ECO-LABELLING:
THE NEW COST OF DOING BUSINESS
IN THE SEAFOOD SECTOR

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ECO-LABELLING: THE NEW COST OF DOING BUSINESS IN THE SEAFOOD SECTOR

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ABSTRACT

Since the collapse of some of the major fish stocks around the world there has been increasing pressure from non-governmental organizations and individuals for ocean conservation and more sustainably managed fisheries. This desire to impact fisheries management by supporting sustainable fisheries has manifested itself in the form of seafood eco-labelling.

Eco-labelling is based on the idea that if consumers are provided with environmental information and a choice between products, they will choose the products that have fewer negative environmental impacts. The goal of seafood eco-labelling is to support, financially, those fisheries that are deemed sustainable, and in turn, provide economic incentive for unsustainable fisheries to improve.

The purpose of this paper is to determine whether the economic power wielded by environmentally-conscience consumers is sufficient to influence those who catch and process the fish and, in turn, fisheries managers. By reviewing various certification schemes, governmental responses to eco-labelling, and the role of retailers, this paper argues that non-governmental organizations are the real driving force behind eco-labelling and that any economic gains from eco-labelling are generally temporary and do not filter back to fish harvesters and processors. Furthermore, eco-labelling has had almost no success in protecting the marine ecosystem.

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LIST OF ACRONYMS & ABBREVIATIONS

Alaska Department of Fish and Game	ADF&G
Alaska Seafood Marketing Institute	ASMI
Convention on International Trade in Endangered Species of Wild Fauna and Flora	CITES
FAO Committee on Fisheries	COFI
Fisheries and Oceans Canada	DFO
Food Marketing Institute	FMI
Friend of the Sea	FoS
Illegal, Unreported, and Unregulated fishing	IUU fishing
International Coalition of Fisheries Associations	ICFA
International Organization for Standardization	ISO
Japan Fisheries Association	JFA
Life Cycle Assessment	LCA
Marine Conservation Society	MCS
Marine Eco-label Japan	MEL-Japan
Marine Stewardship Council	MSC
National Association of Small Boat Owners	NASBO
National Environmental Trust	NET
National Fisheries Institute	NFI
Northwest Atlantic Fisheries Organization	NAFO
United Nations Conference on Environment and Development	UNCED

United Nations Food and Agriculture Organization	FAO
Vessel Monitoring System	VMS
World Trade Organization	WTO
World Wildlife Fund	WWF

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1.0 INTRODUCTION

A stroll through the grocery store today is not what it was 15 years ago. Today there is an organic produce section, free-range eggs, soups with no additives or preservatives, grain-fed, no animal by-product chicken, and the list continues down every aisle. Consumers are increasingly aware of what they are purchasing, where it came from, and how it was produced. The fish counter is no exception.

What distinguishes fish from chicken, beef, and pork is that fish is a wild caught product*, a publicly owned resource and therefore subject, in most cases, to some sort of management regime and inevitably, criticism of that regime. Over the last two decades, since the collapse of some of the greatest fish stocks in the world, there has been mounting pressure from around the world for conservation of the oceans and more sustainably managed fisheries (Phillips, Ward & Chaffee, 2003).

Either in response to this mounting pressure or helping drive the movement, the ecological certification of fish products has evolved into a real force in every link of the fish supply chain. Consumers are demanding eco-labelled fish products, retailers are pressuring suppliers to source sustainable fish, and the cost and responsibility of certification is often being downloaded on to harvesters and processors as the "new cost of doing business" in order to be competitive or retain a competitive edge in today's market.

*in 2009, half of all fish consumed globally was raised on farms (Shwartz, 2009). This paper is concerned only with the 50 percent which is wild caught.

Eco-labelling is based on the idea that if consumers are provided with environmental information and a choice between products, many will choose those products that have fewer negative environmental impacts. Allowing the consumer to select more eco-friendly products should, in turn, cause producers to alter their behaviour to develop and market products that meet consumers' requirements (Phillips et al., 2003). The goal of eco-labelling is to support, financially, those fisheries that are deemed sustainable, and in turn, provide economic incentive for unsustainable fisheries to improve.

The effectiveness of an eco-label depends on consumer awareness and acceptance (trust and understanding) of the label. Awareness is generally the result of successful promotion. Acceptance depends on: 1) public understanding of the relevant issues; 2) public understanding of the connection between relevant issues and product choices; 3) an accurate and clearly understood presentation of the product attributes; and 4) an understanding of what specific actions (i.e., purchase decisions) individuals can take in response to the information provided by the labelling program (Roheim & Sutinen, 2006).

The most famous example of a seafood eco-label, the dolphin silhouette on canned tuna, began appearing in the United States around 1990 in response to high by-catch rates of dolphins in the tuna fishery. The label was developed to assure consumers that the tuna they purchase was caught using methods that did not involve the encircling, capture and subsequent death of dolphins (FishOnline, n.d.; Roheim et al., 2006). So, while eco-labelling of fish products is not a new concept, as environmental awareness of the oceans and its resources has grown, so has the number of eco-labelling schemes and eco-certified

products. Fast-forwarding to early 2009, the Marine Stewardship Council (MSC), the most internationally recognized and accepted eco-certifier, reached a milestone with its 2000th certified sustainable product available on store shelves ("New Milestone," 2009).

The purpose of this paper is to determine whether the economic power wielded by environmentally-conscience consumers is sufficient to influence those that catch and process the fish and, in turn, fisheries management decision-makers. To help answer that question, this paper will examine: 1/ how the concept of eco-labelling fish products began and how the international community (i.e., the United Nations) is addressing the issue; 2/ the role of organizations, like the MSC, that are setting standards for sustainable fisheries; 3/ the certification process and support and criticism of the process; 4/ how individual countries are addressing the issue of eco-labelling; 5/ the driving force behind seafood eco-labelling and the response of retailers; 6/ whether there is sufficient economic incentive for harvesters and processors to get involved in the process; 7/ whether eco-labelling has the ability to influence fisheries management; and 8/ the future of seafood eco-labelling.

2.0 INTERNATIONAL DEVELOPMENT OF SEAFOOD ECO-LABELS

Labelling of products based on environmental attributes dates back to 1977, with the inception of the Blue Angel environmental labelling program in Germany, marking the first time eco-labels were recognized for creating a market-based incentive for environmentally friendly production ("Ecolabelling in Fisheries," n.d.). Throughout the

1980s, globalization of businesses coupled with increased consumer access to information contributed to the proliferation of environmental certification and labelling programs; by 1992, more than 20 labelling schemes had been developed worldwide (Phillips et al., 2003). In 1992, eco-labelling became a topic for global discussion at the United Nations Conference on Environment and Development (UNCED) ("UN Division," 2004). At UNCED, 178 governments adopted Agenda 21 which called for the expansion of environmental labelling and for other environmentally related product information programs to be designed to assist consumers in making informed choices ("Ecolabelling in Fisheries," n.d.).

Despite general acceptance throughout the international community for product eco-labelling, the approach caused controversy in several international arenas, including the World Trade Organization (WTO) Sub-committee on Trade and Environment and the UN Food and Agriculture Organization (FAO) ("Ecolabelling in Fisheries," n.d.). The seafood eco-labelling debate arose in 1997 during the 22nd Session of the FAO Committee on Fisheries (COFI) in response to an initiative by the World Wildlife Fund (WWF) and Unilever to create the MSC (FAO, 2003).

When the MSC concept was introduced many COFI delegates questioned the transparency of the MSC process, the responsibility and competence for the development of principles and criteria for sustainable fisheries, and the source and use of scientific evidence in the process (FAO, 2003). Some delegates were concerned about the potential for discrimination against unlabelled products and feared that the MSC could pose a

threat to developing countries as a potential trade barrier leading to market advantages for some countries (FAO, 2003). A proposal by the Norwegian delegation suggesting that the Committee request FAO to prepare for an informal discussion on issues related to eco-labelling of fish products was considered, but no agreement was reached within the Committee and no request was made.

By the following year, the significance of the MSC had grown and at the 6th Session of the COFI sub-Committee on Fish Trade in June 1998, the sub-Committee accepted a proposal by the Nordic countries for FAO to organize a technical consultation to investigate the feasibility and practicality of developing non-discrimatory, globally applicable, technical guidelines for the eco-labelling of fish and fishery products. FAO convened this technical consultation in October 1998. The consultation developed some guiding principles for eco-labelling schemes in marine fisheries, but did not reach an agreement on the feasibility and practicality of developing international technical guidelines. The issue was debated again at COFI in 1999 and in 2001 FAO was given a mandate to monitor eco-labelling developments and assemble information for the benefit of FAO Members, but there was no consensus on the development of international guidelines (FAO, 2003).

It was during the 25th Session of COFI in 2003 that a number of Member governments asked FAO to develop guidelines on eco-labelling. Those draft guidelines, including a scope, principles, minimum requirements, criteria, and procedures, were made available

to a Technical Consultation, which was to report back to the next session of the COFI sub-Committee on Fish Trade (FAO, 2003).

During 2003 and 2004 the FAO eco-labelling guidelines were drafted with the participation of a number of experts and governments through a series of FAO Expert and Technical Consultations. The following set of voluntary guidelines for the eco-labelling of fish products was finally adopted during the 26th Session of COFI held March 7-11, 2005:

- Be consistent with the 1982 UN Convention on the Law of the Sea, the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, the FAO Code of Conduct for Responsible Fisheries and the World Trade Organization (WTO) rules and other relevant international instruments;
- Recognize the sovereign rights of States and comply with all relevant laws and regulations;
- Be of a voluntary nature and market-driven;
- Be transparent, including balanced and fair participation by all interested parties;
- Be non-discriminatory, do not create unnecessary obstacles to trade and allow for fair trade and competition;
- Provide the opportunity to enter international markets;
- Establish clear accountability for the owners of schemes and the certification bodies in conformity with international standards;

- Incorporate reliable, independent auditing and verification procedures;
- Be considered equivalent if consistent with these guidelines;
- Be based on the best scientific evidence available, also taking into account traditional knowledge of the resources provided that its validity can be objectively verified;
- Be practical, viable and verifiable;
- Ensure that labels communicate truthful information;
- Provide for clarity; and
- Be based, at a minimum, on the minimum substantive requirements, criteria and procedures outlined in these guidelines (FAO, 2005).

The guidelines involve a tag or label "certifying that a product was produced in an environmentally-friendly way, allowing consumers to make informed choices and creating a market mechanism that promotes sustainable production methods" ("UN Adopts," 2005). The guidelines outline general principles that should govern eco-labelling schemes, including the need for reliable, independent auditing, transparency of standard-setting and accountability and the need for standards to be based on good science ("UN Adopts," 2005). Drawing on FAOs Code of Conduct for Responsible Fisheries, the guidelines also lay down minimum requirements and criteria for assessing whether a fishery should be certified and an eco-label awarded ("Ecolabelling Schemes," 2005).

Importantly, the guidelines also acknowledged the challenges faced by developing countries due to a lack of financial and technical resources and the guidelines called for financial and technical support to help them implement and benefit from eco-labelling ("UN Adopts," 2005).

3.0 MARINE STEWARDSHIP COUNCIL

In 1996, the WWF and Unilever, one of the world's largest buyers of frozen fish, began discussions on how to ensure the long-term sustainability of global fish stocks and the integrity of marine ecosystems (Marine Stewardship Council, n.d.).

Although the motivations of each of the partners were quite different, their goal was the same: to reverse the increasingly serious trend of unsustainable fishing. WWF was concerned about the widespread impact of overfishing on marine ecosystems and the limited capacity of regulators to ensure that fisheries are sustainable. Unilever argued that the future of some of its brand name companies was threatened by consumers' increasing negative perceptions about the oceans and potential future interruptions of supply caused by overfishing. To address both of these concerns, the two partners decided to create the MSC to harness market forces and consumer power in favour of sustainable, well-managed fisheries. They each contributed more than US$500,000 in start-up funds to the MSC (Phillips et al., 2003).

By 1997, the MSC was a legally ratified body and undertook a two year, global consultation process of eight workshops and two expert drafting sessions. This resulted in a set of Principles and Criteria for Sustainable Fishing. In 1999, the MSC became a fully independent, non-profit organization, and has ever since operated independent of its two founders (Marine Stewardship Council, n.d.).

The MSC states its mission as "to safeguard the world's seafood supply by promoting the best environmental choice." To fulfill that mission, the MSC says that its duties are:

- To conserve marine fish populations and the ocean environment on which they depend;
- To conserve the world's seafood supply for the future;
- To provide consumers with accurate information about the best environmental choice in seafood;
- To work in partnership with stakeholders;
- To ensure our [MSC] programme and its benefits are available to all, regardless of size or region; and
- To carry out our [MSC] activities responsibly and openly.

To carry out those duties, the MCS strategy is based on:

- Encouraging independent certification of fisheries to the MSC Standard;
- Identifying, through the MSC's eco-label, products from certified fisheries;

- Encouraging all those who buy and sell seafood to source MSC eco-labelled products;
- Promoting our [MSC] work and that of our [MSC] partners to increase public awareness of, and support for, our [MSC] programme; and
- Monitoring, evaluating, and developing the MSC Standard and programme to ensure its continued relevance and credibility (Marine Stewardship Council, n.d.).

During the workshops and expert drafting sessions it was decided to include only capture fisheries, not aquaculture products, in the Principles and Criteria. Aquaculture products were excluded for several reasons, including additional complexity, important differences with capture fisheries and that the UN, industry and non-governmental organizations were already working to develop guidelines for those products (Phillips et al., 2003). However, after gaining experience in the certification of capture fisheries, the MSC received a grant from the Rockerfeller Brothers Fund to evaluate the feasibility of developing an aquaculture certification standard (Phillips et al., 2003). At its Board meeting in Thailand in November 2006, the MSC decided not to expand its eco-labelling program to include farmed seafood, but rather "continue to focus its resources and activities on its wild-fish eco-label program as momentum and opportunities to accelerate the delivery of its wild capture program continue to expand exponentially" (Fiorillo, 2006a).

Before final adoption of the Principles and Criteria by the MSC Board of Directors, several test cases were conducted, including the Alaska salmon fishery, the Western Australia rock lobster fishery, and the Thames herring fishery (Phillips et al., 2003).

These Principles and Criteria, as follows, are used as the standard in a third-party, independent, and voluntary MSC certification program:

PRINCIPLE 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

PRINCIPLE 2

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

PRINCIPLE 3

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable (Marine Stewardship Council, n.d.).

Each of the three Principles is accompanied by several criteria that provide guidance on complying with the Principle. The MSC does not allow variations in the application of its Principles and Criteria to specific fisheries (Phillips et al., 2003). The Principles and

Criteria apply to "marine fisheries activities up to but not beyond the point at which the fish are landed" (Marine Stewardship Council, n.d.). Issues regarding allocation of fish resources and access to those resources are beyond the scope of the Principles and Criteria (Phillips et al., 2003).

3.1 *The Certification Process*

This discussion of the certification process is not intended as an exhaustive review, but rather a brief description to provide context for its role in fisheries management.

It is important to note that the MSC does not directly certify fisheries. Rather, the MSC establishes the standard by which fishery performance is measured and independently accredits third-party certification bodies that conduct the actual fishery assessments and make certification decisions consistent with the MSC standard. The accredited certification body follows the rules set out in the MSC's Fisheries Certification Methodology. The MSC visits the offices of the certification body and attends site visits during assessments. If the standard is met, the certification body, not the MSC, issues a fishery certificate and conducts all follow-up performance audits and evaluations during the life-cycle of the certificate (Marine Stewardship Council, n.d.).

The client for the certification may be a fishing organization, government, processor's organization, or any other stakeholder. In the case of the Newfoundland and Labrador northern shrimp fishery, the client is the Association of Seafood Producers; in the Alaska salmon fishery certification process the client is the Alaska Department of Fish and

Game. Fisheries are eligible for certification regardless of size, scale, ecology, geography, or technology.

