick to just one type. By doing so, your exposure to possible seafood contaminants can be reduced. This also helps to lower pressure on wild fish that have become over-popular seafood choices. And always ask where your seafood comes from before you buy — you have a right to know! This will also prompt restaurants and markets to pay attention to what they buy once they know their patrons care. Learn about your seafood and share your knowledge with others.

For a handy guide that you can keep in your wallet and pull out when you're at a seafood market or sitting down to dinner at your favorite restaurant, check out our Smart Seafood Guide at:

http://bit.ly/seafood-guide

Endnotes

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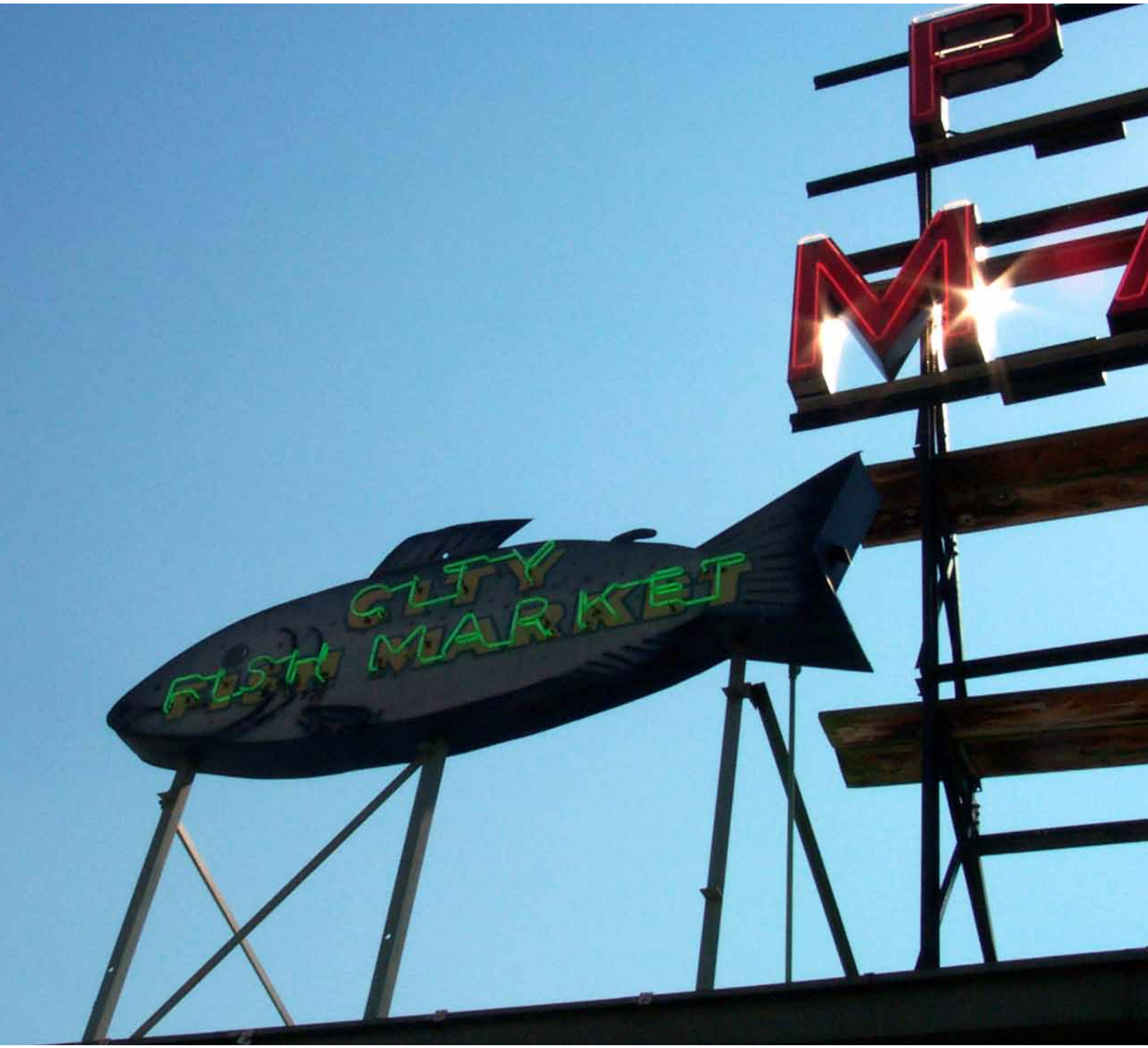

Food & Water Watch
Main Office
1616 P St. NW, Suite 300
Washington, DC 20036
tel: (202) 683-2500
fax: (202) 683-2501
info@fwwatch.org
www.foodandwaterwatch.org

California Office
25 Stillman Street, Suite 200
San Francisco, CA 94107
tel: (415) 293-9900
fax: (415) 293-9941
california@fwwatch.org

food&waterwatch
Food & Water Watch • 25 Stillman Street, Suite 200, San Francisco, CA 94107
www.foodandwaterwatch.org • T: +1.415.293.9900 • F: +1.415.293.9941

Appendix 2: "Comparison of Seafood Eco-Labels."

