

Master's Thesis



The Market for Sustainable Seafood in Vancouver:

An Ocean Wise Assessment

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Declaration

I hereby confirm that I am the sole author of this thesis and it is a product of my own academic research.

Katherine Dolmage

Abstract

The current fisheries crisis has been well documented in both the literature and popular media. Numerous programs have been introduced in recent years to promote sustainable seafood purchasing decisions, one of which is the Ocean Wise program, developed and managed by the Vancouver Aquarium (Canada). This study examined the factors that motivate restaurateurs to, or deter restaurateurs from, making sustainable choices and becoming a part of the Ocean Wise program. Based on a review of the literature, a conceptual framework was developed outlining a set of personal, business and economic factors that were expected to play a role in restaurateur's decisions. Interviews were conducted with 70 Vancouver restaurateurs (owners, head chefs), 34 of whom were members of the Ocean Wise program, and 36 of whom were non- or ex-members of the program. Data from the Ocean Wise program were analysed to examine trends, and menus were analysed for percentage and price of sustainable items.

The Ocean Wise program is growing in Vancouver and across Canada. The study determined that restaurateurs committed to the Ocean Wise program were more likely to adhere to a set of green values. While general environmental attitudes were unrelated to membership in the program, specific environmental attitudes related to knowledge of sustainable seafood were associated with membership. Ocean Wise restaurateurs felt that membership played an important role in creating the image they sought for their restaurants. Economic factors did not appear to play a major role in decisions about membership. The program was seen as highly trustworthy by both member and non-member restaurants. It appears that a niche market for sustainable seafood restaurants is developing, and this study seeks to help Ocean Wise to take advantage of this opportunity. Recommendations are included for how the program can improve and continue to grow.

*This thesis is dedicated to the people - conservationists, restaurateurs, seafood lovers -
who are committed to sustainable seafood
“Never doubt that a small group of thoughtful, committed citizens can change the world;
Indeed, it’s the only thing that ever has”
-Margaret Mead*

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List of Acronyms

FAO- Food and Agriculture Organisation of the United Nations

ENGO- Environmental Non-Government Organisation

NGO- Non-Government Organisation

WTO- World Trade Organisation

GATT- General Agreement on Tariffs and Trade

PPM- Processes and Production Method

TBT- Technical Barriers and Trade

MSC- Marine Stewardship Council

WWF- World Wildlife Foundation

CAZA- Canadian Association of Zoos and Aquariums

ERB- Environmentally Responsible Behaviour

NEP- New Environmental Paradigm

ESR- Ecosystem Services Review

CSR- Corporate Social Responsibility

GRA- Green Restaurant Association

ICES- Institute for Clinical Evaluative Sciences

EBM- Ecosystem Based Management

USD- United States Dollar

ISO- International Organisation for Standardization

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1 Introduction

For two decades, scientists have been issuing warnings that humanity's current path is unsustainable, and changes need to be made if the planet is to sustain future generations. In 1992, the Union of Concerned Scientists (2012) released a report indicating that:

Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources...Fundamental changes are urgent if we are to avoid the collision our present course will bring about (p. 1).

In a final warning, the group of over 1700 scientists stated:

We the undersigned, senior members of the world's scientific community, hereby warn all humanity of what lies ahead. A great change in our stewardship of the earth and the life on it is required if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated (Union of Concerned Scientists, 2012, p. 1)

As yet, these warnings have gone unheeded (Rees, 2010).

In 2010, the United Nations Food and Agriculture Organization (FAO) reported that global fish consumption reached an all-time high of an average of 17 kilograms per person, or 15 percent of the average global animal protein intake (FAO, 2011). This increased demand on global fish populations has depleted stocks around the world; large predatory fish biomass today is estimated to be 10 percent that of pre-industrial levels (Myers and Worm, 2003). Many ideas have been presented to reverse the trend of depleting fisheries, including policy changes, creation of marine reserves and no take zones, and reduction in fisheries subsidies (Pauly, Christensen, Guenette, Pitcher, Sumaila, Walters, Watson and Zeller, 2002; Sumaila, Khan, Dyck, Watson, Munro, Tydemers and Pauly, 2010).

The global fisheries crisis has been well documented (Myers and Worm, 2003; Pauly et al., 2002; Sumaila et al., 2010). Daniel Pauly (2009) outlines the need for a change in the fisheries management paradigm:

There are basically two alternatives for fisheries science and management: one is continuing with business as usual, accommodating subsidy-driven over-capacity without bothering about externalities. This would lead to further depletion of biodiversity and intensification of ‘fishing down the marine food web,’ which ultimately involves the transformation of marine ecosystems into dead zones (Pauly, Graham, Libralto, Morissette & Palomares, 2009; Pauly 2009). The other alternative is to convert fisheries science and fisheries management into life-affirming disciplines which, instead of maximising return to fisheries, would be devoted to implementing a more balanced, ecosystem-based fisheries management, requiring consideration of more stakeholders than the fishing industry alone (p. 35).

Along with changing the management paradigms, consumer awareness is being suggested as an option to reduce pressure on unsustainable fisheries. Koldewey, Atkinson and Debney (2009) report that consumer purchasing power has been shown to drastically alter production methods, and that creating consumer awareness has altered the view of fish from a food source to wildlife. Consumer based campaigns, such as eco-labelling, have also been suggested as a method to shift demand from unsustainable fisheries to those considered more sustainable (Pauly et al., 2002). The goal of these campaigns is to “harness market forces to encourage behavioural changes in fisheries” (Gulbrandsen, 2009 p. 655).

In 2005, the Vancouver Aquarium introduced the Ocean Wise program. The main goal of the Ocean Wise program is to educate consumers on sustainable seafood and empower them to make environmentally friendly decisions. The program works with restaurants, suppliers and markets. Member businesses may place the Ocean Wise logo next to sustainable seafood items to highlight these options for the consumer, and make wise purchasing decisions easy. The program now has over 450 members and 3100 locations across Canada (Ocean Wise, n.d.a).

The Ocean Wise program has the potential to play a vital role in helping to change consumer, retailer and supplier behaviour with respect to sustainable seafood purchasing. Ultimately, changes there will impact changes in fishing practices and fish stocks. Understanding the specific effect of the Ocean Wise program on fish stocks or fishing practices is outside the scope of this research. Nevertheless it can be assumed that, as the program grows and more retailers begin to support sustainable seafood while bypassing unsustainable options, more fisheries will begin to comply with sustainable practices. By creating a viable market for sustainable seafood, Ocean Wise may be able to drive the industry toward sustainability. In order for programs such as Ocean Wise to be most effective, the factors driving consumer behaviour need to be studied and understood.

1.1 Aims of the Research

The aims of this research project are twofold: to contribute to the current literature on motivations for sustainable behaviour, and to assess specific aspects of the Ocean Wise program as it is delivered to restaurateurs in Vancouver.

Based on the literature, a model was developed that identified some of the key factors expected to be associated with sustainable behaviour amongst restaurateurs. The set of factors included personal, business, and economic factors. Motivators and barriers to serving sustainable seafood were assessed, as well as services and potential services that programs like Ocean Wise could offer to sustain and increase membership.

Three types of restaurants that sell seafood were included in the present study: Ocean Wise member restaurants, former Ocean Wise member restaurants, and restaurants that have had no involvement with the program. Discussion of the program with current and former Ocean Wise members was conducted to determine what aspects of the program were important to restaurateurs, and what aspects could be improved. Restaurateurs who have had no association with the Ocean Wise program were included to help identify areas for growth and outreach. This information will be valuable not only for the Ocean Wise program, but for various sustainable seafood or restaurant sustainability programs. Information gathered from sales records, where possible, menu items, and supplier data were also used to determine if the sales of sustainable seafood are increasing relative to that of unsustainable.

1.2 Research Questions and Hypotheses

In order to meet the aims of the study identified previously, three research questions and six hypotheses were proposed and investigated:

Research Question 1: How effective is the Ocean Wise program in Vancouver, in terms of increasing and sustaining restaurant membership, and increasing the proportion of sustainable seafood sales in Vancouver?

Research Question 2: What characteristics distinguish Ocean Wise restaurateurs from non-Ocean Wise restaurateurs, and how might the Ocean Wise program learn from these differences to increase membership?

Research Question 3: What barriers and facilitators exist for restaurateurs in terms of providing sustainable seafood, and how can Ocean Wise further assist restaurateurs by helping to reduce barriers and strengthen facilitators?

Hypothesis 1: Ocean Wise is having an effect on the seafood market in Vancouver. In addition to increase in membership in the program, sales of Ocean Wise seafood are increasing relative to that of non-Ocean Wise seafood.

Hypothesis 2: Restaurateurs with knowledge of sustainable seafood issues and who hold positive environmental attitudes will be more likely to participate in Ocean Wise.

Hypothesis 3: Ocean Wise members will feel they are making a difference. The degree of commitment to Ocean Wise will reflect the impact members feel they are having on the marine environment.

Hypothesis 4: Ocean Wise member restaurateurs will adhere to a set of “green” values and will perceive benefits to those values. Further, restaurateurs not involved in the Ocean Wise program will be less supportive of these “green” values and place more emphasis on values such as low cost rather than sustainability.

Hypothesis 5: Ocean Wise restaurateurs will consider business and economic factors, such as cost and product availability, in making decisions about whether or not to join programs like Ocean Wise. Additionally, the extent to which they perceive others (customers, restaurant leaders, and the broader community) as

supporting the concept of sustainable seafood will influence decisions about membership.

Hypothesis 6: Ocean Wise services used and valued by Ocean Wise restaurants will include training, help in sourcing sustainable products, marketing products, and invitation to/support of media and marketing events.

1.3 Data and Methods

Data for this study were gathered through interviews with three groups of restaurateurs: Ocean Wise, non-Ocean Wise, and ex-Ocean Wise. Interviews included a semi-structured portion and a survey identifying background knowledge and scores on the New Environmental Paradigm scale. Program data provided by Ocean Wise, supplier data provided by Albion Fisheries, and menu information were also included in analyses. Analyses of quantitative data were performed using SPSS software, with statistical analyses including multiple regressions correlations, T-Tests, and chi-square analyses. Content analyses of qualitative data identified themes, and representative quotes were included for emphasis and further clarification.

1.4 Limitations of the Study

Several limitations were present in this study. There were fewer than expected Ocean Wise restaurateurs who were available for interviews, and the smaller sample size did not allow for quantitative analyses within the Ocean Wise group. Although they represent a large portion of the restaurants in Vancouver, and typically sell large quantities of seafood, very few Asian restaurants were interviewed in this study. Language barriers or other factors accounted for the limited representation of Asian restaurants in the sample. Finally, insufficient tracking or unavailability of sales data meant that quantification of the volume of unsustainable products removed from Ocean Wise member restaurants was impossible. Similarly, the pattern of sales of sustainable versus unsustainable items over time, amongst Ocean Wise restaurants, could not be ascertained.

1.5 Structure and Content

This thesis is divided into six sections. Section 2 will include a theoretical overview of sustainable fisheries campaigns and eco-labelling programs around the world. Various psychological models for environmentally responsible behaviour will be discussed, followed by an overview of sustainability from a business perspective. In Section 3, research methods are detailed, including sampling and analyses. Results for each hypothesis are presented in Section 4, followed by Section 5, discussion of results. The discussion includes recommendations for the Ocean Wise program, as well as other sustainability campaigns, and areas for future research. Finally conclusions are made in Section 6.

2 Theoretical Overview

2.1 Sustainable Fisheries Campaigns

The introduction of sustainable seafood campaigns has been spearheaded by environmental non-government organizations (ENGOS) (Kong, Slazmann, Steger and Ionescu-Somers, 2002). No single government has sufficient power to prevent overfishing, and many are wary of enacting fishing restrictions due to job losses and other economic factors (Kong et al., 2002). Lack of, or delayed action by government agencies has created a niche market for the ENGO programs, which then put pressure on policy makers to implement sustainable fisheries management processes (Shelton, 2009). Market based tools, including sustainable seafood guides, consumer education programs, boycotts, buycotts (purchasing products meeting certain standards) or labelling may be used (Cho and Krasser, 2011; de Vos and Bush, 2011). The goal of any such campaigns is to engage citizens and create a demand for sustainable seafood (de Vos and Bush, 2011).

Sustainable seafood programs, ecolabelling or seafood recommendation programs can improve the market share and revenues for sustainable fishers, offsetting the inevitable short term losses from the creation of sustainable fisheries management (Shelton, 2009). In a case study of the blue fin tuna fishery, Martinez-Garmendia and Anderson (2005) conclude that creating a market for sustainable seafood is an integral part of sensible use of a limited resource, such as fish. Green alliances between ENGOS and businesses are becoming more common as businesses see options for improved economic performance by improving their environmental performance. Such alliances may produce greater environmental gains than cooperation with governments (de Vos and Bush, 2011). It has been argued, for example, that the long-term vision of government action can lead to projects not getting off the ground (Glasbergen and Groenenberg, 2001).

In order for marine conservation campaigns to be effective, social factors are a key concern. By focusing on social aspects such as cultural beliefs and resource rights, conservation efforts could be made much more effective (Mascia, Brosius, Dobson, Horowitz, McKean & Turner, 2003).

2.1.1 Overview of Types of Campaigns

Human behaviour is the cause of most deteriorating environmental conditions (Schultz, 2011; Saunders, Brooks and Myers, 2006; Stern, 2000), therefore, consumer based programs have been recommended to create sustainability in the seafood industry. Some campaigns have been motivated by frustration with ineffective government regulation, and attempt to use consumer action to change markets (Skladany and Vandergeest, 2004). Ecolabels and recommendation lists are two main avenues for providing sustainable fisheries information to consumers (Parkes, Young, Walmsley, Abel, Harman, Horvat, Lem, MacFarlane, Mens and Nolan, 2010). These programs allow consumers to “vote at the cash register” (Brownstein, Lee and Safina, 2003 p. 1).

Certification is generally conducted on fisheries or fish producers who seek certification, while recommendation lists may evaluate any fishery they choose and base their recommendation on the factors that they deem important (a well-managed fishery with a stable biomass may be blacklisted due to the ecosystem impacts of bottom trawling, for example). Ecolabels, such as Ocean Wise, provide a consumer advantage by creating a clear sign at the point of purchase.

2.1.2 Eco-Labeling

“Environmental certification is playing an increasingly important role in the strategies of many businesses” (Michael, Echols and Bukowski, 2010 p.466).

Eco-labels not only inform consumers, but encourage producers to evaluate the environmental consequences of manufacturing activities (Blengini and Shields, 2010). Seafood eco-labelling is a relatively new, but quickly growing industry. In 2005, voluntary guidelines for eco-labelling fish products were published by the FAO (Seafood Choices Alliance, 2007). Eco-labelling for other products, such as organic food and cotton, is more established. Labelling programs aim to identify producers meeting defined thresholds of sustainability and to create incentive for improved environmental performance (Tlusty, 2011).

In Canada, polls show that 91% of citizens feel seafood products should come from sustainable stocks. Despite this, only 8% of Canadians believe they have enough

information about seafood products (WWF, 2011). A survey of British consumers found that 95% think that the most effective way to communicate sustainability is through eco-labels (Seafood Choices Alliance, 2007). The value of these programs is revealed naturally by the market, and is visible through increased sales (Nimon and Beghin, 1999a).

The World Trade Organisation (WTO) is an important stakeholder in the ecolabelling industry. The General Agreement on Tariffs and Trade (GATT) “does not permit differential treatment of products based on their method of production if such differences do not lead to product specific impacts in the importing country” (Bruhwiler and Hauser, 2008 p. 26). Although schemes enacted by NGOs are not subject to the GATT, government labelling schemes are (Lopez-Hurtado, 2002). Eco-labelling programs that differentiate on the basis of environmental factors can have major market implications, including adverse effects on trade (Chang, 1997).

Chang (1997) examines the regulations and standards outlined in the WTO Agendas, and finds that “voluntary eco-labelling programs based on non-product-related PPMs [processes and production methods] are not covered by the TBT agreement” (Agreement on Technical Barriers and Trade) (Chang, 1997 p. 147). While much of the wording of the WTO agreements is ambiguous, the GATT obligations apply to government bodies, rather than private bodies. Any advantage gained by voluntary eco-labels is based on consumer preference, and is not government-conferred (Chang, 1997). The GATT does state that preference given to countries that have good management practices to sustain their forest products, for example, does constitute discrimination and would not be allowed under the WTO (Chang, 1997). The differential treatment of tuna labelled with the dolphin-safe logo lead to the appeal by the Mexican government to the WTO, as addressed later in this review.

When administered by independent bodies, eco-labelling programs are not inconsistent with the GATT guidelines (Chang, 1997). Programs that are government run could be seen as inconsistent, and therefore there may be an incentive for governments to privatize eco-labelling programs. Chang (1997) concludes that the TBT Agreement cannot regulate private eco-labelling programs, and that a new, independent multilateral agreement be created.

2.1.3 Sustainable Seafood Ecolabels

Many sustainable seafood ecolabels exist. While the goals of the programs are common -- to positively affect fish stocks -- the method of delivery varies. The growing use of seafood ecolabels aims to incentivize the market for responsible use of fisheries resources (FAO, 2012). In 2007, the FAO released a document entitled “Guidelines for the ecolabelling of fish and fishery products from marine capture fisheries”. This document outlined the necessary requirements for ecolabelling schemes, including a management system conducted with good practices, stocks that are not overfished, consideration of the effects on the ecosystem, and necessary assessment of the current state and trends of stocks (FAO, 2007).

This literature review will briefly outline the difficult issues inherent to seafood ecolabelling before outlining some of the most well-known seafood ecolabels, including the Marine Stewardship Council, Viswijzer, Seafood Choices Alliance, Seafood Watch, SeaChoice, and Dolphin Safe Tuna, as well as the Ocean Wise program. The various elements that make these programs successful, as well as elements that could be changed to create better programs will be discussed.

Seafood Ecolabelling Issues

Research has shown that ecolabels can use heightened consumer interest in and awareness of environmental issues to gain market access and create a price premium. But in order for consumers to harness this power, they must be able to make confident decisions regarding the products they are purchasing. The mislabelling of seafood products has been found in many studies in the US and around the world. Mislabelling may be the result of generic names, such as “Pacific snapper”, being used for a variety of species, a mistake resulting from long supply chains with many different players, or a deliberate act to mislead consumers and overcharge for inexpensive products. Jacquet and Pauly (2007a) conclude that the sale of mislabelled salmon alone (farmed salmon being sold as a more expensive wild product) resulted in a consumer loss of at least US\$2 million. Mislabelling also impairs a consumer’s ability to influence markets (Jacquet and Pauly, 2007a). In the United States, only one federally mandated labelling program exists, the country of origin label (COOL), but even this label has many loopholes. For example, a product fished in Thailand but processed in any way in the United States does not require a label (Food &

Water Watch, 2010). Even with COOL requirements, it is estimated that, in 2006, the US Food and Drug Administration (FDA) inspected 0.59 percent of seafood imports (Fox, 2008).

Some researchers identify government action as necessary to avoid mislabelling concerns (Food & Water Watch, 2010), others note that chain of custody requirements by ecolabellers can allay the problem (Gutierrez, Valencia, Branch, Agnew, Baum, Bianchi, Cornejo-Donoso, Costello, Defeo, Essington, Hilborn, Hoggarth, Larsen, Ninnis, Sainsbury, Selden, Sistla, Smith, Stern-Pirlot, Teck, Thorson & Williams, 2012). By tracking fish from hook to plate and providing information including exact species name, fishing or farming method, and country of origin, fish could more easily be tracked (Fox, 2008). Ecolabels place the onus for this tracking on suppliers. It is necessary that labelling schemes are transparent and employ traceability and chain-of-custody requirements (FAO, 2011). Sustainable seafood NGOs can also play a role in fighting for legislation on seafood traceability and labelling (Jacquet and Pauly, 2007b).

In order for seafood ecolabelling schemes to develop effectively and efficiently, a study by the WWF outlines the main steps that need to be considered. These include: publically available documentation of the ecolabelling scheme and certification and accreditation bodies; documented procedures and compliance with ISO, WTO and ISEAL guidelines including stakeholder consultation; traceability; and transparency, and also note that, of the schemes covered in their research, none currently address management of fisheries with respect to climate change (WWF, 2012). By adopting these steps, ecolabelling programs can begin to have positive effects on fish health.

Dolphin Safe Tuna

The dolphin safe tuna label, possibly the most widespread seafood eco-label, was created in 1990 to address the huge number of dolphins being killed in tuna nets. As the presence of dolphins often indicates the presence of yellowfin tuna, seine boats often set their nets around dolphin's pods, resulting in entanglements. From 1960-1972, approximately 100 000 dolphins were killed by the US tuna fleet alone (Teisl, Roe and Hicks, 2002). The Dolphin Protection Consumer Information Act (1990) mandated that only tuna caught without the aid of dolphins could bear the "dolphin safe" logo, and set a maximum fine of \$100 000 USD for noncompliance with dolphin avoidance measures. Observers were

present on fishing boats to verify the fishing methods. The “Flipper Seal of Approval” was later created as an international label for dolphin safe tuna (Teisl, Roe and Hicks, 2002). This label allows for tuna caught internationally to be sold in the United States. As discussed in section 3.2, the Mexican government appealed to the WTO to ban the dolphin safe label on the grounds that it is discriminatory; this controversy is on-going (Campling, 2009).

Marine Stewardship Council

The world’s largest seafood labelling program is the Marine Stewardship Council (MSC). This program was established in 1997 as a joint venture between Unilever and the World Wildlife Foundation (WWF). The MSC uses standards developed using the United Nations Fish Stock Agreement, FAO Code of Conduct for Responsible Fisheries and other international agreements to certify fisheries around the globe (Koldewey, Atkinson and Debney, 2009). The use of third party audits and re-evaluation of certified fisheries every five years give added value to the program.

The Marine Stewardship Council Principles of Criteria include 3 “Principles for Certification”. Principle 1 relates to the target species, Principle 2 to other ecological or environmental impacts of the fishery and Principle 3 to the fisheries management system (Marine Stewardship Council, 2010). Third party certifiers evaluate each Principle for certification, but there are no parameters in Principle 2 that can be quantifiably measured (Ward, 2008). This principle is open to interpretation by the certifier. Comparison of the first 22 MSC fisheries certifications shows that evaluation of Principles 1 and 3 are consistent between certifiers, while there is significant difference in the scores for Principle 2. Standards that are well-specified and consistent are necessary for market-based incentives. Ward (2008) argues that because MSC lacks these, it could lose credibility.

Viswijzer

In the Netherlands, an education and pocket guide program, Viswijzer, was created to help consumers make sustainable seafood decisions (de Vos and Bush, 2011). De Vos and Bush (2011) view the program as an instrument for communication with the power to initiate interactions and discussions over sustainable fisheries through inclusion or exclusion on the guides. It is estimated that 25% of all Dutch consumers use the Viswijzer pocket guides

(Hofs, 2009, as cited by de Vos and Bush, 2011). De Vos and Bush (2011, p. 298) state that:

“...discussions have intensified between NGOs, the industry and scientists, led largely by lower fish prices, high fuel prices and the higher impact of the Viswijzer...albeit a private initiative, [the Viswijzer], was able to indirectly criticise government policy to the extent that the Ministry became a stakeholder.”

The Dutch have created a program where fishermen are compelled to create and maintain good relationships with ENGOs to ensure that their products will be supported, and in return reap economic benefits (de Vos and Bush, 2011). Rather than focussing only on the market effects of sustainable seafood labelling programs, de Vos and Bush (2011) suggest that much of their benefit lies in the ability to fuel communication between the many stakeholders in the fishing industry.

Seafood Choices Alliance

The Seafood Choices Alliance is an international NGO founded in the United States in 2001. The organisation is funded by foundations, donations and various other sources (Seafood Choices Alliance, 2006). The program maintains communication with various stakeholders in the seafood industry, including fishermen, farmers, processors, distributors, retailers, restaurants, and other food service providers. The mission of the Alliance is “to mobilize market forces in the global seafood sector, catalysing positive action in support of ocean conservation” (Seafood Choices Alliance, 2006). The Seafood Choices Alliance ranks common wild and farmed seafood products using a streetlight system (green, yellow and red). The success of this program is clear, according to Brownstein, Lee and Safina (2003). It has created incentives for fisheries to become more sustainable: in British Columbia, where halibut fishermen requested stricter government regulations regarding seabird bycatch in order to meet the criteria for a “green” product.

Seafood Choices has created trust between consumers, scientists, industry and management by developing a transparent system. All research and scoring documentation is available online (Brownstein, Lee and Safina, 2003). Initiatives currently on-going include the Seafood Summit, Seafood Champion Awards, the Good Catch program to help foodservice

professionals understand sustainable seafood, workshops on the Global Reporting Initiative, and publications and market research on the subject of sustainable seafood (Seafood Choices Alliance, 2006).

Seafood Watch

The Seafood Watch Program was created in 1999 at the Monterey Bay Aquarium. The program distributes pocket guides recommending sustainable seafood choices, takes part in outreach efforts, and has produced a mobile application to aid seafood purchasers (Monterey Bay Aquarium, 2012). Seafood Watch bases their recommendations on science-based, peer reviewed data and takes into account ecosystem-based criteria. The program encourages restaurants, distributors and purveyors of seafood to source their products from sustainable sources. To date, the mobile application has been downloaded over 240 000 times, and there are close to 200 partners in North America (Monterey Bay Aquarium, 2012). This program was created to support, not replace, other conservation efforts (Kemmerly and Macfarlane, 2008).

Success of the Seafood Watch program can be attributed to the credibility established, the maintenance of partnerships, and the wide accessibility of the program material to ensure widespread involvement (Kemmerly and Macfarlane, 2008). By identifying that sustainable seafood programs need to have regular evaluation and continued collaboration, the Seafood Watch program should continue to be successful in the future (Kemmerly and Macfarlane, 2008).