The MSC certification process (see Figure 1), which has evolved since the first certification in 2000, begins with a fishery (i.e., a client) requesting an assessment by a certifier accredited by the MSC. The certifier assembles an assessment team that must include expertise in fish stock assessment, ecosystem processes, fisheries management, and fishing operations. The certifier and assessment team must contact stakeholders, including fish harvesters, fishing organizations, environmental groups, researchers, government agencies, and others (Phillips et al., 2003).

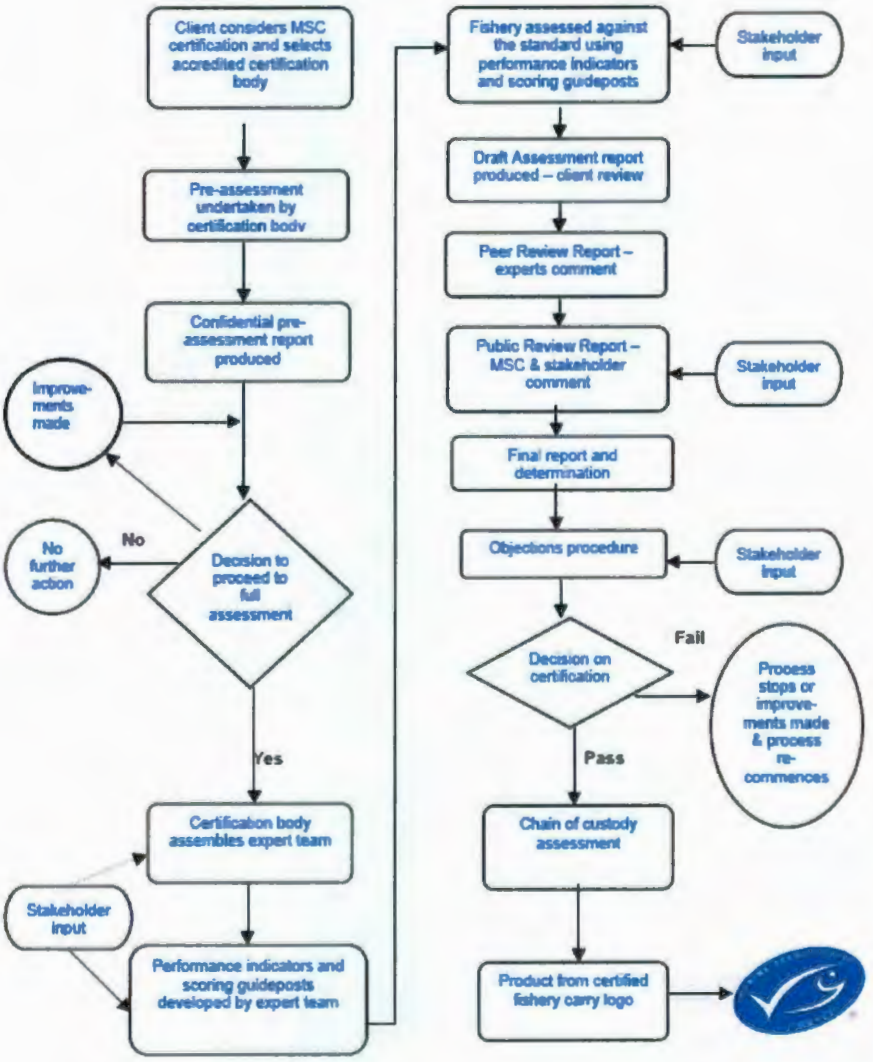

Figure 1: Certification assessment process flow chart (Marine Stewardship Council, n.d.).

The MSC standard is very broad and is not prescriptive in its expectations. The standard for any given fishery is unique to that fishery as each fishery has its own set of characteristics, there are however obvious similarities among "families" of fisheries, such as shrimp trawl fisheries or tuna longline fisheries. Thus, the creation of a standard against which a fishery is to be assessed is a two-step process – the Principles and

Criteria, which are established by the MSC, and a series of scoring guideposts and indicators, which are established by the certifier's expert team.

The following is a short summary of the fishery assessment system as described in Phillips et al. (2003):

Step 1 - a client selects a certifier and a pre-assessment of the fishery is prepared.

Step 2 – if the client wishes, a full assessment is then commissioned.

Step 3 – the certifier prepares draft scoring guideposts and performance indicators for public review.

Step 4 – the certifier evaluates the fishery against the guideposts and indicators.

Step 5 – the draft report is peer reviewed and a determination is made by the certifier regarding whether a certificate should be issued.

Step 6 – prior to a final decision about whether a certificate should be issued, the determination is subject to a formal objection process.

Step 7 – once any and all objections have been fully considered, a decision is made whether to issue a certificate.

Performance against each indicator is judged on the basis of a 100, 80, or 60 scoring. A score of 100 denotes ideal performance, a score of 80 defines the minimal requirement for unconditional certification, and a score of 60 defines the minimal requirement for conditional certification. If the fishery scores between 60 and 80 a conditional certification may be awarded if the fishery adopts the recommended corrective actions of the final assessment report (Potts & Haward, 2006).

Once a fishery is certified, a Chain of Custody for the products manufactured from the certified fish must be evaluated and certified. A Chain of Custody evaluation and certification provides proof that any product sold under the MSC logo (see Figure 2) can be shown to originate from a certified fishery (i.e., traceability. While outside the scope of this paper, traceability through the Chain of Custody certification is an important feature of one of the few fisheries where the MSC certification process led to a major improvement in the marine ecosystem. That case study will be discussed later). The Chain of Custody evaluation and certification must be applied to all entities involved in the supply chain from the time fish is landed until it is on the store shelf. This includes primary processors, secondary processors, wholesalers, distributors, importers, retailers, food service, restaurants or any other business that handles MSC product (Phillips et al., 2003). Certification is valid for five years, and if a fishery wishes to maintain its certification uninterrupted it must complete a reassessment, equivalent to a full assessment, before the end of the five-year period (Marine Stewardship Council, n.d.).

Figure 2: MSC logo (MRAG, n.d.).

The cost of MSC certification varies from fishery to fishery, but the main elements of the assessment and certification process that carries a cost can be summarized as the pre-assessment, full assessment, annual audits, chain of custody certification, and logo licensing. The cost of the process depends on the complexity of the fishery and sometimes on the level of controversy between stakeholders. One of the most expensive assessments was less than $500,000 USD and the least expensive was under $35,000 USD (Marine Stewardship Council, n.d.). The cost of certification largely comes from fees charged by the third-party certifier for the actual assessment. Anyone using the blue logo must pay a licence fee to the MSC – the only source of funds collected by the MSC from the certification of a fishery (Roheim et al., 2006).

As of May 2009, there were 42 fisheries around the world certified to the MSC standard, ranging from a 120 tonne nephrops fishery in the U.K. to the Bering Sea-Aleutian Islands pollock fishery with landings over 1 million tonnes. There are another 103 fisheries in various phases of the assessment. While just seven percent, or over five million tonnes, of the global supply of edible wild capture fisheries are engaged in the certification process (i.e., certified and in the assessment phase), certain sectors of the seafood industry have become more involved in eco-labelling. For example, 42% of the global wild salmon, 40% of the global prime whitefish (cod, pollock, hake, etc.) and 18% of the world's lobster catch is certified to the MSC standard (Marine Stewardship Council, n.d.). Alaska pollock alone accounts for approximately 60% of the volume of MSC-certified fish (Gulbrandsen, 2009).

In January 2009, the number of seafood products around the world carrying the MSC logo reached 2,000, with estimated sales of over $1 billion annually. Incredibly, it took seven years to get from the first MSC-labelled product to the 500th, another nine months to reach the 1,000th, and the 2,000th MSC-labelled product was reached just 12 months after that ("New Milestone," 2009). The 2,000 products are sold in 42 countries, with the U.S. and U.K. retailing the most products, and Austria, Germany, France and the Netherlands retailing significant quantities of certified products as well (Marine Stewardship Council, n.d.). Interestingly, the distribution of eco-labelled products is not random; rather there are common features among markets where the most eco-labelled products are sold. Most markets have a relatively affluent and eco-aware population, a strong civil society and media, and an active environmental movement (i.e., Greenpeace, WWF, etc.) where seafood is typically sold in supermarkets, where consumption patterns are based on a traditionally limited range of fish products, and where there is a tradition of purchasing packaged/processed seafood that lends itself to the attachment of a label at the point of sale (Washington, 2008).

4.0 OTHER SEAFOOD ECO-LABELS

The concept of eco-labelling may have been around since the 1970's, but in many respects retailers and seafood producers are still grappling with the most efficient, economical way to meet consumer demands for sustainable seafood while ensuring they are not left behind in the green movement. The uncertainty within the industry is reflected in two media headlines from leading seafood media outlet Intrafish: *Is one seafood eco-*

label enough? (Stromsta, 2006a) and *Are there too many seafood labels?* (Stromsta, 2007b).

While the MSC may be the most internationally recognizable scheme, it is not the only eco-labelling program certifying marine capture fisheries. Other non-governmental organizations, seafood retailers, and fish-producing countries and states have all developed labelling programs in response to concern for declining global fish stocks and consumer demands for sustainable seafood products. As will be discussed later in this section, some eco-labelling schemes, particularly those developed or being developed by governments, have arisen in response to dissatisfaction with the MSC process.

4.1 *Friend of the Sea*

Founded in 2006, the Italy-based Friend of the Sea (FoS) offers "bargain-basement eco-certification" of wild caught and aquaculture products, mainly targeting retailers' private-label products (Cherry, 2007a). FoS certifies both wild caught and farmed seafood (see Figure 3) and provides advice on sourcing sustainable seafood to retailers such as Co-op Italia, Italy's largest supermarket chain (Leadbitter & Ward, 2007; Evans, 2007a).

Figure 3: FoS logo (Friend of the Sea, n.d.).

There are no third party, independent certification bodies involved with the FoS label and the system essentially involves a self-assessment by candidate fisheries prior to approval by the Certification Body (Leadbitter et al., 2007). Depending on the

complexity of the fishery and the organization seeking certification, an audit can last one day to two weeks (Friend of the Sea, n.d.). When it first began, the group charged $1,555 USD for an assessment, but has since raised its fee to $6,200 USD as demand for its services has surged (Stromsta, 2008a). The staggering difference in the cost of certification under the MSC and FoS schemes is attributed to the assessment process. Whereas MSC undertakes an investigation of the entire fishery using an assessment team of specialists and prepares unique guideposts and indicators based on the particular fishery, FoS uses scientific information that is already available. Unlike the MSC, a fisheries carbon footprint has become an essential criterion for certification, and as part of their audit FoS requests evidence of a gradual reduction of at least 20 percent every year in greenhouse gas emissions (Holland, 2009).

In a March 22, 2007 interview with Intrafish, FoS said they eliminate "the need for expensive and lengthy evaluations by employing standards based on data published by regional fisheries bodies for wild fisheries, and widely accepted organic and welfare standards in aquaculture." The group doesn't approve fish stocks deemed overexploited, depleted, or data deficient by the FAO and regional fisheries bodies, such as the Northwest Atlantic Fisheries Organization (NAFO) (Evans, 2007a).

FoS Approval Criteria for Sustainable Fisheries are based on the following six principles:

1. Species and Stock Status Criteria: fisheries must not target overexploited stocks;
2. Seabed Impact Criteria: respect of benthic habitat;

3. Selectivity Criteria: fishing methods with lower than average (less than 8%) discard levels;
4. Legal Criteria: Total Allowable Catch; illegal, unreported and unregulated fishing; and applicable legislation;
5. Management Criteria: fishery monitoring and precautionary approach; and
6. Traceability: a system in place (Friend of the Sea, n.d.).

While some have questioned the thoroughness of a certification system that approves or rejects a fishery in a fraction of the time and cost of other systems, the FoS logo is gaining prominence. FoS certified products are currently being sold in 24 countries throughout Europe and the U.S. in grocery chains such as Carrefour (Europe's largest retail chain), Tesco, and Whole Foods (Friend of the Sea, n.d.). The eco-label has gained particular distinction in central and southern Europe, however they are still struggling in Northern Europe and the U.K. The certification of the Norwegian Barents Sea prawn fishery may change that as product enters the substantial British prawn market (Stromsta, 2008a). The FoS label gained additional visibility on European shelves and fish counters with the certification of Canada's west coast salmon fishery (Friend of the Sea, n.d.) (see Figure 4).

Figure 4: B.C. salmon featuring the FoS logo ("Are You," 2007).

In a September 2007 presentation to the FAO, Dr. Paolo Bray, director and founder of FoS, emphasized that not every fishery applying for certification meets the organization's standards. For example, the South Georgia toothfish fishery was not certified as it was deemed overfished or depleted and the South African Hake fishery was not certified as it was deemed overfished and negatively impacted benthic habitat (Friend of the Sea, 2007). Both fisheries are currently certified by the MSC.

When pressed on the criteria used in FoS certification in a March 22, 2007 interview with Intrafish, Bray accused rival certifier MSC of knowingly certifying "hake fished from a recovering or overexploited stock in South Africa, and of permitting high bycatch of shark and skate in seas there." In response to the accusation, MSC said that it welcomes FAO-compliant programs, but the proliferation of such schemes could lead to marketplace confusion (Evans, 2007a).

4.2 *Fair-fish*

The FAO guidelines on eco-labelling of marine fishery products acknowledges the challenges faced by developing countries due to a lack of financial and technical resources and calls for assistance to help them implement and benefit from eco-labelling. One eco-label, called Fair-fish, is going beyond sustainability for fisheries to promote social development in artisinal fisheries in developing countries.

Fair-fish, a Swiss-based eco-label, was founded in 2000 by a group of five animal welfare organizations and individual members (Fair-fish, n.d.). Their goal is "to bring the issues

of sustainability, fair trade and animal welfare under one label, while helping fish harvesters in developing nations attain the environmental certification they need to become more attractive to European consumers" (Stromsta, 2007c). Fair-fish will meet that goal by:

1. Respecting the needs and the suffering of the animals;
2. Protection of species and the environment;
3. Appropriate compensation of the producers; and
4. Best quality of production in order to reduce waste of a high value raw product (Fair-fish, n.d.).

Figure 5: Fair-fish logo (Stromsta, 2007c).

Fair-fish defined criteria for fair methods in fishing and established a label (see Figure 5) for fish produced according to those criteria. While the Fair-fish label started small, it has achieved success. In 2004, Fair-fish initiated a pilot project to export certified fish from artisanal fisheries in Senegal to retailers in Switzerland (Fair-fish, n.d.).

In March 2006, the first Fair-fish exports, mostly pangasius and mullet, took place with 200 Senegalese hand-line fish harvesters fully certified. Those exports went exclusively to Swiss retailers and restaurants, with plans to expand to Germany and Austria as more fish harvesters were certified and more product became available (Stromsta, 2007c).

Fair-fish is quite different from other seafood eco-labels in that it provides artisanal fisheries of the South access to the high value markets of the North. Perhaps more importantly, Fair-fish assesses fisheries on fair trade and social issues, not solely on scientific and biological criteria - a glaring omission from the assessment criteria of major labels, such as the MSC.

According to Stromsta (2007c) the Senegalese fishermen with the Fair-fish logo were paid double what they would have made if they sold their fish through local distribution channels. In addition to price, Fair-fish

- helped to preserve the traditional role of fishermen's wives in the local fish market,
- allocated 10% of the price of raw material to local communities to help create alternative income outside the fishery,
- provided life jackets for participating fishermen,
- provided health insurance for participating fishermen and their families,
- ensured child labour was not used in the fishery,
- established requirements on school attendance for fishermen's children,
- provided training for fishermen and their wives on food safety and hygiene (Fair-fish, n.d.).

While Fair-fish recognized it might never compete with other major eco-labels, it looked to capitalize on the tremendous economic and social need for certifiable sustainability in developing countries (Stromsta, 2007c). Unfortunately, in July 2007 funding for the Fair-

fish pilot project in Senegal ran out and Migros, Switzerland's largest retail chain, decided to leave the project citing economic risks. Fair fishing continues in Senegal funded by local sales. The Fair-fish certification scheme is ready for implementation in other areas and there is some interest for starting the program in Brazil and Portugal (Fair-fish, n.d.).