Food & Water Watch

December 2010

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FISH

Comparison of Seafood Eco-Labels

Fact Sheet • December 2010

Table 1: Concerns Associated with Standards for Certifying Wild Fish, by Label

	MARINE STEWARDSHIP COUNCIL	FRIEND OF THE SEA (WILD CRITERIA)	INTERNATIONAL FISH MEAL AND FISH OIL ORGANIZATION
Prohibitive costs	⚠[1]		
Ambiguous or non-transparent criteria	⚠[2]	⚠[3]	
Insufficient public input[4]	⚠	⚠	⚠
Negative impact on marine animals[5]	⚠	⚠	⚠
No carbon footprint standards	⚠[6]		⚠[7]
Certifies forage fisheries or their products[8]	⚠	⚠	⚠
Free-rider problem	⚠[9]		
Incongruent with FAO criteria[10]	⚠	⚠	⚠

Marine Stewardship Council: Although MSC has relatively easy-to-read standards, their readability does not prevent them from being associated with a host of concerns, and in many places, the standards are ambiguous. The cost of MSC certification came close to preventing even Alaskan salmon, some of the best-managed fisheries, from entering the recertification process.[11] The criteria do not specifically prevent use of any gear type except explosives and poisons[12] — allowing fisheries associated with high bycatch and seafloor damage to be certified. One example of this

is Alaskan pollock — a fish that is caught with industrial trawls.[13]

Although MSC does allow for a comment period when a fishery is up for certification, the Alaskan Ocean Program concluded after a drawn-out challenge to the 2005 pollock certification that its "objection process is not legitimate."[14] In another example, certification of New Zealand hoki was adamantly opposed by Forest and Bird New Zealand because the fishery was accused of causing many fur seal and seabird deaths.[15] Despite these concerns, certification was granted and then recertified, providing evidence that the MSC certification does not always indicate whether other animals that may interact with the fishery are being protected.[16]

As for carbon footprint, MSC does not address this issue in their scoring criteria.[17]

MSC has certified several sardine and herring fisheries, and other forage fisheries are under consideration.[18] These types of fish are processed into fishmeal and fish oil for use in various products, including animal feed. Depleting forage fish stocks can damage marine food webs and negatively impact food security in developing countries.

MSC has even certified the Antarctic krill fishery.[19] Krill is a small crustacean used to make pharmaceuticals and feed for farmed fish and terrestrial animals. Certification of the Antarctic krill fishery is extremely concerning because the creature is believed to already be experiencing significant adverse ecological impacts as a result of climate change. Because the MSC allows fisheries that do not meet all standards to be certified and labeled,[20] it allows problematic fisheries to ride on the eco-friendly reputation of more sustainable fisheries in the program — this is referred to as the "free-rider" problem. Last, but certainly not least, MSC does not meet all the FAO standards for the eco-labeling of wild fish.[21]

Friend of the Sea (Standards for Wild Fish): FOS promotes itself as a low-cost alternative to MSC certification[22] and is unique in its attention to a fishery's carbon footprint. However, certification programs with lower costs (that entail, in the case of FOS evaluation, reliance on existing studies) may not be scientifically rigorous, and FOS's approach to addressing a fishery's carbon footprint involves the purchase of carbon offsets,[23] which are highly controversial in terms of efficacy. Though the program does not explicitly ban harmful gear types like industrial trawls,[24] it does not appear to have certified any factory trawl finfish fisheries as of December 2010.[25]

The criteria that FOS relies upon for evaluation are predominantly qualitative, rather than quantitative, which makes them somewhat ambiguous.[26] Additionally, FOS does not require a peer review after initial evaluation, which leaves little room for meaningful stakeholder participation or public comment.[27]

Of significant concern, FOS has certified a fish oil corporation, Omega Protein Corporation.[28] Omega Protein catches the vast majority of the nation's menhaden, a small filter-feeding fish that is a critical part of the food chain and is believed to play an important role in coastal water filtration.[29] Omega claims to be the "world's largest producer of omega-3 fish oil and North America's largest manufacturer of protein-rich fishmeal."[30]

Although FOS does not appear to create as much of a free-rider situation as MSC, it is likely that there are in fact wide disparities in the sustainability of certified fisheries, due to the qualitative nature of the certification process. Finally, the label is not congruent with all FAO standards for the eco-labeling of wild fish.[31]

International Fishmeal and Fish Oil Organization's Global Standards for Responsible Supply: The biggest concern with this certification program is the very nature of the fisheries it certifies: fisheries that take small fish or crustaceans that serve as the base of the marine food web. Some of these species serve as a key source of protein in food-insecure countries.[32]

The IFFO's requirements generally state that the "fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment," but do not spell out how this will be measured; nor does IFFO indicate that it bans gear types associated with higher instances of negative ecological impacts.[33]

The cost of certification to the IFFO's GSRS is somewhat less expensive than MSC's but certification lasts for 3 years (as compared with MSC's 5 years).[34] However, the program is focused on large fisheries and companies, so exclusion based on cost is not as much of a concern here: Many of these companies are financially strong.