SeaChoice

SeaChoice is Canada's most comprehensive sustainable seafood program, formed in 2006 by an alliance of Canadian Parks and Wilderness Society, Ecology Action Centre, Living Oceans Society and Sierra Club British Columbia. The program works in collaboration with the Seafood Watch Program to undertake assessments of fisheries, provide information to consumers, and partner with businesses (David Suzuki Foundation, n.d.). The SeaChoice program produces various consumer guides, including Canada's Seafood Guide, Canada's Sustainable Sushi Guide, and Canada's In-Depth Guide to Sustainable Seafood, among others, to aid Canadians in making environmentally sound decisions when purchasing seafood (SeaChoice, n.d.).

2.1.4 The Vancouver Aquarium's Ocean Wise Program

The Ocean Wise Program was launched in January, 2005 at the Vancouver Aquarium. The program aims to educate consumers about sustainable seafood issues and empower them to make changes. Ocean Wise works with suppliers, restaurants and markets to ensure that they have the scientific information necessary to make ocean-friendly decisions when purchasing seafood. Placing the Ocean Wise logo next to menu items lets consumers know which seafood choices are sustainable (Ocean Wise, n.d.b).

Objectives and Approaches

The most visible Ocean Wise initiative is the logo at member restaurants (Figure 1). Restaurants may display the symbol on doors and in display cases, as well as next to sustainable seafood items on their menus.



Figure 1 The Ocean Wise Symbol

In addition to the logo at restaurants, the program has created a website (www.oceanwise.ca), iPhone app, cookbook, and uses social media (Facebook and Twitter), public and private speaking engagements, training events, and media to spread their message (McDermid, 2012, pers. comm.). The program works in collaboration with other North American conservation organisations. Recently, the *Be Happy* initiative was launched, a collaboration between Ocean Wise, the Blue Ocean Institute, David Suzuki Foundation, FishWise, Seafood Watch, New England Aquarium, SeaChoice, and the Shedd Aquarium. The Ocean Wise program also works with local groups. The program has recently partnered with Abbotsford Christian Secondary School in “The Bounty of the Sea” project, helping biology and foods students create a sustainable seafood feast and presentations (Ocean Wise, n.d.b). The program is discussed at the Vancouver Aquarium; at various places around the Aquarium (including the Windows on Research desk,

Upstream Cafe, and during animal presentations), visitors are not only introduced to the program and symbol, but are given advice on how they can effect change.

Ocean Wise Collaborations with Restaurants

In order to become an Ocean Wise partner, restaurants must commit to replacing one unsustainable menu item with a sustainable option, and may place the Ocean Wise logo next to all sustainable options. Restaurants should then, whenever updating menus, substitute one unsustainable menu item with a sustainable replacement. The goal is to highlight sustainable options so that consumers can identify them easily. There are many benefits to restaurants that become Ocean Wise. These include promotion on the Ocean Wise website and “Ocean Wise Restaurant Directory” pamphlets, training sessions for both front of house and kitchen staff, assistance with the organisation of media events, invitation to Ocean Wise media events, association with a network of chefs committed to seafood sustainability, and regular correspondence with the most up-to-date scientific data available (Ocean Wise, n.d.c). Until 2011, the program was provided free of charge, but recently a fee of \$250 per year has been introduced in an attempt to make the program self-sufficient (McDermid, 2011, pers. comm.).

The number of Ocean Wise restaurants in British Columbia has grown from 22 in 2005 to 262 in 2011. The Ocean Wise program does not solicit restaurants; restaurants come voluntarily to the program. By growing this way, Ocean Wise ensures that the member restaurants are serious about their commitment. As the program continues to grow and spread across Canada, active engagement of more restaurants may take place. By targeting leaders in the restaurant industry (top restaurants who are seen as trend setters in the industry), the program hopes to affect a larger market. The top restaurants and chefs set culinary trends in Canada, and this can have a trickledown effect on other restaurants (McDermid, 2012, pers. comm.).

2.1.5 Eco-Labelling Theory

Eco-labelling is a relatively new area in marketing and currently, there is no complete theoretical model for the eco-labelling industry, although pieces have been suggested (Tlusty, 2011). Accurate assessment of true numerical improvement is impossible without a complete model.

A piece of the model is the pull-threshold model created by Tlusty (2011). The use of a standard-based certification reduces the chances that a seafood producer already meeting certification criteria would continue to improve its environmental performance, while those producers with performance below a certain point would not have the realistic ability to improve to the level of certification (Parkes et al., 2009 as cited by Tlusty, 2011).

An important step for certification schemes is to determine the appropriate threshold to maximise improvement (Tlusty, 2011). Tlusty (2011) explains that “maximizing the threshold pull and enticing producers to improve beyond the threshold are critical parameters to maximize the effectiveness of a certification program” (p. 8). He suggests that if retailers required certification and educational programs for farmers were put in place, an increase in the pull of the certification would result. The largest pull is created when multiple thresholds are used, similar to the grading scheme seen in the agriculture industry (which has six quality grades for beef and three for chicken). It is necessary that consumers have the opportunity to discriminate between the thresholds. Where multiple certification programs exist, they must each have distinct thresholds. Multiple programs working in unison have the potential for greater improvement in the industry (Tlusty, 2011).

2.1.6 Nature of the Message

“The massive scale on which social problems are conceived often precludes innovative action because the limits of bounded rationality are exceeded and arousal is raised to dysfunctionally high levels” (Weick, 1984, p. 40).

Scale of the Problem

Social problems are often magnified to arouse attention, but the scale of the problem often leads to feelings of helplessness and frustration (Weick, 1984). By dividing a large problem into smaller issues, small wins can be achieved. Once one small win has been attained, momentum can increase to aid other small wins (Weick, 1984).

Public support is often given to “charismatic mega-fauna” such as whales or pandas, whereas abstract issues requiring mathematical models like climate change are ignored. Issues that are visual and drastic are easily perceptible to humans, but slow, incremental changes are much harder to grasp (Kollmuss and Agyeman, 2002). In order for consumers

to change their behaviours, campaigns must catch their attention. Information that is both vivid and concrete is most likely to capture the attention of consumers, and therefore has the greatest chance to change behaviour (McKenzie-Mohr, 1994).

Credibility of the Message

In order to achieve the best results, consumers must trust the credibility of the message they are being given. This may be achieved through standardisation schemes or badges of identification (McKenzie-Mohr, 1994). Establishing credibility requires time and effort, and its results cannot be easily measured (Bostrom, 2006). Fisheries science is, in its nature, uncertain. Bostrom (2006) found that relying on data from an organisation with a reputation for neutrality, such as the Institute for Clinical Evaluative Sciences (ICES) can lead to greater cooperation with fishers. His report identifies six factors necessary to establish credibility: independence, global applicability, auditability, scientific validity, inclusiveness, and the ability to balance environmental stringency with feasibility.

Moye (2010) hypothesizes that private initiatives are better able to run eco-labelling programs than governments which are often biased due to a strong interest in industry. Parkes et al. (2010) recommend developing common methodologies and scoring criteria for ecolabels and recommendation schemes to minimize consumer confusion. In order to maximize credibility, recommendation lists should follow a clear, transparent process and make their findings available for peer review. Transparency in the entire production process is important to develop market strategies for seafood from developing and developed countries (Iles, 2007). Efforts should also be made to encourage review and certification of small scale fisheries in developing countries to prevent barriers to market access (Parkes et al., 2010).

Hopefully the separate work of ENGOs and policy makers will create synergy and stronger sustainability overall, but it could potentially create redundancy. Government programs and regulations are necessary in setting fishing targets and creating transparency in the fishing industry (Shelton, 2009), but creation of sustainable seafood programs can increase the level of interaction between key stakeholders, including governments, ENGOs and fishers (de Vos and Bush, 2011). A survey of restaurant professionals in Europe found that 79% agreed that ENGO alliances would provide reliable, trustworthy information on sustainable fisheries (Seafood Choices Alliance, 2005).

It has been established that simply providing information is not sufficient to create behaviour change (Kennedy et al., 2009), but lack of knowledge does create a barrier to action (Tabanico & Schultz 2007). The most common sustainability campaigns are education based; they provide an easy avenue to reach people (Tabanico and Schultz, 2007 and McKenzie-Mohr, 2000b). These campaigns assume that, with increased knowledge of issues, people will change their behaviour (Tabanico & Schultz 2007). Eco-labelling programs are presently used for many consumer products, promoting these products as organic, fair trade, or environmentally friendly. Labelling programs can create a sense of empowerment for the consumer. To understand green consumption, the inequalities between conventional and green products must be assessed; the vast majority of people will choose the more environmentally friendly of two products when all other factors are equal (Peattie, 2010).

Transparency on the part of producers is important in building trust with consumers. Eco-labels have the potential to manipulate consumers, and therefore it is necessary that the consumers have the ability to check the veracity of the claims being made (Bruce & Laroiya, 2007). Many “sustainability” campaigns are purely marketing, but organisations like Greenpeace and the WWF are being used in “green verification”, to authenticate claims. Reducing the number of false claims will add to the value of the campaigns truly supporting sustainability (Roberts 2010). Unfortunately, lack of or ambiguous information about many seafood products can create confusion when consumers attempt to identify the seafood they are purchasing on their recommendation guide (Parkes et al., 2010). An increased number of eco-labels may also cause problems: in their evaluation of energy labelling programs, Proto, Malandrino and Supino (2007) found a vast range of different labels lead to consumer disorientation. Heinzle and Wustenhagen (2011) recommend that, in order to reduce consumer uncertainty regarding products, eco-labels must minimize complexity.

Johnston et al. (2001) have found that consumers are more likely to purchase seafood labelled by a well-known agency. Their research showed that 49% of Americans and 81% of Norwegians would most trust the government to provide certification. In both countries, the WWF was the second most trusted organisation, scoring 23% and 16%, respectively. The MSC was chosen as the third most trusted organisation, by 5% in both the US and in

Norway. The authors note that the level of trust in a certifying agency can be increased through education or public-relation campaigns.

Creating confidence in eco-labels is integral to their success; this can be done through education and stakeholder involvement (Kong et al., 2002; Brecard et al., 2009). When implementing eco-labels, an understanding of how consumers infer credibility regarding environmental claims is important (Grolleau and Caswell, 2006). While many sustainability initiatives may be government run, NGOs can play an important role in encouraging sustainable consumer behaviours. NGOs may have a strong influence over key stakeholders (Kong et al., 2002). Information sharing and cooperation between stakeholders is a necessary best management practice (Golden, Subramanian and Zimmerman, 2011).

Credibility of the Vancouver Aquarium

Aquariums and zoos often emphasize conservation messages. These institutions can “contribute directly to conservation education and conservation sciences” through the stimulation of curiosity about the natural world and through educational programs (Miller, Conway, Reading, Wemmer, Wildt, Kleinman, Monfort, Rabinowitz, Armstrong and Hutchins, 2003, p. 86). Smith, Shaw, Bettinger, Caniglia and Carter (2007) assert that aquariums and zoos have the ability to provide data and understanding to make conservation programs successful.

The Vancouver Aquarium is a non-profit organisation that, since 1956, has been focussed on education, conservation and research. The Aquarium is funded in part by individual donors and corporate sponsors, including the Government of Canada. The Aquarium runs conservation, research and education programs. Some of these include the Marine Mammal Rescue Centre, the Great Canadian Shoreline Cleanup, the BC Hydro Aquavan, the BC Cetaceans Sightings Network, and the Ocean Wise program, among many others (Vancouver Aquarium, 2012). The Aquarium is a member of the Canadian Association of Zoos and Aquariums (CAZA), an organisation that represents leading aquariums and zoos, and promotes the advancement of science, education and conservation (CAZA, 2012).

While the Aquarium itself may be seen as a credible source of information, the way that that information is relayed to the public is still important. Fraser, Taylor, Johnson and Sickler (2008) find that messages presented by staff with some job titles were seen as more

credible than those with other titles. Study participants selected scientists as the most credible source of information on environmental issues. Volunteers, on the other hand, were not seen as a trustworthy source. The authors recommend that organisations “identify volunteers as ‘zoo educators’” (p. 414) or otherwise attempt to remove bias toward the volunteer title. This will encourage greater trust in the message these often well educated volunteers are providing (Fraser, Taylor, Johnson and Sickler, 2008). Finally, the authors found that, when the conservation message relates to actions that may be taken by individuals themselves, titles such as interpreter were seen as the most trustworthy (Fraser, Taylor, Johnson and Sickler, 2008). These findings can be used to ensure that the credibility in the conservation messages, including the Ocean Wise message, is being conveyed as highly as possible to Aquarium visitors.

2.1.7 The Effectiveness of Sustainable Seafood Campaigns

Multiple sustainable seafood programs have been discussed in this literature review. While it is clear that these programs are becoming more common and well known, their true effects have not been conclusively established. While causality is extremely difficult to determine, especially in fisheries science, other proxies have been established to determine if campaigns are having success.

Research on Eco-Labeling and Other Campaigns

The success (or lack of) the dolphin safe tuna label has been well documented in this review. As one of the most well-known and widespread labels, a great deal of research is available on the subject. Many people argue that the label was an extremely successful campaign. The number of dolphins killed by the tuna industry has been reduced by over 95%. In 1991, immediately after the Act was created, dolphin deaths dropped to 25 000 from an average of more than 100 000. The decline continued and, in 2002, less than 5 000 were killed. Since 1991, nearly all canned tuna sold in the US has been labelled dolphin safe (Teisl, Roe and Hicks, 2002). But, as discussed in section 3.4, causality in this debate is uncertain.

Teisl, Roe and Hicks (2002) found that the dolphin safe label did affect consumer behaviour, and therefore that production of eco-labels can generate a consumer response. Further, a welfare analysis suggested that consumers are willing to pay to reduce dolphin mortality in tuna fisheries. In addition to changes in consumer behaviour, Teisl, Roe and

Hicks (2002) reported seeing change in manufacturer behaviour based on the dolphin safe tuna label.

Consumer demand for products labelled as “environmentally friendly” creates an incentive for manufacturers. Tiesl, Roe and Hicks (2002) note that the true marginal effects of the dolphin safe label cannot be confirmed; changes in consumer behaviour may have been seen if other avenues, such as stories in the media, announcements by suppliers, or government action, had been taken instead of the product label. Or, it may be that the label was necessary to recapture the market after consumers became aware of the dolphin controversy (Brown, 2005; Kaiser and Edwards-Jones, 2005; Ward, 2008).

Research by Teisl, Roe and Hicks (2002) finds that there may be a delay in the impact of labelling programs, and they suggest two reasons for this. First, they refer to the process of diffusing information, noting that it may take multiple exposures or discussions for people to react to the labels. Second, some consumers may need verification of the claim of the labels before trusting their promises.

When the information presented on an eco-label differs from a consumer’s prior knowledge, they will likely react negatively to the product (and vice-versa) (Teisl, Rubin and Noblet, 2008). An individual’s underlying level of environmental concern and perception of the effectiveness of consumer choice will also play a role in their acceptance of eco-labels (Teisl, Rubin and Noblet, 2008). Teisl, Rubin and Noblet (2008) suggest that eco-labels should be introduced with educational programs in order to alter consumer’s preconceived understanding of the product.

Andreatta, Nash and Martin (2011) studied the “Carteret Catch” seafood program, promoting local seafood products in North Carolina. Their research concluded that, in order to compete with imported products, individual fishermen need to become focussed on the market. In addition, consumers who value local products must use their wallets to demand it.

A 2008 Seafood Choices Alliance report on sustainable seafood found promising results. Among retailers, chain restaurants and wholesalers there was significant growth in the percentage of sales that were considered sustainable. There was increased dialogue between stakeholders, and an increased numbers of stakeholders concerned about ocean

health. In every sector, seafood items with negative environmental considerations were removed from product lists (Seafood Choices Alliance, 2008).

Evidence of Impacts on Fish Stocks

In their discussion of the effectiveness of seafood labelling campaigns, Skladany and Vandergeest (2004) suggest that, even if there is only a small possibility that these campaigns are having an effect on conservation, they should be put into action. The growth in the certification/labelling industry has been well documented in this literature review, but less well studied are the actual impacts that efforts are having on the environment. Determining the causal relationships between certification programs, consumer changes and changes in ecosystems is difficult. In 2011, the Marine Stewardship Council released a report on the environmental impacts of its program. The report shows, through stakeholder interviews, that thirty-five percent of certified fisheries had improved since certification, while only seven percent had deteriorated. Forty-nine percent of respondents credited MSC certification for the improvement (Marine Stewardship Council, 2011b). Figure 2 shows the improvement of indicators of certified fisheries over time.

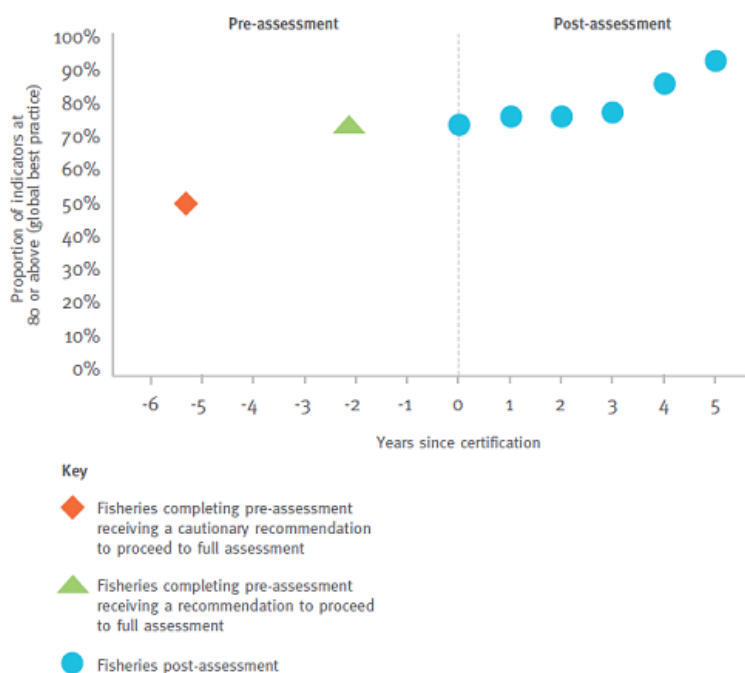


Figure 2 Improvements in MSC Certification Scores over Time (Figure from Marine Stewardship Council, n.d.b).

Contrary to the self-reported positive results seen by MSC, Gulbrandsen (2009) states that MSC “has so far failed to demonstrably arrest the decline of fish stocks”, and also suggests that certification may have detrimental effects, where it is considered a good alternative to other conservation methods such as creation of marine reserves.

2.1.8 Limitations to Success of Sustainable Seafood Campaigns

There are many factors associated with fisheries that make management complex. Fish are often considered a common property resource, many populations are trans-boundary or multi-jurisdictional, and the vast scale of the oceans make assessing marine fisheries, and therefore certification, difficult (Ward, 2008). Market based programs work to address the customer-retailer relationship, but often overlook the other important industry stakeholders (Iles, 2007).

Debate often arises over the definition of a “sustainable” fishery. Ecosystem based management (EBS) is becoming the new paradigm for sustainable fisheries management. Richerson, Levin and Mangel (2009) argue that size and age distribution of a species also needs to be evaluated to ensure sustainability. Current sustainable seafood programs (other than the Swedish KRAV program) do not account for production stages occurring after the fishing event, and do not take into account the energy consumption, emissions, or other externalities (Thrane, Ziegler and Sonesson, 2008).

The MSC has come under fire by multiple sources for problems with its certification system. Principles used in scoring sustainability have created variable and inconsistent results. Shelton (2009) argues that “under the MSC standard, depleted fisheries can still be deemed ‘sustainable’ or conditionally sustainable”. Recently, many independent scientists and environmental groups, including Greenpeace and the Pew Environmental Group have protested various MSC procedures and their resulting certifications. Although the spawning biomass of the certified Alaskan Pollock fell 64% between 2004-2009, the fish was recertified (Ianelli, Barbeaux, Honkalehto, Kotwicki, Aydin, and Williamson, 2009; Jacquet, Pauly, Ainley, Holt, Dayton and Jackson, 2010). Pacific hake, which has seen a population decline of 89% since the late 1980s, has also been certified. Major changes to the MSC standards are needed for it to fulfil the claim of being “the best environmental choice” (Jacquet et al., 2010, p. 29). The MSC has also been criticised for favouring either

small scale fisheries with limited access, or large scale fisheries that are well run and can afford the expensive certification process.

Lack of transparency in the fishing industry, as well as the lack of opportunity for certification of fisheries in developing countries has also created problems (Gulbrandsen, 2009). Fairtrade certified coffee, alternatively, is available only to cooperatives of small producers. Market advantages held by large coffee companies are therefore minimized (Jacquet, Pauly & Ainley 2010). Marketing programs are designed to sell a product, and Schultz (2011) argues that, while sustainable marketing campaigns promote selling a “better” product, consumerism is a chief cause of many environmental problems, and therefore success in sustainability is unlikely to be achieved through the purchase of products.

Although Teisl, Roe and Hicks (2002) argue that the dolphin safe tuna campaign was a clear success, the Earth Island Institute has disputed this (Ward, 2008). Some studies claim that, once the public became aware of the dolphin by-catch problem, the label was necessary to counter the reduction in sales (Brown, 2005; Kaiser and Edwards-Jones, 2005; Ward, 2008). The label may have been the result of public pressure and may not have changed consumer behaviour. The certification process of the dolphin safe label has also been questioned; the label is commonly seen on United Kingdom skipjack tuna labels, a fishery that does not have a problem with dolphin by-catch (Ward, 2008). Further, Ward (2008) explains that, while dolphin by-catch has been greatly reduced, this reduction has not alone been enough to allow populations to recover. Hall and Mainprize (2005) go so far as to suggest that the narrow focus of creating a dolphin-safe fishery may have simply displaced the damage, and could be having a negative effect on other species, such as turtles and sharks.

Further controversy over the dolphin safe label arose when the Mexican government appealed to the WTO on the grounds that the label was discriminatory (Campling, 2009). In the initial appeal to the WTO, Mexico claimed the label was both discriminatory and unnecessary. A panel was formed, and found that the label was not, in fact, discriminatory, but that it was more trade restrictive than necessary to fulfil its objectives. As of January, 2012, the process is on-going. Mexico continues to appeal issues regarding the legal

interpretations of the decisions being made (WTO, 2012). For the time being, the label is still in use.

In Holland, problems with the Viswijzer program have arisen with the “red” labelling of local fish, such as plaice, which is caught by trawl. The lack of distinction between fishing methods on the Dutch wallet cards angered fishermen. Differing information between website information and that on wallet guides also lead to mistrust (de Vos and Bush, 2011). Through cooperation between government, industry and ENGOs, these concerns were abated (de Vos and Bush, 2011).

In summary, there are a number of factors that can limit the effectiveness of ecolabelling and other sustainable seafood campaigns. Concerns about the science behind the programs, inconsistency in the rankings of similar species, and lack of transparency in both fisheries and the certification program can diminish the success of programs. Further, the true effects that programs are having on fish stocks are extremely difficult to determine and therefore consumers may lose faith that their choices are affecting the bottom line.

In order to ensure that sustainable seafood programs are as successful as possible, certain elements are necessary. Each program must create consumer confidence. This may be done through the use of third party audits or the use of peer reviewed data. Consumers must have access to clear, unambiguous information about the species they are considering purchasing (Parkest et al., 2010). Trust between stakeholders is essential, and in order to create this trust the system must be transparent (Brownstein, Lee and Safina, 2003). The wider audience that a program can reach the better, so it is important that the programs create and maintain partnerships to help spread the messages (Kemmerly and Macfarlane, 2008).

2.1.9 Conclusions and Implications

The world is experiencing a global crisis with respect to diminishing fish stocks, species decline and environmental degradation associated with fishing and fish farming methods. There are numerous efforts in place to try to redress this problem. These efforts include: governmental regulation and improved fisheries management guidelines; innovations within the industry itself, and; efforts by NGOs to put pressure on the government and industry, to build partnerships with responsible businesses and to increase consumer

awareness and promote sustainable behaviour. All of these efforts are aimed at the ultimate outcome of ensuring more sustainable fisheries.

Among NGO efforts to increase consumer awareness and promote sustainable behaviour are labelling efforts at the point of purchase and consumer purchasing guides. These approaches depend on sound and credible science to identify those species and fishing practices that should be supported as well as those that should not be supported. The marketplace – purchasing by consumers, retailers, restaurants, and suppliers – is used by these programs to reward fisheries that have been deemed sustainable, and to discourage fisheries that continue to operate in a non-sustainable manner.

One significant challenge faced by government, industry and consumers are the apparent contradictions between sources regarding which fisheries are sustainable or unsustainable. Equivocality in the science on causes and impacts makes decisions about what direction to take sometimes unclear, and this can reduce the level of support that people are willing to exert. Additionally, tying changes at the level of the purchaser to changes in actual fish stocks and fishing practices has proven to be very challenging. Both of these challenges are beyond the scope of the present study.

Nevertheless there is both theory and evidence that consumer behaviour change can impact industry practices, and it makes intuitive sense that as the market for sustainable products grows, and the market for unsustainable products declines, fisheries will ultimately have to respond to these market forces in order to survive. Additionally, there is substantial theory and research on factors associated with behaviour change, adoption of innovations, and environmentally responsible behaviour, which are important in and of themselves. The greater our understanding of designs and services that programs like Ocean Wise can offer in order to maintain and increase consumer support, the stronger these programs will become, and the more confident that we can be that at least this link in the chain is operating as effectively as possible.

2.2 Models and Theories of Environmentally Responsible Behaviour

In this section, research on factors associated with consumer environmentally responsible behaviour change are identified, including personal factors (such as knowledge, attitudes, belief in impacts, and demographic variables), and contextual variables (barriers, facilitators, and support from the wider community). This research is examined with the aim of identifying potential motivators for restaurateurs as consumers, as well as for their patrons as consumers. Following this section, marketing and business models are considered which help to shed light on the unique experience and motivations of restaurateurs as consumers who, in order to maintain successful businesses, also need to be responsive to local culture and trends, product costs and availability, advertising, staff training and other factors. Finally, the factors that appear to be particularly relevant to the growth of Ocean Wise in Vancouver are summarized.