4.3 *EcoFish*

A small company in New Hampshire, USA is showing that the seafood eco-labelling business is not just for large, international organizations like the MSC. After ten years in the Boston, U.S. lobster-exporting business, Henry and Lisa Lovejoy decided that too many fisheries worldwide are facing commercial extinction and these resources need better management (EcoFish, n.d.).

Two years later in 1999, the Lovejoy's launched EcoFish (see Figure 6) with the goal of providing their customers with the most sustainable, highest quality seafood and to help reverse the decline of marine biodiversity by encouraging a shift in consumer demand away from over-exploited fisheries (EcoFish, n.d.). Unlike the MSC, part of the EcoFish mission is to help support the communities that rely on sustainable fisheries by featuring their sustainable seafood products and adding value to their catch (EcoFish, n.d.).

Figure 6: EcoFish logo (EcoFish, n.d.).

Figure 7: Example of an EcoFish-labelled product (EcoFish, n.d.).

EcoFish sources and sells only seafood that is caught or grown in an eco-friendly manner to restaurants and retailers (see Figure 7). Most products come from the U.S., mainly Alaska, as well as Ecuador and Argentina and include wild Alaska salmon and pollock and farmed white shrimp from the first United States Department of Agriculture certified organic shrimp farm in Florida. The EcoFish label can be found in 3,000 U.S. stores such as the natural food supermarket chain Whole Foods and Target Supercenters ("EcoFish," 2007).

EcoFish maintains a list of Approved Species that are chosen by their Seafood Advisory Board. In recommending species and fisheries, Board members, who come from groups such as The Monterey Bay Aquarium and Blue Ocean Institute, use a diverse array of guidelines that exist at their respective organizations to assess the sustainability of fisheries. The following are some of the major issues that EcoFish Advisors consider when evaluating fisheries:

- Biological Characteristics of Seafood – selects species that are likely to be resilient to fishing pressure;
- Population Status – species must have a healthy biomass in order to sustain itself well into the future;
- Management of Fishery – must be a management plan in place that will sustain the fishery;

- By-catch – there can be little or no by-catch in the fishery and no endangered species can be part of the by-catch; and
- Impact Harvesting Method – fishing gear used cannot destroy the marine environment (EcoFish, n.d.).

An important distinguishing point between the MSC and Friend of the Sea labels and the Fair-fish and EcoFish labels is the consideration of social attributes of the fishery and a focus on fishing communities and families. As part of their sourcing program, EcoFish travels to many of the communities to meet fishing families from whom they purchase fish. According to EcoFish (n.d.), supporting fishing communities goes hand-in-hand with their sustainability mission because oftentimes small-scale family harvesters are using more sustainable fishing techniques than large corporations because the future of their community and way of life depends secure on fish resources.

4.4 *Peche Responsable*

Very few retailers have developed their own seafood eco-labels, preferring instead to align themselves with an existing scheme, such as the MSC. The one group of retailers that have bucked this trend are French supermarkets Scapeche, Casino, Auchan and Carrefour, which is the world's second and Europe's largest retailer (Holland, 2009; Carrefour, 2008).

In 2005, French-based Carrefour launched the "Peche Responsable," or Responsible Fishing eco-label (see Figure 8). The two hands encircling a fish are intended to represent the two guiding principles of the label: one, conservation of the target species stock and two, protection of the environment. To date the label has appeared on packaging (see Figure 9) of seven different species, primarily Alaska pollock and Atlantic cod, representing a small range of Carrefour's overall seafood offerings and sales. Peche Responsable labelled seafood is available in France and Belgium and to a more limited degree in Spain and Portugal (Correard, n.d.).

Figure 8: Peche Responsable logo (Carrefour, n.d.).

Retailer eco-labels found fertile ground in France where retailers and consumers long shunned the MSC and other eco-labels. France and Spain resisted the MSC for a number of reasons including the cultural importance of local fresh fish markets (which generally does not lend itself to eco-labelling), a tradition of government-run and trusted labelling programs, strong fisheries sectors which could feel threatened by eco-labelling, and the European North-South divide on environmental issues (the idea that Northern Europe is more environmentally-conscious than the South) (Evans, 2007d).

Figure 9: Example of a Peche Responsable -labelled product (Carrefour, n.d.).

Quality and provenance feature prominently in the purchasing psyche of French consumers and is supported by a strong tradition of government regulated labelling

programs. In 1919, the French government established the Appellation d'Origine Controlee (Origin Label) for the wine sector to guarantee the origin of the product; the label eventually expanded to cover all agricultural food products. In 1960, the government created Label Rouge (Red Label) to distinguish products that are of a superior quality and guarantees a better taste and higher standards of production. The Label would become one of the best-known and most identifiable French quality schemes (Dobbs, Nguyen, Bertramsen & Legagneux, 2003).

By 2008 however, it appeared French consumers and retailers were becoming more receptive to the MSC as Carrefour began carrying MSC certified products under their own environment-friendly Agir Eco Planete brand and frozen food giant Findus announced it would sponsor the first MSC certification of a French fishery. The French government also announced it would fund the MSC certification of ten fisheries and launch campaigns to raise public awareness about sustainable seafood in an effort to put the industry on a 'sustainable footing.' At the same time, the government also announced they would create their own seafood eco-label, but offered no details or timelines (Evans, 2008).

While not particularly common, the Peche Responsable eco-label is an example of retailers developing their own logo to mark sustainable seafood. Most likely the cultural climate in France, in particular the tradition of trusted government labels, made Peche Responsable a viable option for Carrefour. Introduction and promotion of the MSC logo however, is evidence of the pervasiveness of the international label. It remains to be seen

how the French government will proceed with their national eco-label; on one hand French consumers are accustomed to and trust government-led labels, on the other hand the MSC logo is becoming more prominent around the world and may be difficult for a national label to usurp.

4.5 *Other Lists and Rankings*

The MSC, Friend of the Sea, Fair-fish, EcoFish and Peche Responsable programs are label-based schemes that use a label or tag to convey a message of sustainability to consumers. Another way groups have tried to raise consumer awareness about the importance of buying seafood from sustainable sources is by providing guides that identify species as good or bad choices based on sustainability. One such guide is the Monterey Bay Aquarium's Seafood Watch Program that produces a pocket guide categorizing a number of widely-available seafood choices into "Avoid," "Best Choices," and "Good Alternatives" (Monterey Bay, n.d.). EarthEasy has also developed a Sustainable Seafood Guide and uses a traffic light system, with those species that are best to avoid listed in red, better choices listed in green, and moderate risk species listed in orange (EarthEasy, n.d.).

Similarly, Greenpeace has compiled the "Greenpeace International Seafood Red List," a list of fish that are commonly sold in supermarkets around the world, which they claim, may be sourced from unsustainable fisheries (Greenpeace, n.d.). In addition to creating the Red List, Greenpeace also ranks supermarkets on their seafood sourcing policies. In 2005, Greenpeace released a report challenging major U.K. retailers "to begin the process

of ensuring that all the seafood they sell comes from sustainable sources. In just one year most of the U.K.'s major retailers have engaged in this process – removing from sale some of the most destructively-fished species, increased their range of better-managed stocks…." (Greenpeace, 2006, p. 4). Marks & Spencer and Waitrose consistently top Greenpeace's annual U.K. list. The 2005 report and U.K. retailer ranking laid the ground-work for Greenpeace's sustainable seafood campaign and in the following years retailers in the Netherlands, Austria, Germany, Denmark, Sweden and Norway were ranked according to the Greenpeace criteria (Greenpeace, 2008a).

In 2008, Greenpeace introduced its ranking system to U.S. retailers with the report *Carting away the oceans: How grocery stores are carting away the seas*. As in the U.K., the U.S. ranking was based on four categories: 1) seafood sourcing policy; 2) support for initiatives; 3) labelling and transparency; and 4) number of red-listed species on sale (Greenpeace, 2006). The results, released in June 2008, were abysmal; all of the 20 leading supermarket chains in the U.S. failed the first seafood sustainability ranking. According to Greenpeace, the results demonstrate "that the chains are ignoring scientific warnings about the crisis facing global fisheries and the marine environment when they stock their shelves with seafood" (Greenpeace, 2008b). The report, however, did show some room for optimism, as several large retailers are "developing comprehensive sustainable seafood policies and are beginning to remove some of the most imperiled species from their shelves" ("U.S. Supermarkets," 2008). Whole Foods was the highest scoring retailer in the country, gaining just 36.5 out of a possible 100 points.

Just six months later, Greenpeace released an updated ranking of U.S. retailers. Apparently much had been learned in those short six months, as four grocery chains passed the test in the second ranking. Greenpeace said that "while all 20 supermarkets continue to sell destructively fished and overfished species, several companies have begun developing and implementing sustainable seafood policies and practices. To date, eight companies have demonstrated their commitment to improving their seafood sustainability by removing from sale some imperilled species such as orange roughy and sharks" (Fiorillo, 2008a). The two top ranked chains, Whole Foods and Ahold, did not change over the six-month period; in fact only five chains had a change in their ranking.

Boycotts are another type of market-based incentive employed by those who want to promote sustainability and protect threatened species. In recent years there have been two well-publicized boycotts of particular species deemed to be from unsustainable fisheries. Initiated in 1998, the *Give Swordfish a Break* campaign, organized by public relations firm SeaWeb and environmental group National Resources Defence Council, targeted restaurant chefs and consumers to refrain from buying swordfish to show support for stronger conservation measures (Roheim et al., 2006). The campaign lasted until August 2000 when victory was declared as the U.S. government closed several nursery areas to fishing and supported stronger quota restrictions within the international organization responsible for the management of swordfish stocks (Roheim et al., 2006). The second consumer seafood boycott called *Take a Pass on Chilean Sea Bass* was initiated in 2002 and is on-going. The campaign, spearheaded by the National Environmental Trust (NET), aims to reduce demand for Patagonian toothfish and put pressure on the U.S. government

to support listing of the species in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Roheim et al., 2006).

Certainly, other seafood sustainability lists, rankings, and campaigns exists other than those briefly described above. While an exhaustive discussion is somewhat outside the focus of this paper which investigates the "label" itself, such lists, rankings, and campaigns are relevant in that they are another avenue for consumers armed with sustainability information to have an economic impact and provide an incentive for unsustainable fisheries to improve their status. Whereas eco-labels represent a point of sale decision by the consumer (assuming of course that the consumer is aware of what the label represents); lists, rankings, and campaigns require a certain amount of knowledge and preparedness on the part of the consumer.

5.0 RESPONDING TO THE DEMAND FOR SUSTAINABLE SEAFOOD

Having described the more prominent seafood eco-labels currently available and some of their advantages and short-comings, it seems an appropriate point to investigate who is actually driving the sustainability movement. At first glance the obvious answer would be that the increasingly environmentally-aware consumer base is forcing seafood purveyors to prove the sustainability of their products (and of course this works its way back through the supply chain). However, there is widespread scepticism about actual consumer demand for sustainable seafood and willingness to pay a premium for labelled products.

As noted earlier, Germany ranks amongst the top countries for the quantity of MSC certified products on retailers' shelves, yet only four percent of German consumers are aware of the MSC logo and what it represents (Stromsta, 2007a). That disparity raises the question "If consumers aren't aware of the availability of sustainable seafood, how can they be demanding it?" A scathing article by Gulbrandsen (2006) decisively answers that question, claiming seafood eco-labels were created by environmental organizations and their proliferation has been driven more by advocacy groups targeting companies and supply chains and less by the companies themselves responding to consumer demands. While environmental organizations target key professional seafood buyers and major retailers in certain countries, retailers also gain the ability to protect their reputation from certain "name and shame" tactics (i.e., Greenpeace's retailer rankings) by purchasing MSC products and having a sustainable sourcing policy. Whereas scaling the roof of retailers may seem radical to many, Greenpeace has had great success with that tactic. In early 2006, protesters scrambled onto the roof of Wal-Mart owned retailer Asda's headquarters in an effort to embarrass one of Britain's top retailers into changing its seafood sourcing policy. The event was hugely successful as Asda agreed to remove several species from their shelves that very day (Cherry, 2009).

Gulbrandsen (2006) notes that even though fishery certification initiatives have thus far not been driven by consumer demand, success in the long term will most likely depend on growing consumer demand for labelled products. For consumers to prefer and seek out eco-labelled products, they must see the impact of their decisions and view the eco-label with a certain level of credibility. By purchasing certified seafood, the consumer is not

only showing support for that particular sustainable fishery, they are also trying to influence the management of other fisheries. Presumably an improvement in management standards for uncertified fisheries and long-term sustainability of certified fisheries is key to continued credibility of a labelling scheme. However, fish resources are notoriously difficult to manage and the impact that fishing pressure has on stock abundance, and especially the overall ecosystem, is incredibly difficult to discern. Fluctuations are subject to factors beyond management, such as changes in the marine environment and population dynamics. Therefore, with such a degree of uncertainty there can be no guarantee that even the best devised principles and criteria of an eco-label can ensure the most sustainable utilization of fish stocks or that changes to fisheries practices will improve biodiversity (Broathen, 1999; Ward, 2008). Should uncertified fisheries fail to be better managed or a certified, well managed fish stock decline, does that mark the failure of a certification scheme or undermine its credibility with consumers? Likely only time will provide the answer.

Given that national or regional governments are generally the centre of fisheries management, they have an important role to play in seafood eco-labelling. In fact, the first eco-labelling initiatives, such as the German Blue Angel (1977), Canadian Environmental Choice (1988), the Nordic Swan (1989) and the European Flower (1992), were introduced by governments and applied to a wide array of products (Gulbrandsen, 2006). However, over the last ten to fifteen years, non-governmental organizations like the MSC, have become active in seafood eco-labelling, marking a shift away from government led programs, in seafood at least. At the 2007 annual meeting of the

International Coalition of Fisheries Associations (ICFA), which included representatives from Iceland, European Union, Canada, Norway, Japan, United States and others, seafood eco-labelling was a topic of discussion. Much of the discussion centred around who is the most appropriate body to assess fisheries: governments or private organizations. Most members felt governments are best suited to assess fisheries and that private organizations should not be given the power to judge a fishery as "good" or "bad" (Japan Fisheries Association, 2008). Whether one is actually preferred over the other is debateable, as governments like to portray a positive image and success of their management programs, while private organizations are driven by profit and the need to satisfy their supporters. Over the last number of years however, the MSC has clearly been given the mandate to assess fisheries.

Originally, fisheries certification by third parties was deemed necessary as a result of the failure of governments to properly manage fisheries, but fisheries management is still the domain of governments, and therefore governments must be drawn in. In fact, in his Seafoodnews.com editorial John Sackton (2007a) claims "the success of fisheries certification falls squarely on traditional fisheries managers." Virtually all MSC certifications completed to date have come with "exceptions" or specific aspects of a fishery that certifiers find need improvements, such as by-catch or habitat destruction issues. As long as the fishery commits to address the exception, then the fishery can be certified. As certified fisheries reach their five-year mark, there is the question of how the remedies to those exceptions will be evaluated; a responsibility that at least in part would fall on government fisheries managers. While the onus is on the client of the certifying

body to provide the necessary scientific data needed for assessment and certification, such information generally comes from government departments. Although certifiers are hired to review the stock status and management practices, the data on which they rely is usually collected and managed by governments (Sackton, 2007a).

In Canada the Ocean-to-Plate approach, which in part commits to ensuring marketing considerations are better incorporated into annual fisheries management plans, coincides with the growing interest in eco-labelling. There is a recognition that should eco-labelling be a long-term arrangement, budgets and data collection methods have to be adjusted to conform to the requirements of certification. But certification schemes must adapt as well and recognize that research must be prioritized. Redefining research priorities can be a positive result, especially if it enhances trust in fisheries management; however, the certification process should not become a forum for interest groups fighting over issues such as bottom trawling, marine reserves, etc. or redirect financial resources away from fisheries not involved in the certification process to meet requirements under the certification process (Sackton, 2007a).