Various logos used in fish certification programs

Other concerns include: The GSRS program, which is intended as a business-to-business label, does not involve significant public input.[35] The standards invoke the precautionary principle and say that endangered and protected species should be considered, but do not include specific standards for protecting marine animals, and the issue of a fishery's carbon footprint is not addressed in the company's criteria for certification.[36] The label is not congruent with all standards set by the Food and Agriculture Organization of the United Nations for wild fish.[37]

Table 2: Concerns Associated with Standards for Certifying Farmed Fish, by Label

	BEST AQUACULTURE PRACTICES (GAA)	FRIEND OF THE SEA (FARMED CRITERIA)	GLOBAL TRUST*	AQUACULTURE STEWARDSHIP COUNCIL **
Prohibitive costs	⚠ [38]		Unknown	TBD
Does not prohibit… GE	⚠ [39]		Unknown	TBD
antibiotics	⚠ [40]	⚠ [41]	⚠ [42]	
hormones	⚠ [43]		Unknown	
Ambiguous or non-transparent criteria		⚠ [44]	⚠ [45]	TBD
Insufficient public input	⚠ [46]	⚠ [47]	⚠ [48]	TBD
Certify farms with negative impact on mangrove ecosystems	⚠ [49]		Unknown [50]	TBD [51]
No carbon footprint standards	⚠ [52]		Unknown	TBD
Insufficient FCR standards		⚠ [53]	⚠ [54]	TBD
Free-rider problem				⚠ [55]
Insufficient worker safety	⚠ [56]		Unknown	TBD

*Because Global Trust's standards are not available to the public, it was not possible to verify whether certain concerns apply. Its failing grade on antibiotics and FCR are an assumption based on its certification of one salmon farm.

**Because the Aquaculture Stewardship Council has not yet issued certifications, several of these categories are not yet determined. Because standards are being created separately for different species, different conditions may apply to each species. The issues with mangrove systems and free-riders are problems expected to arise based on Aquaculture Dialogue standards as currently written.

Best Aquaculture Practices: The cost of the Global Aquaculture Alliance's Best Aquaculture Practices is particularly relevant because the BAPs certify many shrimp farms,[57] and in many of the countries where shrimp farming takes place, it is safe to assume that many smaller farmers cannot afford the extra cost of certification. Although the BAP standards are more measurable than some of the other programs', they have still been accused of failing to protect the environment and human rights. Looking at the survey used for tilapia, for example, the company does not state that it prohibits genetically engineered fish, antibiotics or hormones, nor does it indicate that they have standards to address the issue of carbon footprint.[58] Mangrove Action Project has intensely criticized the GAA certification scheme, claiming that it will lead to further degradation of mangrove ecosystems, critical habitats in which shrimp farming often takes place.[59] The BAPs have not been adjusted in spite of MAP and other community groups' complaints, indicating that public input is not sufficiently considered. Perhaps most concerning, a shocking exposé on labor and human rights abuses in the shrimp-farming industry notes that the BAP standards' attention to workers' rights is seriously sub-par.[60]

Friend of the Sea (Standards for Farmed Fish): FOS does ban genetically engineered fish and growth hormones, but does not prohibit antibiotics used in fish farming.[61] Like the criteria for wild fish, those for farmed fish are lacking in numerical, quantifiable standards. No peer review of certification decisions is required,[62] which limits the opportunity for stakeholder dialogue and public input. While the standards call for "evidence of a decreasing FCR [feed conversion ratio]," which is a number representing the ratio of the amount of fish that are fed to the farmed fish, in order to produce a pound of farmed fish, no numerical limits are set in FOS's criteria. This means that large amounts of fishmeal or fish oil (produced from the reduction of wild forage fish) might be used on certified farms.[63] The standards call for "social accountability,"[64] but it is unclear what measures FOS takes to ensure that human and worker rights are respected on the farms it certifies.

Global Trust Certifications, Ltd: Distribution of the Global Trust Certification, Ltd's standards is controlled, and interested members of the public must fill out a licensing agreement to gain access to them.[65] Clearly, the standards are severely lacking in transparency and public input. Because GTC has certified at least one large salmon farm,[66] the standards do not appear to prohibit antibiotic use or require limits on wild fish in feed that would meet this report's qualifications for sustainability.[67] For example, Cooke Aquaculture, which is certified by GTC, has faced widespread community opposition at some of its sites. Criticisms have stemmed from this company's use of a risky experimental pesticide in the open water,[68] apparent water pollution, and attempts to dramatically expand production despite such opposition from local residents.[69]

Aquaculture Stewardship Council: Because the ASC is not yet fully functional as of the time of publication, any concerns associated with this certification program remain to be seen. The program will be using separate guidelines for each species,[70] so concerns may be specific to individual types of seafood. One anticipated issue is the "free-rider" problem. ASC will take the approach of certifying just at the above-average level of environmental performance, similar to MSC,[71] thus allowing products from less-than-sustainable operations to earn the same label as the most sustainable options carrying the same label. Mangrove Action Project and other groups have already challenged the ASC for intent to "support industrial aquaculture and harm local environments and indigenous communities."[72] Another concern associated with the ASC is that it will support the emergence of the open-water finfish industry. The Aquaculture Dialogues, which are creating standards for the ASC to use, are already discussing standards for U.S. production of salmon, seriola and cobia,[73] which currently are commercially produced, primarily in open water fish farms.

Endnotes

1 Fiorillo, John. "Will Alaska winter troll salmon lose MSC label?" IntraFish, December 8, 2009. To cite just one example, in this article that was written in late December 2009, ASMI was considering whether to take over maintenance of the MSC program for Alaska salmon, but "at issue is concern over how ASMI will effectively be reimbursed the estimated $250,000 annual cost of administering the program." They later deferred on taking control of the certification process, and another company stepped in for Alaska salmon.