2.2.1 Overview of Models

Various psychological theories for the development of environmentally responsible behaviour have been proposed. Conservation Psychology is a relatively new field of research which draws from psychological theory and research to try to understand why people behave in environmentally sustainable or unsustainable ways (Clayton and Brook, 2005). Some of the research that fits within this overall framework examines individual factors such as knowledge, attitudes, values and beliefs, and how these are related to environmentally sustainable behaviour. Other approaches focus more on the context surrounding the individual, drawing from the field of social psychology. One framework that is particularly useful to understanding responses to social and environmental programs is “community based social marketing”, which examines and addresses barriers to behaviour change as well as incentives to promote change (McKenzie-Mohr, 2000a)

The following discussion will address a number of the theories and findings that are relevant to understanding the motivations of consumers, and in turn, restaurateurs, to begin to adopt environmentally sustainable behaviours. The section begins with a brief introduction of Conservation Psychology, followed by theory and research on individual and contextual factors. Next, community-based social marketing is discussed, including findings on how barriers and benefits of programs can influence behaviour. Understanding

of what causes people to act the way that they do will aid in the development of efficient programs to change consumer behaviour.

2.2.2 Conservation Psychology

“The challenges ahead for biodiversity conservation will require a better understanding of one species: our own” (Saunders, Brook and Myers, 2006 p. 702).

Conservation psychology aims to understand the forces that make people act in ways that help or harm the environment. Understanding these factors allows conservation psychologists to promote sustainable behaviour (Clayton and Brook, 2005). Science has seen a disconnect between the biological understanding of the environment and the success of conservation programs. This disconnect is likely due to the lack of understanding of the social aspects of conservation (Mascia et al., 2003).

It has been argued that environmental professionals have often overlooked the importance of psychology (Clayton and Brook, 2005, McKenzie-Mohr, 2000b). The use of naïve economic theories instead of consideration of the human element has led to failure when past environmental crises have been tackled (McKenzie-Mohr, 1994). The importance of understanding human behaviour in order to address problems requiring behaviour change cannot be understated. Clayton and Brook (2005, p. 89) state that “psychology not only is relevant to conservation initiatives, but is among the most relevant disciplines as the one most devoted to the study of human behaviour and behavioural interventions”.

2.2.3 Environmentally Responsible Behaviour

De Young (1993) claims that there has never been a time in human history that such a high rate of behaviour change has been necessary to our survival. Hungerford and Volk (1990) describe an environmentally responsible citizen as one who is sensitive or aware of environmental issues, understands the issues at least at a basic level, feels concern and is motivated for action, has the ability to solve problems, and is actively involved in resolving environmental issues. Osbaldiston and Sheldon (2003) describe environmentally responsible behaviour (ERB) as “a move away from inherently wasteful and damaging behaviours and a move towards conservation-oriented” behaviours (p. 349). ERBs may be either direct (purchasing a hybrid vehicle) or indirect (changing policy to encourage the

purchase of such vehicles) (Monroe, 2003). ERBs may be behaviours that people do not enjoy doing (such as sorting recycling), but internalisation of these behaviours means that they will be performed regardless of pleasure (Deci and Ryan, 2000; Osbaldiston and Sheldon, 2003). De Young (1993) suggests that both internally initiated and externally initiated techniques to change behaviour are necessary for successful change to occur. It is important to create a community that accepts and encourages ERB.

While providing consumers with the information necessary to make environmentally sustainable decisions is doubtless important, “providing...information without an understanding of the target audience’s knowledge, values and context is not sufficient to change behaviour” (Kennedy, Beckley, McFarlane and Nadeau, 2009). Three steps are required to create ERB: initiation of new behaviour, maintenance of that behaviour, and generalisation of the behaviour to a wide range of similar activities. For example, if someone began to recycle bottles, continued to sort all recyclables, and finally made changes to other areas of life, such as taking public transit or turning off lights, they would be considered to have accepted a change toward ERB (Osbaldiston and Sheldon, 2003). Citizenship (or accountability by individuals toward environmental concerns) and consumption should be addressed together when attempting to achieve sustainability through changes in consumption (Frame & Newton 2007). Although altruism is often cited as necessary for ERB (Brecard, Hlaimi, Sterenn, Perraudieu and Salladarre, 2009), life may be made more enjoyable by environmental protection, and therefore willingness to sacrifice is not necessary for creating ERBs (Monroe, 2003).

Incentives and commitments are common forms of creating behaviour change. Providing external incentives is unlikely to increase the likelihood of behaviour change, but commitment to a behaviour dramatically increases the likelihood (Monroe, 2003; McKenzie-Mohr, 2000a). Often people simply forget to engage in certain behaviours, and prompts can be very effective in encouraging a behaviour that someone is already receptive to (McKenzie-Mohr, 2000a). Enhancing people’s understanding of how they can overcome barriers to environmentally responsible behaviours by changing the way that they think and act toward the environment can encourage lasting behaviour (Pelletier et al., 1999). As discussed below, lack of understanding of the barriers, on the other hand, will make development of effective strategies unlikely (McKenzie-Mohr, 2000b).

2.2.4 New Environmental Paradigm

It is not known conclusively what factors affect a person's attitude toward environmental issues. In the past three decades, people have shown an increased interest in environmental issues as they became aware of the declining state of many natural environments (Pelletier et al., 1999).

The extent to which people view themselves as connected to nature can significantly affect their concern for the environment (Schultz, 2000). In a study by Kennedy et al. (2009), 49.7% of Canadians reported a strong adherence to the New Environmental Paradigm (NEP), or the belief that humans are intricately connected to other species, that resource use should be conservative, and that humans have caused damage to other species. But this study also identified an alarming gap between environmental values and environmental behaviours. Schultz (2000) believes in people's ability to deepen their relationships with nature, as they would deepen relationships with other people. This ability may lead to a closure of the gap between environmental values and behaviours identified by Kennedy et al. (2009).

Dunlap, Van Liere, Mertig and Jones (2000) find that the NEP scale can be used to measure environmental concern. They suggest that a person's beliefs about nature are a "fundamental component of people's belief systems" (Dunlap et al., 2000, p. 428). This hypothesis is supported by Chung and Poon (2000), who found a significant correlation between mean NEP scores and waste avoidance in China. Schultz's research (2000) shows that concern for the environment is malleable, and perspective taking can increase this concern. Participating in perspective taking "expanded the participants' inclusiveness of self and reduced the degree of separation that participants perceived between themselves and nature" (Schultz, 2000 p. 403). Creation of a positive attitude toward a sustainable act or product may be enough to stimulate behaviour, however social influence and perceived behavioural control also play a role (Vermeir and Verbeke, 2007).

2.2.5 Innate Behaviour

Evolution has been used by some researchers to explain humanity's irresponsibility toward the environment. Rees (2010) hypothesizes that human evolution is responsible for our unsustainable activities, and that "to achieve sustainability, the world community must

write a new cultural narrative that is explicitly designed for living on a finite planet, a narrative that overrides humanity's outdated innate expansionist tendencies" (p. 13). Populations of all species tend to grow until they are constrained, whether by space, resources, or disease (Rees, 2010). As K-selected species (Jones, 1988), humans have evolved to satisfy their short term needs; individual fitness has been determined by our ability to aggressively acquire material demands (Pratarelli and Aragon, 2008). Rees (2010) also hypothesises that natural selection has led to humans' tendency to discount the future. As a species, humans demand many more resources than any other animals of comparable size. Humans quickly habituate to a level of consumption, and soon demand more. In addition to evolutionary tendencies, our ecological models have reduced environmental damage to a "negative externality" that can easily be accounted for by taxes or other economic disincentives (Rees, 2010). In other words, any damage to the environment can be mitigated by economic factors, such as fees for polluting rivers.

Rees (2010) notes that "green consumerism" remains consumerism; even the most efficient economies are still increasing their per capita waste. He suggests that the costs of increasing social growth are now outweighing the benefits. To create a sustainable planet, humans must re-program both belief systems and neural pathways. Educating future generations with a new sociocultural survival paradigm to override humanity's engrained expansionist tendencies may be necessary for the creation of species that is able to sustain itself on this planet (Rees, 2010).

2.2.6 Self Determination Theory

The Self Determination Theory (Deci and Ryan, 1985) describes types of motivation in humans, differentiating between controlled and autonomous motivation and amotivation. Autonomous motivation is integrated into one's sense of self, while controlled motivation is a function of external factors such as reward or punishment. More effective performance is yielded when motivations are autonomous. Autonomous motivation also leads to long-term, maintained behaviour change (Deci and Ryan, 2008). The Self Determination Theory can be used to guide environmental policy; the theory explains that rewards, punishments and rules are only likely to produce short term compliance to an activity such as recycling. Autonomous motivation for environmentally responsible behaviours is developed when a feeling of satisfaction is derived from participating in a sustainable activity (Pelletier and

Sharp, 2008). Pelletier and Sharpe (2008) recommend enhancing the internalisation of behaviours by tailoring messages to specific people, discussing the messages in terms of intrinsic factors (like health and well-being), and finally informing people about how to implement their goals .

Sustained changes in environmental behaviour can be promoted by internalised, or self-determined, motivation (Osbaldeston and Sheldon, 2003). The self-determination theory states that “people are more likely to engage in behaviour if they perceive that the motivation to do it comes from within them rather than from an external, controlling agent” (Osbaldeston and Sheldon, 2003, p. 349). Internalisation may occur intrinsically (when behaviour is enjoyable or challenging), or because the values behind the behaviour are endorsed. Other forms of motivation that are not internalised may be due to external motivation (when behaviour is rewarded) or when behaviour is conducted to avoid feeling guilty. Behaviours that are not internalised are not likely to continue after the external factors, such as bribes or guilt, are removed (Osbaldeston and Sheldon, 2003).

When asking people to change their behaviour, requests that are perceived to encourage autonomous decisions making are more likely to lead to internalisation of behaviour. People will try harder to reach their goals when they feel a sense of ownership over them. After attaining one goal, positive feedback can encourage continued performance (Osbaldeston and Sheldon, 2003).

2.2.7 Value Belief Norm

The Value-Belief Norm theory suggests that many values are linked to environmental attitudes, not just altruism (as proposed by other theories) (Schultz, 2000). Through evaluation of our values, Dietz, Fitzgerald and Shwom (2005) propose that we can conceptualize our environmental decisions and that there is a reasonable relationship between our values and environmentalism. Stern, Dietz, Abel, Guagnano and Kalof (1999) propose that values, beliefs and personal norms must work in conjunction to achieve support for the environmental movement. A successful environmental movement must reshape personal norms toward a feeling of obligation. In the model proposed by Stern et al. (1999), a new ecological paradigm is created through altruistic, egoistic and traditional values, and a willingness to change. Once the new ecological paradigm is achieved, awareness of consequences and ascription of responsibility are necessary to create a pro-

environmental personal norm. Achievement of this personal norm will lead to activism, citizenship, support of environmental policy, and private-sphere behaviours. This model is visualized in Figure 3.

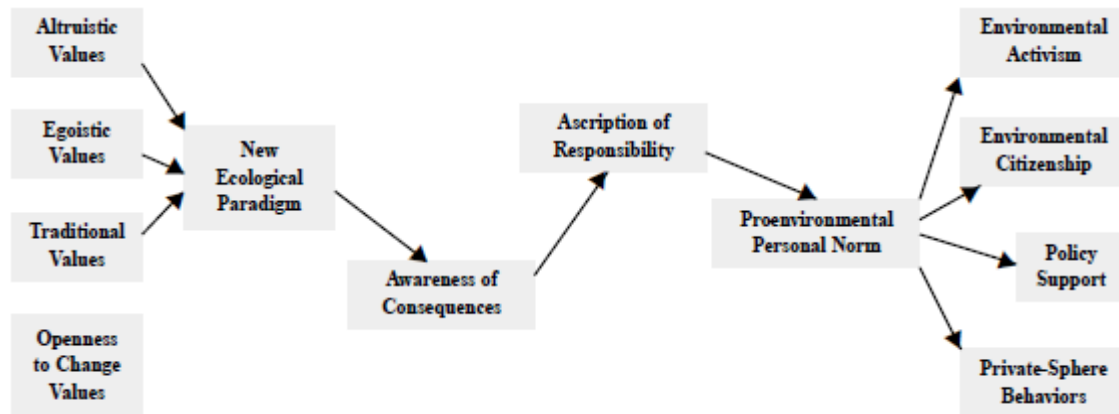


Figure 3 Model of the Value Belief Norm variables, from Stern et al. (1999).

2.2.8 Role of Education and Knowledge

More education is not necessarily correlated with increased pro-environmental behaviour. Greater education does, however, lead to greater knowledge of environmental issues (Kollmuss and Agyeman, 2002). Without knowledge of environmental issues, sound decisions cannot be made (Hungerford and Volk, 1990). Hungerford and Volk (1990) also stress the necessity of in-depth knowledge of issues if citizens are to create ownership.

Consumers who think that environmental problems are severe and that corporations do not, in general, act responsibly toward the environment, are more likely to purchase green products (Laroche, Bergeron and Barbaro-Forleo, 2001). With regard to fisheries, those who believe that fisheries are managed well are less likely to purchase eco-labelled seafood (Brecard et al., 2009).

According to Hungerford and Volk (1990), the ultimate goal of environmental education is to shape human behaviour. Environmental education programs, specifically, may provide experiences that are more engaging and inspiring than traditional educational experiences as they often incorporate partners outside of traditional programs (Lieberman and Hoody, 1998; Monroe, 2003). These programs allow students to be involved in something that is

real, and often more complex than traditional education; students can gain an understanding of the natural environment that is not easy to teach from a text book (Monroe, 2003). While most environmental education programs focus on increasing environmental knowledge in order to change behaviour, Oreg and Katz-Gerro (2006) conclude that cultural value orientations should be targeted, independent of knowledge. Reinforcement is necessary to create lasting environmental behaviours, and although there is no research determining the amount of reinforcement necessary, it is important that reinforcement be provided over a substantial time period (Hungerford and Volk, 1990). The six components critical to successful environmental education programs identified by Hungerford and Volk (1990) are:

- 1) Teach significant environmental concepts and environmental interrelationships
- 2) Provide opportunities for learners to achieve environmental sensitivity
- 3) Create curriculum that will lead to in depth knowledge
- 4) Provide the skills to analyse issues, and the opportunity to apply these skills
- 5) Teach the citizenship skills necessary to solve environmental issues, and provide opportunity to apply these skills
- 6) Provide a setting that will reinforce environmental behaviour

This research suggests that environmental education can develop citizenship behaviour. Creating ownership and empowerment through innovative strategies is necessary to success (Hungerford and Volk, 1990).

Hu, Parsa and Self (2010) recommend that green restaurants aggressively inform their customers of their commitment to environmental issues. Information cards, notes in menus, and window displays can all be used to convey information to consumers. Restaurant associations can also be used to promote green practices and committed restaurants. Marketing should also inform consumers that they can make a difference. By promoting themselves as leaders in the environmental field early, restaurants can gain a future competitive advantage (Hu, Parsa and Self, 2010).

2.2.9 Amotivatoin

Success in motivating people can be achieved by identifying amotivation for the behaviour (Monroe, 2003). Amotivation is described by Pelletier, Dion, Tuson and Green-Demers (1999) as an inability to perceive the connection between a behaviour and the outcomes of

that behaviour. Understanding amotivation can help to clarify the complex factors involved in environmental motivation (Pelletier et al., 1999). When individuals are amotivated, they are unable to see the consequences of their action (or lack thereof). Amotivation may be caused by a belief that the severity and enormity of the problem is too great to overcome (Pelletier et al., 1999). Amotivation can be avoided when people perceive themselves as competent, and as of having the capacity to attain their environmental goals through their behaviour. Providing skills and awareness to carry out these behaviours is necessary (Pelletier et al., 1999).

Monroe (2009) identifies a number of tactics for enhancing conservation behaviour (p. 120):

- Interesting stories, case studies, and success stories of peers, environmental heroes, and community leaders
- Participation in project-based environmental problem solving
- Reinforcement for environmental values from family, school, youth groups and community programs
- Frequent and sustained experiences in nature, starting in early childhood
- Opportunities for children to explore and creatively play in nature
- Partnerships with experts, mentors, older students and leaders
- Investigating issues and working on their resolution
- Persuasive encouragement and support for actions to build efficacy
- Information about the environment, environmental issues and the consequences of human actions
- Making connections between and among the various aspects of an issue or action to more thoroughly understand the choices and consequences
- Acquisition and practice of action skills, both political and ecological.

2.2.10 Demographic and Cultural Variables

Some demographic and cultural variables have been found to be associated with environmental attitudes and behaviour. Research related to these variables will be discussed briefly below.

Demographics

Environmental attitudes have been shown to be influenced by gender and education. Research consistently shows women as being more likely to choose environmentally friendly products (Brecard, D. et al., 2009; Wessells, Johnston and Donath, 1999). Even though women often have less extensive knowledge of environmental issues, they show

more concern, are more emotionally engaged, more willing to change, and believe in solutions based on things other than technology (Fliegeschnee and Schelakovsky, 1998; Laroche, Bergeron and Barbaro-Forleo, 2001). Mixed results regarding marital status have been reported in the literature (with Brecard et al., (2009) reporting no connection and Laroche, Bergeron and Barbaro-Forleo (2001) finding correlation). Consumers working in intellectual professions were found to prefer eco-labels over those in blue-collar professions, and students were the least attentive group to eco-labels (Brecard et al., 2009). Rokka and Uusitalo (2008) found that there was altogether no correlation between demographic variables and the choice of green product packaging in a Finnish study. They suggest that background is not a good predictor of green behaviour.

Hu, Parsa and Self (2010) studied the demographics of green restaurant patronage. Their research found no difference between males and females with regards to their intention to patronize a green restaurant. The age group over 41 was the most likely to visit green restaurants, as were those with higher education levels. Higher income level, amount spent at restaurants, and knowledge of sustainable restaurant operations were also positively related to green restaurant patronage (Hu, Parsa and Self, 2010).

Cultural Differences

Lee, Barnowe and McNabb (2005) describe cultures as the “products of the ideas, values, institutions, traditions, socioeconomic conditions and artistic and ethical expressions that together make a society distinct” (p. 5). Culture, therefore, plays an important role in environmental behaviour. Environmental concerns and goals differ greatly between societies; Lee, Barnowe and McNabb (2005) find that the perceptions relating to technological, natural and social environments vary between countries. Their research shows that the most important environmental issues in the US are different than those in Taiwan, according to citizens. Kollmuss and Agyeman (2002) hypothesize that there is less resource conscientiousness in large, resource rich countries (like the USA and Canada) than in small, dense countries such as the Netherlands. In Vancouver, a reputation as a “green” city has been established. Mayor Gregor Robertson aspires to make Vancouver “the Greenest City in the World by 2020” (City of Vancouver, 2012). This green attitude has been embraced by the restaurant industry in Vancouver. For example, the Green Table Network was established in Vancouver to help restaurants become greener (Green Table Network, 2011)

Many cultures see humans as separate from nature, and a fundamental challenge is to integrate humans as a part of nature (Saunders, Brook and Meyers, 2006). Traditional values, such as being humble and having respect for traditions, correlate to people's decisions to purchase sustainable products (Vermeir and Verbeke, 2007).

In Norway, membership to environmental organisations was not significantly associated with the likelihood of choosing certified seafood, although there was strong correlation in the United States (Johnston, Wessells, Donath and Asche, 2001). Higher income was positively correlated with certified seafood purchase in Norway, but not correlated in the United States (Johnston et al., 2001). Johnston et al. (2001) found that US consumers were unlikely to purchase Mexican shade-grown coffee for a price premium, but that Canadians and Mexicans likely would purchase it. Their findings suggest that labelling programs must be flexible, as consumers across nations show significant heterogeneity.

2.2.11 Social Psychological Model of Conservation Behaviour

The social psychological model of conservation behaviour (Clayton and Brook, 2005) explains behaviour as a function of a person's experiences, knowledge, and fundamental motivations which include belonging and control. Clayton and Brook (2005) stress the importance of context in the model, noting that personal factors (past experiences, knowledge, motivations, etcetera) change the individual's interpretation of the context. In turn, the context influences how people perceive and respond.

Included in the context is the social and physical environment. The behaviour of other people, as well as consideration of what others find acceptable, heavily influences people's behaviour (Clayton and Brook, 2005). For instance, research suggests that people are less likely to litter if they see that the ground is litter-free, or if they see someone else picking up litter off the ground (Cialdini, Reno and Kallgren, as cited by Clayton and Brook, 2005). The physical environment also plays a role in behaviour; the natural environment being replaced by the built environment may have negative psychological and behavioural effects (Clayton and Brook, 2005). As people become less connected with nature and natural environments they may engage in more environmentally damaging behaviours.

The second premise of Clayton and Brook's (2005) model recognises that context is highly influenced by past experiences and memories (stored knowledge). They argue that

memories of personal experiences with nature can affect the way people respond to current issues involving nature. They also note that recent knowledge can affect behaviour (for instance, when reading a recent article on impacts of food choices affect subsequent food shopping).

Thirdly, the model acknowledges that interpretation of context is often affected by fundamental motives, such as (in Western cultures) a positive self-image, and sense of control and belonging (Clayton and Brook, 2005). Thus, people may choose non-environmentally responsible actions because of the status they aim to achieve (for example, when buying a large, expensive car). Or, they may react against pro-environmental regulations because of a fundamental need to resist control by others (reactance).

The model integrates social and environmental psychology and proposes that context, experiences and motivations determine a person's behaviour toward the natural environment (Clayton and Brook, 2005). On the basis of these premises, they identify potential approaches for environmental programs to change behaviour by acknowledging and working with the existing schemas, needs and perceptions of the targeted audience. This can include aligning environmentally-responsible choices with other motives that people already have, so that both motives are part of a higher common objective.

2.2.12 Community Based Social Marketing

In order to hope to achieve success, the environmental movement must harness general public support (Stern, Dietz, Abel, Guagnano and Kalof, 1999). Andreasen (1994, p. 110) defines social marketing as

“...The adaptation of commercial marketing technologies to programs designed to influence the voluntary behaviour of target audiences to improve their personal welfare and that of the society of which they are a part.”

While social marketing may include campaigns with fixed timelines, a programmatic approach adds to its strength. Social marketing has proven to be much more likely to promote sustainable behaviour than information rich campaigns (McKenzie-Mohr, 2000a).

When using social marketing techniques for sustainability, the use of relevant psychological techniques results in sizeable payoffs (McKenzie-Mohr, 1994).

Concrete knowledge of the audience and the ability to identify those already committed to a behaviour as opposed to those who are not, are necessary for social marketing. The identification of both benefits and barriers to the behaviour is also important (Monroe, 2003). Effective program design without identifying what barriers are inhibiting action is nearly impossible (McKenzie-Mohr, 2000a). McKenzie-Mohr (2000a) therefore recommends taking a systematic approach to removing barriers: identifying all barriers and working to remove them, starting with the most important.

Proper identification of barriers can be time consuming, and is often overlooked. Program planners often assume what barriers exist, and become overconfident on their theories (McKenzie-Mohr, 2000a). Barrier identification using focus groups, surveys or observational studies should be used. These strategies can also be useful in determining the differences between people who do and those who do not engage in behaviours (McKenzie-Mohr, 2000a). Andreasen (1994) stresses that monitoring the behaviour of consumers, and constantly asking “how will this (strategy, tactic) affect consumers?” (p. 111) is necessary to ensure that programs remain on track.

Social marketing programs that target specific behaviours with high plasticity (or probability that the behaviour can be changed) are most likely to succeed (Schultz, 2011). Effective social marketing requires the use of social and cultural norms and values (Han and Shavitt, 1994 as cited by Monroe, 2003). The final goal of social marketing programs is behaviour change (Andreasen, 1994). As this change can be difficult to measure, social marketers often consider the factors that are easy to measure, rather than determining what should be measured, to evaluate program success. Social marketing is not equivalent to advertising, and involves much more than providing information (Andreasen, 1994).

In New Zealand, social marketing campaigns were created to promote sustainability through reducing air pollution, recycling, and reducing consumption. These campaigns were successful when they presented sustainability in instructive, factual terms. Authors assumed that “voluntary change is...more likely if the reasoning behind taking sustainable actions is made self-evident through public media” (Frame and Newton, 2007, p. 578). Ideological changes are needed to achieve sustainability, including improved dialogue between individuals, communities, and authorities as well as across disciplines. Increased

success of consumer marketing programs could be seen with a shift from the authoritative nature of current programs, where governments hold the expertise, to programs that co-produce knowledge with consumers (Frame and Newton 2007).

Social marketing has been used for many different marine sustainability programs, with varying successes. The Marine Bird Conservation Project was highly successful, thanks to its audience analysis, which considered the attitudes, local knowledge, and economics, among other factors, of stakeholders. In contrast, the Manatee Watch Program was ineffective, and noted that consideration of attitudes and morals of the target population may have made the program more effective (Bates, 2010). Bates (2010) describes the value in setting specific goals, both achievable and seemingly unrealistic. This will give an accurate picture of both what is attempted and what is achieved. These goals are helpful for evaluation of programs, but are often lacking from social marketing campaigns. Bates (2010) has found that many campaigns lack a formal meta-analysis component, have no formal evaluation component, and are atheoretical in nature. She recommends rigorous reporting of campaign findings (therefore preventing similar programs from repeating mistakes) and the use of an explicit theoretical framework.

2.2.13 Conclusions and Implications

In summary, there are a number of personal and contextual issues that have been found to be associated with environmentally responsible behaviour. Knowledge of the issues, pro-environmental attitudes, previous experiences and belief that your actions will have an impact are among the personal factors that may influence behaviour. Contextual factors including barriers and incentives, as well as the behaviour of others, may also play a role. Additionally, when it comes to eco-labelling, the extent to which the advice is perceived to be credible will be important in determining whether consumers, retailers and other will be willing to follow it.

Restaurant owners and chefs would be expected to be influenced by some of the same factors as other consumers. They would also be expected, however, as business representatives, to be influenced by market variables, such as cost, customer base, corporate image, market trends and other factors. These kinds of variables, and how they might influence the environmental responsibility of restaurants as businesses, are discussed below.