5.1 *Governmental responses to eco-labelling*

The following discussion will review the reaction of several governments to the MSC eco-labelling scheme, particularly the Nordic countries, who were very sceptical of the MSC. While most governments now offer some level of support, Iceland remains the one notable holdout. This section will also address initiatives to develop national or regional

seafood eco-labels, and later the role of retailers in eco-labelling and sustainable fisheries and how they have responded to the new sustainability climate.

5.1.1 Japan

Much of the discourse surrounding eco-labelling and the general movement towards sustainable fisheries has taken place in and is in the context of the environmentally-conscious European and North American markets. However, China and Japan, two of the world's major seafood markets are not considered to be particularly eco-conscious. Japan's seafood imports accounts for an astounding 25 per cent of global seafood trade and as the world leader in per-capita seafood consumption, their level of demand is so high that it is said to be a stimulus to illegal fishing by others (Gardiner & Viswanathan, 2004; DiPietro, 2008a).

On the surface, Japan may not appear to be fertile ground for eco-labelling, and indeed the MSC has struggled to put down roots there, but since 2006 some Japanese fisheries have achieved MSC certification and a national fisheries eco-label has been established.

In Fall 2006, the Japan Fisheries Association (JFA), the umbrella organization for the entire Japanese fishing industry formally recognized the "rising awareness in the industry for expedited actions to adopt the eco-labelling system" ("Eco-labeling Comes," 2006). Up to that point, several firms had obtained MSC certificates for processing and distribution of MSC products, but no fisheries were undergoing assessment ("Eco-labeling Comes," 2006; "Fish Eco-labeling," 2006).

By early 2007, the MSC had placed a representative in Japan to promote awareness of the eco-labelling program among government, seafood suppliers and buyers, consumers and non-government organizations ("MSC Searching," 2007). In just four months the Japan Times ran a story reporting MSC-labelled products were becoming more prominent in major Japanese retailers (see Figure 10). Interestingly, the promotions manager at Precce Premium, a retailer carrying MSC products, claimed "it was the quality of the seafood bearing the label that made it a good buy…The fish is natural and it has a good flavour" (Inoue, 2007). There was no mention of the importance of sustainable fisheries or consumer demand for eco-labelled seafood.

Figure 10: MSC-labelled products are becoming more widely available to Japanese consumers (Inoue, 2007).

Also in early 2007, the first two Japanese fisheries (snow crab and flathead flounder) entered full MSC assessment. However, the MSC induction to Japanese fisheries was not without problems. Twenty-one months after the snow crab fishery entered the assessment phase, the agency assessing the fishery reminded impatient fish harvesters that the "important thing is to ensure credibility and to secure profit to be gained by fishermen rather than simply accelerating the pace of certification work" (Sackton, 2007b). Finally, on September 22, 2008, Japan and Asia as a whole, received its first MSC certified fisheries – snow crab and flathead flounder; the WWF, who helped sponsor the certification process, was hopeful that other Japanese harvesters would be inspired to enter the certification process ("First Asian," 2008).

As the MSC worked to raise their profile in Japan, the JFA was developing their own eco-label and sustainable seafood certification standards. On December 6, 2007, JFA officially released Marine Eco-Label Japan, or MEL-Japan (see Figure 11). The program is designed to meet Eco-Labelling Guidelines of the FAO and provide certification at a reasonable cost ($9000) and in a shorter period of time (nine months). The program hopes to "create a reasonable and unique certification scheme truly reflecting the state of fishery resources in Japan…and to become an authoritative system which would enable Japanese producers and distributors to achieve sustainable utilization of the fishery resources" ("Japan's First," 2007).

Figure 11: MEL-Japan logo ("Japan's First," 2007).

MEL-Japan is a joint effort between the fishing industry, scientific community, conservation organizations, fish processors and distributors, and consumers and food specialists committed to the promotion of the sustainability of Japanese fisheries. Having recognized the global nature of the seafood industry and the cultural and economic importance of the industry to Japan, stakeholders decided to take a proactive approach and establish a Japanese eco-labelling scheme (Japan Fisheries Association, 2008). The sentiment that a Japanese eco-label is best suited to certify local fisheries is reflected in a criticism of the MSC proposed by a Japanese retailer: "The British way of thinking is not necessarily accepted in Japan. To make the MSC pervasive, the program needs attunement. It should be well blended with British way of values and Japanese traditions" ("Japan's Retail," 2007).

While an objective in the development of MEL-Japan was to create a Japan-specific labelling scheme, there are a number of similarities between the Japanese label and the MSC and Friend of the Sea. MEL-Japan has three guiding Principles:

PRINCIPLE 1

Promotion of the conservation and sustainable use of marine resources and the conservation of marine ecosystems.

PRINCIPLE 2

Co-management. Fishermen in many communities share in the role of fisheries management and resource enhancement. MEL-Japan aims to create a positive cycle in which fishers, through eco-label certification, give closer attention to resource management, reinforce cooperation with scientists and administrators, and contribute to the accumulation of scientific data and the improvement of information through fishing activities.

PRINCIPLE 3

Scientific and objective certification. MEL-Japan is structured by a council, board, and committees, all which include representatives from each stakeholder group. MEL-Japan ensures scientific and objective certification by independent certification bodies which form a certification team comprised of scientists and other experts with a profound understanding of the Japanese fisheries and marine environment (Japan Fisheries Association, 2008).

Like the MSC, fisheries awarded the MEL-Japan logo are assessed by a third-party certifier, which assembles a team of experts to assess the fishery. Whereas the MSC certifier develops a list of guideposts and indicators that the fishery is evaluated against, MEL-Japan, like the Friend of the Sea scheme, utilizes existing data from other management efforts. This results in a much shorter assessment period. Like MSC, the MEL-Japan certificate is valid for five years and there are two types of certification: one in the production stage and the other in the distribution and processing stage. Interestingly, in late 2007, Japan's Hokkaido chum salmon fishery decided to seek certification from both the MSC and MEL-Japan, pointing to the fact that Chinese processors who export their products to the EU and produce value-added items for the domestic market, were demanding an eco-label ("Japanese Wild," 2007). The first MEL-Japan stamp appeared on red tanner crab products in early 2009 (Coons, 2009).

While Japan has made great strides in eco-labelling and sustainable fishery standards and labelled products are appearing on more retailers' shelves, there remains scepticism among seafood industry groups about the concept. In particular, some industry groups see eco-labels (whether MSC, MEL-Japan, or another label) as nothing more than a marketing tool. There is concern that should a label be used improperly through counterfeiting or poor traceability, it could lead to a mislabelled food scandal, a problem that has already plagued much of Asia. Furthermore, some believe that eco-labels are not necessary, that it is the role of retailers to source sustainable fish and that Japanese are fish-savvy consumers and do not need to rely on labels ("Some Japanese," 2008).

As was discussed earlier, there are factors that likely impeded the permeation of eco-labelling and an overall seafood sustainability ethos in Japan. The presence of environmental non-governmental organizations is not as strong in Japan as in North America. Given that those organizations have been shown to be strong drivers of seafood eco-labelling in Europe and North America, perhaps eco-labelling will need to take a different route in Japan. Whether that route involves MEL-Japan or some other scheme, it will likely be more Japanese-tailored and may even be more consumer driven than current seafood eco-labelling in the West.

5.1.2 Nordic Countries

In the late 1990s, when the UN was first delving into the issue of eco-labelling, the Nordic countries (Denmark, Finland, the Faeroe Islands, Greenland, Iceland, Norway, and Sweden) were the initial drivers behind much of that discussion. In fact, in 1998, it was the Nordic contingent that proposed FAO organize a technical consultation to investigate the feasibility and practicality of developing a globally acceptable set of technical guidelines for seafood eco-labelling. While that consultation did not result in a set of guidelines, it was an important start and demonstrates the keen awareness and proactive approach of the Nordic countries to the issue of seafood eco-labelling.

For several years following the launch of the MSC, eco-labelling made little progress in the North Atlantic fishing industry as players adopted a 'wait and see' attitude. Then in 2003, discussions surrounding eco-labelling intensified as some within the industry considered it necessary to label their products; the discussion centred primarily on the

MSC. Many stakeholders in the Nordic fisheries had serious misgivings about becoming involved with the MSC and deemed it necessary to examine the issue further to determine whether other alternatives were available. It was for this purpose that a meeting was convened in Copenhagen in January 2004. All in attendance at that meeting agreed to conduct an in-depth survey of other eco-labelling possibilities, including the possibility of a Nordic eco-label initiative (Nordisk Atlantsamarbedje, 2005).

The Nordic fishing industry's resistance to eco-labelling was based more in a mistrust of the MSC than with the concept of seafood eco-labelling as a whole. Some were suspicious of the MSC because of its origin with the WWF, and past WWF campaigns against the commercial fishing industry. Stakeholders feared revenues generated from the MSC could be used to finance other such campaigns. Nordic countries were wary of involvement with the MSC as they saw the MSC as the driver in the development of eco-labelling of seafood products and they claimed the MSC devised the standards single-handedly and could change those standards arbitrarily. Furthermore, as the MSC is responsible for the selection and accreditation of certification bodies, Nordic countries questioned the independence of certifiers, particularly because use of the label is a source of revenue for the MSC (Nordisk Atlantsamarbedje, 2005).

In February 2005, the eco-label review was completed and a report containing the proposed business concept for a Nordic eco-label was tabled at the meeting in Copenhagen. But apparently much had changed from the initial meeting. The Norwegian Export Council for Fish had conducted a survey that showed very little consumer demand

for eco-labelled fish; instead price, safety, quality and appearance were deemed more important, as was origin, which often infers information about environmental issues. The survey results also confirmed that it is large retail chains that demand evidence of fishery sustainability. Sustainability however, can be demonstrated through reliable information and documentation, not only through an eco-label (Nordisk Atlantsamarbedje, 2005).

After consideration of the results of the Norwegian survey the group concluded that the need for an eco-label was not as critical as previously thought, and instead should focus on finding new ways to verify that a fishery is sustainable (Nordisk Atlantsamarbedje, 2005).

However, much can change in a year. In February 2006, the Norwegian saithe fishery, through the Norwegian Vessel Owners Association (known as Fiskebat), entered full MSC assessment. The Association felt an eco-label would increase their credibility in the marketplace, particularly in markets where saithe competes with other white fish such as pollock and hake (some of which was already MSC certified) ("First Norwegian," 2006). But the move by Fiskebat did not represent capitulation by the Norwegian industry as a whole, but rather a crack in an otherwise solidly defiant industry. In a presentation at the International Coldwater Prawn Forum in Fall 2006, Tor-Edgar Ripman, Marketing Director with the Norwegian Raw Fish Organization, made scathing comments on the usefulness of the MSC, claiming their "criteria and standards may be unsuitable and in the worst cases misleading when it comes to the fight against illegal, unreported and

unregulated (IUU) fishing, which we believe is the greatest threat to sustainable fisheries" (Ripman, 2006).

Yet again, much can change in a year. In March 2007, after several years of scepticism and negative comments, Norway did an about-face and jumped on the MSC wagon. The Norwegian change in attitude was not based on a newfound respect for the MSC or its mission, but rather a "result of the fundamental rule of all business: give customers what they want" (DiPietro, 2007a). Morten Hyldbord Jensen, sales director for Norway's Aker Seafoods, flatly admitted "it is our customers in Europe that are pushing for this [MSC] development" (Olsen & Stromsta, 2007). By responding to 'customers', Norway means European buyers and German and Dutch retailers; nowhere in any press release or news story was consumer demand mentioned.

While the Norwegian fishing industry may have initially seemed united in its acceptance of eco-labelling and the MSC, cracks soon began to show. On a positive note, the industry considered different labels for different markets. For example, in certain markets where a local label is well known and trusted, such as the organic label KRAV in Sweden, the industry decided that may be a better option than an international label, like the MSC (Evans, 2007b). On a negative note, in a move with the potential for creating a two-tiered fishery, one Norwegian company, Domstein, applied for MSC certification for its own cod and haddock quotas, not certification of the entire fishery. In most cases an entire fishery becomes certified so that anyone with a legal quota is entitled to use the MSC label when selling or marketing that fish. In the case of Domstein, only fish caught by

Domstein boats would be able to use the label, leaving other harvesters who fish those same stocks on the outside looking in. The Norwegian Seafood Federation condemned the move, saying "the best thing for the industry is if fisheries as a whole are certified (Stromsta & Solsletten, 2007). Domstein, however, has continued with their certification.

Even though Norway announced acceptance of the MSC in early 2007, scepticism has persisted in certain sectors of the industry, particularly within the Norwegian Raw Fish Organization. They maintain that the MSC scheme is ill equipped to combat illegal fishing. Many Norwegians believe their fisheries management system to be among the best in the world, and after years of negative comments, the Norwegian industry opened its doors to MSC scrutiny as a result of pressure from customers, not from support or trust in the MSC mission. The final test of Norwegian acceptance of an outsider, like the MSC, meddling in their fisheries management system will likely come as the cod and haddock assessments near completion and the MSC identifies exceptions to certification, or specific areas that must be addressed within the five year period. The Norwegian response to such involvement will presage the future of the MSC in Norway.

The period 2005 to 2007 saw one of the two remaining global fish-producing giants relent on their resistance to the MSC, leaving Iceland as the remaining bastion against MSC certification. Like Norway, much discussion was taking place within the Icelandic fishing industry about the increasing customer demand for sustainably caught fish. Similar to Norwegians, Icelanders feel they have a sustainable fishing industry and a solid fisheries management system and like the Japanese, believe an eco-label should reflect Icelandic

values and traditions rather than a set of rules developed elsewhere (Stromsta, 2006b; "Minister and Grandi," 2006).

Beginning in late 2006, major industry players, including the Minister of Fisheries, promoted development of an Icelandic seafood eco-label "stressing the need to meet consumer demand for sustainable seafood while maintaining Iceland's autonomy in setting environmental standards." The MSC response to the announcement was judicious, congratulating Iceland on taking sustainability seriously, while warning about the confusion multiple eco-labels could cause in the marketplace (Stromsta, 2006b). A year later, in October 2007, the Minister of Fisheries announced Iceland would be forging ahead with a national seafood eco-label that would use third-party certifiers to assess traceability and sustainability. The Minister also took the opportunity to reiterate Iceland's steadfast opposition to the MSC (Olsen, 2007). The Fisheries Association of Iceland unveiled their logo for responsible fisheries (see Figure 12) in October, 2008, with a set of requirements and standards that are compliant with the FAO Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries (Sackton, 2008a; Gardarsson, 2008).

Figure 12: Iceland's eco-label (Sackton, 2008a).

While sectors of the Iceland seafood industry were developing a national eco-label, Iceland's National Association of Small Boat Owners (NASBO) had initiated a pilot project for the establishment of an eco-label for fish caught by the small boat fleet. The

pilot project sought to certify five small boats operating from southwest Iceland that targeted cod, haddock and catfish. The pilot project was in cooperation with the Swedish certifier KRAV (see Figure 13), who, while primarily an organic labelling organization, had partnered with fish harvesters in Sweden in 2000 to develop standards for fisheries certification (Gulbrandsen, 2009). Although national in scope, KRAV is a highly regarded and well-known labelling organization in Sweden and has certified several Swedish fisheries (Gulbrandsen, 2009). Arthur Bogason, NASBO chairperson, claimed "KRAV's requirements are much more stringent than those of other organizations such as the MSC, which only looks at the fishery itself. KRAV accredits the fishing vessel, the processing and the whole chain of production and transport… KRAV has a set of environmental requirements as well that need to be met, as well as social and management requirements" ("Inshore Eco-label," 2007). NASBO decided to shun the MSC as they felt the MSC does not favour small operators but rather are aligned with larger operators. The high cost of certification was also cited as a deterrent. In a July 2008 interview, Bogason said the Association plans to apply for certification of the entire inshore fleet once the pilot project is complete (Bates, 2008).