Another source states the following in regards to fees for the MSC program: "Media reports show that the [initial] fees are about $15,000– 150,000 per fishery, and about $75,000 for annual audits." Jacquet, Jennifer, et al. "Seafood stewardship in crisis." Nature 467, 28-29 (2 September 2010). MSC certification lasts for 5 years, pending on annual compliance measures.

By comparison, FOS costs are estimated at €5,000 (about $6,757 in U.S. dollars, conversion performed by Food & Water Watch staff in November 2010) or higher for the initial fee to enter the program, and €3,000 (about $4,054) for subsequent audits. Friend of the Sea. "Frequently Asked Questions" at "Costs Involved." Accessed November 17, 2010, available at http://friendofthesea.org/faq.asp

IFFO's estimated costs are €12,000 (about $16,216) in initial fees for the fisheries assessment and administration, with subsequent audits at about €3,000 (about $4,054) per year – of which €2,000 (about $2,702) is assigned in annual administrative costs and €1,000 (about $1,352) is assigned for ongoing assessments. Since IFFO's program is focused on large fisheries and companies, exclusion based on cost is not as much of a concern here: many of these companies are financially strong. International Fishmeal and Fish Oil Organization. "IFFO Global Responsible Supply Standard Costs." Available at http://www.iffo.net/downloads/IFFO%20RS/IFFO%20RS%20Costs.pdf

2 For example, MSC's Fisheries Assessment Methodology uses phrases like "likely" and "highly likely" that are vaguely defined in terms of statistical probability, even as these phrases are permitted to be used in a qualitative sense. See Marine Stewardship Council. "Fisheries Assessment Methodology" Version 2.1, May 2010 at pages 26, 30 and 36.

3 For example, FOS's Criterion 5.4 states "The Fishery has a by-catch reporting methodology that is accountable." – but without any definition of the term "accountable" or a description of the entity to whom the fishery is accountable. The person or organization responsible for monitoring (for example, fishermen, regional fishing management organizations, the local community, or national authorities) for such compliance is also not listed here. Friend of the Sea. "Certification Criteria Checklist for Wild Catch Fisheries." Updated May 2010 at Criterion 5.4.

4 MSC has been frequently criticized for its limited ability to assess and certify smaller fisheries, and to adequately interface with stakeholders in local fishing communities that might not be able to pay high fees for formal assessment of their resource. Ponte, Stefano. "Greener than Thou: The political economy of fish eco-labeling and its local manifestations in South Africa." World Development, vol. 36, iss. 1. January 2008 at 163.

These concerns have led some to label MSC's organizational model as "corporate" and inaccessible; critics have even alleged that its "managerial structure is designed to insulate the Board of Trustees." Gale, Dr. Fred, and Dr. Marcus Haward. "Public accountability in private regulation: contrasting models of the Forest Stewardship Council (FSC) and Marine Stewardship Council (MSC)." Presented to the Australasian Political Studies Association Conference, University of Adelaide. September 29 – October 1, 2004 at 28.

FOS, meanwhile, does not require audits beyond the minimum required by FAO, and peer review of a fishery to be certified to FOS does not appear to be incorporated into the assessment process. See Friend of the Sea. "Audit and chain of custody." Page undated, available at http://friendofthesea.org/about-us.asp?ID=2 Accessed November 23, 2010; and Food and Agriculture Organization, "Guidelines for the ecolabelling of fish and fishery products from marine capture fisheries." Revision 1, 2009 at #132, "Renewal of Certification."

IFFO's review process also does not require peer review during the certification process. After a company is audited by an accredited certification body, the application is reviewed by IFFO's Certification Committee, which "comprises a retailer, a processor an marine conservation NGO, and one IFFO representative," but no apparent public input. See International Fishmeal and Fish Oil Organization. "Global Standards for Responsible Supply [Booklet]." October 2010 at 5. Available at http://www.iffo.net/downloads/IFFO%20RS/IFFO%20RS%20Booklet.pdf

5 MSC's controversial certification of the Bering Sea/ Aleutian Islands pollock fishery is believed to have had an adverse effect on endangered Steller sea lions. See World Wildlife Fund Kamchatka / Bering Sea Ecoregion in Jake Rice, et al. Moody Marine Ltd. "MSC Assessment Report for The Bering Sea / Aleutian Islands Pollock (Theragra chalcogramma) Fishery." Version 3: Public Comment Draft Report, January 2010 at 186-187; and Wolf, Nicholas and Marc Mangel. "Understanding the decline of the Western Alaskan Steller sea lion: assessing the evidence concerning multiple hypotheses. NOAA Contract Report AB133F-02-CN-0085. 2004.

FOS has certified companies that catch and sell large quantities of forage fisheries, such as Omega Protein Corporation, which processes menhaden into fishmeal and fish oil. Depleting forage fish stocks can harm marine food webs and negatively impact food security in developing countries. See Franklin, H. Bruce. The Most Important Fish In the Sea. Island Press, 2007. See also Omega Protein, "Omega Protein is a Friend of the Sea." Accessed November 24, 2010, available at http://www.omegaproteininc.com/friend-of-the-sea.aspx and Friend of the Sea. "Omega Protein qualifies for Friend of the Sea Certification." May 20, 2008. Accessed November 24, 2010, available at http://friendofthesea.org/news-doc.asp?ID=165&CAT_ID=1

IFFO's mission is to certify these forage fish stocks as sustainable, which in itself can result in harm to marine mammals, as stated above. International Fishmeal and Fish Oil Organization. "About." Available at http://www.iffo.net/default.asp?contentID=636 , accessed November 24, 2010.