2.3 Marketing and Business Models

2.3.1 Overview of Market Variables

Seafood ecolabelling has been created to identify seafood that is harvested in a way that prevents over-exploitation or environmental degradation. Consumers who value these things will create a market incentive for sustainable seafood and management of fish stocks (Johnston et al., 2001). Research conducted by Jaffry, Pickering, Ghulam, Whitmarsh and Wattage (2004) suggests that eco-labelled foods have an opportunity for higher premiums and a greater share of the market. Eco-labels create a consumer choice, and provide rewards for fisheries adopting sustainable, responsible, or ecologically sound practices (Jaffry et al., 2004).

Cho and Krasser (2011) have found that, globally, consumers are becoming more conscious about the ethics of the products they are purchasing. These consumers are interested in purchasing socially responsible, environmentally friendly products. Ecolabels will need to outcompete other factors (including, but not limited to, quality, brand, and price) in order to be successful (Wessells, Johnston and Donath, 1999). Schubert et al., (2010) found that restaurant patrons will not compromise freshness or taste for a “green” label. Characteristics other than environmental soundness, such as quality and taste, may be important to reinforce the credibility of eco-labels. Using market variables can lead to greater conservation (Martinez-Garmendia and Anderson, 2005).

Consumers cannot easily verify environmental claims, and therefore may rely on other characteristics to infer the validity of the environmental quality (Grolleau and Caswell, 2006). Generating trust in a label is important in order for consumers to believe the environmental claims. Once trust is generated, consumers are willing to pay a higher price premium (Janssen and Hamm, 2011). Janssen and Hamm (2011) found that the visibility of an eco-label is an important factor in generating consumer trust. Further, Grolleau and Caswell (2006) assume that only eco-labelled products that meet an array of attributes important to consumers will be successful. These issues will be explored in greater detail below.

Cost

Handfield, Sroufe, and Walton (2005) are attempting to disprove the theory that there is a trade-off between being environmentally friendly and being profitable. Their research shows that, through environmental supply chain management, companies can become both more profitable and environmentally friendly. Consideration of the environmental issues may create an advantage over competition, and offset any costs associated with implementing environmental programs (Laroche, Bergeron and Barbaro-Forleo, 2001)

The Marine Stewardship Council has received criticism over the cost of the certification process for fisheries. Certification of a fishery varies between \$15 000 USD and \$120 000 USD or more. The cost is based on the complexity of the assessment, availability of data, and level of stakeholder involvement (Marine Stewardship Council, 2011a). Restaurant certification is subject to an annual fee and a royalty. The annual fee is based on the value of seafood sold (Table 1), and royalties are paid at a level of 0.5% on the value of the seafood (Marine Stewardship Council, n.d.a). While the majority of the fees cover the costs of assessment and certification, the fee paid for use of the MSC label is paid to generate revenue for the MSC (Marine Stewardship Council, n.d.a).

Table 1 Annual Restaurant Fees for MSC Certification (from Marine Stewardship Council, n.d.a).

Value of MSC certified seafood purchased/sold	Annual Fee
0-\$200 000	\$250
\$200 000-\$500 000	\$1000
>\$500 000	\$2000

As discussed previously, Ocean Wise has recently introduced a fee of \$250 per year for their program (McDermid, 2011, pers. comm.).

Availability

Growth in the green product industry, whether it is seafood, cleaning products or organic clothing, is clear. The area in the United States dedicated to organic cotton (grown without synthetic insecticides, herbicides, fungicides or fertilizers) grew from 800 acres in 1991 to 36 000 acres by 1994. But while the number of sustainably certified fisheries globally is increasing, Jaffry et al. (2004) note that the majority of global fisheries will be unable to

meet rigorous sustainability criteria. MSC, the largest seafood certifier, currently recommends less than 1% of the total global seafood catches (Brecard et al., 2009). This suggests that the availability of sustainable seafood options likely represents a challenge for restaurateurs.

The Marine Stewardship Council currently has certified 133 fisheries or 13 000 seafood products worldwide. An additional 141 fisheries are currently in the assessment process (Marine Stewardship Council, 2012). A survey by Robinson (2010) found that a greater number of people recalled seeing sustainability labels in supermarkets than in restaurants (16% versus 13%), and only 19% of respondents recalled sustainable seafood messages at the supermarket or other store. The same survey found only 3% of consumers identified “environmental friendliness” as the most important concern when purchasing seafood.

Albion Fisheries is Western Canada’s largest seafood distributor, and is committed to the Ocean Wise program and to providing sustainable seafood. Since 2005, the company has removed many unsustainable items from their product line, including Bluefin tuna, Chilean sea bass, skates and rays (Albion Fisheries, 2011). The work by Albion has allowed many businesses in Vancouver, and Western Canada to provide sustainable options on their menus or in seafood counters. The Albion website (www.albion.bc.ca) provides not only information on the wide supply of sustainable products available, but also information on Albion’s commitment to sustainable seafood (Albion Fisheries, 2011).

Value

In recent years there has been huge growth in the organic food industry, with gains of ten percent annually. The industry was worth approximately \$51 billion in 2008, even though the average unit margin exceeded that of conventional products by only 4.2 cents (van Doorn and Verhoef, 2011). An increasing number of people are willing to pay price premiums for environmentally friendly products (Laroche, Bergeron and Barbaro-Forleo, 2001). Organically grown products in the USA were found to garner a 33.8% price premium over regular cotton products (Nimon and Beghin, 1999a). A study conducted by Cho and Krasser (2011) found 61% of UK consumers purchased fair trade products, when possible, a 15% increase over the previous year.

In a study of British seafood consumers by the Seafood Choices Alliance (2007), half of respondents stated they would be willing to pay 5-10% more for sustainable seafood and

nearly 25% would pay more than 10% extra. This study also noted the importance of providing information regarding overfishing, bycatch etc. to consumers in order to encourage their decision to purchase sustainably (Seafood Choices Alliance, 2007).

A survey at the Monterey Bay Aquarium found that 92% of visitors agreed strongly (30%) or very strongly (62%) that they would choose environmentally responsible seafood over others in a store or restaurant, although the authors note that aquarium visitors are already more interested in environmental issues than the general public (Kemmerly and Macfarlane, 2008). Additionally, the researchers noted that that environmental sustainability competes with other motivators in consumer's decisions to purchase seafood. In their study, survey participants considered other factors as equally or more important in purchasing seafood, including: freshness or smell (97%), taste and texture (93%), possible contamination with bacteria or chemicals (85%), and health benefits (75%). Environmental factors were ranked slightly more important than price (53%). However, when asked to identify barriers to purchasing sustainable seafood, price was the barrier most frequently mentioned (Wolfe and Lilley, 2004).

Breard et al. (2009) find that if two products carry similar environmental labels, consumers will assume that the higher priced item is better for the environment. Consumers are more likely to pay more for organic "virtue" products (health foods, vegetables, etc.) than "vice" products (desserts etc.) (van Doorn & Verhoef 2011). Willingness to pay requires clear links between product design and sustainable consumption, and also quantifiably higher eco-efficiency (Kong et al., 2002). Limited resources, such as fish stocks, should be managed in a way that garners as high a price as possible (Martinez-Garmendia and Anderson, 2005). While seafood certification in developing countries is unlikely, local eco-labels are emerging (Nimon & Beghin 1999b). Interestingly, Pincinato and Gasalla (2010) have found that high trophic level fish are experiencing a price increase regardless of labelling schemes, possibly due to the scarcity of the supply.

It is important to note that eco-labelled products may convey improved quality over conventional products, which is often an important factor in decision making (Loureiro, McCluskey and Mittelhammer, 2002). Johnston and Roheim (2006) found that, while consumers may be willing to pay a premium for sustainable seafood, they are unwilling to

substitute a less-favoured species. Survey results show a differing influence of eco-labels depending on species, with consumers more likely to purchase a serving of certified cod over a serving of certified shrimp. While the authors note that this result was not correlated to a belief that cod was more overfished than shrimp, they did not offer another conclusion for the result (Johnston et al., 2001).

Laroche, Bergeron and Barbaro-Forleo (2001) have developed a conceptual framework of the factors influencing a consumer's willingness to pay more for environmentally friendly products (Figure 4).

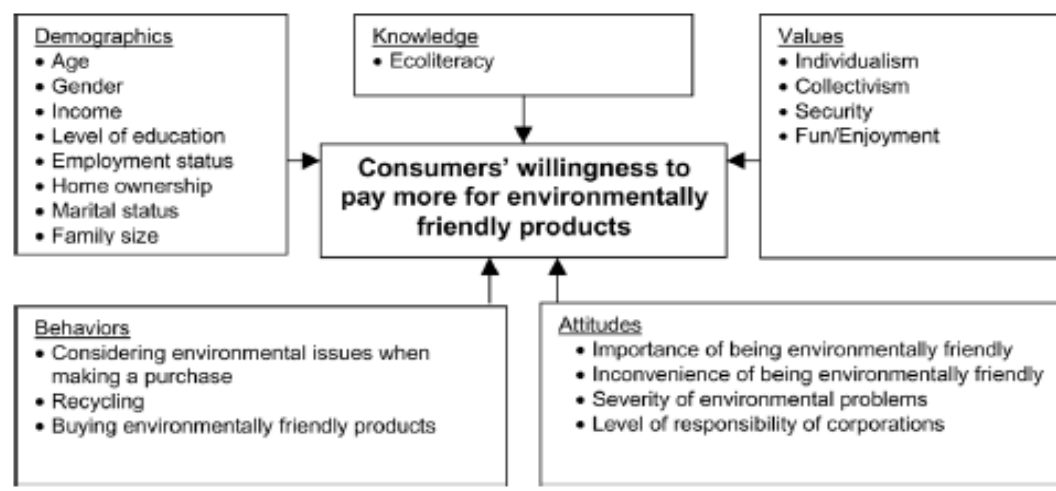


Figure 4 Consumer's Willingness to Pay for Environmentally Friendly Products (from Laroche, Bergeron and Barbaro-Forleo, 2001).

2.3.2 Sustainable Business Theory: A New Paradigm

Current business models are, most often, based on economic performance. Green businesses operate on a significantly different paradigm than the dominant economic paradigm (Johnson, 2008). Research has found that the number of businesses that see the need for incorporating sustainable business practices is increasing. There may be many factors influencing the decision by businesses to incorporate sustainability into their corporate strategies. The MIT Sloan Management Review (Kiron, Kruschwitz, Haanaes and Von Streng Velken, 2012), a survey of over 4 000 businesses worldwide, found that 70 percent of companies had included sustainability in their management agenda in the past six years. Two thirds of respondents stated that sustainability was “critically important to

being competitive in today's market" (Kiron et al., 2012). Thirty-one percent of companies stated that they are profiting from their sustainable practices (Kiron et al., 2012).

Gupta and Benson (2011) found that "well-executed sustainability programs can lead to dramatic improvements in a company's operational effectiveness" (p. 123). Other research has shown that making sustainable changes can be highly profitable when certain conditions are met. Høgevold (2011) identified important lessons learned from the case study of a Swedish company, HÅG: there must be long term support by company owners or top-level management, the best results will occur when the entire supply chain is analysed, and involving an external body to measure the improvement and identify further action is necessary. Høgevold (2011) determines that it is not only possible to create sustainable business models, but that their creation can lead to economic gains. Stubblefield-Loucks, Martens and Cho (2010) suggest that sustainability should not only be incorporated into existing business strategies, but that it should be used to advance the business strategy. Sustainability can be a means to identify new business opportunities. As customers become more environmentally aware, these corporate models will be even more important (Høgevold, 2011).

Many resources are available for companies considering adopting sustainability practices. One resource is the Corporate Ecosystem Services Review (ESR) which been designed to help managers develop proactive strategies to manage the risks associated with their dependence and impacts on natural systems (Hanson, Ranganathan, Iceland and Finisdore, 2008). ISO 14001 certification is also available for companies, and can be used to enhance corporate image, improve relationships with local communities and create savings through management of wastes and reduced energy consumption (Setthasakko, 2007).

2.3.3 Creating New Business Models

It is often assumed that business decisions that are made in a socially responsible way will have negative impacts on economic performance (Grant, 2011; Gupta and Benson, 2011). Corporate social responsibility is counter to the conventional management paradigms (Setthasakko, 2007). But these traditional views are changing, and many theories for the creation of sustainable business models are emerging. Sustainable business models will take a holistic perspective of the business environment, considering the connections between economics, environment and society (Setthasakko, 2007). Some of these include

The Porter Hypothesis (Porter, 1991), The Blue Ocean Strategy (Kim and Mauborgne, 2005), and an Aristotelian approach to sustainable business (Grant, 2011). These strategies are discussed in more detail below.

In 1991, Michael Porter went against all current economic models when he made the statement “strict environmental regulations do not inevitably hinder competitive advantage against foreign rivals” (Porter, 1991, p. 168). After research showed that nations with rigorous environmental requirements (such as Germany and Japan) were often leaders in the export of the regulated products, Porter (1991) hypothesized that these requirements lead to innovation and upgrading. Subsequent research has supported Porter’s hypothesis, and found that environmental regulations can increase profits and can also create consumer demand for better quality, higher priced products (Andre, Gonzalez and Porteiro, 2009).

In her discussion of an Aristotelian approach to creating sustainable business theory, Grant (2011) discusses the common goal of Aristotle’s view of society and sustainable business-eudaimonia, or a state where all members of society are flourishing. In each situation, economy, prosperity, environment and social equity must all be considered equally. The current business paradigm stresses profit maximisation and self-interest, rather than the common good. In Aristotle’s model, on the other hand, community members are inter-dependant, and therefore equity must be maintained within and between generations (Grant, 2011). This view is supported by Stubblefield-Loucks, Martens and Cho (2010) who state that, in order to be successful, the community and natural resources around it must be well off, and by Johnson (2008) who claims that cooperation must supersede competition. Grant (2011) describes corporations as “communities of people working together for a common goal and the existence of community gives rise to mutual responsibilities” (p. 8). In these corporate communities, managers are responsible for providing conditions where community members can be virtuous, with concern and respect for one another. This can be done, Grant (2011) concludes, by influencing corporate culture.

Competition is generally accepted to be the heart of corporate strategies. For one company to succeed, it must outcompete others (Kim and Mauborgne, 2005). The Blue Ocean Strategy argues that, instead of competition, companies should create a new market where there is no competition. These untapped market spaces create the opportunity for growth

and high profits (Kim and Mauborgne, 2005). Research by Kim and Mauborgne (2005) suggests that competition for the same market is making brands more similar. In order to differentiate themselves, companies should look for new market spaces. The Blue Ocean Strategy “embraces the entire system of a company’s activities” (Kim and Mauborgne, 2005 p. 109), similar to many sustainable business strategies. The Blue Ocean Strategy could be used to focus on sustainability and give businesses the ability to create uncontested market spaces (Kim and Mauborgne, 2005).

In a 2009 report by the World Economic Forum, major challenges for future industry were discussed. These included (among other things) the under-pricing of natural resources and the potential for new business opportunities through rethinking current business models. The report found that, in order to create sustainable business models, consumers must be meaningfully engaged, creating a system that sells value rather than “stuff” is essential, more value needs to be placed on externalities, and a closed-loop system with collaboration across the value chain is needed. These value chain systems will work collaboratively to integrate all aspects of the supply chains (Gupta and Benson, 2011). The report recommends engaging key stakeholder and demonstrating how value will be created. It argues that companies who are leaders in sustainable business will guarantee stronger market shares for themselves, and a successful business future (World Economic Forum, 2009).

2.3.4 Creating Partnerships and Strategic Alliances

Sustainability is complex, difficult to rationalize, and context dependent. The complexity and fluidity of sustainability may create difficulty when marketing concepts. These things can, however, increase the strength of campaigns by broadening the understanding of people as citizens as well as consumers (Frame & Newton 2007). For businesses, one of the most efficient avenues for marketing their products as green is by forming strategic alliances with environmental groups (Mendleson and Polonsky, 1995). By allying with an environmental group that is seen as an “unbiased protector of the environment” (p. 16), businesses are ensuring that consumers will have confidence in the environmental claims (Mendleson and Polonsky, 1995).

Companies that are leaders in sustainability are twice as likely to have increased collaboration with competitors and also more likely to be collaborating with suppliers, governments, consumers, NGOs and local communities (Kiron et al., 2012). In addition, companies known for good corporate social responsibility (CSR) have been shown to attract and retain employees of a higher quality than standard businesses (Stubblefield-Loucks, Martens and Cho, 2010).

2.3.4 Commitment at Top Level Management

It is crucial to change the views of management in order to move industry toward sustainability (Kasim and Ismail, 2011; Setthasakko, 2007; Stone, Joseph and Blodgett, 2004). Effort in measuring and reporting a company's environmental impacts rarely occurs before the CEO is committed to an environmental program (Epstein and Roy, 1998). Managers, specifically top managers, need to "set the tone" and implement sound environmental practices (Kasim and Ismail, 2011 p. 5). After top management has set the environmental goals and created an environmental vision, they can encourage lower level employees to collaborate in their strategies (Setthasakko, 2007). Setthasakko (2007) finds when corporate responsibility and the development of sustainability programs come from a deeply held vision of upper management, the resulting programs created are more than just public relation campaigns.

After senior level management has committed to environmental programs, it is necessary to communicate these programs to other employees. Setthasakko (2007) suggests that, in Thailand, respect for authority will lead employees to accept a manager's decision. Kasim and Ismail (2011) recommend environmental education and training programs for staff. Commitment by all employees is crucial to successfully move toward a sustainable society (Kasim and Ismail, 2011).

2.3.5 Creating Value through Sustainability

The view that strict environmental regulations automatically raise costs and reduce profits is changing (Gupta and Benson, 2011). Effective sustainability strategies should integrate concern for the ecosystems they impact while simultaneously creating economic value (Stubblefield-Loucks, Martens and Cho, 2010). Stock market analyses by Gupta and Benson (2011) contradicts the view that environmentally sustainable business practices

reduce profits. Their research shows that sustainability leaders do not perform statistically differently on the stock market than traditional businesses, and are viewed as highly competitive in the market. Switching to green products may seem costly, but restaurant supplier Sysco reports that the additional cost is minimal to non-existent (Sysco Today, 2011).

At a minimum, sustainable business models can increase effectiveness and lead to lower costs and higher profits. But the potential also exists for businesses to create differentiation through their sustainability programs, and reshape market boundaries. Sustainable businesses can use their sustainability programs to create a competitive advantage (Gupta and Benson, 2011).

2.3.6 Opportunities and Challenges

Commitment to a “green” program, through certification or other means, requires company executives to support the green initiatives. Though little research has been conducted into why some executives choose to be proactive in pursuing environmental initiatives, research by Michael, Echols and Bukowski (2010) suggests that executives who actively pursue green initiatives see the opportunity in environmental programs, while those who are more reactive focus on the threats. Such opportunities may include improved relationships with regulatory and environmental groups leading to improved stakeholder relationships, and better preparedness for future environmental regulations.

Those executives that did not pursue environmental certification cited start-up costs and increased man-hours required for preparing the necessary documentation for certification as barriers (Michael, Echols and Bukowski, 2010). Executives who had achieved certification for their businesses consistently reported greater ease in setting up the systems than was expected by the executives that had not participated in certification (Michael, Echols and Bukowski, 2010). Creating concrete measures for environmental performance can help much more than the discussion of broad ethical guidelines (Rokka and Uusitalo, 2008).

2.3.7 Sustainability in the Restaurant Industry

The restaurant industry has seen a growing trend of businesses becoming green. Sysco reports that “sustainability has become one of the most prominent issues in our food

systems today” (Sysco Today, 2011 p. 6). It is widely recognised that there are many avenues for restaurants to decrease their environmental impacts (Hu, Parsa and Self, 2010). Some of these avenues include energy and water efficiency, recycling or composting, preventing pollution, sourcing sustainable food, and educating employees (Hu, Parsa and Self, 2010). A 2008 survey by the American Culinary Federation found philosophy-driven food choices one of the “hottest trends” for restaurants (National Restaurant Association, 2008). Schubert, Kandampully, Solnet and Kralj (2010) found that restaurants can create stronger relationships with customers and communities by engaging in green practices. The biggest barriers to sustainability in the restaurant industry were identified by Freeman (2011) as cost, lack of awareness, and space.

Research in the United States showed that 71% of restaurant patrons believe that they are helping the environment by dining in green restaurants (Schubert et al., 2010). The same study found 85% of respondents would be willing to pay more to dine in green restaurants. In Britain, the number of restaurants serving sustainable seafood has grown substantially in recent years. From 2009-2011, 45% of restaurants surveyed improved their sustainability rating by switching from overfished stocks to more sustainable options (Smith, 2011). Smith (2011) calls this change unprecedented, and believes that it is the first real evidence that attitudes and priorities in the restaurant industry are changing.

The Green Restaurant Association “was founded with the mission of creating an ecologically sustainable restaurant industry, and...to make the process as simple and effective as possible” (Green Restaurant Association, n.d.). The value and growing interest in green restaurants was displayed when the 2008 National Restaurant Association focussed their annual conference on Green Restaurants. The GRA maintains a database of environmental solutions to help restaurants become more sustainable (Hu, Parsa and Self, 2010). Schubert et al. (2010) encourage the use of such databases, as their research shows that sustainability can be marketed to create a competitive edge, as long as customers know which restaurants are green.

While it is clear that sustainability is growing in the restaurant industry, Ismail, Kassim and Zahari (2010) speculate that this movement is superficial. While restaurants are changing their practices to be politically correct, restaurateurs are not fully educated about environmental conditions. While benefits to introducing sustainability programs may be

seen in the long term, many restaurant owners are more concerned about the short term effects, and put off by high start-up costs (Ismail, Kassim and Zahari, 2010). Ismail, Kassim and Zahari (2010) recommend the restaurant community and governments work with private organisations to create realistic environmental policy goals.

2.3.8 A New Economic Paradigm

Most classic economic models are based on a linear system, in which products are designed to be disposed of and replaced at the end of their lifespan (Stubbs and Cocklin, 2007). But the environment in which we live is a closed system, and wastes must be accounted for. The new economic paradigm, a closed loop system, seeks not only to reduce wastes, but to reuse wastes and by-products (Stubbs and Cocklin, 2007).

Synthesis of ecology and economics is necessary for the proper management of natural resources to ensure a sustainable future (Costanza and Daly, 1987). Many different definitions exist for sustainability, although the definition most often includes the three pillars of economy, society, and ecology (Vermeir and Verbeke, 2007). Costanza and Patten (1995) describe a sustainable system as “one which survives or persists” (p. 193). Further, the authors argue that sustainability is a prediction and can only be assessed after the fact. They define a sustainable system as “a system (that) persists in nominal behavioural states as long as or longer than its expected natural longevity or existence time” (Costanza and Patten, 1995 p. 195).

Economic paradigms often consider the impact of humans on the natural systems, rather than integrating human behaviour into the ecosystem. A constant increase in consumption has become the norm for humans, ignoring the natural carrying capacity of ecosystems that is respected by all other animals (Costanza and Daly, 1987). Increased consumption no longer implies growth in welfare (Costanza, Andrade, Antunes, van den Belt, Boesch, Boersma, Catarino, Hanna, Limburg, Low, Molitor, Pereira, Rayner, Santos, Wilson and Young, 1999). The intrinsic value of other species and ecosystems needs to be considered in any ecological model (Costanza and Daly, 1987). If economic paradigms continue to discount ecology, human population growth and overconsumption will gradually reduce the capacity of the earth to support life (Costanza and Daly, 1987). By determining the value of ecosystem goods and services, environmental economics can provide justification

for protecting the environment (Mascia, Brosius, Dobson, Forbes, Horowitz, McKean and Turner, 2003).

Integrating natural and social sciences into the discussion of ocean governance is necessary for development of a sustainable marine environment (Costanza et al., 1999). Ocean science, inherently, involves a large degree of uncertainty; decisions made regarding the use of resources should, therefore, be precautionary (Costanza et al., 1999). Czech, Angermeier, Daly, Pister and Hughes (2004) suggest that, although an economist typically has little experience with ecology, biologists have the knowledge to create an economic policy necessary for today's world. By incorporation of trophic theories to economic policy, reliance on current models which show no limit to growth would be reduced (Czech et al., 2004). The movement of populations toward the coastal zone and expanding pressure on marine resources are having detrimental impacts on the oceans. A new paradigm of ecological marine economics, which is adaptive, fair, scale-sensitive, inclusive and inquisitive, is necessary (Costanza et al., 1999).

2.3.9 The Role of the Media

The attention paid by the public to many issues is very important to the amount of media attention the issue receives (Thøgersen, 2005). Environmental issues have remained on the public agenda in North America and Western Europe for much longer than theory suggests they should have. Research shows that the peak of environmental concern occurred between 1990 and 1992, and that it has since experienced a downward trend (Dunlap, 2002). Media attention to organic products, for example, was high in the early 1990s, resulting in free public relations for organic companies. But since then media attention has diminished, as has growth in the organic industry.

More current research on environmental concern varies by country. A 2007 study found that Canadians rank the environment as one of the top two problems facing Canada (the other being healthcare) (EnviroNics Research Group, 2008). These results differ in the United States, where polls show that Americans have, after 20 years of prioritizing the environment over economics, now permanently shifted the priority to economics (ecoAmerica, 2011). Finally, in Europe, polls show that while concern regarding climate change grew 12% between 2004 and 2007 (from 45% of people reporting they are worried

about climate change to 57%), the level of concern for other environmental factors remained relatively constant over the time period (Eurobarometer, 2008).

Media attention often focuses on new issues or scandals. In the early 1990s, there were many new stories to cover regarding the blossoming organic industry, but boredom when these stories were no longer new led to reduced coverage (Thorgersen, 2005). Overall coverage of the organic industry is down, but coverage of scandals in the industry, incidents where companies are breaking the rules, continues (Thorgersen, 2005). Therefore, the percentage of negative publicity that organic products are receiving is increasing whether or not the incidences of rule breaking are increasing. The high volume of negative coverage could undermine the public's trust in organic products (Thorgersen, 2005). Thorgersen (2005, p.152) proposes that "the more hostile media agenda from the late 1990s onwards has had a negative influence on consumer attitudes and perceptions regarding organic food".