Figure 13: KRAV logo ("Inshore Eco-label," 2007).

As one of the world's largest producers of high quality fish products and an economy so dependent on fish exports (especially given the demise of their financial sector), the rejection of the MSC by Iceland seemed like a risky move, especially after Norway opened its doors to the certifier. The decision to shun the MSC and other international

certifiers must have caused some stakeholders in Iceland to second guess themselves in 2008 when some supermarkets in eco-conscious Switzerland halted sales of Icelandic cod because third party certification was not available. Despite these developments Iceland forged ahead with its own eco-label, and four years after Nordic seafood leaders decided a regional eco-label was not necessary, Iceland unveiled it's own label and set of certification standards. Developing an eco-label and placing it on a package of fish is one thing, acceptance by retailers and consumers is another issue. Only time will tell if retailers accept Iceland's national eco-label as proof of sustainability and if consumers recognize the label and understand the message it is conveying.

Undoubtedly, Iceland is somewhat relying on its status with consumers as a source of high quality fish and a clean pristine environment. However, Iceland will need to undertake an extensive public awareness program with retailers and consumers to ensure the best chance of success for its label.

5.1.3 Alaska, U.S.

The discussion up to this point has centered on how some of the major players in the global fishing industry have responded to the call for sustainable fisheries and eco-labelling. Japan, not traditionally considered a particularly eco-conscious country, responded with MSC certification as well as a Japanese eco-label; Norway, following harsh criticism and scepticism of the MSC, reluctantly opened it's doors to the certification scheme; and Iceland, the final significant hold-out, continues to resist the MSC and has developed a national label identifying sustainable fisheries. The common

thread between the three examples is a wariness of international certification and, in the case of Iceland and Norway, pressure from retailers to prove their sustainability. In the end, each responded to that pressure differently.

The final region to be reviewed, Alaska, entered the eco-labelling "game" at a much earlier stage than the other three and had different motivations to do so. When Alaska salmon entered the MSC process, pressure from the retail sector to prove sustainability was certainly not as strong as it is today.

In the late 1990s, when the newly formed MSC was holding workshops around the globe seeking input on the draft standards, a suggestion was made to test the assessment process on a fishery to determine the robustness of the scheme. Representatives from the Alaska Department of Fish and Game (ADF&G) put forth the idea that the MSC should use Alaska salmon as a test case. As a test case, it was suggested that the MSC would be able to determine if its system was robust enough to handle large scale fisheries (the fishery utilizes several different gear types) and multi-species fisheries (the Alaska salmon fishery involves five salmon species), as well as being adaptable to fisheries that were not strictly marine-based (Phillips et al., 2003).

In 1998, a stakeholder working group was formed to discuss Alaska's participation in the MSC initiative. After more than a year of discussions, one concern remained: processors and harvesters did not want to see one gear type, or one fishery gain an advantage over others through the MSC process. In other words, if Alaska salmon was going to be used

as a test case, it was going to be assessed and certified (or not certified) in its entirety; all five species of salmon and the net and troll fisheries would be assessed as a group and pass or fail as a group. It was decided that ADF&G would volunteer staff time and expertise to answer questions from an accredited MSC certifier and to compile the necessary information for the evaluation. In return, ADF&G would get a report on whether Alaska salmon fisheries successfully complied with the MSC standard and the report would say if the fisheries passed or failed as an aggregate. Two other test case fisheries, Thames herring and Western Australia rock lobster, were being conducted concurrent to Alaska salmon (Phillips et al., 2003).

The evaluation report recommended the Alaska salmon fishery receive certification with specific exceptions the ADF&G had to fulfill and in 2000 the blue MSC label was placed on wild salmon from Alaska.

Fast-forwarding to 2009 allows for some analysis of the certification of Alaska salmon. When the fishery was originally certified in 2000, it was done as a test fishery. The MSC needed a large, high-profile fishery to lend it credibility, and salmon producers were anxious to add an eco-label to their marketing arsenal in their fight against farmed salmon. In 1980, wild salmon accounted for nearly 100% of world-wide salmon production; by 2001 that figure had dropped to a staggering 50% as production of farmed salmon soared and aggressive advertising and promotion generated new markets for cultured salmon and flooded established ones (Roheim, 2003). Nine years later it is clear that Alaska salmon has reaped some benefit from its association with the eco-label,

especially in Europe where new markets have opened up and continue to open up for the certified fish and some markets that were lost to farmed salmon have been recaptured, (Fiorillo, 2007; Cherry, 2007b; Roheim, 2003).

Using Alaska salmon as a test fishery was mutually beneficial, but as John Fiorillo argues in his editorial *Do we need the MSC?* (2007), the MSC likely benefited more from the relationship. The eco-label was spending the bulk of its time certifying minor fisheries, and then Alaska salmon gave it a large-volume fishery and head-turning credibility. Since then the MSC has taken-off and that growth was part of the reason the re-certification of the Alaska salmon fishery was delayed two years, happening in 2007 instead of 2005.

Apart from the delay, the re-certification and post-certification period was, and continues to be, a bumpy time for the MSC in Alaska. Starting in 2006, there were some rumblings of discontent among key associations and players in the Alaska seafood industry regarding the MSC and Alaska seafood (Fiorilla, 2006b). Initially the talk seemed relatively harmless, but by Summer 2007, the Alaska Seafood Marketing Institute (ASMI), Alaska's official seafood marketing agency, voted to investigate the creation of an Alaska eco-label that would certify seafood from the state as wild, natural and sustainable, thereby distancing itself from the MSC (DiPietro, 2007b).

A number of issues led the ASMI to consider pulling away from the MSC and moving towards a state seafood eco-label - possibly the existing ASMI logo that is already used on many Alaska seafood products (see Figure 14). As well as some problems with the re-

certification process, ASMI was concerned about the increasing cost of MSC re-certification, the increasing cost of using the MSC logo on products, the inability of ASMI to bring about changes to the MSC, the likelihood for problems with the re-certification of Alaska's Pollock fisheries in 2009, and concern over loss of "Alaska brand equity, while helping to build the MSC's brand equity" (Fiorillo, 2007). The Alaska seafood industry was essentially questioning the need for third party certification of what they felt was a sustainable fishery that already had consumer support based on provenance.

Figure 14: ASMI logo (Alaska Seafood Marketing Institute, n.d.).

Building equity in the Alaska brand and capitalizing on inherent characteristics of Alaska fisheries are key factors in ASMIs interest in parting from the MSC and pursuing their own eco-label. When Alaska gained statehood in 1959, it assumed control of its fisheries and mandated in the state constitution "fish…be utilized, developed and maintained on the sustainable yield principle". The ADF&G was established by the state legislature and charged to "manage, protect, maintain, improve, and extend the fish, game and aquatic plant resources of the state…." (Phillips et al., 2003). Because sustainability has been constituted in Alaska for 50 years and that careful stewardship has been a hallmark of Alaska fisheries management, ASMI believes that Alaska branded seafood can stand on its own and does not need the endorsement of a third party certifier. They feel Alaska's management standards and practices are equal to or more extensive than the standards put forth by the MSC and the FAO Code of Conduct for Responsible Fisheries (see Appendix

A). Rather than communicating to consumers that Alaska is "going green", ASMI believe they need to get the word out about the 50 year tradition of sustainable fisheries management in Alaska (see Appendix B).

Along with confidence in Alaska fisheries management, ASMI conducted consumer research, the results of which support their desire to keep the Alaska brand in the forefront. ASMI research shows 77 percent of consumers who were surveyed say the Alaska Seafood logo on a restaurant's menu has a positive impact on them, with 37 percent saying the logo would make them "a lot more likely" to order Alaska seafood, and 40 percent saying the logo would make them "a little more likely" to do so. The same research also found people are more receptive to the words "Alaska" and "wild" than they are to the word "sustainable" (DiPietro, 2007b).

ASMI believes the results of their research is proof the Alaska brand can stand on its own and can be used to differentiate Alaska seafood products more so than the MSC or other labelling schemes. They feel the Alaska brand conveys a bigger story than the MSC label alone; it tells consumers their seafood is wild, natural, and sustainable and gives the positive sense of provenance associated with Alaska. However, should the Alaska seafood industry decide to go it alone and drop the MSC label it will be interesting to see how the state logo fares in markets where major retailers such as Wal-Mart and Marks & Spencer have committed to carry MSC labelled products. Since Alaska seafood makes up the overwhelming share of MSC-certified products, the retailers' commitment to MSC products gives a tremendous boost to Alaska fish. Furthermore, an editorial by Drew

Cherry, *Did the MSC save wild salmon?* (2007b), points out that Alaska seafood has made impressive gains in high-end European markets as a result of the MSC label and while an Alaska brand may stand on its own in Japan and the US, the name alone is not enough in Europe where it would be competing against equally evocative names like Iceland, Norway, and Greenland.

What makes the Alaska salmon experience with the MSC so interesting is that the fishery has run the course of the certification process from assessment, to certification, to reassessment, and finally re-certification. It appears as though Alaska may be heading down the same path as Iceland and Japan with the investigation of their own logo. As with Iceland, Alaska believes it has a positive and strong sense of provenance and a tradition of sustainable fisheries management. What sets Alaska apart is that they have completed the MSC certification cycle, and given that experience and other factors, are considering using a state logo. The MSC could be in for turbulent times ahead as other fisheries engaged in the MSC process come up for re-assessment and reflect on their experience with the eco-label and question its value.

6.0 THE FISH BUSINESS

Very few people, particularly in developed countries, have the opportunity to buy the food they consume directly from the people who produced it. Therefore, most people who eat fish purchase it either in a grocery store or at a restaurant. This disconnect between the primary producer and the consumer creates the need for a supply chain. Since the MSC

became an independent organization in 1999, their marketing efforts have been largely focused on the retail sector. Accounting for more than 80 percent of all fish sales in the U.K., supermarkets were the obvious starting point for the MSC, providing the initial point of contact between consumers and the label (Stromsta, 2007e; Stromsta, 2008b).

While very simplistic, Figure 15 below shows a basic supply chain for fish products. In vertically integrated fishing companies one or two of the links in the chain could be removed, or the chain could be lengthened if the product is exported to another country and an importer is involved. Nonetheless the simplified diagram shows the journey of fish products from the ocean to the consumers' plate and, for the purposes of this paper, the players involved in the selling and purchasing of seafood in the sustainability movement.

Figure 15: Simple seafood supply chain.

This section will explore how the latter part of the supply chain has responded to or created the sustainability movement, how North American and European (particularly the U.K.) retailers have differed in their approach, and which sector is the driving force behind eco-labelling and sustainability.

6.1 *Retailers*

Whether the impetus for sustainable, eco-labelled fish came from consumers, environmental organizations, or was created by the MSC, retailers have been forced to respond to this new reality of selling fish. Until very recently, select few retailers have used social and environmental responsibility as part of their corporate identity. One of the few exceptions is the U.K. grocery chain Waitrose. Consistently positioned at the top of the Greenpeace seafood sustainability ranking, Waitrose appears to have a history of embracing social and environmental responsibility that pre-dates any MSC marketing efforts: in 1983, they were the first U.K. grocery chain to sell organic food, they carry an extensive variety of Fairtrade products, and they have a well developed local food sourcing and traceability program. In 1999, long before most retailers even whispered the word sustainability, Waitrose withdrew from the North Sea cod and haddock fishery in response to concerns about the sustainability of the fish stocks, they currently do not sell any fish from the Marine Conservation Society (MCS) List of Fish to Avoid, and in 2006, Waitrose became the first U.K. supermarket to sell only line-caught fresh and smoked cod and haddock in place of trawled fish (Waitrose, n.d.; "Waitrose," n.d.). To emphasize sustainable seafood, Waitrose has developed a magazine, television advertisements and hosts podcasts through their website ("Waitrose Uses TV," 2007).

The green approach seems to be paying off for Waitrose. In the U.K. Waitrose has just 4% of the overall grocery retail market, however they have captured 10% of the seafood market ("Waitrose," n.d.). In 2006, for the first time in a decade, the chain's fresh fish outsold its fresh poultry. While the variety of fish offered at the retailer might be smaller

because of its discerning fish policy, MSC products are out-performing other lines and consumers seem to be willing to pay more for some products. In an interview with Intrafish (Cherry, 2006a), Waitrose Central Buyer for Poultry, Fish and Eggs Quentin Clark said "sustainability has been a good decision for the retailer."

Others, like up-scale U.K. retailer Marks & Spencer committed in 2007 to sell only eco-labelled, MSC or other independently certified, fish by 2012 (Evans, 2007c). In early 2006, global giant Wal-Mart, which also own's Sam's Clubs and U.K. – based Asda, committed to source all its wild-caught seafood from MSC certified fisheries by 2010. In an interview with Intrafish, Wal-Mart Vice President Peter Redmond said "sustainability is simply a cost of doing business in the 21st century, whether a long-touted and never proven price premium ever actually materializes or not" (Stromsta, 2007d). There appears to be a large gap in the philosophy of Waitrose compared to Wal-Mart. While Waitrose's corporate commitment to environmental and social responsibility dates back more than two decades, other retailers, such as Wal-Mart appear to be jumping on the sustainability bandwagon, whether from consumer demand or pressure from environmental organizations. If the goal is simply eco-labelled fish on store shelves, then Wal-Mart's commitment is just as valid as that of Waitrose. However, if the commitment to eco-labelled seafood is part of the larger philosophy of sustainable seafood and environmentally and socially responsible sourcing policies, then the Wal-Mart commitment seems a little superficial.

The eco-labelling initiatives by Marks & Spencer and Wal-Mart represent company specific commitments to sell only eco-labelled fish. On a national scale, a consortium representing 99% of retailers in the Netherlands committed in late 2007 to sell only MSC certified fish by 2011 (Cherry, 2007c). Such a blanket decision permitting only the MSC eco-label has caused real concern in the Dutch seafood industry; they feel it will be a major challenge to adapt in such a tight time period and fear being shut out of the market entirely ("Dutch MSC," 2007).

Retailers like Marks & Spencer and Wal-Mart, who have made commitments to eco-labelled seafood, will need to have sustainable seafood sourcing plans in place until their entire seafood selection carries a label or their eco-labelling deadline is reached and they remove any un-labelled products. In late 2006, a Canadian lobster supplier was intending to deliver product to retail giant Wal-Mart and was asked, by Wal-Mart, for proof that the Canadian lobster fishery is conducted under a sustainable management scheme. The supplier then passed the matter over to the Fisheries Council of Canada, which requested Fisheries and Oceans Canada (DFO) issue a letter stating the sustainable management scheme in place for lobster. DFO produced a document stating:

1) The Canadian lobster fishery is managed rigorously;
2) Management of lobster stocks is implemented through regulation of fishing effort, taking the biological characteristics of the stock into account; and
3) The regulations include prohibition of landings of female lobsters before the spawning period, prohibition of the catch of juveniles, obligation to use selective pots to avoid by-catch of small lobsters, obligation to use bio-degradable fishing

gear in order to avoid ghost fishing, restrictions on entry into fishing rights, demarcation of fishing area and setting of fishing seasons ("Wal-Mart Accepts," 2006).

While the global seafood industry initially saw the document as an eco-label, DFO later clarified that the Canadian government is not in the business of issuing eco-labels, and that the document was simply a letter about sustainability and a description of Canadian fishery management, something that is often provided. What made the circumstances around issuance of the letter unique was that it marked the first time a government document was used to help meet customer (i.e., Wal-Mart) requirements for sustainability (Sackton, 2007c).