6 MSC Principles and Criteria (version 1.1, updated May 2010) have no mention of travel miles or carbon footprint.

7 IFFO's Global Standards for Responsible Supply have no mention of travel miles or carbon footprint included in their standards for certification. International Fishmeal and Fish Oil Organization. "Global Standards for Responsible Supply: Requirements for Certification." September 7, 2009.

8 For MSC: Currently certified fisheries that are used, at least in part, for reduction to fishmeal and fish oil but are also a primary food source include (but are not limited to) the Scottish pelagic Atlanto-Scandian herring, certified in March 2010. The Mexican Gulf of California sardine fishery, which is predominantly a reduction fishery, is still being considered for certification. Information available at http://www.msc.org/track-a-fishery/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring and http://www.msc.org/track-a-fishery/in-assessment/pacific/gulf-of-california-mexico-sardine/

For FOS: See Endnote 5. This organization has certified companies that catch and sell large quantities of forage fisheries, such as Omega Protein Corporation, which processes menhaden into fishmeal and fish oil. Depleting forage fish stocks can harm marine food webs and negatively impact food security in developing countries. See Omega Protein, "Omega Protein is a Friend of the Sea." Accessed November 24, 2010, available at http://www.omegaproteininc.com/friend-of-the-sea.aspx and Friend of the Sea. "Omega Protein qualifies for Friend of the Sea Certification." May 20, 2008. Accessed November 24, 2010, available at http://friendofthesea.org/news-doc.asp?ID=165&CAT_ID=1

For IFFO: See Endnote 5. IFFO's mission is to certify forage fish stocks as sustainable, as stated above.

9 Because the MSC allows fisheries that do not meet all standards to be certified and labeled, it allows problematic fisheries to ride on the eco-friendly reputation of more sustainable fisheries in the program – this is referred to as the "free-rider" problem. For example, see Condition 3.4.2 in MSC Methodology: "Where the fishery achieves a score of less than 80, but of at least 60 for any individual Performance Indicator, the certification body shall set one or more conditions for continuing certification." Marine Stewardship Council. "MSC Fisheries Certification Methodology." Version 6, revised September 2006. At Condition 3.4.2 on page 21.

10 See page 10 of Decoding Eco-Labels: Why We Need Public Standards by Food & Water Watch, for a chart noting several deficiencies in each of these 3 eco-labels as compared against FAO criteria.

11 Fiorillo, John, "MSC Label in Jeopardy?" Intrafish Media. July 25, 2008; and Marine Stewardship Council. [Press release]. "AFDF to serve as new client managing MSC certification for Alaska salmon." February 20, 2010.

12 Criteria B14 of Principle 3 of MSC's Principles and Criteria: "Operational criteria: Fishing operation shall not use destructive fishing practices such as fishing with poisons or explosives." Marine Stewardship Council. "MSC Principles and Criteria for Sustainable Fishing." Version 1.1, updated May 2010 at page 8.

13 See Endnote 5, and Marine Stewardship Council. "Bering Sea / Aleutian Islands pollock." Accessed November 29, 2010, available at http://www.msc.org/track-a-fishery/certified/pacific/bsai-pollock

14 Marz, Stacey, consultant to Trustees for Alaska. Letter to Rupert Howes, chief executive of Marine Stewardship Council. Sent April 25, 2005 on behalf of the Alaska Oceans Program, the National Environmental Trust, Oceana and Trustees for Alaska. On file with Food & Water Watch.

15 Burton, Bob. (2007). Inside Spin: The dark underbelly of the PR industry. Crows Nest NSW, Australia: Allen & Unwin at 165; and Forest and Bird New Zealand. "Hoki fishery still killing too many fur seals." November 3, 2010; available at http://www.forestandbird.org.nz/what-we-do/publications/media-releases/-hoki-fishery-still-killing-too-many-fur-seals Accessed December 1, 2010.

16 New Zealand Forest & Bird. [Press release]. "Hoki fishery doesn't deserve its 'sustainability tick.'" September 17, 2007.

17 See Endnote 6.

18 See Endnote 8.

19 Marine Stewardship Council. "Aker Biomarine Antarctic krill." Accessed November 29, 2010, available at http://www.msc.org/track-a-fishery/certified/southern-ocean/aker-biomarine-antarctic-krill

20 See Endnote 9. Condition 3.4.2 in MSC Methodology: "Where the fishery achieves a score of less than 80, but of at least 60 for any individual Performance Indicator, the certification body shall set one or more conditions for continuing certification." Marine Stewardship Council. "MSC Fisheries Certification Methodology." Version 6, revised September 2006. At Condition 3.4.2 on page 21.

21 See page 10 of Decoding Eco-Labels: Why We Need Public Standards by Food & Water Watch, for a chart noting several deficiencies in MSC as compared against FAO.