Dunlap (2002) suggests that the economic environment plays a role in the difference in the public's concern for environmental issues from year to year. He notes, however, that the role of the government on environmental issues outweighs the economy. Many Americans rely on the government to take care of environmental issues. Only when it is clear that the government is not doing this successfully do they take action. This action is often in the form of contacting local officials or donating to conservation organisations (Dunlap, 2002). When Americans are convinced that the government is efficiently dealing with environmental issues, their support wanes (Dunlap, 2002).

2.3.10 Conclusions and Implications

Restaurants will need to consider a number of issues before deciding to become a part of an environmental program like Ocean Wise. As businesses, restaurateurs will need to consider issues of cost, availability, and quality. They will also need to consider trends in the customer base. While research shows that consumers are more and more often searching for environmentally friendly products or services, there is risk associated with new ventures. New paradigms are occurring in the business industry. Consideration of the environment as more than an externality is the new economic model. Business that commit to the environment now, as the industry develops, may be seen as leaders in the future.

2.4 Summary of Theoretical Perspectives and Implications for Ocean Wise

Based on the review of theoretical perspectives and findings from studies of similar programs, it appears that several factors may be associated with the decision to support a program like Ocean Wise. These factors include characteristics of the program itself (credibility, source), personal factors (knowledge, attitudes etc.) and business factors (perceived cost, trends, new business models etc.).

Research suggests there may be important barriers to participation in a program like Ocean Wise. If restaurateurs do not have sufficient understanding of the issues, or do not believe that their actions may have an impact, they may be less likely to pursue membership in these programs. Additionally, if they face barriers to participation, such as lack of availability of sustainable options (or uncertainty in terms of where to find these), or perceived high cost of alternatives, they may be less likely to participate.

Furthermore, apart from factors associated with the restaurants themselves, research suggests that program-related factors such as perceived credibility and consistency of messaging play important roles in adoption. Additionally, programs that can help to address some of the barriers that restaurateurs face, such as difficulty finding sustainable alternatives, and lack of knowledge of the issues (i.e., by providing training and information) would expect to draw in more members than programs without these services. Finally, any services that increase the business success of its members, through marketing and other promotional activities, would lead to increased support and membership growth.

Market forces such as trends toward environmentally responsible behaviour, “green” business trends, “buy local” initiatives and other trends compatible with sustainable seafood can also encourage greater adoption of ecolabelling programs by restaurants. Vancouver is a community that has embraced the environmental movement (the cities’ “Greenest City 2020 Action Plan” outlines reductions in waste and carbon that will make Vancouver the world’s greenest city by 2020 [City of Vancouver, 2012]). This fact combined with Vancouver’s coastal location and fishing history, made it the perfect location to launch a sustainable seafood campaign. Leaders in the local restaurant industry

who are known for their quality food and who may be at the front end of new and emerging trends toward sustainable behaviour can also help to motivate other restaurants.

As Ocean Wise has not conducted research on its restaurant population, and only limited research is available on similar programs elsewhere, the present study was an exploratory study aimed at uncovering some of the important factors associated with membership in Ocean Wise. In particular, the study aimed to identify personal factors and business factors, including incentives and barriers that restaurants in Vancouver face with respect to membership in the Ocean Wise program.

2.5 Research Hypotheses

The following hypotheses were explored in this study:

Hypothesis 1: Ocean Wise is having an effect on the seafood market in Vancouver. In addition to increase in membership in the program, sales of Ocean Wise seafood are increasing relative to that of non-Ocean Wise seafood.

Hypothesis 2: Restaurateurs with knowledge of sustainable seafood issues and who hold positive environmental attitudes will be more likely to participate in Ocean Wise.

Hypothesis 3: Ocean Wise members will feel they are making a difference. The degree of commitment to Ocean Wise will reflect the impact members feel they are having on the marine environment.

Hypothesis 4: Ocean Wise member restaurateurs will adhere to a set of “green” values and will perceive benefits to those values. Further, restaurateurs not involved in the Ocean Wise program will be less supportive of these “green” values and place more emphasis on values such as low cost rather than sustainability.

Hypothesis 5: Ocean Wise restaurateurs will consider business and economic factors, such as cost and product availability, in making decisions about whether or not to join programs like Ocean Wise. Additionally, the extent to which they perceive others (customers,

restaurant leaders, and the broader community) as supporting the concept of sustainable seafood will influence decisions about membership.

Hypothesis 6: Ocean Wise services used and valued by Ocean Wise restaurants will include training, help in sourcing sustainable products, marketing products, and invitation to/support of media and marketing events.

As will be discussed in the Methods section, some challenges in data collection made it difficult to test two of these hypotheses. In particular, the sample sizes obtained for Ocean Wise members and for ex-Ocean Wise members were smaller than expected, which made testing the degree of commitment (Hypothesis 2) challenging. Additionally, restaurateurs were reluctant to provide specific sales data for sustainable versus non-sustainable seafood, which made testing of Hypothesis 1 more difficult. Nevertheless, the study uncovered some additional qualitative and other data that were used to help explore the hypotheses in light of these limitations.

3 Research Methods

3.1 Overview

During the summer and fall of 2012, a study involving seafood-selling restaurants in Vancouver, a city of nearly 600 000 people on Canada's west coast (City of Vancouver, 2010) was undertaken. As discussed previously, the reputation of Vancouver as a "green" city is well established.

This chapter explains the approaches used to both gather and analyse data in this study. Research techniques for this study included the use of both semi-structured interviews and survey questions to explore attitudes of chefs and restaurant owners in Vancouver towards sustainable seafood and the Ocean Wise program, and to gain an understanding of the motivations of restaurateurs to adopt, or fail to adopt, sustainable seafood as part of their business. Additionally, program data provided by Ocean Wise were analysed, and background interviews were conducted with the Ocean Wise manager and Albion Seafoods, a major seafood supplier, to further understand the program and the local context. Due to the reluctance of restaurants to provide financial sales data, menus were examined to gain an understanding of the percentage of sustainable items and their respective prices.

3.2 Mixed Methods Approach

This study employed a mixed methods approach to gathering data. This included the collection and analysis of both quantitative and qualitative data through interviews, surveys, and analysis of program and restaurant data.

The use of multiple methods can expose unexpected results, and create new connections in the data that may not be obvious using qualitative or quantitative approaches on their own (Bryman, 2008). While there is much debate over the definition and value of qualitative and quantitative methodology, Castellan (2010) notes that the goals of the two methods differ. Quantitative research looks for generalizability and explanation, while qualitative

research looks for understanding and insight. Further, quantitative data are analysed deductively or statistically, while qualitative data are analysed inductively with codes and themes. By using the two methods together, a fuller understanding of the research topic was gained.

3.3 Sampling

3.3.1 Selection of Restaurants

Three sets of restaurants were considered in this study: (1) those who were Ocean Wise members, (2) those who were Ocean Wise members but had left the program and; (3) restaurants that sold seafood but were not members of Ocean Wise. Ocean Wise has a database with contact information for the main contact at each restaurant. Letters to the other groups were sent to the person in charge of making decisions regarding seafood at the restaurant, or by default to the head chef as this person usually design the menu and choose seafood options.

Ocean Wise Restaurants

A random sample of restaurants was initially selected to ensure that all restaurants had an equal chance of being selected. For Ocean Wise restaurants, this random sample was obtained by creating a spread sheet including all Ocean Wise restaurants in Vancouver, and then using an online random number generator (www.random.org). The list of Ocean Wise restaurants was obtained directly from Ocean Wise, and included the name of the Ocean Wise contact at the restaurant, their position, and contact email and phone number. The list of selected restaurants was examined by Ocean Wise staff to ensure that it was representative. Once selected, an email was sent introducing the interviewer and the project (see Appendix A, Introduction Letter). Following this, up to three phone calls were made to the restaurant to set up an interview.

A total of 80 Ocean Wise restaurants were contacted and invited to participate in the study. Of these, 2 were found to be closed, and 2 more had left the Ocean Wise program. Of the 78 eligible restaurants, 34 agreed to be interviewed. This represents a response rate of 44%.

Non-Ocean Wise Restaurants

For non-Ocean Wise restaurants, the same technique was initially used to randomly select restaurants. A database of all Vancouver restaurants was obtained from Ecolab, through the Vancouver Aquarium. To qualify for the study, restaurants had to sell seafood and not have any current or previous affiliation with Ocean Wise. Using the same random number generator, an initial list of 30 restaurants was created. Because contact names and emails were not available for these restaurants, letters were delivered in person to each restaurant. Phone calls were then made attempting to set up interviews with the person in charge of ordering seafood at each restaurant.

After attempting to contact the initial 30 restaurants, it was determined that this method was not as effective as hoped. A significant portion of the restaurants contacted did not have an English speaker in charge of making seafood decisions. A large number of restaurants were identified as low-end, while most Ocean Wise restaurants are mid- to high-end. For these reasons, it was decided that the sample of non-Ocean Wise restaurants would be selected based on Urban Spoon ratings of the top seafood restaurants in Vancouver. In addition, any restaurants identified by Ocean Wise staff as potential members or restaurants that they would like to see join the program were contacted.

In total, 84 non-Ocean Wise restaurants were initially contacted. Of these, 12 were found to be ineligible for the study because of language difficulties. Of the 72 eligible restaurants, 32 agreed to participate in the study and completed the interview and written survey. This represents a response rate of 44%.

Ex-Ocean Wise Restaurants

Due to the small number of former Ocean Wise restaurants, no random sampling was necessary. All restaurants were contacted using the contact name and email provided by Ocean Wise. While it was initially hoped that there would be an available sample of 30 Ex-Ocean Wise restaurants, there were fewer than expected restaurants in this category. With many of the restaurants having since closed down, the potential sample was limited to only 9 eligible restaurants in total. Of these, all 9 were contacted and 4 agreed to and completed the interview and survey, a response rate of 44%.

3.3.2 Final Sample

It was originally intended that the Ocean Wise sample would include a total of 50 completed interviews and surveys, so that the sample would be large enough to conduct subgroup analyses within it (for example, comparing OW members who were high versus low in terms of commitment to the program). It was also intended that 30 interviews would be completed with non-Ocean Wise restaurants, and 30 with ex-Ocean Wise restaurants.

Unfortunately, the sampling and interviewing challenges were greater and more time-consuming than expected, and in the end the samples for two of the three groups were smaller than originally intended. As discussed above, a total of 34 Ocean Wise, 32 non-Ocean Wise, and 4 ex-Ocean Wise restaurants were included in the study, for a final sample of 70 restaurants.

According to Hague (2004), undertaking 30 in depth interviews will “almost certainly draw out all the issues pertaining to the research topic” (p. 63). With in-depth qualitative interviews, as well as the quantitative data collected, it was decided that the minimum of 30 in each of the two main categories of restaurants – Ocean Wise and non-Ocean Wise – would be sufficient to explore most of the key issues of interest in the study.

In all cases, interviews were conducted with decision makers at each restaurant, the head chef or restaurant owner. Interviews took approximately 30 minutes, and were tape-recorded with the permission of interviewees.

3.4 Interview and Survey Instruments

The use of semi-structured interviews combined both closed and open ended questions. This technique allowed for concrete answers without fixing the range of responses (Ayres, 2008). The use of semi-structured interviews allows for freedom to elaborate and explore new perspectives on the part of the interviewer and the interviewee. The extent to which a range of perspectives can be uncovered increases the validity of the information gathered (Hague, 2004). By interviewing a wide range of restaurants, a variety of differing perspectives were seen. Evaluation of the different perspectives adds to the validity of this study. The use of these interviews also revealed issues that were not initially considered by the interviewer (Hague, 2004).

The content of the interviews differed between the three groups of restaurants being studied. Interview questions for all restaurants included general knowledge of fisheries, issues surrounding sustainable fisheries, knowledge of the Ocean Wise program or other sustainable seafood program, and knowledge of green restaurant initiatives in general. A modified New Ecological Paradigm scale survey (Cordano, Welcomer and Scherer, 2003) was given to each interviewee, as well as survey questions regarding the interviewee's knowledge of sustainable seafood issues.

In addition to the above questions that were asked of all interviewees, a set of questions specific to each of the three different restaurant categories were also designed and administered. For restaurants that were currently Ocean Wise members, additional interview questions focussed on their perceived value of the program, and changes that they may have seen since becoming members. For non-Ocean Wise restaurants, their understanding of the program was explored as well as possible reasons for joining or not joining. Interviews at restaurants that had left the program focussed on the reasons behind leaving. Each of the variables measured is defined below.

Knowledge of Sustainable Seafood Issues: A set of survey questions were designed by the researcher to assess knowledge of sustainable seafood issues. These questions addressed knowledge of sustainable fishing practices as well as seafood species (see Appendix A, Knowledge and Attitude Survey Part A).

Environmental Attitudes: The modified New Ecological Paradigm (Cordano, Welcomer and Scherer, 2003) was used to determine environmental attitudes (see Appendix A, Knowledge and Attitude Survey Part B).

Barriers/Facilitators to Purchasing Sustainable Seafood: Interview questions included perceived barriers to sourcing sustainable products, perceived price premium of sustainable products (see Appendix C, Interview A, B & C Guide Section 7.4).

Commitment to Serving Sustainable Seafood: Commitment to serving sustainable seafood was assessed using Ocean Wise program information and restaurant menus. The length of time the restaurant has been involved with the Ocean Wise program, the percentage of sustainable species on the menus and volume of sustainable items sold, and the other activities the restaurant is involved in to promote sustainable seafood

were included. (See Appendix B, Sample A, Ocean Wise Restaurants: Section 7, Questions 1-2)

Green Image: The overall green image of the restaurant was assessed in the interview. Any green initiatives, in addition to Ocean Wise, including recycling programs, support of local or organic foods, and membership in an organisation such as the Green Restaurant Association were considered. (See Appendix B, Sample A, B & C, Section 6).

Benefits of Ocean Wise: Using open ended interview questions, the benefits that Ocean Wise restaurants have found from participating in the program were identified. Additional benefits that member restaurants would like to see provided by the program were also identified. (See Appendix B, Sample A, Ocean Wise Restaurants: Section 7, Questions 3-6)

Services Provided by Ocean Wise: Interview questions with Ocean Wise restaurateurs were used to determine what services provided by Ocean Wise were the most useful to member restaurants, this also identified which services were either not useful or were unfamiliar to restaurateurs. (See Appendix C, Interview Guide A, Section 7.1)

Emphasis on Green Values vs. Cost: When restaurants are not purchasing their seafood based primarily on environmental or sustainability values, their reasoning behind their seafood purchases was identified using open ended interview questions. Further, the overall consideration of green values was assessed. (See Appendix C, Sample B/C, Section 4, Questions 1-6).

3.5 Analyses of Interview and Survey Data

All interviews were digitally recorded with the permission of the interviewee, and detailed notes were also taken.

3.5.1 Quantitative Data Analysis

Quantitative data from interviews and surveys were analysed using SPSS software. Descriptive statistics were used to create a broad understanding of the samples and data

gathered. T-Tests and chi-square analyses were used to identify significant differences between groups of restaurants studied. Correlational analyses were conducted to evaluate the strength of the relationships between variables. Multiple regression analysis was conducted to determine the relationship between multiple variables.

3.5.2 Qualitative Data Analysis

Content-analysis of qualitative responses to specific open-ended questions was conducted, identifying common themes and frequency of mention. Representative quotes were extracted where appropriate.

3.6 Analysis of Ocean Wise and Restaurant Financial Data, and Background Interviews

Data obtained from Ocean Wise was used to study the growth of the program in Vancouver, in both restaurant numbers and number of sustainable items being sold. Discussions were also held with the Ocean Wise manager to obtain additional information on the program. By conducting an interview with Albion Fisheries, a founding partner and supporter of the Ocean Wise program, further information on the number of sustainable products available and the increase in sustainable product volume being supplied in Vancouver was gained.

The restaurants selected for interviews were asked to provide financial information. It was hoped that, from this information, the percentage of sustainable seafood items being sold, as well as the value of these items could be examined. Unfortunately, restaurants were unwilling to share these data and therefore, analysis of the menus was conducted. The number of seafood items on the menu, percentage of sustainable options, and the price of each item were evaluated.

3.7 Limitations of the Research

As with any study, limitations to this research were present. While initially the study hoped to include 50 Ocean Wise restaurants, this number was unachievable. The smaller sample size did not allow for quantitative analysis of differences within the Ocean Wise restaurant sample. A longer time frame for conducting interviews could have allowed for a greater

number of interviews to be completed. Further, interviews were conducted mainly during the summer months when many Vancouver restaurants are serving a higher volume of customers. Had this research been undertaken during the off season, restaurateurs may have been more available for interviews.

The lack of Asian representation in this study presents a large gap in the demographic of Vancouver restaurants. Many Asian restaurants serve a great deal of seafood, but are very unlikely to be members of the Ocean Wise program. The great deal of discussion surrounding the banning of shark fin, served at many Chinese restaurants in Vancouver, may have presented these restaurants in a negative light, and made them unlikely to discuss sustainability. A language barrier was also identified at many Asian restaurants that were approached for interviews. By approaching these restaurants with a translator or with an initial letter that had been translated may have encouraged more of these restaurants to participate in this study.

Lack of access to restaurant sales data made tracking of sales of sustainable versus unsustainable menu items over time impossible. Although Ocean Wise has attempted to track both the type and volume of seafood removed from restaurant menus, the data is lacking completely for many member restaurants and is imprecise for others. No comprehensive database of this information is available at the present time.

The study was exploratory in nature. Many of the questions were qualitative, to assess possible issues of concern; previously validated instruments were not available in all cases, and had to be designed by the researcher based on the available literature. The NEP was used as a proxy for the environmental values of the restaurateurs interviewed. This study showed no correlation between the score on this scale and commitment to the Ocean Wise program, or to other environmental activities at restaurants. This result is consistent with the study by Schultz (2000) that shows an alarming gap between environmental values and behaviours. The use of this scale may have been too general. This study also included other questions to gauge environmental commitment and understanding of sustainable seafood issues, but future research should consider a different scale to analyse the background values of participants.

The study was not designed to compare Ocean Wise with other similar programs. Future studies that compare similar programs would be helpful in identifying which program features are most important in membership.

4 Results

4.1 Description of the Sample

A total of 34 restaurateurs who were currently members of Ocean Wise completed the interviews for this study. Additionally, 36 restaurateurs who were not Ocean Wise members completed interviews, including 32 who had never been members, and 4 who were members previously. For most of the analyses below, non-Ocean Wise and ex-Ocean Wise restaurants are included together as the non-Ocean Wise sample.

Descriptive information on the Ocean Wise restaurants, including menu information and business information, is included in Table 2.

Table 2 Descriptive Information of Ocean Wise Restaurants Participating in the Study

Category	N	Minimum	Maximum	Mean	Std.Dev.
Years in Business	34	.75	50	15.13	13.12
Years in Position as Chef/Owner	34	.15	23	5.88	5.67
Years with OW	34	.75	10*	3.85	2.62
Importance of Seafood to the Image of the Restaurant**	34	1	3	2.41	.70
% Seafood Items Sold	29	5	95	42.14	20.58
Total Menu Items	33	1	211	40.06	36.97
Total Seafood Items on Menu	33	1	70	14.03	15.49
Sustainable Seafood Items on Menu	33	0***	70	10.12	12.63
% Sustainable Seafood Items of Total Seafood Menu Items	34	0	100	73.58	30.37
Av. \$ Sustainable Seafood Items	31	4.10	30.33	17.57	9.48
Av. \$ Non-Sustainable Seafood Items	16	7.33	42.00	15.69	9.48

* While the Ocean Wise program has been around for nearly 8 years, one restaurateur responded that his restaurant had been with the program for 10 years

**Importance of Seafood to Restaurant Image measured on scale of 1=not important at all to 3=extremely important

*** While Ocean Wise restaurants are required to have at least one sustainable item on their menu, one member restaurant does not have sustainable items on their core menu, but does often offer daily Ocean Wise specials.

As illustrated in Table 2 above, Ocean Wise restaurants see seafood as highly important (2.41 out of 3, 42.14% of sales), and nearly 3/4 of the seafood menu items at Ocean Wise restaurants are sustainable options.

The same descriptive information for the non-Ocean Wise (i.e., non- and or ex-Ocean Wise) restaurants is presented in Table 3. This table does not include whether the seafood items are sustainable or not, as this information was not available for these restaurants.

Table 3 Descriptive Information of Non/Ex-Ocean Wise Restaurants Participating in the Study

Category	N	Minimum	Maximum	Mean	Std. Dev.
Years in Business	35	.25	50	13.72	14.01
Years in Position as Chef or Owner	35	.04	43	5.49	7.95
Importance of Seafood to the Image of the Restaurant	34	1	3	2.37	.69
% Seafood Items Sold	32	1.5	95	37.30	26.31
Total Menu Items	36	9	126	41.72	22.27
Total Seafood Items on Menu	36	2	37	12.27	9.11

Table 3 above illustrates that the non-Ocean Wise restaurants were similar in many ways to the Ocean Wise restaurants, particularly in terms of number of years in business, importance of seafood to the restaurant image, and number and percent of seafood items sold.

4.2 The Growth of Ocean Wise in Vancouver

4.2.1 Hypothesis and Analyses

Since its launch in January, 2005, the Ocean Wise program has grown in Vancouver and also spread to other cities across Canada. It was hypothesized that:

Hypothesis 1: Ocean Wise is having an effect on the seafood market in Vancouver. In addition to increase in membership in the program, sales of Ocean Wise seafood are increasing relative to that of non-Ocean Wise seafood.

As discussed in the Methods section, it was originally hoped that analyses of individual restaurant sales of sustainable versus unsustainable seafood items over the past few years could be conducted in order to determine if there was a clear trend in terms of increasing

sales of sustainable items within Ocean Wise restaurants. Unfortunately, this was proprietary information that restaurants were reluctant to share.

In order to explore trends in Ocean Wise membership and sustainable seafood sales, data from the Ocean Wise program were examined. This included examining the number of restaurants that have joined the program since its inception in 2005, and the number that have since dropped out of the program, as well as data on changes in menu items. Ocean Wise restaurants were asked to describe the reasons why they had decided to join the program, which uncovered perceptions that demand for sustainable seafood was increasing amongst their customer base. Additionally, non-Ocean Wise restaurants were asked whether or not they would be interested in joining the Ocean Wise program. The Vice President of one of the major suppliers of seafood in Vancouver, Albion Fisheries, was interviewed, and he provided qualitative information on sustainable seafood sales in recent years. The results of these analyses will be presented below.

4.2.2 Main Findings

Trends in Ocean Wise Membership

During the first year of the Ocean Wise program, 22 member restaurants were involved. The program grew to 262 restaurants in British Columbia by 2011, and many more across Canada, as seen in Figure 5.

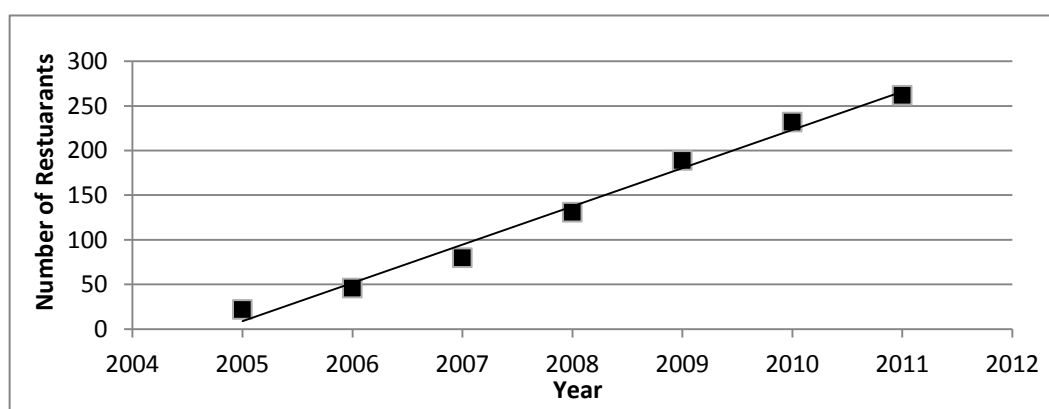


Figure 5 Ocean Wise Restaurants in British Columbia from 2005 to 2011.

Over this time, 43 restaurants in British Columbia have left the Ocean Wise program. Of these, 30 are still operating, as seen in Table 4. In Vancouver, nearly half of the restaurants

that have left the program have closed (10 of 22). The restaurant's closure rate therefore appears to be associated with dropping out of the program in Vancouver, although not in the rest of British Columbia.

Table 4 British Columbia Restaurants Leaving the Ocean Wise Program

Restaurant Location	Status	Number
Vancouver	Closed	12
Vancouver	Operational	10
Other BC	Closed	20
Other BC	Operational	20
Total		43

As presented in Table 4, nearly half of the restaurants that have left the Ocean Wise program are now closed. Information on whether these restaurants left the program before closing was not obtained.

To become a member of the Ocean Wise program, the restaurateur must fill out a seafood inquiry form, listing all current seafood items and including catch method, species and location. The Ocean Wise staff run an assessment on these items and then meet with the restaurateur to discuss what is sustainable and why or why not. While the primary focus of this procedure is to identify which products are or are not sustainable, it will hopefully also lead to greater understanding and a possible shift in the mindset of the restaurateur. Once the process is complete, the restaurant will remove one unsustainable item from their menu and commit to improvement. A former guideline of changing one unsustainable item every six months for a sustainable replacement has been changed, and it is now hoped that the Ocean Wise logo will highlight the best choices, and consumer demand will drive the change to a more sustainable menu.

Reasons Restaurants are Joining Ocean Wise

Ocean Wise member restaurants were asked to give their reasons for joining the program. Results are displayed in Figure 6.