6.1.2 U.S. versus U.K.

If U.K. retailers are in the eco-labelling race, many of their North American counterparts are just realizing there is a race. As discussed earlier, U.S. retailers fared very poorly in Greenpeace's first seafood sustainability ranking released in June 2008, with all retailers failing the review, indicating deficient sustainable seafood purchasing practices and policies. Six months later, Greenpeace claimed substantial progress had been made toward sustainable seafood sourcing policy and it was fitting to "give credit where credit was due" and therefore decided to re-evaluate the same 20 retail chains (Fiorillo, 2008b). As expected, some improvements were made and on this second ranking four chains received a passing grade. Overall though, only five retailers changed their original ranking. John Sackton proposes the rankings reflect those companies with strong

corporate policies on procurement, rather than those companies that are changing due to pressure from Greenpeace and their ranking process (Sackton, 2008b). For example, in 1999, Whole Foods became one of the first American companies to sign on to support and participate in the MSC; they actively promote MSC-labelled fish, have developed new sustainable aquaculture standards, and also educate customers on the importance of sustainability. In 2001, Ahold (i.e. Stop & Shop) partnered with the New England Aquarium on the Ecosound project to give preference to suppliers of sustainable species without depending on third party certification and as a result have removed orange roughy, Chilean sea bass, and shark from their counters; other retailers are participating in the Food Marketing Institute's (FMI) working group on sustainability (Sackton, 2008b; Fiorillo, 2008b; Whole Foods Market, n.d.; Roheim et al., 2006).

A red carpet welcome was not offered to Greenpeace for their foray into the U.S. retail market; in fact U.S. fishing and grocers' organizations launched significant opposition campaigns against Greenpeace. Perhaps their fiercest opponent has been the National Fisheries Institute (NFI). The NFI is a non-profit organization dedicated to education about seafood safety, sustainability, and nutrition. Their members include seafood restaurants, retailers, wholesalers, suppliers, and trade associations. NFI and its members "support and promote sound public policy based in ground truth science" and are vocal on many issues affecting all aspects of the seafood industry in the U.S. (NFI, n.d.). NFI took on Greenpeace's seafood sustainability ranking and made some scathing comments prior to the release of the results. In March 2008, NFI president John Connelly said the Greenpeace campaign "is a bold-faced attempt to intimidate retailers into following the

dictates of a discredited activist group who do not seek solutions, but headlines" and urged retailers to "combat Greenpeace's attempts to dictate how you run your business..." (Fiorillo, 2008c). Once the results were released NFI slammed the rankings saying they lack credibility because they don't use science-based standards (Fiorillo, 2008b).

Prior to the release of the second round of rankings, NFI warned retailers of the upcoming release and accused Greenpeace of corporate blackmail and of wrongfully taking credit for retailers' sustainability efforts ("NFI To Grocers," 2008). While the words might sound harsh, "corporate blackmail" and name and shame tactics are the bread and butter of Greenpeace activism. In the first round of U.S. rankings NFI claimed Greenpeace demanded retailers remove nearly 50% of commonly sold seafood items from sale, or face a poor rating. None of them complied (at least in the first ranking) and they all received poor ratings. Canadian retailers have not been immune from Greenpeace's tactics. On November 6, 2008, Greenpeace targeted Loblaws stores in Toronto scaling roofs, hanging yellow crime scene tape, fishing nets, and banners with the message "Caught red-handed selling Redlist fish" (Fiorillo, 2008d) (see Figure 16).

Figure 16: Greenpeace protest against Canadian retailer Loblaws in Toronto (Fiorillo, 2008d).

While the NFI was capturing headlines with strong comments on the Greenpeace ranking, the FMI was engaging retailers in discussions on sustainability and developing resource

material. FMI represents three-quarters (by sales volume) of retail food stores and pharmacies in the U.S. and has 1,500 member companies ranging from large multi-store chains to independent supermarkets. FMI develops and promotes policies and programs in the areas of government relations, food safety and defence, public and consumer information, research and education, and industry cooperation in support of their members (FMI, n.d.).

In 2007, before Greenpeace had started ranking U.S. supermarkets, the FMI Sustainable Seafood Working Group had been formed with the goal of developing guidelines to help companies create seafood sustainability programs. Through consultation with groups such as the Conservation Alliance for Seafood Solutions, which is composed of some of the world's leading environmental organizations like WWF, David Suzuki Foundation and Monterey Bay Aquarium, the group is seeking common sustainability standards and practices ("Largest U.S.," 2009; Conservation Alliance for Seafood Solutions, n.d.). On their website, FMI has posted case studies of successful retailer – non-governmental organization partnerships, such as Greenpeace and Marks & Spencer, as well as other resource material like details on labelling programs (FMI, n.d.). In January 2009, the Working Group developed a new policy supporting sustainable seafood and encouraged its 26,000 retail food store members to:

- Learn about the issues that relate to seafood sustainability and how they can be applied within companies;

- Utilize sustainable seafood resources available from FMI and others to educate company and store associates;
- Consider the sustainability of the seafood supply in the development of procurement policies; and
- Explore sustainable seafood certification programs ("Largest U.S.," 2009).

While Roheim et al. (2006) notes that some of the most active non-governmental organizations are found in the U.S. and Europe (buoyed by American foundations such as the Pew Charitable Trusts and the Packard Foundation) the early days and evolution of seafood sustainability and eco-labelling in the U.K. and U.S. has differed. The U.S. certainly has strong roots in nature conservation and the environmental movement, with a solid history of environmental activists and legislation aimed at protecting water, air, and endangered species. However, for reasons outside the scope of this paper, conservation and protection of fish resources though public engagement and activism started earlier and was much stronger in the U.K. than the U.S. Even though Greenpeace began their retailer ranking in the U.K., there already seemed to be a strong ocean conservation and sustainability ethos established there, both in consumers and retailers, especially Waitrose and Marks & Spencer.

While the MSC might have initially focused on the retail sector, the logo is expanding beyond grocers' counters and shelves. A handful of European restaurants are displaying the logo on their menus and highlighting sustainability and the MSC through in-restaurant

advertising (Stromsta, 2007f). Again in Europe, entire hotel chains have become certified to the MSC standard ("Small Hotel," 2007); MSC-labelled fish was part of four million U.K. school lunches in 2007 ("MSC Fish," 2007); and an airline has even added MSC certified fish to its onboard menu ("Pilot Project," 2008). While restaurants, school lunches, and airplane food represents only a tiny portion of seafood sales, it is the pervasiveness of the label into different veins of seafood retail and foodservice that speaks to the growing prominence of the label and the shift of seafood sustainability from a 'movement' to part of the mainstream, particularly in the U.K. and other parts of Europe.

7.0 HAS SEAFOOD ECO-LABELLING ACHIEVED ITS GOAL?

One of the greatest selling points of the MSC or any logo, or any label, is ease of use. Moving backwards through the supply chain, the concept of sustainability can be difficult to sort through for many consumers, particularly as seafood sustainability enters the mainstream and individuals who may have had little prior exposure to the issues are attempting to make environmentally responsible choices. For those individuals, an on-package label makes selecting seafood that much easier, allowing consumers to make sustainable choices without having to know the technical details of the fishery. As was discussed above, some large retailers have made commitments to source only sustainable seafood, with some committing solely to labelled products, such as those with the MSC logo. For those that have chosen to source only products with a label, ease-of-use was undoubtedly a factor in that decision. Having a label on the package makes

'sustainability' easier for retailers in that a third party (i.e., the certifier) has done the legwork of investigating the characteristics of the fishery. Having the logo requirement makes it easy for large retailers such as Wal-Mart to select seafood. They pass the message on to their suppliers that labelled seafood is permitted and unlabelled is out, therefore dramatically simplifying the sourcing process. For those retailers that have committed to supply sustainable seafood, with or without a label, sourcing is somewhat more difficult. For unlabelled seafood, the retailer is forced to do the leg-work of proving sustainability and must have policies in place to guide purchasing decisions. Another option for retailers is to seek the advice of an environmental organization, as Ahold has done with the New England Aquarium. Neither of these options is as easy as sourcing only eco-labelled products. As was seen in the Wal-Mart - lobster example, the absence of a label makes proving sustainability more difficult for retailers, and as in that case, the onus was placed on the supplier. In turn, a certified fishery and labelled products are easier for suppliers to sell to retailers and secure a spot on store shelves.

So it appears as if eco-labelling works for all links in the seafood supply chain, making sustainable choices easier for consumers and creating an easy way for retailers to 'check the sustainability box.' But does eco-labelling benefit fish harvesters – the group at the very beginning of the chain? When a retailer or an entire country declares a commitment to sell only eco-labelled seafood, it can leave harvesters in a precarious situation. The vast majority of fisheries in the world have not been subjected to MSC or the standards of any other certification scheme. Having not assessed all fisheries around the world the absence of a label does not necessarily mean a fishery is unsustainable, rather that it has not

invested the funds needed to be assessed against a set of standards. When the Netherlands or Marks & Spencer commit to only sell eco-labelled products, they are in fact excluding many truly sustainable, well-managed fisheries. Even more exclusive, some retailers such as Wal-Mart have committed to stock only MSC labelled products, further narrowing the window for harvesters. By committing to stock only labelled products, retailers are effectively excluding what are likely many sustainable, but unlabelled fisheries in favour of taking the easy route and opting instead for the labelled product.

As retailers scramble over one another to develop even more stringent sustainability policies and pledge commitments to MSC and other labelled products, it is quite possible that fish harvesters, the primary producers and arguably the most severely impacted by those decisions, stands to lose the most. After all, most harvesters are very limited in the variety of fisheries available to them; suppliers and retailers on the other hand have a virtually endless selection of fish that is purchased from all parts of the world. When a retailer declares they will sell only labelled products, harvesters that previously supplied fish to that particular retailer find themselves in a real predicament. If they want to have continued access to that market they must invest in a certification scheme, provided of course they have the financial and other resources needed to engage in the process. For harvesters and processors to jump on the eco-labelling wagon, there needs to be a real incentive to do so. The security of having a sustainable fishery is not incentive enough, as they can have a sustainable fishery without investing in a label. The incentive needs to be financial, either through price premiums or new access to higher-end markets that pay a better price.

The MSC has been around for more than a decade, and while the initial rate of certifications was slow, business has certainly picked up for the Council in the last few years. Sufficient time has passed, enough fisheries have been certified and plenty of labelled products are on store shelves to determine whether the MSC (as a proxy for all seafood eco-labels) has succeeded in its goal to create an economic incentive for sustainably managed fisheries, and in turn whether a price premium exists that can justify the investment by the harvesting and processing sector.

7.1 *Financial Incentive*

Seafood eco-labelling, or any sort of eco-labelling, is based on the premise that a consumer will pay more for a product featuring a credible label on the package. Market data supporting or refuting consumer demand and a willingness to pay a premium is scant, partly because much of the retail data is proprietary (Roheim et al., 2006). As a result, most research has measured consumers' hypothetical demand for eco-labelled seafood and willingness to pay extra for it (Roheim et al., 2006). In "Recipe for Change" Greenpeace (2006) states that a research poll carried out in 2005 revealed that 79% of people consider the environmental impacts of seafood to be an important factor in their purchasing decisions and that 86% of those surveyed would prefer to buy seafood that was reliably labelled as environmentally responsible. Clearly it is in the interest of Greenpeace to show a consumer willingness to pay more for eco-labelled seafood. A 2005 study investigating British consumer attitudes towards the environment and seafood found that appearance, price and value for money were the three most important criteria when making seafood-purchasing decisions; country of origin, how it was caught and

how it was produced were ranked of low importance (Seafish, n.d.). The results show that while consumers are receptive to information about where and how their seafood is produced, they are not willing to trade off price and quality for those attributes.

In a transoceanic investigation Johnston, Wessells, Donath & Asche (2001) compared consumer demand for eco-labelled seafood in Norway and the U.S. Respondents in both countries showed a preference for and willingness to pay more for a labelled versus un-labelled product of the same species. As expected, the likelihood of purchasing the labelled product decreased as the price premium increased. Interestingly, Norwegian consumers, who are generally considered to be more willing to change their behaviour based on environmental concerns, were found to be more sensitive to price premiums than U.S. consumers.

Johnston et al. (2001) found that when presented with two products of the same species, one eco-labelled and the other not, consumers do prefer the labelled product and are willing to pay a premium. Johnston & Roheim (2006) pointed out that single-species seafood options are rarely the case (i.e., the variety at supermarkets) and assessed the potential impact of eco-labels when multiple species are available and specifically whether consumers will choose a less-favoured species based solely on the presence of an eco-label. The study found that consumers are not willing to sacrifice a favoured species in order to obtain an eco-label; in other words, the presence of a label is insufficient to cause consumers to give up a most-favoured seafood species. When considered with results from Johnston et al. (2001), it can be concluded that consumers are willing to pay

a certain level of price premium for eco-labelled seafood products, but only for their favoured seafood species.

Roheim et al. (2006) points out that it is difficult to isolate the effect of an eco-label on price because seafood markets are so complicated and are influenced by so many different factors such as supply effects, competition from other species, changes in market conditions, market dynamics, and seasonality. Furthermore, even if a price premium does exist at the retail level, there is little evidence, if any, that the premium filters back to the harvester (Roheim et al., 2006). Failure to realize a financial return leads harvesters to question the value of obtaining an eco-label and speculate about who is really benefiting from certification.

Just two years after the New Zealand hoki (a whitefish from the order Gadiformes) fishery was certified to the MSC standard, Roheim (2003) undertook an early review of the impact the newly acquired label was having on price and demand. She found that soon after certification, Unilever began to purchase hoki for the first time and indicated that it would take at least 4,000 tonnes annually from that fishery. In addition, the number of major European processors with MSC-labelled hoki products increased from nine to 13 within the first year of certification, including such companies as Iglo, Birds Eye, and Young's Bluecrest. Roheim (2003) also reported that share prices of Sanford Group Ltd., New Zealand's largest fishing company and the main fishing company associated with hoki, hit an all-time high after the fishery gained MSC certification. In the year following

certification, the price of hoki blocks, the highest volume product form, increased by 10% and the industry experienced a period of increased price stability.

From those early accounts, it appeared as though certification brought about increased demand and price increases and stability for hoki. The passing of time however provides a different perspective on the impact of MSC certification. In 2003, the German-firm Frosta announced it would only source fish certified as sustainable by the MSC for its own-brand products (Roheim et al., 2006). At that point, that commitment limited their whitefish offerings to hoki, so Frosta invested significant time and money in developing hoki-based products (Roheim et al., 2006). Hoki is generally sold at a higher price than other whitefish in Germany, so combined with the cost of altering processing lines passed on to consumers, a ten percent increase in price was passed on to consumers (Roheim et al., 2006). Frosta had assumed that consumers would be willing to pay a price premium for certified sustainable seafood products coming from a well-managed fishery, but they severely miscalculated. Frosta market share dropped by more than 50% and the firm almost went out of business (Roheim et al., 2006).

In 2002, Unilever launched an ambitious marketing plan in the U.K., hoping to lure consumers away from traditional cod and haddock toward hoki (Roheim et al., 2006). Through its Birds Eye brand, Unilever launched two hoki steak products with the MSC logo and explanation on the package as well as the words 'an excellent alternative to cod' (Roheim et al., 2006). Unilever's recommended retail prices for the hoki products were one-third lower than equivalently-sized cod products (Roheim et al., 2006). Unilever had

in-store promotions of its products, and initially about 13% of the cod steak buyers moved to hoki (Roheim et al., 2006). However their success was short lived as most people moved back to cod once they had bought and tried the hoki steaks, most likely because of the strong taste of hoki compared to cod (Roheim et al., 2006). As a result retailers removed the hoki steaks from store shelves (Roheim et al., 2006).

The Frosta experience shows a real market example of consumers' unwillingness to pay a premium for eco-labelled products. The Unilever case study supports the findings of Johnston et al. (2006), showing that consumers will not switch to a less preferred species just because it is eco-labelled, even when it is priced lower than a favoured, non-labelled product.