22 See Endnote 1, and Stromsta, Karl-Erik. "Friend of the Sea vs. Marine Stewardship Council: Only one?" Intrafish Media. July 31, 2008.

23 Friend of the Sea. "Seafood Carbon Footprint Calculator Allows Industry and Retailers to Offset their CO2." May 21, 2008. Available at http://friendofthesea.org/news-doc.asp?ID=32&CAT_ID=1 accessed November 8, 2010.

24 As evidenced by FOS's "Certification Criteria Checklist for Wild Catch Fisheries," updated May 2010. See sections 2 and 3.

25 From a review of certified fisheries on Friend of the Sea's website. Also see FOS press releases on rejected fisheries, including Northeast Atlantic langoustine trawl fishery and East Indian Ocean shrimp bottom trawl fishery. Friend of the Sea. "North East Atlantic Trawl Fisheries for Langoustine fail to meet Friend of the Sea criteria." November 11, 2009. Available at http://friendofthesea.org/news-doc.asp?ID=99&CAT_ID=1 , accessed November 29, 2010; and Friend of the Sea. "Shrimp bottom trawl fishery in the East Indian Ocean does not pass Friend of the Sea sustainability audit." February 16, 2009. Available at http://friendofthesea.org/news-doc.asp?ID=121&CAT_ID=1 , accessed November 29, 2010.

26 See Endnote 3.

27 From a thorough review of FOS's website, it does not appear to be the case that peer review is required of any audit. See Friend of the Sea. "Frequently Asked Questions" at "The Audit Process." Page undated. Available at http://friendofthesea.org/faq.asp , accesssed November 29, 2010; and FOS. "Stakeholders." Page undated. Available at http://friendofthesea.org/stakeholders.asp , accessed November 29, 2010.

28 See Endnote 5. Friend of the Sea. "Omega Protein Qualifies for Friend of the Sea Certification." May 20, 2008, available at http://www.friendofthesea.org/news-doc.asp?ID=165&CAT_ID=1 Accessed November 8, 2010.

29 Franklin, H. Bruce. (2007). The Most Important Fish in the Sea. Washington, DC: Island Press at 6-9.

30 Omega Protein. "Welcome." Page Undated. Available at http://www.omegaproteininc.com/ , accessed November 29, 2010.

31 See page 10 of Decoding Eco-Labels: Why We Need Public Standards by Food & Water Watch, for a chart noting several deficiencies in FOS as compared against FAO standards.

32 IFFO's mission is to certify forage fish stocks as sustainable for the purpose of their reduction into fishmeal and fish oil for use in animal and fish farm feeds. For example, IFFO certifies one of the largest reduction fisheries in the world, Peruvian anchovy, which is also a food source for people in countries like Peru, where food insecurity remains a problem. See IFFO, "Plants Approved under the IFFO Global Standards for Responsible Supply (IFFO RS)." Available at http://www.iffo.net/downloads/PlantsApprovedRSScheme%20English%20011110.pdf , accessed November 30th, 2010 at pages 2 through 10; and Jacquet, Jennifer. "Save our oceans, eat like a pig." The Tyee, April 17, 2007. Available at http://thetyee.ca/Views/2007/04/17/EatLikePigs/

33 International Fishmeal and Fish Oil Organisation. "Global Standards for Responsible Supply: Requirements for Certification" at Criterion 1.3.2.3. September 7, 2009.

Available at: www.iffo.net

34 See Endnotes 1 and 7. IFFO requires a full assessment every third year, with annual administration charges and audits conducted annually. See International Fishmeal and Fish Oil Organization. "IFFO Global Responsible Supply Standard Costs." Available at www.iffo/net/default.asp?contentID=636 ; and IFFO, "Global Standards for Responsible Supply: Requirements for Certification." September 7, 2009.

35 There is no mention of peer review or other supervisory activity mentioned in either the Global Standards for Responsible Supply "Requirements for Certification" document, or the IFFO Booklet. (See Endnotes 1 and 7.)

36 See Endnote 33. International Fishmeal and Fish Oil Organisation. "Global Standards for Responsible Supply: Requirements for Certification." September 7, 2009. Available at: www.iffo.net

37 See page 10 of Decoding Eco-Labels: Why We Need Public Standards by Food & Water Watch, for a chart noting several deficiencies in IFFO as compared against FAO.

38 Global Aquaculture Alliance. "Certification Process." Page updated 2010, accessed December 1, 2010. Available at http://gaalliance.org/certfication/process.php

39 See Global Aquaculture Alliance's "Aquaculture Facility Certification: Shrimp Farms," which on page 17 states, "Certified farms shall not use wild postlarvae and shall comply with governmental regulations regarding the importation of native and non-native shrimp seedstock." The details about this standard further say, "Should genetically modified shrimp be commercialized in the future, further regulation would be required," but currently do not explicitly ban GE. Global Aquaculture Alliance. "Aquaculture Facility Certification: Shrimp Farms." Version updated September 2009, available at www.gaalliance.org/cmsAdmin/uploads/BAP-ShrimpF-909.pdf

Similar information can be found on GAA's "Guidelines for Channel Catfish Farms," which state, " Genetically modified organisms (GMOs) are defined as organisms whose genomes have been modified by the introduction or deletion of specific genetic material. Sex-reversed organisms and their offspring, and organisms created by hybridization and polyploidy are not GMOs. Should genetically modified channel catfish be commercialized in the future, producers shall comply with all regulations regarding such organisms." However, if such regulations do not prohibit GMOs, the BAP criteria as from this document suggest that they would not be prevented from certification. Global Aquaculture Alliance. "Aquaculture Facility Certification: Channel Catfish Farms." Version updated September 2009, available at www.gaalliance.org/cmsAdmin/uploads/BAP-CatfishF-909.pdf

40 See Endnote 39, on GAA's Shrimp Farm criteria. Criterion 10.1 of that document states: "If used, are antibiotics applied only to treat diagnosed diseases in accordance with instructions on product labels and national regulations?" which implies that antibiotics are permitted for use by companies certified to the BAP standard.