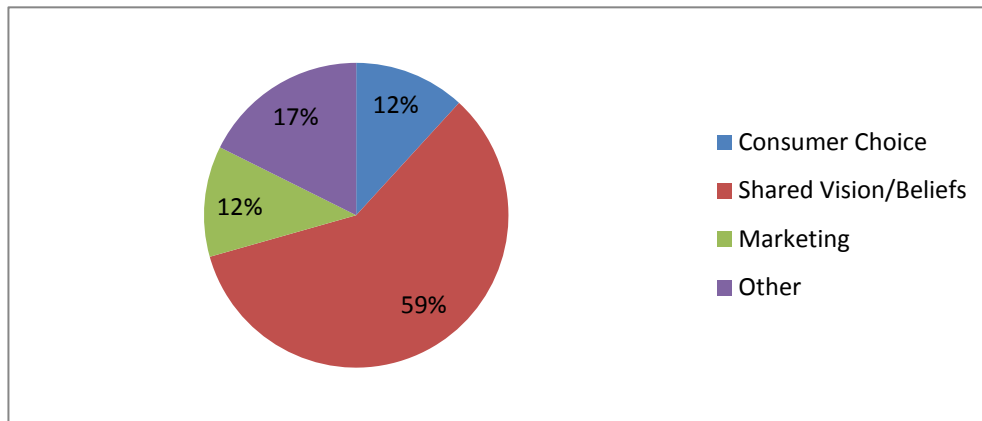


Figure 6 Reasons Ocean Wise Restaurateurs Gave for Initially Joining the Program (n=34).

As can be seen in Figure 6, Ocean Wise restaurateurs frequently commented that they joined the program out of a shared vision or set of beliefs that was common to those of Ocean Wise. Many also noted that their customers were also expressing the same vision and set of beliefs, and were expecting restaurants to follow suit.

Quotes further detailing various restaurateurs reasoning are given below.

Ocean Wise Restaurateur Comments Regarding Reasons for Joining the Program
“People are starting to realise eating sustainably is important”
“It just makes sense. As long as humans are alive we’re going to need to eat and that means we need to eat responsibly”
“Because, even though we aren’t able to use a totally Ocean Wise prawn, it is reducing our footprint and helping with the future of food sustainability on the West Coast, that’s a big deal to us. We feel a responsibility to work with groups and organisations such as Ocean Wise”
“I agree with what they’re about...I said let’s go 100%. Does it cost me more? Maybe, maybe not”
“This is what I do- I don’t want to see products disappear because somebody demands them. You have got to put your foot down. Don’t serve Chilean sea bass because it’s going extinct. It’s the only way to go in order to sustain species”
“I grew up in a small town on the Coast, and went fishing with my dad. I want to do that with my kids. I like cooking seafood, if we drag the oceans there will be nothing

left”

“Good practice. I want to be able to eat in 20 years”

“Ocean Wise was a necessity...chefs cannot do the research, we need somebody to do the research for us so we can make responsible choices”

“There’s no other choice. You can’t get away with not being sustainable, ethical, knowing food history...can’t not be sustainable in this town”

“People are demanding it”

“You couldn’t find anyone to say it’s a bad idea”

“Basically, when it started top chefs were on board. Moving into the future, people are ethically choosing where they go. If you’re not Ocean Wise, people won’t go”

“It’s favourably viewed in the consumer’s eye, all about marketing”

“Education for the people”

“It’s just the way to be, no reason not to”

Interest in Joining Ocean Wise amongst Non-Ocean Wise Restaurants

Knowledge of the Ocean Wise program is widespread among restaurateurs who are not already members of the program. A total of 26 of 31 (83.9%) non-Ocean Wise restaurateurs asked were familiar with the program. Of these, 17 (54.8%) would consider joining the program. Representative quotes outlining reasons for interest in the program, as well as reasons for not wanting to join are included below.

Non-Ocean Wise Responses: Interest in the Ocean Wise Program

“I could be interested if people gave us the information”

“It would be nice. But mostly we deal with Blundell so we follow guidelines, alternatives”

“Yeah, I have considered it. I would like to be Ocean Wise, I contacted them at the last restaurant I was at and they never got back to me”

“Having the name, being a part, supporting local fisheries”

“We are in a touristy area- Gastown- it’s a trend that would suit us well”

“Gives strength to be more green/eco-friendly, a lot of chefs are following the principles, even if they’re not Ocean Wise. It’s vitally important to chefs to have species around to enjoy and eat”

Non-Ocean Wise Responses: Not Interested in Joining the Ocean Wise program

“It doesn’t do anything for my business. I don’t want the logo on every item. We’re not into marketing them. I’d rather put money into our own program”

“I think it’s just a waste of money”

“I have considered it but the owner doesn’t think it matters”

“The mark would be nice, but to me it’s not necessary. My beliefs are quite strong about animals in captivity, I don’t need the marketing that badly”

Reported Supplier Sales in Sustainable Products

Albion Fisheries, a major supplier of Ocean Wise products, also notes a higher growth in sustainable products than conventional. Guy Dean, vice president of Albion, identified a 15% growth in sustainable products in each of the last five years in both the volume of sustainable products sold and the dollar value of sustainable products sold. While total growth in the company also increased, sustainable products made up a greater percentage of this growth. The number of Ocean Wise codes at Albion increased by 2.55% more than conventional codes between 2010 and 2011. At current, Ocean Wise codes make up 31.46% of the products supplied by Albion (Dean, 2012, pers. comm.).

Ocean Wise Data on Menu Item Changes

Due to the number of Ocean Wise restaurants and the frequency that menu items change, it is difficult to put a value on the number of unsustainable items removed from restaurants in Vancouver or the volume of fish saved, but Ocean Wise has created a list of top ten items removed from restaurants as well as the ten sustainable items that have replaced them. As of June, 2010, 40 restaurants in Vancouver had removed Black Tiger prawns from their menus, the number one unsustainable removal item. A total of 34 restaurants removed rockfish, and 24 removed Ahi tuna. The most common sustainable species added to restaurant menus were BC or Alaska sockeye salmon, introduced at 162 restaurants, followed by mussels at 148 and Pacific halibut at 147 restaurants.

4.2.3 Summary of Results

As hypothesised, the Ocean Wise program is growing in Vancouver, and across Canada, and the amount of sustainable products being sold is increasing, both relative to non-sustainable products and in total volume. Many Ocean Wise restaurants report that customers are expecting to find sustainable seafood in their restaurants, and the majority of members expressed values in line with those of Ocean Wise. Most of the non-member restaurateurs interviewed were at least somewhat familiar with the program and more than half indicated that they would consider joining the program.

4.3 Relationships between Environmental Knowledge and Attitudes, and Participation in Ocean Wise

4.3.1 Hypothesis and Analyses

As noted in the Methods section, due to the small number of ex-Ocean Wise restaurants that were available and agreed to be interviewed, for quantitative analysis these restaurants were grouped with non-Ocean Wise restaurants. It was assumed that the ex-OW restaurateurs would have environmental values and knowledge more in line with non-Ocean Wise restaurants. Additionally, two of the four ex-Ocean Wise restaurants surveyed were run by chefs who were not present while the restaurants were members of the program. Hypothesis 2 states:

Hypothesis 2: Restaurateurs with knowledge of sustainable seafood issues and who hold positive environmental attitudes will be more likely to participate in Ocean Wise.

To evaluate this hypothesis, attitudes regarding environmental issues and sustainable seafood, and knowledge of sustainable seafood issues (products and fishing methods), were assessed through interview and survey questions, and then Ocean Wise restaurateurs were compared with non-Ocean Wise restaurateurs. Attitudes were assessed in part with the use of the New Environmental Paradigm (NEP) (Dunlap, Van Liere, Mertig & Jones, 2000) Additionally, the importance that restaurateurs report placing on environmental sustainability when choosing seafood menu items, compared with other qualities (price, taste, etc.,) was assessed. Results are presented below.

4.3.2 Main Findings

Relationship between OW Membership and Environmental Attitudes

Comparison of the mean NEP total score showed no significant difference between Ocean Wise restaurants, ($\bar{x}=79.31$, $SD=11.56$) and non/ex Ocean Wise restaurant ($\bar{x}=79.30$, $SD=9.31$) where $t(64)=59.46$, $p=.997$. Statistical analysis showed no correlation between how an interviewee scored on the NEP scale and whether or not the restaurant is a member of the Ocean Wise program $r(64)=-.17$, $p=.97$. This was surprising, and contrary to what was expected based on the review of the literature. This finding may be explainable by the fact that the NEP measures more general environmental attitudes, rather than environmental attitudes specifically related to sustainable fisheries. The literature does suggest that general environmental attitudes are less useful predictors of specific environmental behaviour than are specific environmental attitudes (Kennedy et al. 2009).

Similar results were also seen between Ocean Wise and non/ex-Ocean Wise restaurants when asked if they believed that government regulations were strict enough with regards to fisheries and aquaculture (OW $\bar{x}=2.88$, $SD=.60$, non/ex-OW $\bar{x}=2.97$, $SD=.71$). Of the sixty nine responses, 61.8% did not believe that government regulations were adequate. A further 20.6% believed regulations were adequate, while 16.2% were unsure. Only one respondent (1.5%) felt that government regulations were too strict.

Restaurateurs were asked to rate the importance of a number of factors that they consider when ordering seafood products on a scale from 1 to 5, with 1 being “not at all important” and 5 being “extremely important”. The factors included price, taste, quality, freshness and sustainability of seafood products. They were then asked to rank these criteria from most to least important. Significant differences appeared when comparing the rating and ranking of these variables between Ocean Wise and non/ex-Ocean Wise restaurants. Environmental sustainability was found to be rated as significantly more important by Ocean Wise restaurants than non/ex-Ocean Wise in both categories. Ocean Wise restaurants ranked sustainability 2.5 out of 5, while non/ex-Ocean Wise ranked it lower. Freshness was ranked significantly higher by non/ex-Ocean Wise restaurants than by Ocean Wise, although there was no difference between the two groups of restaurants on the total importance placed on freshness. Some confusion over the term “freshness” was expressed by both groups of

restaurateurs, with some considering “frozen at sea” seafood as not fresh and therefore ranking freshness lower than other factors.

Table 5 Mean Difference between Ocean Wise and Non/Ex-Ocean Wise Restaurants Importance of Factors when Ordering Seafood

Variable (Value 1-5)	OW Mean, SD	Non-OW Mean, SD	t	p
Price	3.92, 1.04	4.07, 0.95	-0.58	0.56
Taste	4.88, 0.33	4.74, 0.57	1.17	0.29
Quality	4.96, 0.20	4.86, 0.38	1.25	0.22
Freshness	4.60, 0.97	4.91, 0.43	-1.64	0.11
Sustainability	4.38, 0.63	3.81, 1.06	2.38	0.02
Variable (Rank 1-5)				
Price	3.83, 1.38	3.48, 1.38	0.83	0.41
Taste	3.11, 2.52	2.52, 1.26	1.53	0.13
Quality	2.39, 1.14	2.68, 1.28	-0.77	0.45
Freshness	3.50, 1.46	2.48, 1.26	0.54	0.02
Sustainability	2.50, 1.62	3.84, 1.43	-2.87	0.008

While Ocean Wise restaurants ranked quality and sustainability as the two most important factors when purchasing seafood, non/ex-Ocean Wise restaurants felt that taste and freshness were most important, and ranked sustainability last.

Relationship between OW Membership and Knowledge of Sustainable Seafood Issues

Significant differences were found between Ocean Wise and non/ex-Ocean Wise restaurants on knowledge scales. Multiple questions were used to assess knowledge. Firstly, restaurateurs were asked if they were familiar with the fishing methods used for the seafood products they were selling. Their response were scored from 0-2; a score of 0 was no knowledge of fishing techniques used for the products being purchased, 1 was some

knowledge and 2 was extensive knowledge of fishing techniques used. Analysis showed that Ocean Wise restaurateurs were significantly more knowledgeable with respect to fishing techniques than non/ex-Ocean Wise restaurateurs. Restaurateurs were then asked to rank their own knowledge on a scale of 1-5, from no knowledge to a great deal of knowledge, of sustainable seafood products and sustainable fishing methods. Ocean Wise restaurateurs reported a higher level of knowledge than non/ex-Ocean Wise restaurateurs. Finally, restaurateurs were asked to identify which seafood products, of 10 examples, were sustainable, and which of 7 fishing methods were sustainable (the specific products and fishing methods are included in Appendix C, Questions 3, 4). Ocean Wise restaurateurs scored higher on both questions, although the results for fishing methods were not significant.

Table 6 Mean Differences between Ocean Wise and Non- or Ex-Ocean Wise Restaurants on Knowledge and Attitude Variables.

Variable	OW Mean, SD	Non-OW Mean, SD	t	p
Knowledge of Fishing Methods	1.18, .80	0.54, 0.85	3.19	0.002
Self-Reported Knowledge of Sustainable Fishing Practices	4.02, 0.59	3.56, 0.81	2.71	0.004
Self-Reported Knowledge of Sustainable Seafood Products	4.08, 0.55	3.53, 0.91	3.0	0.004
Score (out of 10) on Sustainability of Seafood Products	7.06, 1.97	5.61, 2.97	2.96	0.004
Score (out of 7) on Sustainable Fishing Methods	4.24, 1.20	3.58, 1.84	1.74	0.086

Ocean Wise restaurateurs were significantly more knowledgeable with regards to the fishing methods that are being used for the products they sell, as well as sustainable seafood products and practices in general

Of the Ocean Wise restaurateurs surveyed, only 3 of 34 respondents completely lacked knowledge of what fishing practices were being used for the seafood products they were selling. At non/ex-Ocean Wise restaurants, on the other hand, 18 of 32 had no knowledge of these practices. Ocean Wise restaurateurs often gave descriptions of the fishing practices, 13 were knowledgeable and willing to discuss the techniques used, while another 9 had had discussions with their suppliers. While some non-OW restaurateurs appeared to be aware of and concerned about the notion of sustainable fishing practices, they did not

have the knowledge specific to the fish that they purchased and the fishing practices used. Responses were often “I don’t know”. Some examples of the responses given are displayed below.

Ocean Wise Restaurateur with Knowledge Comments
<p>“Sablefish and halibut are line caught, the steelhead is farmed”</p> <p>“Line caught ling, scallops they pick, char is farmed, mussels picked”</p> <p>“Hook and line, troll, trap for prawns. I’m talking to suppliers, don’t use unless I’m told the methods”</p>
Ocean Wise Restaurateur who Discuss with Suppliers Comments
<p>“I talk about it with my suppliers”</p> <p>“My...Albion supplier will let me know how it’s caught”</p> <p>“I don’t know off the top of my head, but it was one of the discussions that we had when we devised the menu”</p>

Non/Ex-Ocean Wise Restaurateur Comments
<p>“I don’t know”</p> <p>“Probably a big ship with a big net in the back or a big line where the halibut get caught. I would probably not agree with it”</p> <p>“I know hook and line is better, trawl, we’ve all seen the Simpson’s where Lisa is against that”</p> <p>“I can track to the name of the fisherman and where it was caught, they come with a tag to track where and when”</p>

Many Ocean Wise restaurateurs remarked that a knowledgeable supplier, who readily supplies information regarding sustainability, was very important to their seafood purchasing decisions. Many restaurateurs were clear that their supplier was a very important part of their purchasing decisions.

In some cases, while it was clear that the non-OW restaurateur could access the data that they needed in order to determine whether or not the product was sustainable (e.g., “I can

track to the name of the fisherman and where it was caught, they come with a tag to track where and when”), it was apparent that some of the restaurateurs did not actually investigate further in order to use this information in their purchasing decisions

4.3.3 Summary of Results

It was hypothesised that environmental attitudes and knowledge would be related to Ocean Wise membership. The study found that while general environmental attitudes as measured by the NEP scale were unrelated to Ocean Wise membership, more specific attitudes regarding sustainable seafood were related to membership. Additionally, strong correlation was seen between the knowledge of sustainable seafood products and practices and Ocean Wise membership.

4.4 Reflections of Commitment to Ocean Wise

4.4.1 Hypothesis and Analyses

Research suggests that people will be more committed to environmentally responsible behaviour if they believe their actions are having an impact. Additionally, personal experience with the issues (i.e., observing declines in fish stocks in recent years) is expected to be associated with greater commitment.

Restaurants highly committed to the Ocean Wise program were assumed to be more likely to feel that their actions are having a positive impact on seafood stocks. They were also presumed to be more likely to promote the program in their restaurants, by providing training to staff and additional information in the restaurants to customers. Hypothesis 3 states:

Hypothesis 3: Ocean Wise members will feel they are making a difference. The degree of commitment to Ocean Wise will reflect the impact members feel they are having on the marine environment.

As discussed above, the sample of Ocean Wise restaurants was too small to conduct quantitative analyses of differences within the sample, based on level of commitment to Ocean Wise. Instead, qualitative data were examined to try to obtain an understanding of how commitment to the program might be reflected in different activities that restaurants engage in. Commitment was considered in terms of length of time with the program, and

the ways in which restaurants were using and promoting the program through staff training, distribution of materials to customers, and other activities.

4.4.2 Main Findings

Perceptions of Impacts on Fish Stocks

Of the Ocean Wise member restaurants interviewed, all but 7 noted that they had seen some changes in fish stocks in recent years. While a few interviewees felt quality and supply had increased, the vast majority of members had noticed negative changes in fish stocks, such as decreased availability, decreased size, and increased price (Table 7).

Table 7 Ocean Wise Restaurants Perceptions of Changes in Fish Stocks in Recent Years

Change Noticed	Number of Responses (N=34)	Percent of Respondents*
Decrease in Supply/Availability	20	58.8%
Increase in Price	9	26.5%
No Changes	7	20.6%
Decreased Size	4	11.8%
Decreased Quality	3	8.8%
Increased Quality	3	8.8%
Increased Supply/Availability	2	5.9%
Other	8	23.5%

*Some respondents gave multiple responses; therefore percentages do not equal 100.

All four former Ocean Wise restaurants interviewed responded that they had seen decreased availability of fish in recent years; one of these also noted that he had seen a decrease in fish size and quality.

When asked what impact they believed involvement in the Ocean Wise program was having on fish stocks, 29 of the 34 OW restaurateurs reported at least a small positive impact, outlined in Table 8.

Table 8 Perceived Impact of Program Involvement on Fish Stocks

Impact	Number of Respondents N=34	Percent of Respondents*
Positive	15	44.1%
Presumed Positive	8	23.5%

Minimal	6	17.6%
Too Small to Count/None	4	11.7%
Unaware	3	8.8%

*Some respondents gave multiple responses; therefore percentages do not equal 100.

Multiple Ocean Wise restaurants felt that, however small their individual impact, the group effect was going to have an overall positive impact on fish stocks. A few restaurateurs thought that they were using too little seafood to make a difference. Sample comments are presented below

Ocean Wise Restaurateur Comments
<p>“If everyone does whatever they want it’s a lot of strain to put on seafood stocks”</p> <p>“You always think you don’t really count, I’m only one vote out of a million, but at the end of the day it does. If we all start thinking that then no one bothers to buy Ocean Wise or votes, then it can sway in a big amount”</p> <p>“I don’t feel like we are overly using seafood, our usage is pretty minimal”</p> <p>“I don’t use enough to influence fish stocks”</p> <p>“I don’t think we’ve made a tiny dent”</p> <p>“I don’t feel like we are overly using seafood, our usage is pretty minimal”</p>

Ocean Wise Restaurateur Comments
<p>“Any of the swordfish and bill family fish, the size has been reduced dramatically, the same with tuna. Halibut has never been the same, you used to get forty to sixty pounds, now you get ten to twenty pounds....ground fish has become more scarce...depletion of the skate, it’s not seen anymore. Dungeness crab and lobster has become abundant and cheap, cheaper”</p> <p>“[In ‘97] you didn’t discuss sustainability. Rob [Clark] brought it to the forefront. In the last five years, you can’t get away with...unsustainable fish or shellfish. I refuse to serve shark fin in the Chinese kitchen. We’ll work with and create dishes without shark fin”</p>

Training and Information Provided

It was expected that restaurants more committed to the Ocean Wise program would be more likely to present information to customers in the restaurant, in addition to the logo and statement provided on menus. Committed restaurants also would be more likely to include training about the Ocean Wise program to front of house staff. Responses to these categories are included in Table 9.

Table 9 Commitment to Ocean Wise Based on Information Provided in House and Training of Staff Members to Understand the Ocean Wise Program

Additional Information Provided to Customers	Number of Respondents N=34	Percent of Respondents
No Additional Information	12	35.3%
Verbal Information Provided	8	23.5%
Information on Website	7	20.6%
Information in Restaurant	7	20.6%
Staff Training Provided		
Yes, Information	18	52.9%
Yes, Formal	12	35.3%
None	4	11.7%

As can be seen in Table 9, most OW restaurants provide some training to the staff regarding the Ocean Wise program and sustainable seafood, although in most cases this training is informal (18 of 34). Similarly, most provide some information to customers about the program, over and above the menu logo, and in about 20% of the restaurants (7 of 34) this includes written information that is available and distributed to customers who request it.

Also as can be seen in Table 9, nearly one-third (12 of 34) of the OW restaurants do not provide any additional information to customers regarding the Ocean Wise program, and more than 10% (4 of 34) do not provide training to their staff with respect to the program.

Although the subsample sizes were too small to conduct statistical analyses of the significance of group differences, it is interesting to note that restaurants that had been with the OW program longer appeared to provide somewhat more training to staff on sustainable seafood and more information to customers on sustainable seafood. Additionally, as intended by the program, a greater proportion of their menu items were

sustainable. Again, these results could not be tested for significance, and are only presented here as suggestive findings for further study.

Table 10 Commitment to Ocean Wise Based on Length of Time with Ocean Wise

Time With Ocean Wise	Additional Information	Training	OW Seafood Items >50%
<4 Years (N=18)	41.2%	58.8%	52.9%
≥4 Years (N=16)	63.6%	72.7%	85%

The value of greater than or less than 4 years with Ocean Wise was used because it provided the most even distribution of restaurants, not because 4 years was seen as an important length of time to judge commitment.

At the same time, many of the newly joined OW restaurants were also very committed to the program, and were engaging in training and information dissemination. One example of a new, but highly committed Ocean Wise restaurant is a high end hotel restaurant in downtown Vancouver. The restaurant has recently been rebranded and taken over by a new chef who had previous experience with the Ocean Wise program. His commitment to the program, and to the environmental movement, is clear in the restaurant. Staff are trained to understand the program, the menu is 100% Ocean Wise, and additional information booklets about the program are available by request. In addition, the chef “spends two days a week at farmers markets, picking items” and states that “you can’t get away with not being sustainable, ethical, knowing food history...can’t not be sustainable in this town”. This chef also sees the importance of the program to customer values, and stated that “almost every time [customers] are intrigued, interested, ask questions. Out of town guests ask, Americans may know Sea Choice, etcetera; everyone who finds out is supportive. It drives people to visit the Vancouver Aquarium”.

Ocean Wise was launched in Vancouver in 2005. On average, the restaurants interviewed in this study had been with the Ocean Wise program for nearly four years ($\bar{x}=3.85$). Time with the program is displayed in Figure 7.

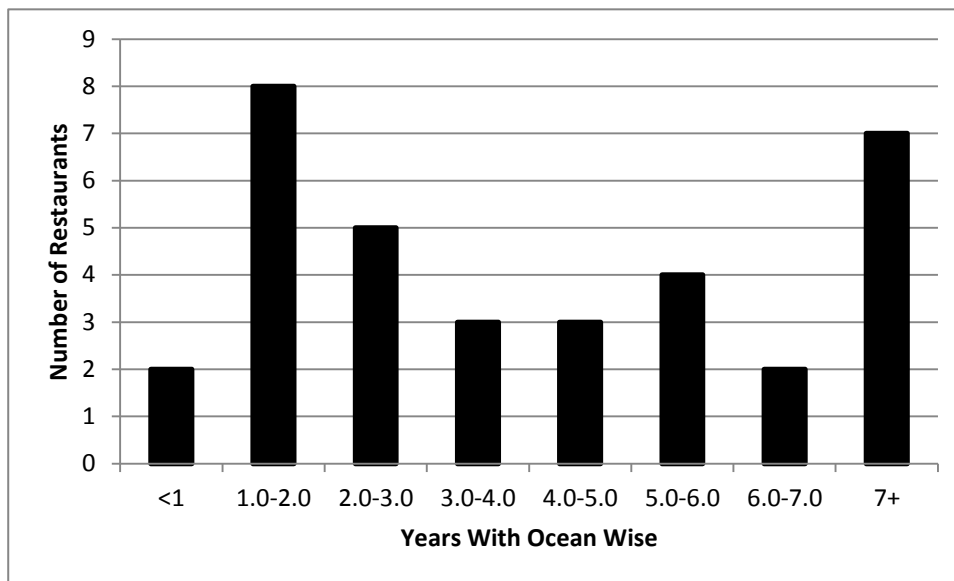


Figure 7 Surveyed Restaurants Time with the Ocean Wise Program

4.4.3 Summary of Results

The results from this analysis were exploratory only. With the small sample size, it was not possible to compare Ocean Wise restaurants in terms of high and low commitment.

Amongst those Ocean Wise restaurants included in the study, the majority seemed very committed to the program. The vast majority of members reported having personally noticed negative changes in fish stocks in recent years, such as decreased availability, decreased size, and increased price. Almost all felt that their restaurant's involvement in the Ocean Wise program would be having at least some positive impact on fisheries and fish stocks, although there was some variability in terms of the amount of impact that restaurateurs felt their involvement was having. Most OW restaurants provide some sustainable seafood training to the staff, although in most cases this training is informal. Similarly, most provide some information to customers about the program, over and above the menu logo, and in about 20% of the restaurants this includes written information that is available and distributed to customers who request it. Restaurants that had been with the Ocean Wise program for greater lengths of time were more likely to provide training to their staff, and had a higher percentage of sustainable items on their menus.