As more fisheries are being certified and more products reaching store shelves, it is becoming increasingly clear that consumers are not willing to pay more for certified products. International seafood marketing consultant Marie Monfort bluntly stated during a speech at the 2007 European Tuna Conference "an MSC price premium simply cannot be evidenced" (Stromsta, 2007g). Not only are industry observers saying no price premium exists, producers of certified fisheries are saying the same thing. In late 2007, Oregon's pink shrimp fishery became the first MSC certified shrimp fishery in the world. When asked whether the MSC logo would boost prices, Oregon pink shrimp producer Hallmark Fisheries was doubtful, saying that not every customer plans to use the label on its packaging and also every customer will not want to pay more for the same shrimp they were buying before the MSC logo was added. Those factors combined with the additional

cost of using the logo and maintaining a Chain of Custody record means that any benefit realized likely won't be financial (DiPietro, 2007c).

Hallmark Fisheries' doubt about realizing a price premium is well founded based on the experience of Dutch fishermen involved in the North Sea herring fishery. Many fishermen there had initially hoped for higher prices for their MSC-certified herring, but there has been little actual increase (Stromsta, 2007h). Producers, suppliers and importers of Alaska pollock all say no price increase has occurred because of MSC certification and pointed to the fact that uncertified Russian pollock was fetching similar prices on the European market (Washington, 2008; ISEAL Alliance, n.d.)

Clearly, a price premium is not the reason why an increasing number of fisheries are seeking MSC certification. Related to price however, Washington (2008) reports certification can lead to price stability for some harvesters in cases where buyers are committed to purchasing MSC-labelled products. For example, a South African producer claimed his company was "able to stand firm on price knowing that a particular customer has specifically been needing MSC certified product that they have not been able to source elsewhere" (Washington, 2008, p 29). However, as more certified producers enter the market, any initial price stability that did exist will likely level off or disappear, as customers have more options and suppliers become competitive (Washington, 2008).

Aside from price premiums or price stability many producers claim other, often less quantifiable, benefits have accrued from MSC certification. Some fisheries that have

gained MSC certification have seen returns in terms of new business and/or consolidation of their market position through higher demand and more enquires about their certified product (Washington, 2008). In addition to new customers, some fisheries like Alaska pollock, report stronger customer relationships as a result of MSC certification (ISEAL Alliance, n.d.). Others use the MSC logo to gain access to niche markets. As in the case of Oregon pink shrimp, Hallmark Fisheries saw MSC certification as a way for their product to stand out in the market, at least "until someone else comes along" (i.e., pink shrimp will have an advantage until another shrimp fishery attains certification) (DiPietro, 2007c).

That comment from Hallmark Fisheries is a valid one as there is some indication that fisheries feel compelled to become certified when their competitors do. For example, in late 2007, the Oregon pink shrimp fishery was certified to the MSC standard. The northern shrimp fishery off Newfoundland and Labrador, a competitor with the much smaller Oregon fishery, was certified in August 2008, followed by the Gulf of St. Lawrence shrimp fisheries later in 2008 and 2009 (MSC, n.d.). With just three main coldwater shrimp producing countries in the world (Canada, Greenland and to a lesser extent Norway), one of the three now holds the MSC label, an advantage that will likely be short-lived. With no price premium evident for certified fisheries, any marginal advantage in terms of niche markets or exclusivity will disappear once a sufficient number of competing fisheries are certified and buyers that are focused on the MSC label have more options.

The drive to compete with labelled competitors can even come from retailers themselves. Demand from British supermarkets for a certified British Columbia wild salmon fishery prompted industry leaders to seek the MSC logo. The B.C. salmon industry were told they compete in British markets with Alaska salmon, which is a certified fishery, and therefore they must also be certified if they intend to compete (DiPietro, 2008b). Instead of the MSC logo meaning the potential for enhanced market access, this is an example of the logo being a condition of access, which will have same effect as Wal-Mart and other retailers and countries committing to sell only MSC certified products.

There is no evidence that eco-labelled seafood can command a price premium. Any price stability that arises from demand for a certified product that is in short supply is quickly removed once other similar fisheries gain certification. Any market advantage, either from exclusivity or access to better markets, is again quickly removed once competing fisheries get certified. Given that there appears to be very little financial benefit to becoming MSC certified, why then is the demand for certification outstripping the availability of third-party certifiers? Why are fisheries all around the world scrambling to get the logo on their products? The single-word answer that is true for most fisheries and the companies that market the products is "security" – and not security of world fish stocks. International seafood marketing consultant Marie Monfort says, "the benefits of MSC certification go much deeper than the bottom line, and companies that avoid eco-labelling will pay a price." The MSC label increases brand value, stimulates shareholder loyalty, and helps a company avoid negative media exposure from a poor sustainability policy, which can be disastrous for a company. A WWF spokesperson says certification is

a matter of a short-term investment verses the long-term security of a company (Stromsta, 2007g). Suppliers that offer MSC-labelled fish have the security of knowing their products will be accepted by retailers, such as Wal-Mart, and that they are prepared for customer demands for sustainably managed seafood products.

As was theorized earlier, much of the push for seafood eco-labelling came from environmental organizations, like Greenpeace, who used "name and shame" tactics to force retailers to change their purported unsustainable fish purchasing policies. Whether their tactic was scaling stores and hanging banners or publishing a ranking of retailers based on seafood sustainability practices, non-governmental organizations made retailers nervous, which in turn was felt through the entire supply chain. Over the years the global fishing industry has been attacked on every environmental front, whether it is dolphin by-catch in tuna gear, over-fishing of swordfish, effects of bottom trawling on benthic habitats or discarding of unwanted fish, and it is an easy target as the only wild-capture, publicly-owned food source. The MSC logo and other eco-labels have become an insurance policy against environmental groups and media attacks.

7.2 *Improved Fisheries Management*

The goal of seafood eco-labelling is two-fold. From a business perspective companies are encouraged to engage in the certification process and distinguish their products by way of an eco-label, with the expectation of financial benefits (an expectation which has largely not materialized). From a policy perspective, an eco-label aims to educate consumers about the environmental effects of a particular product so as to bring about change in

purchasing behaviour and ultimately reduce negative environmental impacts and improve the marine ecosystem (Jacquet & Pauly, 2006).

The task of fisheries and marine ecosystem management has typically fallen on national governments and regional management bodies. However, with more than half the world's fish stocks fully exploited and drastically altered ecosystems left in their wake, some people and organizations believe government regulators have failed miserably (Jacquet et al., 2006). As governments have been losing their power and resources as well as their credibility with the public, others, such as environmental groups have stepped in to fill that real or perceived vacuum (Gunningham & Sinclair, 2002). The MSC was created to compensate for short-comings in the management of fish stocks.

The interesting question is: has seafood eco-labelling achieved what governments could not? After more than a decade, are fish stocks around the world more sustainably managed than they were prior to the formation of the MSC and other certification standards? Theoretically, it might be too soon to know for certain. Realistically however, there seems to be little indication of improvement and little expectation that any will occur. Most of the limited numbers of fisheries that have been certified to date were already well managed prior to certification (Washington, 2008). It stands to reason that without evidence of a financial benefit, many of the more questionably-managed fisheries will not be interested in making changes, particularly costly ones, to their operations. Without buy-in and a subsequent change in the management in those fisheries it is

unlikely that certification and eco-labelling alone will lead to well-managed fisheries on a global scale.

Gulbrandsen (2009) suggests two types of fisheries dominate the MSC certification scheme: large-scale industrial and small-scale fisheries in developed countries; very few are intermediate scale fisheries or are in developing countries. Upon further examination, Gulbrandsen (2009) notes some common key features of certified fisheries: they are highly selective of their target species; have stocks that occur within known areas for which there are exclusive national access rights; tend to have limited access; are well regulated and enforced; and, are often co-managed by governments, scientists, and fish harvesters. In contrast, most harvesters in most regions of the world have no significant input into the management process, and they share the fish resources with multiple harvesters from other nations or with unassociated harvesters. Presumably this set of key features exists among certified fisheries because it was such attributes that attracted them to the MSC program, in other words they were fairly certain they would be certified because they were a nice fit with the Principles and Criteria. Most fisheries in the world are not such a nice fit with the program. With such vast resources of fish coming from fisheries that do not have these attributes, and are unlikely to seek certification because of it, it is difficult to envision how eco-labelling will bring about wholesale improvements in the state of the world's fish stocks.

Those fisheries that supply markets in less eco-conscious regions, where an eco-label does not determine market access, will be even more apathetic about certification. Given

that Asia consumes two-thirds of the world's seafood and that environmental issues have resonated with few Asian consumers, it is difficult to elucidate how eco-labelling will have a measurable impact on the sustainability of fish resources (Jacquet et al., 2007). As was discussed in an earlier section, the Monterey Bay Aquarium has developed a pocket guide called the Seafood Watch Program that categorizes a number of widely-available seafood choices into "Avoid", "Best Choices" and "Good Alternatives" (Monterey Bay, n.d.). Since 2000, the Aquarium has distributed two million guides and in 2004 decided to do a self-assessment to determine the effectiveness of their program at modifying consumer behaviour and reducing pressure on target species. Jacquet et al. (2006) found that the Seafood Watch guides did not modify consumer behaviour or reduce fishing pressure on species to "Avoid." Their self-assessment, however, did demonstrate a genuine concern for results. In addition to being ineffective, seafood lists or pocket guides are indiscriminate in that they can negatively impact responsible harvesters that happen to fish the same species that is listed as a product to "Avoid" (Roheim et al., 2006). Furthermore, instead of educating consumers, these guides can actually cause confusion as standards differ across groups and a species that appears on one group's red list might appear in another group's yellow list, as is the case with pollock. Greenpeace believes pollock is a red-list species, while other groups have Alaska pollock on the green list due to its MSC certification (Roheim et al., 2006).

In 2006, following criticism for not reporting on environmental achievements of the program, the MSC, in collaboration with a U.K.-based fisheries research consulting firm, conducted a self-study of environmental gains resulting from its certification program

(Gulbrandsen, 2009). The study found a number of process improvements in MSC-certified fisheries that could lead to enhanced marine biodiversity conservation, yet there was only one major ecological improvement related to the MSC-certification process: a reduction in endangered seabird by-catch in the South Georgia Patagonian toothfish fishery (Gulbrandsen, 2009; Ward, 2008). Two other biodiversity achievements of the MSC program identified in the report, reduced sea lion by-catch in the Western Rock Lobster fishery in Australia and reduced seal by-catch in the New Zealand hoki fishery, were shown to be either not directly related to the MSC certification or proved to be a temporary benefit, respectively (Ward, 2008).

Based on their self-study, it does not appear that MSC-certification is having the desired impact on marine biodiversity. However, a couple of authors (Potts et al., 2006; Roheim et al., 2006) suggest that certification "is an emergent and important tool in dealing with illegal, unreported and unregulated (IUU) fishing" (Potts et al., 2006, p. 91). IUU fishing is a real problem for fisheries world-wide and can severely hamper the sustainable management of marine ecosystems. In their 2009 publication, Agnew, Pearce, Pramod, Peatman, Watson, Beddington, & Pitcher estimates current global fishing losses from IUU are between $10 billion and $23.5 billion annually, representing between 11 and 26 million tonnes of fish. As Roheim et al. (2006) points out, a fishery that is plagued by IUU fishing would generally not be a candidate for MSC certification. Therefore, when the South Georgia Patagonian toothfish fishery requested assessment for certification, many environmental groups and others were very doubtful the fishery would pass the criteria for certification because of the problems, in particular IUU fishing, associated

with toothfish fisheries world-wide (hence the *Take a Pass on Chilean Sea Bass* campaign) (Roheim et al., 2006).

That the fishery had applied for MSC certification showed the commitment of those involved that the South Georgia Patagonian toothfish fishery should become a well-managed fishery. That commitment alone however would not ensure that no IUU fish entered the marketplace. The MSC Chain of Custody certificate, required for all certified fisheries, is intended for the processor who takes custody of fish landed from a certified fishery and who must demonstrate their ability to keep that fish separate from any uncertified fish they may also be processing. While a Chain of Custody must be in place for all fisheries certified to the MSC standard, in the case of the South Georgia Patagonian toothfish fishery it was deemed that the risk of uncertified fish from IUU activity entering the certified fishery was great and that a Chain of Custody from the vessel to the port was needed to prevent that entrance. This extra measure of traceability was implemented to ensure that all fish and fish products that displayed the MSC logo were indeed from the evaluated fishery (Roheim et al., 2006).

What developed in response to that additional Chain of Custody from the vessel to the port was an elaborate system of vessel and catch monitoring for the 4,000 t fishery. In order to be eligible to use the MSC logo companies/vessels with licences to fish in the South Georgia zone must be members of the group that administers the Chain of Custody program. To become a member, an applicant must demonstrate it has no links to any company or entity engaged in IUU fishing for toothfish, has committed no serious

fisheries infractions during the last fishing season and has the onboard equipment necessary to fulfill the Chain of Custody requirements. In addition to carrying a Vessel Monitoring System (VMS), onboard fisheries observers, and be subject to at-sea inspections by patrol vessels, group members must also comply with:

- Inspection of vessels, at designated ports, prior to commencing fishing operations;
- Automated labelling of all boxes of toothfish product to a pre-set specification, detailing all relevant aspects of capture and box contents;
- Daily uploading of product data onto a central database; and
- Inspection on cessation of fishing operations, including weighing of total catch and sampling of boxes and contents (Roheim et al., 2006).

Every day each vessel must transmit the weight, number and size of fish caught in each haul. On the vessel the information is stored in a unique barcode that is affixed to each box of toothfish. Thus, every box has a unique barcode detailing the net and gross weight of the box, the number and size of fish in it, the vessel identifier, and the haul number. Because each box has a unique identifier, consumers further up the supply chain can access the central database to verify product label information and even provide information such as a guarantee that no albatross or other seabird was harmed in the catching of the fish in that particular box (seabird by-catch is the most significant biodiversity issue with the Patagonian toothfish fishery) (Roheim et al., 2006).

The additional Chain of Custody measures for the South Georgia Patagonian toothfish fishery has resulted in a sustainable fishery with a low level of IUU fishing and bird mortality (Roheim et al., 2006). Implementing those extra measures in the fishery were costly, the burden of which is borne by the industry and consumers. For those costs to be considered a worthwhile financial investment and entice others to implement similar measures, participants in the certified fishery must see a return on their investment in the form of increased prices or enhanced market access (for example, re-entry into lucrative markets that may have disappeared as a result of the *Take a Pass on Chilean Sea Bass* campaign). In other words they must see that fishing sustainably is worth more to them, in dollar terms, than fishing unsustainably.

As was briefly discussed earlier, boycotts are a means of using the market power wielded by consumers to positively impact the management of the target species. Through 1998 to 2000, supporters of the *Give Swordfish a Break* campaign sought to reduce demand for the globally over-fished species by enlisting chefs, hotel chains, cruise lines, and others throughout the U.S., which is the world's largest market for swordfish. The campaign was deemed a success when the U.S. government undertook new management measures for swordfish. There is little evidence however, that a drop in demand for swordfish brought about the policy change. Reviewing U.S. swordfish data for 1998 and 1999, Roheim et al. (2006) found no obvious drops in imports, and suggests that even if a drop did exist it would be impossible to attribute it solely to the campaign (i.e., a decrease could be a function of exchange rates, supply, or other factors). It appears the success of the *Give*

Swordfish a Break campaign was more a result of publicity and public relations than of a change in consumer behaviour.

The experience of the *Take a Pass on Chilean Sea Bass* campaign for protection of Patagonian toothfish is somewhat similar to that of swordfish. Roheim et al. (2006) points out that the campaign has raised awareness of the plight of toothfish and the seriousness with which some governments treat the possibility of listing the species under CITES. If the boycott was successful, one would expect to see a drop in price for the product due to a drop in demand. On the contrary, Roheim et al. (2006) reports that the price for toothfish in the U.S. remains relatively high, with the average import price of frozen Patagonian toothfish from Chile (one of the largest suppliers to the U.S.) at $10.17 per kilogram in 2004 and $12.59 per kilogram in 2006. (Note: sales of the certified toothfish fishery do not account for the rise in price as the certified fishery represents just one tenth of the overall legal toothfish landings.) If the price does not drop then the market does not disappear and the incentive for IUU fishing remains and ultimately the boycott has little environmental impact. Therefore, as with swordfish, any success achieved by the *Take a Pass on Chilean Sea Bass* campaign will be a result of publicity and public relations and the willingness of governments to take action, not because of a change in consumer behaviour.