41 Friend of the Sea's checklists for "Prawn Culture" and states at Criterion 6.2: "The use of drugs and other chemical compounds permitted by regulations is justified only for specific problems." The same language is used at Criterion 7.2 for "Marine Aquaculture." Neither document directly specifies that antibiotics are prohibited, and this language implies that the use of such drugs are in fact permitted "for specific problems." See Friend of the Sea. "Certification Criteria Checklist for Aquaculture Products: Marine Aquaculture." Updated April 1, 2010, available at http://www.friendofthesea.org/public/page/EN%20-%20Marine%20Aquaculture.pdf ; and Friend of the Sea. "Certification Criteria Checklist for Aquaculture Products: Prawn Culture." Updated April 1, 2010, available at http://www.friendofthesea.org/public/page/EN%20-%20Checklist%20FoS%20Prawn%20Culture.pdf

42 Global Trust Certifications, LTD (GTC) has certified Cooke Aquaculture, an international corporation with salmon farming "operations in New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland, Maine and Chile as well as sales offices in major centers in the United States and Canada." Cooke Aquaculture is the owner of several brands of farmed salmon, including True North Salmon, Heritage Salmon, and Jail Island Salmon. Heritage Salmon's website states "Antibiotics are used sparingly and under strictly controlled conditions when prescribed by a veterinarian to cure an infection. When antibiotics are used, we follow specified withdrawal periods and fish are tested for tolerance levels of residue prior to harvest." See Cooke Aquaculture, "Products and Services," "Global Trust Certification, Ltd.," and "About Cooke Aquaculture," all accessed December 1, 2010 and available at http://www.cookeaqua.com/commitment-to-the-environment/certification-seafood-trust/international-food-quality-certification-ltd and http://www.cookeaqua.com/about-cooke-aquaculture and http://www.cookeaqua.com/about-cooke-aquaculture/products-and-services ; and Heritage Salmon. "Frequently Asked Questions." Accessed December 1, 2010, available at http://www.heritagesalmon.com/salmon/faq.asp

43 The GAA standards for both catfish and shrimp are vague on this point but appear to allow the use of hormones in the production of both. See "Aquaculture Facility Certification: Shrimp Farms," which at Standard 10 on page 19 states: "Banned antibiotics, drugs and other chemical compounds shall not be used. Other therapeutic agents shall be used as directed on product labels for control of diagnosed diseases or required pond management, not prophylactic purposes" and further states as a "Critical Point" that "Other drugs and chemicals, such as antibiotics, heavy metals, pesticides, and hormones, may be banned in specific countries." Neither of these statements explicitly prohibits the use of hormones. Global Aquaculture Alliance. "Aquaculture Facility Certification: Shrimp Farms." Version updated September 2009, available at www.gaalliance.org/cmsAdmin/uploads/BAP-ShrimpF-909.pdf

Similar information can be found on GAA's "Guidelines for Tilapia Farms," which state on page 28, "Analyses of tilapia fillets have shown that the use of methyl testosterone or related hormones for producing all-male fry has not resulted in residues of testosterone higher than those naturally found in control fish. Nevertheless, where practical, producers are encouraged to use other methods of obtaining all-male fry. When used, records of hormone application shall be maintained." The document also states "Hormones should not be administered to animals intended for human consumption." Both statements together indicate that hormone use is not altogether banned for use, although it is not permitted in fish grown out for human consumption. Global Aquaculture Alliance. "Aquaculture Facility Certification: Tilapia Farms." Version updated September 2009, available at http://www.gaalliance.org/cmsAdmin/uploads/BAP-TilapiaF-909.pdf

44 See Endnote 3.

45 Global Trust Certifications, Ltd. (GTC) lists only their general guidelines for an eco-label on their public website. Distribution of the standards is controlled, and interested members of the public must fill out a form to gain access to them. The standards have strict limits on an individual's ability to review or generally discuss the material publicly. In fact, in order for Food & Water Watch to review the GTC certification standards for their eco-label, we would have been required to sign a licensing agreement, obliging us to submit this report to GTC for review prior to publication. Global Trust Certifications, Ltd. "Copyright Declaration." Document undated, obtained February 15, 2010. From personal electronic communication with Cormac O'Sullivan and Julie McDonald of Global Trust Certifications, January 31 – February 15, 2010. On file with Food & Water Watch.

46 Mangrove Action Project. "Wal-Mart and Darden Restaurants announce future sourcing of "certified" farm-raised shrimp." January 29, 2006. Available at http://mangroveactionproject.org/news/action-alerts/wal-mart-and-darden-restaurants-action-alert at page 2; accessed December 1, 2010.