4.5 Relationships between Ocean Wise Membership and Other “Green” Commitments

4.5.1 Hypothesis and Analyses

The “green” image of Vancouver is well established. As cited previously, the city aims to be the “Greenest City in the World by 2020” (vancouver.ca, 2012). There are many “green” activities that businesses can take on and that reflect an environmentally responsible approach, including recycling, composting, reducing energy consumption, shopping locally to reduce transport emissions, and other activities. Based on the literature, it was expected that restaurants that were members of Ocean Wise would also exhibit a higher level of environmentally responsible actions in other areas, than would restaurants that were not members of Ocean Wise. In particular, it was hypothesized that:

Hypothesis 4: Ocean Wise member restaurateurs will adhere to a set of “green” values and will perceive benefits to those. Further, restaurateurs not involved in the Ocean Wise program will be less supportive of these “green” values and place more emphasis on values such as low cost rather than sustainability.

This hypothesis was tested by comparing OW and non-OW restaurants on the number and extent of green activities that they currently engaged in. Additionally, they were compared in terms of membership in “green” organizations such as the “Green Table Society” or “Green Restaurant Association”.

4.5.2 Main Findings

Participation in Green Activities

Of the restaurants interviewed in this study, 84% were participating in some sort of green activity. At a minimum, recycling programs were in place at 58 of the 70 restaurants interviewed. There was no significant difference between restaurant membership in OW and the presence or absence of at least one of these activities (OW $M=.91$, $SD=.29$, non/ex-OW $M=.77$, $SD=.43$, $t(1.60)67$, $p=.12$).

The difference between the restaurant in terms of the *extent* of green activities was also assessed, by assigning each restaurant a score as follows: 0: no green activities, 1: only

recycling 2: recycling and some other green activity, 3: completely committed to green activities (i.e., recycling, composting, sourcing local products, green cleaning products, energy reduction, etc.) Significant differences were found between groups, with Ocean Wise restaurants showing more green activity than non-Ocean Wise restaurants: $M=2.09$, $SD=.97$; non/ex-Ocean Wise $M=1.46$, $SD=1.01$ and $t= 2.65(67.0)$, $p=.010$. Table 11 shows the frequency of restaurants scoring at each level.

Table 11 Extent of Green Activity Amongst Ocean Wise and Non/Ex-Ocean Wise Restaurants

Extent of Green Activity	Ocean Wise N=34	Percent Ocean Wise	Non/Ex-Ocean Wise N=35	Percent Non/Ex-OW
0	2	8.8%	7	20.0%
1	5	14.7%	11	31.4%
2	12	35.3%	11	31.4%
3	14	41.1%	6	17.1%

More Ocean Wise restaurants (41.1%) were given a value of 3, or the highest ranking for green activities, than any of the other categories. While most non/ex-Ocean Wise restaurants were committed to some green activities, it was not to the same extent as at Ocean Wise restaurants.

While a majority of restaurants interviewed were conducting some sort of green activity, Ocean Wise restaurants often participated not only in recycling and composting programs, but additional activities as well. Many Vancouver hotels have environmental programs in place, and some of the Ocean Wise restaurants are housed within these hotels.

Interviewees from two such hotels discussed having “an internal Green Team [that] meets to discuss improvements on environment, energy savings...pushing to all local farmers and markets, I visit farms and markets” while another “spend[s] two days a week at farmers markets” picking items for the restaurant. A full outline of the activities present at Ocean Wise and non/ex-Ocean Wise restaurants is listed in Table 12.

Table 12 Green Activities Taking Place at Restaurants

Activity	OW Respondents N=34	Percent OW	Non/Ex-OW Respondents N=31	Percent Non/Ex-OW
Recycling/Composting	29	85.3%	24	77.4%

Local/Organic Products	12	35.3%	7	22.6%
Energy Efficiency	11	32.4%	3	9.7%
Other Green Activities	8	23.5%	5	16.1%
None	3	8.8%	6	19.4%

Table 12 outlines the differences seen between Ocean Wise and non/ex-Ocean Wise restaurants in the level of green activities that are being conducted. Some respondents gave multiple responses, so percentages do not equal 100.

Membership in Green Organisations

Membership in the Green Table Society or Green Restaurant Association was compared between restaurant groups, and significantly more Ocean Wise restaurants were found to be members. Seven of 34 Ocean Wise restaurants (20.6%) are members of the Green Table Society or Green Restaurant Association, while only one non/ex-Ocean Wise restaurant has membership (2.8%). Chi-square analysis of this data shows that significantly more Ocean Wise members are also members of another green restaurant group, with $\chi^2 (1, N=67) = 4.91, p=.027$

4.5.3 Summary of Results

As hypothesised, this research shows that there is a significant relationship between adherence to a set of “green” values and membership in the Ocean Wise program. Ocean Wise members are often committing to not only sourcing sustainable seafood, but other activities such as recycling, composting, sourcing local or organic produce, conserving energy, and other green activities. Ocean Wise restaurants are also more likely to be members of green organizations such as the Green Table Society or Green Restaurant Association.

4.6 Business Considerations Including Cost, Customer Support and Business Image

4.6.1 Hypothesis and Analyses

It was expected that restaurateurs, as business owners/managers, would need to consider a number of issues before deciding to become a part of an environmental program like Ocean Wise. Restaurateurs need to consider issues of cost, product

availability, and quality. If they perceived costs of a program like Ocean Wise to exceed benefits in terms of customer interest and willingness to pay, they should be less likely to support the program. Barriers such as limited availability of products or lack of information about sustainable products were also expected to play a role in decisions regarding membership in Ocean Wise. Other business considerations would also be expected to influence membership decisions, including customer and cultural trends and changing paradigms in the business and local community.

Based on the above assumptions, Hypothesis 5 stated:

Hypothesis 5: Ocean Wise restaurateurs will consider business and economic factors, such as cost and product availability, in making decisions about whether or not to join programs like Ocean Wise. Additionally, the extent to which they perceive others (customers, restaurant leaders, and the broader community) as supporting the concept of sustainable seafood will influence decisions about membership.

To explore this hypothesis, OW restaurateurs were asked whether or not the program was having a financial impact on their restaurants. Non-members were also asked about whether the \$250 annual membership fee would affect their decisions to become members. Also with respect to cost, OW and non-OW restaurateurs were asked if they would be willing to pay more for sustainable products, and how much more they would be willing to pay. Both OW and non-OW restaurateurs were asked to identify and discuss any barriers that they faced (or would face) in trying to supply sustainable seafood. Issues raised in terms of perceived customer values and importance of Ocean Wise to the business image were also examined.

4.6.2 Main Findings

Perceived Costs and Financial Impacts

Of the 34 Ocean Wise restaurants interviewed in this study, 15 felt that being a member of the program had a positive financial impact on the restaurants. While the majority felt that the impact was neutral or non-existent, no restaurateur felt membership was resulting in a financial loss, despite the \$250 annual fee and the perception by many that sustainable items were, at least sometimes, more expensive than non-sustainable items.

Table 13 Restaurateurs Perceptions of the Financial Impact of Ocean Wise Program Membership

Response	Number of Respondents N=34	Percent of Respondents
Positive	15	44.1%
Neutral/Unaware	11	32.4%
No Impact	8	23.5%

The majority of Ocean Wise restaurants (61.7%) felt that sustainable seafood products were, at least sometimes, more expensive than similar non-sustainable items. But, as noted in Table 13, even with a price premium, membership in Ocean Wise was not considered to be a financial burden, overall.

Table 14 Perception of the Price Premium for Sustainable Seafood Products

Presence of a Price Premium	Number of Respondents N=34	Percent of Respondents
Significant Difference	9	20.5%
Sometimes Different	8	23.5%
Insignificant Difference	4	11.7%
No Difference	9	26.5%
Unaware, Only Look at Sustainable	2	5.9%
Unaware	2	5.9%

As seen in Table 14, the majority of restaurateurs felt that, if there was a difference in price between sustainable and unsustainable items, this difference was not significant.

According to Albion fisheries, a new, niche sustainable product can garner a 30% price premium over a conventional product. Once these products become mainstream, however, that price difference drops and becomes more in line with other similar products (Dean, 2012, pers comm).

Not one of the existing Ocean Wise members complained that paying an annual fee to Ocean Wise or paying for sustainable products was having a negative impact on the restaurant. Contrary to this, 3 of the 4 ex-Ocean Wise restaurateurs mentioned cost when asked what their reasons were for leaving the program. The majority of non-Ocean Wise restaurateurs (53.3%) did not feel that the \$250 fee would prevent them from joining the program, as seen in Table 15.

Table 15 Willingness of Non-Ocean Wise Restaurateurs to Pay \$250 Annually for Ocean Wise Membership

Willingness to Pay \$250 Annual Ocean Wise Fee	Number of Respondents N=30	Percent of Respondents
Yes	16	53.3%
No	9	30.0%
Unsure	5	16.7%

Table 15 shows that most the \$250 annual is not a deterrent for most non-Ocean Wise restaurants from joining the program.

Analysis of menu items at Ocean Wise restaurants shows that the average price of sustainable items is greater than that of non-sustainable items. The average price for both sustainable and non-sustainable items for the Ocean Wise restaurants in this study, are presented in Figure 8.

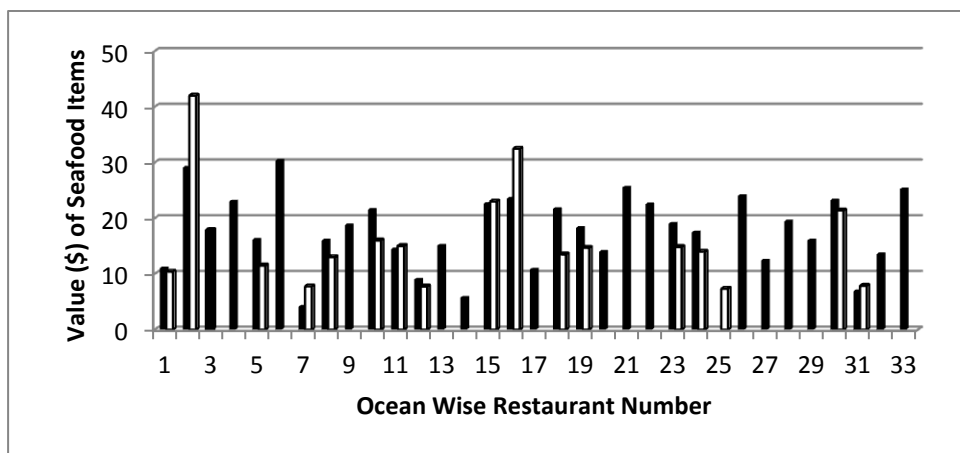


Figure 8 Average dollar value of sustainable seafood items (black) and non-sustainable seafood items (white) at Ocean Wise restaurants.

The average price of sustainable seafood items is \$17.75 ($SD= 6.53$) whereas the average price of non-sustainable items is \$16.03 ($SD=9.28$). One outlier is present in Figure 8. This restaurant menu had a number of non-sustainable items containing lobster and other high end items at a price much higher than other menu items (\$65.00 and \$91.00 for a seafood platter containing unsustainable items). When this point is removed, the average price of non-sustainable items drops to \$14.87 ($SD=6.59$). These data suggests that while the cost of sustainable items on menus is generally higher than the cost of non-sustainable items, the average cost difference is really quite small (less than \$3.00 or about 19%).

Restaurateurs were asked if they would be willing to pay more for three factors: environmentally sustainable seafood, local seafood, and higher quality seafood. Every Ocean Wise restaurant confirmed they would be willing to pay more for all three of these things. While the majority of non/ex-Ocean Wise restaurateurs also expressed willingness to pay more, significant differences appeared in willingness to pay for sustainable seafood (of the 34 questioned: 27, or 79.4% would pay more for sustainable seafood; 31, or 91.2% would pay more for local seafood, and; 33, or 97.1% would pay more for a higher quality seafood). In summary, 79.4% of non-OW restaurateurs agreed that they would be willing to pay more for environmentally sustainable seafood, as compared with 100% of OW restaurants. Chi-square analysis showed a significant difference between Ocean Wise and non/ex-Ocean Wise in the willingness to pay for sustainable products only, $X^2(1, N=68) = 7.80, p=.005$.

Restaurateurs who said they were willing to pay more for a sustainable seafood product were asked how much of a premium, in percentage of cost, they would be willing to pay for a sustainable product versus a similar, non-sustainable product. There was no significant difference in this value between Ocean Wise and non/ex-Ocean Wise restaurants, with non/ex-Ocean Wise restaurants willing to pay a 21% premium, and Ocean Wise restaurants willing to pay a 19% premium. When the total sample of non/ex-Ocean Wise restaurateurs (i.e., including those who would not pay anything more) were compared with Ocean Wise restaurateurs, results remained insignificant, but the premium non/ex-Ocean Wise restaurants were willing to pay dropped to 17%.

Product Availability

Product availability was not addressed specifically in the interviews, but the issue came up in comments from interviewees on a number of related questions. Ocean Wise and ex-Ocean Wise restaurateurs were asked if they had trouble sourcing sustainable seafood products. The results are presented in Table 16.

Table 16 Ocean Wise and Ex-Ocean Wise Restaurateur Responses to the Difficulties Sourcing Sustainable Seafood Products

Problems Sourcing Sustainable Seafood	Ocean Wise N=34	Percent OW Respondents	Ex-Ocean Wise N=4	Percent Ex-OW Respondents
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Yes, Specific Items	18	52.9	3	75.0
Yes, Unspecific Items	1	2.9		
No, Only Consider OW	9	26.5		
No	5	14.7	1	25.0
Other	1	2.9		

As seen in Table 16, a majority of both Ocean Wise and ex-Ocean Wise restaurants identified specific products that they have difficulty finding sustainable sources for. Representative quotes are included below.

Ocean Wise Responses to Difficulty Sourcing Sustainable Products
<p>“Very difficult to find a sustainable prawn other than the ones that are farmed in the States, even those I don’t think they can handle our volume. I’ve looked and the price point compared to the ones coming from Asia, and the volume, it’s difficult for anyone to come close”</p> <p>“Local prawn season is so short and the price is quite high. And scallops, Qualicum Bay scallops are susceptible to changes in water temperature. But those are two of our most popular items”</p> <p>“Some things for sure. Mahi mahi. It’s a big seller, I would love to move to a sustainable option because people love it, I don’t think there’s an option”</p> <p>“Mainly issues with prawns- I haven’t been using sustainable prawns for the last 1-2 months because the price and quality are not good....I spoke to Albion about this yesterday”</p> <p>“Yes. Not so much with fish but shrimp, prawns, crustaceans”</p> <p>“Prawns, I would like them to be from here but they are only available certain small times of the year”</p> <p>“The shrimp that is available from Ocean Wise...is terrible, really horrible. I would love to have a great sustainable shrimp on the menu but we can’t serve that product. I get a lot of complaints”</p> <p>“The eel that is part of the menu, unfortunately it’s not Ocean Wise but there’s no replacement for it. If we limit ourselves to Ocean Wise items it can get very difficult and very limited to the extent where a customer might find it boring”</p>

Ex-Ocean Wise Responses to Difficulty Sourcing Sustainable Products
<p>“Prawns- I was getting some, then they were not available and there was nothing else”</p> <p>“Seeing as how we’re stuck with one supplier that will do Ocean Wise stuff it’s pretty limited. When it comes to prawns about the only ones that are Ocean Wise are spot and they’re ridiculously priced and very seasonal. Total lack of choice and complete lack of availability”</p> <p>“Yes- catfish. It’s hit and miss. I switched to basa for that dish because there is only one farm that does catfish”</p>

As indicated by the responses above, by far the most common product that restaurateurs have trouble sourcing sustainably is prawns. Non-Ocean Wise restaurateurs were asked to discuss what barriers they felt were present to sourcing sustainable seafood products. Their responses are included in Table 17.

Table 17 Non-Ocean Wise Responses to the Barriers Present to Sourcing Sustainable Seafood Products

Barrier to Sourcing Sustainable Seafood	Non-Ocean Wise Responses N=29	Percent of Responses
Price	7	24.1%
Knowledge	4	13.8%
Availability	3	10.3%
Unaware	3	10.3%
Other	1	3.4%
None	14	48.3%

Some respondents gave multiple responses, so percentages do not equal 100. Nearly half of the non-Ocean Wise restaurateurs interviewed felt that there were no barriers to sourcing sustainable products. Many of these restaurateurs identified their suppliers as giving them information on where to source sustainable products. Representative comments are included next.

Non-Ocean Wise Responses to Barriers to Sourcing Sustainable Seafood
<p>“I rely on knowledge of suppliers. Suppliers tell you if it’s Ocean Wise or not”</p> <p>“In Vancouver, not really. 7 Seas gives us a very good deal”</p> <p>“I talk to my suppliers...and find local sustainable products”</p> <p>“Sysco is good with Ocean Wise stuff”</p>

As discussed earlier, many Ocean Wise restaurateurs remarked that a knowledgeable supplier, who readily provides information regarding sustainability, was very important to their seafood purchasing decisions. The above quotes indicate that, even for restaurateurs that are not members of the Ocean Wise program, knowledgeable suppliers are important for getting sustainable seafood products and knowledge to restaurants. Albion Fisheries was the most common seafood supplier for both Ocean Wise and non/ex-Ocean Wise restaurateurs. While some restaurateurs reported using multiple or small suppliers, the most common seafood suppliers were found to be Albion, 7 Seas, GFS, Deluxe, Lobsterman, Centennial and Blundell Seafood.

Because Albion works on a large scale, some small restaurants may not go through the volume of seafood necessary to work directly with the company. For this reason, a partnership has been established with GFS to supply a wider range of restaurants (Dean, 2012, pers. comm). So, some restaurateurs identifying GFS as their supplier may be receiving Albion seafood. Analyses were conducted to study the relationship between seafood supplier and Ocean Wise membership, as well as other factors such as green activity and knowledge. No significant relationships were found.

More than half (58.8%) of Ocean Wise members reported that they accessed help from Ocean Wise in sourcing sustainable seafood. Additionally, 32.4% of members (11 of 34) found that supplying information on sustainable products and suppliers was the most important service that Ocean Wise provides their members. One restaurateur commented “without that list you wouldn’t have a clue of what’s going on, without that list- everybody would be ordering whatever they feel like”.

Business Image and Attracting Customers with Common Values

As discussed in a previous section, 59% of Ocean Wise restaurateurs said that they joined the program because of shared vision and beliefs, and 12% said they had joined because of their customers’ choice.

While many Ocean Wise restaurants were unsure if the program was playing a role in drawing customers to the restaurants, some interviewees were adamant that “it does bring people in”, with one chef even stating that he has “heard chefs and restaurateurs talk of people not wanting to dine at non-Ocean Wise restaurants”. Clearly, as discussed in the

next section, Ocean Wise restaurants used and valued the publicity that they received from Ocean Wise, and many expressed interest in receiving even more assistance in this regard.

Ocean Wise restaurants were asked to put a value on how important being a member of the Ocean Wise program was to the image they were trying to create for their restaurant, using a scale from 1 (not at all important) to 5 (extremely important). Seventy nine percent (27 of 34) reported that the program was extremely important to the image.

4.6.3 Summary of Results

This research shows that, while sustainable products may be more expensive, this expense is often insignificant, or is offset but the ability to charge more for the resulting product. The annual fee of \$250 is seen as a reasonable price to pay for the services provided by Ocean Wise by the majority of member and non-member restaurateurs. Restaurateurs are not finding that participation in the sustainable seafood program is financially burdensome, and indeed many report that it is having a positive financial impact on their businesses. Participation in the program was seen by the majority to be extremely important to their business image. Although many restaurateurs found that sourcing specific products could be very difficult, especially prawns, overall this did not appear to be a major problem. Seafood suppliers were identified to be an extremely important source of information and help in supplying sustainable products, as were Ocean Wise staff and information.

4.7 Ocean Wise Services Used and Valued by Member Restaurants

4.7.1 Hypothesis and Analyses

Ocean Wise offers a number of services to its members. These include advertising on the Ocean Wise website and in print material, educational materials, training sessions, help in sourcing sustainable seafood products, and participation in marketing events. It was expected that all of these services would be considered beneficial by OW restaurateurs, although it was possible that some services would be valued more highly than others. It

was also important to identify the proportion of OW restaurants that were using these services. Hypothesis 6 stated that:

Hypothesis 6: Ocean Wise services used and valued by Ocean Wise restaurants will include training, help in sourcing sustainable products, marketing products, and invitation to/support of media and marketing events.

4.7.2 Main Findings

Overall Satisfaction with Ocean Wise

Member restaurants in Vancouver appeared to be highly satisfied with the Ocean Wise program. When asked to rate their satisfaction on a scale of 1 to 5, with 1 being “not at all satisfied” and 5 being “extremely satisfied”, no restaurateur responded with a value of lower than 3. Mean level of satisfaction for all Ocean Wise restaurants was 4.10. Results are displayed in Figure 9.

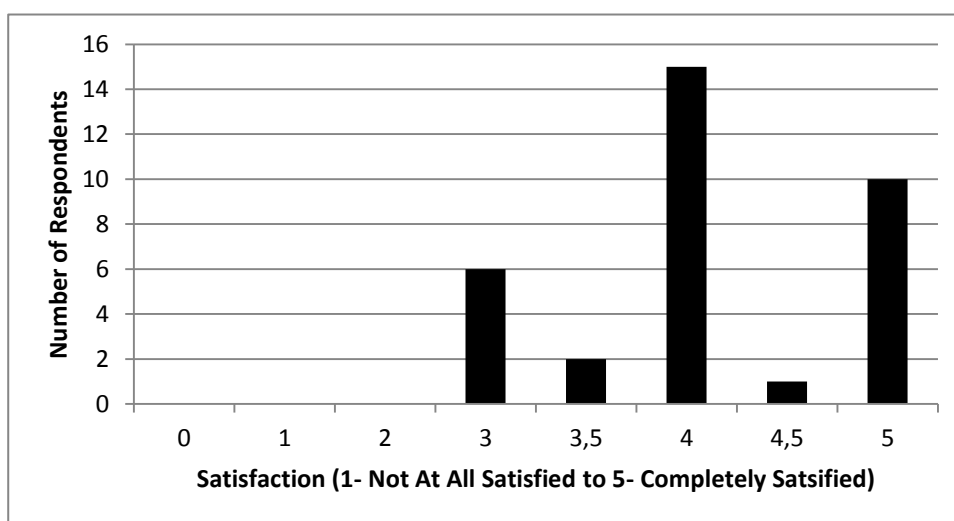


Figure 9 Restaurateur Satisfaction with the Ocean Wise Program, on a Scale of 1-5, from “Not at all Satisfied” to “Extremely Satisfied”.

Perceived Reliability and Credibility of the Program

In addition to being well known in the Vancouver restaurant community, as discussed earlier, the Ocean Wise program has established itself as a reliable source for information on sustainable seafood. In total, 80% of restaurateurs felt that Ocean Wise provided reliable information.

Of Ocean Wise restaurateurs, 91.2% (31 of 34) felt that Ocean Wise was reliable. Of the three remaining restaurateurs, 2 were hesitant, with one noting that “I browse through the Ocean Wise website often and sometimes there isn’t a whole lot of information, so I have to call suppliers”. The only Ocean Wise member who felt that the program did not provide reliable information stated that “it’s a reliable source of information for consumers but for someone in my position it’s too general”. This restaurateur, who had previous experience working in the fishing industry, felt that contradictions between Ocean Wise recommendations and government approvals lead to confusion and loss of confidence.

Of non- and ex-Ocean Wise restaurants, 69.4% (25 of 36) felt the program was reliable, while 9 (25%) were unfamiliar with the program and unable to comment. Only 2 (5.6%) non- or ex-Ocean Wise restaurants did not believe that Ocean Wise was a reliable source for information. One of these restaurateurs commented that “\$250 for something that should be normal, in a country like this one, where chefs go to school and do apprenticeships, I don’t agree at all with them. The information they provide, I can go on Google and get the information for free”. From this quote, it seems that this restaurateur is not happy with the structure of the program, but does not necessarily question their recommendations. Overall, the acceptance and trust in the program is very high. There was no significant difference between OW restaurateurs, and non-OW restaurateurs who were knowledgeable about the program, in terms of perceived reliability of the program.

Services Used and Valued by Ocean Wise Members

Ocean Wise staff was consulted for information on the number of products and amount of training that has been provided by Ocean Wise to member restaurants. Unfortunately, this information is not exact, but provides an idea of the services provided. Ocean Wise estimates that training has been provided to 30% of members. Recently, an online training tool has been launched with the hope that each staff member will complete this training, and will then receive a certificate (McDermid, 2012, pers comm). The training includes four modules: Introduction, Fishing Methods, Aquaculture, and the Ocean Wise Program. All partners are provided with an Ocean Wise Partner Activation Package, which outlines the Ocean Wise program, answers frequently asked questions, suggests ways to leverage the Ocean Wise brand, identifies Ocean Wise member resources, and provides information

for employees. A master seafood list and downloadable Ocean Wise logos are also available online for all members.

The most frequent service used by OW members interviewed for this study was advertising, which 61.8% of restaurants reported using. Help sourcing seafood was reportedly used by 58.8% of members, marketing by 47.1% and training by 23.5%. Interviewees were also asked to identify which service provided by Ocean Wise was most important to them. Responses are shown in Figure 10.