Whether eco-labelling will eventually demonstrate a change in consumer behaviour that results in a discernible move toward sustainable fisheries remains to be seen. What is obvious right now, is that retailers are making sourcing decisions based on real or

perceived sustainability. In 2008, Iceland as a nation experienced a virtual meltdown of its financial sector and the entire country was thrown into crisis as the economy crumbled. The economy of Iceland might have been in shambles, but they still had fish. In January 2009, the government announced the cod quota was to be increased by 30,000 t, the primary reason for which was to buoy the sagging economy. Quick off the mark, the U.K.-based supermarket Sainsbury's announced they would be "working closely with [their] supply base and independent fisheries experts to obtain the supporting scientific advice which allows for the increase in Icelandic cod quota" (Seaman & Cook, 2009). Sainsbury's felt it was important to review the scientific advice on a fisheries management decision made by Iceland.

8.0 THE FUTURE OF SEAFOOD ECO-LABELLING

It is abundantly clear that no price premium exists for eco-labelled seafood, thus there is no financial incentive for unsustainable fisheries to become better managed. There is also no evidence that the marine ecosystem is any healthier or that fish stocks have halted their decline since the inception of the MSC and other certification schemes. Having thus far failed in its intent, one might expect that the MSC and other schemes might start to fade from the forefront as another marketing ploy creeps into the retail business. At this point in time, however, it is unlikely that the MSC and others will do anything other than increase in prominence because "rather than rewarding certified companies with higher

prices, environmental organizations, purchasers and retailers have made certification a cost of doing business" (Gulbrandsen, 2006, p. 486).

To say that eco-labelling will be sticking around is not to say that it will, or should, look the same as it does today. The MSC has already adapted to the requirements of certain fisheries (i.e., the vessel to port Chain of Custody required for the South Georgia Patagonian toothfish fishery) and continues to evolve to meet the needs of small-scale and data-deficient fisheries through its Developing World Fisheries Program (Marine Stewardship Council, n.d.).

8.1 *Developing Countries*

Developing countries account for about half of the world's traded seafood products, about 80 percent of which ends up in markets of developed countries (Washington, 2008). Despite this, very few fisheries in developing countries have been certified through an eco-labelling scheme, likely due to three main factors:

- The lack of an economic imperative;
- Eco-labelling schemes do not translate well into the typical conditions of the fisheries environment in developing countries (insufficient fisheries management regimes, data deficiencies, multi-species fisheries); and
- The high costs of certification (Washington, 2008).

The MSC's Developing World Fisheries Program is an attempt to make certification more accessible to small-scale and data-deficient fisheries by developing assessment guidelines that include the use of traditional ecological knowledge, traditional management systems, and a risk assessment component in cases where fisheries lack full and complete scientific data (Washington, 2008). In November 2007, the MSC announced that four fisheries in Africa and South America would be test cases for the new assessment methodology (Washington, 2008). A year later the MSC opened its first office in Africa ("MSC Opens," 2008).

If the MSC is to truly be a global certification standard then it must be accessible to all fisheries, and be seen as an economic boon for fisheries in developing countries rather than a trade barrier. Support and commitment from certifiers could have a real impact on sustainability of fisheries in developing countries, and in turn on fishing families and communities, particularly if scientific and management initiatives are paired with socio-economic initiatives, as in the Fair-fish program in Senegal. The MSC and other certifiers will be severely remiss if significant advances are not made to engage fisheries in developing countries; failure to do so will marginalize half of the world's seafood trade and cement the notion that eco-labelling is only for data-rich, well-managed fisheries in the developed world. The success of the four fisheries undergoing trial assessment could very well dictate the future of the MSC as a global certifier.

8.2 *Socio-Economic Considerations*

Another way forward for eco-certification is consideration of socio-economic attributes. Of the labelling programs described earlier, only two relatively small initiatives, Fair-fish and EcoFish, consider social aspects of the fishery. Arguably "eco" suggests that a label is primarily concerned with the ecologically sustainable aspects of a fishery, and while it is easy to take an ecocentric view, it is not the world that fisheries operate in; fish managers do not manage fish, they manage the activities of fish harvesters. Fish harvesters, their communities and the entire industry operates within a set of social and economic circumstances that are inextricably linked to the status of fish resources. These circumstances can impact management decisions, as evidenced by the decision of the Iceland government to increase their cod quota in response to that country's financial disaster.

To assess and certify a fishery based solely on scientific data excludes equally important social factors that are certainly of interest to many consumers. For example, Pelletier and Tyedmers (2008) report that markets for fair trade foods increased by 221% between 1997 and 2003. Clearly, consumers are concerned about the social standards of those who produce the food they purchase and certainly seafood is no exception.

In a review of nine seafood certification schemes and lists (i.e., pocket guides), Leadbitter et al. (2007) found that one of the greatest weaknesses was the "extent to which the socio-economic attributes and impacts of the fishery are assessed" (p. 466). They claim that the weakness in assessing the socio-economic attributes flows directly from a lack of

attention of socio-economic issues in most fishery management systems. There are consistent calls for more stakeholder consultation, co-management and collective decision-making, but such matters are not well implemented in most fisheries management systems (Leadbitter et al., 2007). While it is true that stakeholder consultation is lacking in most fisheries, that is not an excuse for certifiers to ignore those issues. As part of a fishery assessment, certifiers could consider issues such as the workplace standards for fish harvesters and processing workers, whether workers are unionized with a collective agreement in place, whether there is equitable sharing of profits from fish sales (i.e., how fish prices are set), and whether fishing rights are granted to local harvesters (i.e., issues of access and allocation).

8.3 *Life Cycle Assessment*

If seafood eco-labelling and certification schemes are to meaningfully influence more sustainable practices, then the criteria they employ should endeavour to address the full spectrum of significant ecological, biophysical, and socio-economic consequences of seafood production (Pelletier et al., 2008). One method to accomplish this is through Life Cycle Assessment (LCA). LCA is an International Organization for Standardization (ISO) accounting framework used to develop "cradle-to-grave" life history profiles of the potential environmental impacts associated with the energetic and material intensity of products or processes (Pelletier et al., 2008). For a number of seafood products it has been shown that fishing is the most energy intense stage of production (Pelletier et al., 2008). A European Commission study reviewing the implementation of eco-labels across Europe recommended the carbon footprint of fishing practices should be included in the

assessment for certification in an effort to improve the overall environmental record of fisheries ("Study: Eco-labels," 2009). Currently, FoS does have criteria related to carbon footprint reduction, but the MSC does not. It is quite possible that the MSC logo could appear on the most energy and greenhouse gas intensive fishery in the world. KRAV has recently included criteria related to many types of environmental aspects and for several stages of the product life cycle. Criteria addressing issues at the fishing stage include: reduction of energy consumption, waste handling, anti-fouling and cleaning agents, and animal welfare. At the processing stage the eco-label has criteria that address clear environmental targets, action plans and internal environmental audits, reduction of product loss internally and through supplier demands, packaging, and additives (Thrane, Ziegler & Sonesson, 2009).

It is not inconceivable that more than one type of certification will be available for seafood products in the future. In addition to eco-certification, there could be LCA certification and fair-trade certification, all vying for consumers' dollars by appealing to particular sensitivities. This could very easily lead to an over abundance of labels that do little other than bewilder consumers. Ideally, existing eco-certifiers would move toward a more holistic assessment of fisheries by adopting principles and criteria related to environmental and socio-economic sustainability. By doing this, eco-certifiers such as the MSC would automatically make their programs more accessible to small-scale and data-deficient fisheries.

9.0 CONCLUSION

As the last remaining wild-caught and publicly owned source of protein, fisheries are an easy target for criticisms of the management practices that have lead to some of the greatest biological disasters in recent history. The failure of governments to sustainably manage fisheries cleared the way and gave a powerful voice to advocacy groups who claimed that creating a market-based incentive to improve the status of poorly managed fisheries would lead to healthier resources. That market-based incentive has taken the form of an eco-label. The purpose of this paper was to determine whether the economic power wielded by environmentally-conscience consumers has been sufficient to influence those that catch and process the fish and, in turn, fisheries management decision-makers.

The financial and time intense MSC certification process is the most internationally recognized and accepted eco-label for sustainable seafood products, but does have some deficiencies, particularly in consideration of socio-economic factors, when compared to some of its smaller competitors, such as Fair-fish. All players in the seafood industry have not embraced eco-labelling for a variety of reasons, including wariness of the MSC itself and of allowing outside forces to interfere with national or regional decisions. Japan introduced its own national eco-label for seafood and also has MSC-certified fisheries; Norway, after many years of dissention, capitulated and now has a number of MSC certified fisheries; and finally, Iceland continues to resist the MSC and has launched a national seafood eco-label.

Conventional wisdom says seafood eco-labelling has come about from consumers' dissatisfaction with unsustainable fishing practices and the desire to support and buy products from well-managed fisheries and that retailers have, in turn, responded to that demand by sourcing sustainable products. Closer investigation shows that the driver behind eco-labels has been advocacy groups, such as Greenpeace. Such groups target retailers and supply chains, threatening "name and shame" tactics like scaling supermarkets, flying banners, publishing sustainability rankings, and generally creating negative publicity. Seafood eco-labelling has become an insurance policy for retailers; it costs them very little (as most certifications are funded by players much earlier in the supply chain), but offers a lot of protection. In addition to protection from bad publicity, an eco-label offers retailers traceability, easier sourcing decisions, and in some cases an edge against competitors.

It is clear that eco-labelling works well for retailers, but seafood eco-labelling was also intended to create a financial incentive for poorly managed fisheries to become more sustainable. It has been shown however, that little or no price premium exists at the retail level for eco-labelled products and certainly no price premium filters back to harvesters. There may be some evidence that eco-labelling does create some amount of price stability and access to more lucrative markets, but that advantage likely disappears as competing fisheries and products attain certification. With large retailers such as Wal-Mart and Marks & Spencer committing to source only certified seafood, eco-labelling has become a new cost of doing business.

Without much evidence of a financial incentive to entice those involved in unsustainable fishing to make what could be costly changes to their practices, it is hard to envision eco-labelling alone bringing about an improvement in the state of global fish stocks. Research conducted by the MSC has shown that certification has had little success in improving marine biodiversity. Realistically, most of the fisheries certified to date have been well-managed, data-rich fisheries in developed countries, however, those characteristics are not true for the majority of fisheries in the world.

Eco-labelling started in Europe and North America and has had little success spreading to heavy fish-consuming Asia. If eco-labelling fails to penetrate the region that consumes two-thirds of all seafood, then the concept will have ultimately failed in its goal to improve the state of world fish stocks. Furthermore, certification has gained little ground in developing countries, which produce 50 percent of the world's seafood. Such fisheries, being largely data-deficient and poorly regulated, are not straightforward candidates for MSC certification. The MSC has, however, recently made efforts to engage small-scale, data-deficient fisheries through the Developing World Fisheries Program.

There is no financial incentive for fisheries to seek certification. An eco-label has simply become a condition of entry onto the shelves of more and more major European and North American retailers. If eco-labelling does not figure more prominently in the psyche of Asian consumers and if certification is not made more accessible to fisheries in developing countries, then eco-labelling will never achieve its goal of improved global

fish stocks as it will have marginalized the majority of fish consumers and producers in the world.

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APPENDIX A –

A COMPARISON OF SUSTAINABILITY STANDARDS

THE ALASKA MODEL FOR SUSTAINABILITY
A COMPARISON OF STANDARDS

There are many ecolabels and sustainability certifications in the world today, with different criteria and standards. For 50 years Alaska has led the world in science-based sustainable fisheries management and stands alone as the model for the world with a proven track record and international recognition.

How do the world's credible standards compare? This "Sustainability Standards Comparison Chart" is designed to help you answer this question, and will demonstrate that the Alaska model of fisheries management represents a standard that meets or exceeds what others are striving to emulate.

- Careful stewardship of marine resources has been the hallmark of fishery management in Alaska since 1959.
- Overfishing – the central problem for many fisheries elsewhere – has been prevented or, when necessary, stopped or reversed in Alaska.
- Alaska's sea lions, otters, birds, and whales are carefully protected, and marine preserves protect hundreds of thousands of square miles of sensitive habitat.
- Alaska's record of excellence sets the standard for the rest of the world's fisheries.

SUSTAINABILITY STANDARDS COMPARISON CHART

CRITERION	ALASKA	FAO	MSC
Year Initiated	1959	1995	1997
Precautionary Approach	✓	✓	✓
Population & Stock Assessment	✓	✓	✓
Science-based Quota Establishment	✓	✓	✓
Firm Harvest Limits (Hard "TAC" – Total Allowable Catch)	✓	*	*
Separation of Conservation from Allocation	✓	✓	*
Transparent, Public Process	✓	✓	✓
Stock-Specific Reference Points	✓	✓	✓
Minimize Bycatch & Discards	✓	✓	✓
Vessel & Gear Restrictions	✓	✓	✓
Time & Area Closures	✓	✓	✓
In-Season Management	✓	*	*
Traceability	✓	✓	✓
Governing Laws and Regulatory Framework (National and State)	✓	✓	✓
Habitat Protection	✓	✓	✓
Regulatory Enforcement	✓	✓	✓
Avoidance of Excess Fishing Capacity	✓	✓	*
Economic Rationalization (e.g. IFQ – Individual Fishing Quotas)	✓	*	*

* = Criterion not evident

FAO = Food & Agriculture Organization of the United Nations
MSC = Marine Stewardship Council

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ALASKA SEAFOOD®
Wild, Natural & Sustainable™

APPENDIX B –

A GUIDE TO SUSTAINABLE SEAFOOD FROM ALASKA

To use your pocket guide: 1. Cut along outer black line
2. Fold on grey lines

GREAT TASTE GOOD FOR THE PLANET

When all is said and done, you can feel good about Alaska seafood. Buying Alaska seafood means you're doing something that's right for the earth, while enjoying the world's best tasting fish.

Wild Alaska seafood is known for its abundance and variety, and prized for its superior quality, texture and delicious flavor.

ALASKA IS THE MODEL

Alaska is one of the most bountiful fishing regions on the planet, and has been recognized as a world model for sustainability.

Since 1959, Alaska's constitution has mandated that "fish...be utilized, developed and maintained on the sustained yield principle."

And that means Alaska seafood will remain the world's finest for future generations, without compromising the pristine natural beauty of Alaska.

LEARN MORE

Visit www.alaskaseafood.org for:

- More detailed information on sustainability and wild Alaska seafood species
- Recipes, cooking tips, and health information
- A wide range of helpful tools and materials

ALASKA SEAFOOD

Wild, Natural & Sustainable™

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A GUIDE TO

Sustainable Seafood FROM Alaska

ALASKA Seafood
ASK FOR ALASKA

HOW TO USE THIS GUIDE

Wild Alaska seafood is widely recognized as the best choice for abundant, well-managed seafood caught in environmentally friendly ways.

This guide can help you make ocean-friendly, sustainable seafood choices from Alaska.

All of the seafood on this list is sustainable and wild.

ALASKA SALMON

King *(Chinook)*
Sockeye. *(Red)*
Coho *(Silver)*
Keta *(Silverbrite or Chum)*
Pink.

*Available in canned and pouched form

ALASKA SHELLFISH

King Crab
Snow Crab
Dungeness Crab
Alaska Scallops
(Weathervane Scallops)

ALASKA WHITEFISH

Halibut
Cod *(Pacific Cod, True Cod, or Grey Cod)*
Alaska Pollock
Black Cod *(Sablefish)*
Lingcod
Rockfish
Sole/Flounder
Surimi Seafood