47 See Endnote 27.

48 See Endnote 45. If members of the public are required to fill out a form to view the standards, it stands to reason that public comment on such standards is strictly limited.

49 See Endnote 46.

50 Global Trust Certifications, Ltd., appears to certify only salmon farms at present, which are not usually located in mangrove-inhabited areas. See Endnote 45.

51 Because the Aquaculture Stewardship Council has not yet issued certifications, several of these categories are not yet determined. Because standards are being created separately for different species, different conditions may apply to each species. The issues with mangrove systems and free-riders are problems expected to arise based on Aquaculture Dialogue standards as currently written.

52 Global Aquaculture Alliance's Best Aquaculture Practices standards have no mention of travel miles or carbon footprint included in their standards for certification for channel catfish, shrimp or tilapia farms. See Endnotes 39 and 43.

53 Friend of the Sea's standards for the certification of marine aquaculture at Criterion 5.2 state " The Organisation records historical data relating to the conversion index of feeds and undertakes to carry out a gradual annual reduction." This is insufficient because no numerical limits are set in FOS's criteria, meaning that large amounts of fishmeal or fish oil (produced from the reduction of wild forage fish) might be used on certified farms. See Endnote 41.

54 Cooke Aquaculture's standards are not publicly available (see Endnote 45); however this failing grade is an assumption based upon certification of a major salmon farming operation, Cooke Aquaculture. See Endnote 42. Open water salmon farms typically have feed conversion ratios that exceed a 1:1 ratio, thereby using more marine protein than they create.

55 The ASC is expected to be modeled closely after its wild-fisheries counterpart, the MSC. But because the MSC allows fisheries that do not meet all standards to be certified and labeled, it allows problematic fisheries to ride on the eco-friendly reputation of more sustainable fisheries in the program – this is referred to as the "free-rider" problem. The ASC's standards for the cultivation of 12 different species in aquaculture production have already demonstrated low-bar entry standards (for example, the draft farmed salmon standards that have been proposed have been criticized by Don Staniford of the Pure Salmon Campaign. See "WWF unveils draft farm salmon standards; critic mocks effort." IntraFish, August 4, 2010. Available at http://www.intrafish.no/global/news/article274387.ece , accessed December 1, 2010.)

Thus, based on the warranted assumption (see article below) that the ASC will implement a "continuous improvement" model, we anticipate that the ASC, too, will suffer from a free-rider problem. World Wildlife Fund. "Aquaculture Stewardship Council appoints independent accreditation agency." September 17, 2010. Available at http://wwf.panda.org/wwf_news/?194990/Aquaculture-Stewardship-Council-appoints-independent-accreditation-agency , accessed December 1, 2010.

56 Solidarity Center. "The True Cost of Shrimp: How Shrimp Industry Workers in Bangladesh and Thailand Pay the Price for Affordable Shrimp" (Series: Degradation of Work, Part 2). January 2008 at 27.

57 Aquaculture Certification Council. "Certifying Best Practices for Responsible Aquaculture: Shrimp, Catfish and Tilapia Farms." Available at http://www.aquaculturecertification.org/index.php?option=com_content&task=view&id=98&Itemid=36 , accessed December 3, 2010.

58 See Endnotes 43 and 52. Global Aquaculture Alliance. "Aquaculture Facility Certification: Tilapia Farms." Version updated September 2009, available at http://www.gaalliance.org/cmsAdmin/uploads/BAP-TilapiaF-909.pdf

59 See Endnote 46.

60 Solidarity Center. "The True Cost of Shrimp: How Shrimp Industry Workers in Bangladesh and Thailand Pay the Price for Affordable Shrimp" (Series: Degradation of Work, Part 2). January 2008 at 16.

61 See Endnote 41.

62 See Endnote 4.

63 See Endnote 53.

64 Friend of the Sea. "Aquaculture: Introduction." Available at http://www.friendofthesea.org/aquaculture.asp , accessed December 3, 2010.

65 See Endnote 45.

66 See Endnote 42.

67 See Endnote 42.

68 Lack, Larry. "New Brunswick sea lice pesticide treatment generates opposition." The Working Waterfront (Maine). August 2009.

69 Roberts, Mark. "Get out of our bay: Friends renew fish farm fight." Nova News Now (Nova Scotia, Canada). August 25, 2009.

70 World Wildlife Fund. "Aquaculture Stewardship Council Frequently Asked Questions" at Question 2. Accessed December 3, 2010, available at http://www.worldwildlife.org/what/globalmarkets/aquaculture/council-faqs.html

71 See Endnote 55.

72 Grandin, Mercedes. "NGOs oppose Aquaculture Stewardship Council." Seafood Source. May 20, 2009. And see Endnote 46.

73 World Wildlife Fund. "[Press Release] Seriola Cobia Aquaculture Dialogue Kicks off in February." November 12, 2008. Available at http://www.worldwildlife.org/who/media/press/2008/WWFPresitem10620.html , accessed December 3, 2010; and WWF. "Salmon." Page undated, available at http://www.worldwildlife.org/what/globalmarkets/aquaculture/dialogues-salmon.html , accessed December 3, 2010.

For more information:
web: www.foodandwaterwatch.org
email: info@fwwatch.org
phone: (202) 683-2500 (DC) • (415) 293-9900 (CA)