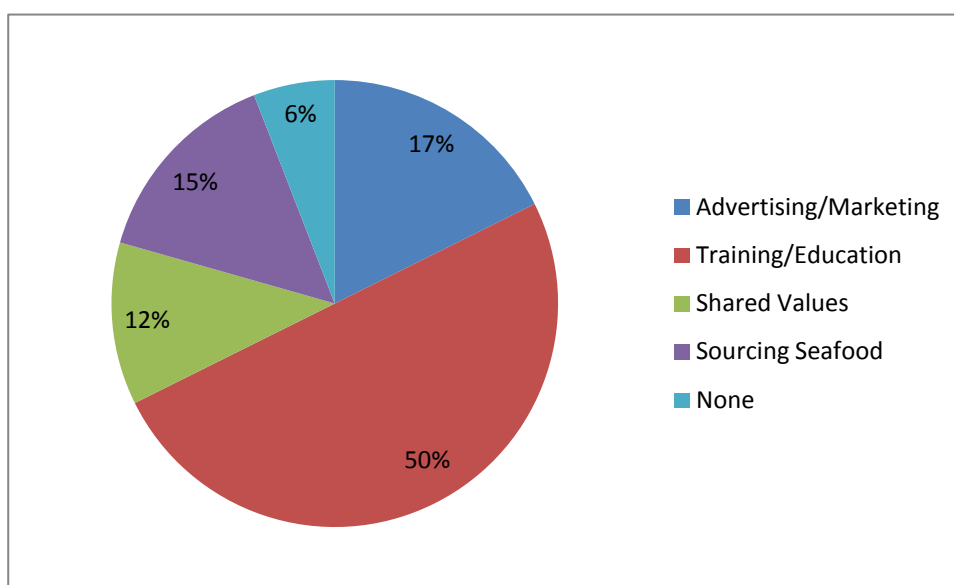


Figure 10 Most Important Services Identified by Ocean Wise Members

As seen above, 50% of Ocean Wise restaurateurs interviewed feel that training and education is the most important services that Ocean Wise provides. This included both training of restaurateurs and restaurant staff, as well as education of the public to encourage them to support sustainable seafood initiatives.

Members were also asked to identify what additional services Ocean Wise could provide to help their restaurant. In some instances, members suggested services that are already offered by Ocean Wise as things they would like to see, while others stated that they were not aware of all of the services offered and would like to be better educated on what is provided by Ocean Wise. As one interviewee stated: “I looked in a booklet one day and we were in it, but I didn’t even know it existed, maybe we get benefits we’re not aware of”.

Often, restaurants mentioned more frequent contact from Ocean Wise as something they would find helpful. Representative quotes are seen below.

Ocean Wise Restaurateur Responses to Additional Services Required
“If it was more consistent, quick, easy training”
“It would be nice to see a bit more advertising”
“It all comes down to marketing at the end of the day; we haven’t seen all that much from a marketing standpoint other than being able to use their brand name. Other opportunities for marketing, public exposure”
“Public education, more people know the more come in and pay \$20 for salmon, wouldn’t look down the street for the \$10 plate”
“Monthly update sheet, or yearly, of products, changes from year to year, avoid sockeye this year, for example, guidelines for products”
“More information, email newsletter updates, more information should be in your face, constant updates”
“More follow up-annually or 2 times a year in terms of where we’re at, if we need anything, information, fliers. Just checking in. Like sales reps almost, call or email to see that things are okay”
“Nice to know the impact that, not just your own, but restaurants as a whole are making, the impact they have made”

Ocean Wise restaurateurs were asked what services, if any, could be provided by Ocean Wise that they were not currently receiving. Their responses are included in Table 18 below.

Table 18 Additional Services Required from Ocean Wise

Service Required	Respondents N=33
Education	4
Seafood Lists	4
Marketing/Promotion	3
Knowledge of Benefits	2
Training	2
More Information/Contact	2
Supplier Lists	2
Standards/Accountability	1
Nothing	9
Other	6

As seen in Table 18 above, the most common response from Ocean Wise restaurateurs was that there were no additional services that Ocean Wise needed to provide them. Other responses included education and training, providing up to date seafood lists, and increased opportunities for marketing and promotion.

Non-Ocean Wise restaurants were asked what services provided by Ocean Wise could encourage them to join the program. The most common response was that contact from Ocean Wise and more information would be the most important in terms of encouraging them to join the program: “I would join if they encouraged me” or “they would have to approach the restaurant”. Reduced cost of the program was mentioned, “just the price holding us back, we don’t do advertising” as well as the need for suppliers to carry more Ocean Wise products, and to find improved quality in Ocean Wise products. Three restaurants were already considering or in the process of joining the program. All responses are included in Table 19.

Table 19 Services Required from Non-Ocean Wise Restaurants to Join the Program

Service Required	Respondents N=29
Education/Knowledge	8
Contact from Ocean Wise	3
Nothing- Joining the Program	3
Reduce Cost	3
Unsure	1
Nothing- Not Interested	4
Nothing- Other	4
Other	4

The most important feature needed by to non-Ocean Wise restaurants to consider joining the program was greater education or knowledge about the program.

Restaurants that have left the Ocean Wise program were asked why they left the program and what additional services could have kept them involved. Three of the 4 restaurants identified the fee, which was established after they had joined the program, as the main reason for leaving. Availability of products and bureaucracy was identified by one restaurant, while another felt that, as sustainability became more mainstream and well known; it became redundant to be a member of Ocean Wise. Each former Ocean Wise member identified different factors that could have kept them involved, these included removal of the \$250 fee, greater product choice, and a tiered program based on tenure so

that restaurants with long commitments to the program would still have the option to be involved in marketing events as the program grows. One chef, who was new to the restaurant since the program had been removed, suggested that he would need more information, as he had had no contact from Ocean Wise while with the restaurant.

4.7.3 Summary of Results

Ocean Wise members are, for the most part, very satisfied with the program. The program was viewed as a reliable program by the majority of both Ocean Wise and non-Ocean Wise members. The most common service utilised by Ocean Wise member restaurants is advertising. Members feel that education of both restaurateurs and restaurant staff and the public on sustainability issues related to seafood is the most important service that Ocean Wise provides. The most important factor for non-Ocean Wise restaurants to consider joining the program was information or contact from Ocean Wise. Restaurateurs had several suggestions for increased or additional services that could be provided by Ocean Wise.

4.8 Additional Analyses to Examine Composites and Relative Contributions of Variables

While the initial attitude scales selected to distinguish between subgroups appeared to have limited usefulness with this sample, it was apparent through the interviews that there were indeed clear differences between the subgroups, and that these differences might be better highlighted by examining responses to some of the more qualitative and specific sustainable fisheries questions that were also part of the interview.

Firstly, it appeared that a number of factors were important to the knowledge of sustainable seafood issues and environmental values amongst this sample of restaurants. These factors included knowledge of fishing methods used for the seafood products sold, presence of green activities at the restaurant (e.g. recycling, composting etc.), extent of green activities at the restaurant (ranked on a scale of 0-3 based on the number and type of green activities present), and self-reported knowledge of sustainable seafood practices and products. These variables were examined separately and were also combined to create a composite “green knowledge and attitude” variable, which was used for subsequent analyses.

A “green knowledge and attitude” composite variable was created based on interview responses. This variable was constructed by including the knowledge of sustainable seafood products and sustainable fishing methods, amount of green activities at the restaurant, and the knowledge of the fishing methods used for the wild seafood products sold. The knowledge of sustainable seafood products and practices was a self-reported variable, that ranged from 1 (no knowledge) to 5 (highly knowledgeable). If no “green activities” were present, the restaurateur was given a 0, recycling only present was given a value of 1, recycling and a minimal number of other “green activities” resulted in a value of 2, and a for participating in a great deal of “green activities”, things such as recycling, composting, energy reduction, sourcing local or organic products, were given a value of 3.

Several stepwise regression analyses were conducted to identify how much of the variance in restaurateurs’ beliefs and actions in terms of environmental sustainability could be predicted by the set of variables examined in this study.

A stepwise regression analysis was conducted in order to assess the relationship between several personal factors, including environmental knowledge, and the importance that restaurateurs placed on environmental sustainability when purchasing seafood for their restaurants. The strongest model R-square (.29) was obtained with the entry of 3 variables: knowledge of the methods used for the seafood products being sold, whether or not restaurateurs believed that sustainable seafood must be wild caught, and the rank of sustainability when ordering seafood. Other variables entered into this analysis included the importance of taste when ordering seafood, the willingness to pay for sustainable seafood, self-reported knowledge of sustainable seafood products and practices, knowledge of whether or not wild Pacific halibut and wild Pacific spot prawns are sustainable, knowledge of whether benthic trawl or trap are sustainable fishing methods, and whether or not being free of antibiotics are necessary for products to be labelled “sustainable”. Results are presented in Table 20.

Table 20 Stepwise Regression Analysis: Knowledge of Fishing Methods and Perceived Importance of Wild/Farmed Status as Predictors of Perceived Importance of Environmental Sustainability

Variable	<i>B</i>	<i>SD(B)</i>	β	<i>R</i>²
Step 1				
Knowledge of Methods	.40	.13	.39	.15
Step 2				
Knowledge of Methods	.40	.13	.38	.23
Wild/Farmed Status	.48	.21	.28	
Step 3				
Knowledge of Methods	.31	.13	.30	.29
Wild/Farmed Status	.52	.21	.30	
Importance of Sustainability	.75	.37	.26	

Restaurateur knowledge of the fishing methods being used for the seafood products they are selling, whether or not they believed that sustainable seafood must be wild caught (Ocean Wise restaurateurs were more likely to respond that seafood was not required to be wild to be considered sustainable, at 75.8% versus 52.8%) and the rank of sustainability when purchasing seafood were found to be the most important factors to predict the importance of environmental sustainability.

A second regression was conducted with the member status of the restaurant, Ocean Wise or not, as the criterion variable. All previous variables were included in the analysis. The model with the highest R-Squared value included 4 variables: knowledge of fishing method, importance of taste of seafood products when purchasing, knowledge of whether spot prawns were a sustainable product and whether or not a restaurateur felt that, in order to be sustainable, a seafood product must be free of antibiotics. Results are displayed in Table 21.

Table 21 Stepwise Regression Analysis: Knowledge of Fishing Method, Importance of Taste, Knowledge of Sustainability of Spot Prawns and Importance of Antibiotics to Sustainability Labels as Predictors Ocean Wise Membership

Variable	<i>B</i>	<i>SD(B)</i>	<i>β</i>	<i>R</i>²
Step 1				.12
Knowledge of Method	-.21	.07	-.37	
Step 2				.20
Knowledge of Method	-.22	.07	-.39	
Importance of Taste	-.06	.03	-.25	
Step 3				.26
Knowledge of Method	-.18	.07	-.32	
Importance of Taste	-.07	.03	-.29	
Knowledge of Status of Spot Prawns	-.30	.14	-.27	
Step 4				.32
Knowledge of Method	-.16	.07	-.29	
Importance of Taste	-.07	.03	-.26	
Knowledge of Status of Spot Prawns	-.32	.14	-.29	
Importance of Antibiotic Status	.21	.10	.24	

The regression analyses above give further information on the importance of a variety of factors in both Ocean Wise membership and environmental values. Variables including knowledge and economic priorities are important distinguishers of membership and sustainable seafood views.

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5 Discussion

5.1 Current Status of the Ocean Wise Program

The Ocean Wise Program has strived to create awareness, in both consumers and restaurateurs, of the status of fisheries and to provide sustainable options. The program started with 22 restaurants in Vancouver in 2005, and grew to 262 by 2011. The program has also spread across Canada, and now has retail, supplier and restaurant locations from coast to coast. While it is impossible to estimate the specific impacts that the Ocean Wise program has had on the marine environment and fish stocks, the fact that thousands of locations across the country have committed to selling sustainable seafood products is very likely contributing to the growing demand for sustainable fisheries practices.

The literature notes that in order for a message to achieve positive results, consumers must trust its credibility (McKenzie-Mohr, 1994). This research shows that, overwhelmingly, restaurateurs are confident that the Vancouver Aquarium and the Ocean Wise program are reliable sources for information on sustainable seafood.

A number of Ocean Wise restaurateurs stated that, in Vancouver, it is not an option to not be sustainable. Restaurateurs noted that the local consumer population is familiar with sustainability, and looks for green initiatives in restaurants. Although a few of the interviewees were unfamiliar with the program, Ocean Wise has targeted high end restaurants and leaders in the food scene, as these restaurants set the trends for others (McDermid, pers. comm. 2012; Poulston & Yiu, 2011). The rate of growth of the Ocean Wise program shows no sign of slowing. With many of the top restaurants and chefs in Vancouver already on board, it seems that the filter down effect is occurring successfully. As the program continues to grow and educate consumers, the number of restaurateurs, and members of the public who are unfamiliar with the program will decrease.

There were indications from this study that growth in the program may be related to the shared vision amongst restaurateurs that sustainability is important. Ocean Wise members appeared to have internal values and beliefs that were consistent with those of Ocean Wise, with 59% stating that they joined the program because of this shared vision or set of

beliefs. Additionally, Ocean Wise members considered sustainability to be an important factor in their purchasing decisions, were knowledgeable about sustainable products and fishing methods, and were supportive of other “green” activities within their businesses. These are partners, and perhaps opinion leaders (or innovators and early adopters) who could help promote and spread the message about the importance of sustainable fisheries.

As discussed in the Social Psychological Model, an individual’s behaviour is heavily influenced by what others find acceptable (Clayton and Brook, 2005). Continued growth in the program could encourage restaurants to join not only due to a shared vision of program’s goals, but because they feel they will face negative consequences through lack of membership. While this incentive - pressure to become part of the program because other restaurant leaders and competitors were on board - was not specifically tested in the present study, there were indications from at least some of the interviewees that their decision to join was influenced by trends in the industry and in the consumer market. Although the Self Determination Theory states that people are more likely to engage in behaviour when the motivation is internal rather than external (Osbaldiston and Sheldon, 2003), it may be that committing to the program will result in fewer unsustainable items on menus regardless of the motivation.

The goal of many consumer based marketing programs is that, through increased knowledge, the public will force change in the market. Ocean Wise may be able to reach a wider consumer market through increasing their public visibility. Staff and volunteers often attend events around the Lower Mainland, such as the Coho Festival¹ and Feast of Fields², to discuss the program with the public. Events such as the annual Chowder Chowdown³ also extend the knowledge to the public. However, many of the people attending such events may already be predisposed to environmentally responsible behaviours. In order to impact a wider public, popular media could be used. Discussion of the program on local television or at events that may attract a wider range of people could be used to get the message out. Once a wider range of people are informed of the fisheries

¹ An annual event in promote the Coho Society’s endeavours <http://www.westvancouver.com/coho/>

² Annual fundraising event at various BC locations for Farm Folk City Folk <http://feastoffields.com/>

³ Annual Ocean Wise event in which Ocean Wise chefs compete and chowders are paired with local beers <http://www.vanaqua.org/experience/events/annual-and-upcoming-events/ocean-wise-seafood-chowder-chowdown>

crisis, they will be more likely to search out and demand a sustainable seafood product. Their knowledge and attitudes can then be used to further drive the market in Vancouver.

Economic factors do not appear to be limiting the appeal of sustainable seafood and the Ocean Wise program in Vancouver. When sustainable items were identified as more expensive, this expense was often seen as not significant. Both OW and non-OW restaurateurs indicated that they were willing to pay about 20% more for seafood items that were sustainable. Although sustainable items may demand a price premium of up to 30% when they are niche items (Dean, 2012, pers. comm.), they may also demand a higher price (Jaffry et al. 2004). Analysis in this study showed that, in Vancouver, Ocean Wise items do draw a somewhat higher price. Additionally, the majority of the Ocean Wise and non-Ocean Wise restaurants were not deterred by the \$250 annual fee.

5.2 Building Knowledge among Restaurateurs

In order to allow for sound decision-making, and for people to feel ownership of environmental decisions, knowledge of environmental issues is necessary (Hungerford and Volk, 1990). Restaurateurs who are unfamiliar with the current status of global fish stocks will be less motivated to change their purchasing behaviour. Both the Ocean Wise program and the Vancouver Aquarium are committed to promoting conservation through education. The present study found that restaurateurs with greater knowledge of sustainable seafood practices, products and fishing methods were more likely to be Ocean Wise members than were restaurateurs with more limited knowledge. This finding suggests that the efforts of Ocean Wise to provide training and education to increase knowledge are important in the total set of strategies that Ocean Wise undertakes to increase membership. By getting more and more information out to the public (including non-member restaurants) about declining fish stocks, impacts of different fishing methods, and services they can offer to help restaurants make the transition, Ocean Wise could tap into the group of non-members who may be open to the concept but who just have not yet fully understood the significance of the issues.

The importance of a knowledgeable supplier representative was seen as very important to many restaurateurs sourcing sustainable seafood products, whether Ocean Wise members or not. Ocean Wise currently works with suppliers in British Columbia and across Canada.

By ensuring that seafood reps are up to date and passionate about encouraging the sale of sustainable seafood over conventional products, the message can reach a wide range of restaurateurs. Many restaurateurs reported a great deal of trust in their suppliers, and therefore encouraging growth of Ocean Wise through seafood reps may be a cost effective avenue to pursue new members.

It will be important for Ocean Wise to extend its reach as much as possible. While the Ocean Wise message is conveyed often at the Aquarium, those who are not visiting may not see any exposure. The status of fisheries has been covered in depth in the literature, but exposure to the general public may be lacking. Also, as noted by one interviewee, fundraising events are often expensive and closed to many members of the public. At the “Toast to the Coast” event⁴, for example, an annual fundraiser featuring Ocean Wise food prepared by top chefs, wine pairings, and a silent auction, tickets sell for \$95.

Research by Brecard et al. (2009) finds that consumers who think that corporations do not act responsibly are more likely to purchase green products. Further, those who believe fisheries are not well managed are more likely to purchase eco-labelled seafood. A high percentage of interviewees in the present study felt that fisheries are not sufficiently regulated in Canada (61.8%), whereas 80% of restaurateurs felt that Ocean Wise was a reliable source for information. This reveals that there is high potential for more restaurants to join the Ocean Wise program. Greater education on both the status of fisheries and the services that Ocean Wise provides could encourage many more restaurants in Vancouver to consider Ocean Wise membership. Many of the non-Ocean Wise restaurateurs interviewed expressed that they would be likely to consider joining the program if Ocean Wise contacted them or provided more information. At present, Ocean Wise does not solicit restaurants but feels that by having restaurants approach Ocean Wise they ensure that the members are serious about their commitment (McDermid, 2012, pers. comm.). Limited staff and budget also may reduce the opportunity for Ocean Wise to work to spread the program to a wider audience. Still, with a potential contribution of \$250 per new member, it may be worth reviewing the potential costs and benefits of more direct contact with potential members (as well as existing members, as discussed below).

⁴ Annual fundraising event at the Vancouver Aquarium featuring Ocean Wise products, wine pairings and a silent auction <http://www.vanaqua.org/experience/events>

It may be most cost effective to develop an outreach and marketing program aimed at restaurateurs who may be particularly likely to join. Apart from high-end seafood restaurants, there may be restaurateurs who are serving seafood but who are only minimally familiar with the program or issues. They may, however, have values and beliefs that are consistent with those of the program. For instance, it may be most cost effective to reach out to restaurants that are members of “green” organizations, are known for serving local and organic products, or are serving particular consumer markets that would be expected to be particularly supportive (e.g., highly educated consumer markets; island and coastal residents).

Many non-Ocean Wise restaurateurs identified lack of contact or information as the main reason they had not considered becoming members. It may be worthwhile, then, for Ocean Wise to commit even limited resources to outreach and providing information to restaurants. Even a small amount of effort, if focussed on restaurants that are identified to be good candidates for membership (as identified in this study, higher end restaurants committed to other green activities) could lead to great growths in program membership. A strong correlation was found between membership to Ocean Wise and membership in the Green Table Society or Green Restaurant Association. This information could be used by Ocean Wise to efficiently target restaurateurs for outreach. Targeting restaurateurs already predisposed to the sustainability message will be an efficient use of limited resources for outreach. Further, in Toronto and other parts of Canada, where the program is newer and less well known, outreach could result in faster growth and greater knowledge of the program. Outreach focused on high end restaurants and culinary leaders in other parts of Canada would likely be the most efficient use of resources for the program.

5.3 Continued Growth of “Green” Images

The level of concern for the environment by Canadians appears to fluctuate over time. While Dunlap’s research from 2002 shows that environmental concern reached its peak over ten years ago, and has since experienced a downward trend, more recent surveys of Canadians suggest that the level of concern is still very high (EnviroNics Research Group, 2008). Continued high level of concern for environmental issues, related to seafood and otherwise, can be encouraged by the media.

The media can, and does, play a key role in keeping members of the public interested in sustainability issues. News stories tend to focus on scandals, and coverage of scandals in the sustainable sector. Coverage of negative or scandalous issues, such as false labelling campaigns, could have a negative effect on consumer trust in the Ocean Wise program.

When consumers distrust governments or feel that they are not successfully dealing with environmental issues they are more likely to take action themselves (Dunlap, 2002). Increased coverage in the popular media of the areas in which governments are not successfully protecting the environment could lead people to feel more empowered to take action themselves and choose green products. The recent coverage of sockeye salmon in British Columbia is a prime example. After years of fluctuating returns of sockeye salmon to the Fraser, a commission was set up to examine what was causing the changes. The story has received immense media coverage and suggests, although not conclusively, that the Department of Fisheries and Oceans has not sufficiently addressed the problems with the sockeye salmon fishery in British Columbia. The report states specifically that “the public would be better served if there were a form of independent oversight of the government’s responses” [to recommendations regarding the fishery] (Canada, 2012 vol. 3 p. 61). The report also demonstrates the lack of knowledge about many facets of marine fisheries. Even well managed fisheries are subject to a high degree of uncertainty.

In no way will the Ocean Wise program be served by attacking the efficacy of government programs. Creating conflict, especially with an organisation that could potentially partner with or otherwise aide Ocean Wise could lead to negative consequences and reduced trust in the program. But reports such as the Cohen Commission create a platform where issues such as Ocean Wise can be discussed on a wider scale. Media coverage should be used whenever possible as an avenue to promote understanding of Ocean Wise, as well as other environmental programs, to create a sense of ownership among the public.

The Vancouver Aquarium is seen, according to this research, as a reliable source of information on sustainable seafood products. Opposition to this view was expressed by one interviewee who felt that, because the Vancouver Aquarium houses animals in captivity, he did not wish to support any organisation associated with it. Remaining restaurateurs felt overwhelmingly that Ocean Wise is a reliable source for information. This supports the

research by the Seafood Choices Alliance (2005) that restaurant professionals see ENGOS as a reliable, trustworthy source of information.

It is often noted in the literature that consumer trust in the credibility of a message is necessary to create support (McKenzie-Mohr, 1994). It seems that the Vancouver Aquarium has met these criteria adequately. In order to maintain this credibility, a third party audit would be helpful. Bruce and Laroiya (2007) suggest giving the consumers the opportunity to test the veracity of the claims being made. Through third party audits, the Ocean Wise program could maintain its image as a reliable, trustworthy source.

A high percentage of Ocean Wise restaurateurs interviewed had noticed changes in the supply, quality, or price of seafood products in the past. The Social Psychological Model identifies that past experiences are highly influential in changing behaviour (Clayton and Brook, 2005), particularly when these experiences include similar activities (Lee, De Young and Marans, 1995). If more chefs begin to recognize changes in their seafood, this may be a motivating factor to encourage them to change their behaviour by adopting sustainable seafood.

The commitment by Ocean Wise restaurants to a group of green activities creates marketing potential. Hu, Parsa and Self (2010) suggest that restaurants should inform their customers of their commitment to environmental issues. They believe that a competitive advantage can be gained through promotion of themselves as leaders in the environmental field. Advantage gained this way could further encourage other restaurants to join the Ocean Wise program.

5.4 Recommendations

The success of the Ocean Wise program is evident from this research. The program is growing steadily, and confidence in the recommendations is evident. Concentrating on training and education for member restaurants and the general public is important to ensure continued growth of the program, and to ensure that the biggest impact possible is had. Kasim and Ismail (2011) identify commitment by all employees as a crucial component to successfully create sustainability. Lack of manpower and high turnover rates inherent to the restaurant industry make training extremely difficult, but it is important that all employees at Ocean Wise restaurants understand the program in order to educate

customers. While in- person training programs would be ideal, online training programs are in development that may suffice. Ensuring that restaurant staff are familiar with each of the sustainable options on their menu, including knowing the relevant issues about the species and fishing methods, is extremely important if the restaurant wants to convey to its customers that it is fully supports the program. Staff can then also become ambassadors for the program and hopefully inspire customers to further promote the restaurant and the sustainable options that they have learned about.

Monitoring the use of the Ocean Wise name and logo is necessary to ensure credibility. Instances of use of logos by suppliers and restaurants who are not program members, or on items that are not sustainable have been found (Dean, 2012 pers. comm.; McDermid, 2012 pers. comm.). This was also found during research for this project. Although these occurrences show that there is value in the Ocean Wise name, deceit will likely lead to consumers losing trust in the program. Lack of manpower again makes monitoring difficult, but it is an area of concern that should be addressed.

As the Ocean Wise program continues to grow, education and monitoring will become more paramount. Vancouver is noted for its sustainability and green initiatives. Locals here are more likely to be aware of sustainability issues than in other areas of Canada. As the program spreads across Canada, especially to areas inland, education of members and consumers becomes even more necessary. Growth of the program may also lead to increased incidences of false use of the program name and logos. Increased monitoring will be necessary.

In this study, a few instances were found where restaurateurs would not be willing to pay the \$250 annual fee, or had left the program because of the fee. The majority of restaurants, however, did not feel that this fee was a deterrent. These findings suggest that many restaurants may be willing to pay a higher amount for Ocean Wise services. Findings that sustainable products garner a price premium over non-sustainable products could be used to encourage restaurants that a higher fee is worthwhile. Increased fees could then be used to offset the cost of hiring staff to monitor the program and educate members.

Ocean Wise offers many services to member restaurants. These include having the restaurant name listed on the Ocean Wise website and promotional material, educational

material, lists of sustainable seafood products, and the opportunity to take part in marketing events. This study found that some restaurateurs were unaware of what services were provided. Increased contact from Ocean Wise, through email or phone calls, could be used to discuss the services offered and ensure that restaurants are getting the most value from their membership.

As the Ocean Wise program grows, the opportunity to participate in marketing events, such as the Chowder Chowdown, may decrease. One ex-Ocean Wise restaurant identified this as a main reason for leaving the program. Events such as the Chowdown, which allows twelve Ocean Wise chefs to create a sustainable chowder recipe and compete for judge's and people's choice awards, will be open to a continually smaller percentage of restaurants as the number of partners continues to grow. It is important that Ocean Wise provide avenues for all of their member restaurants, who are interested, to be part of such events. This could be done through an increased number of marketing events or increased restaurant participation at existing events.

5.5 Future Research

The research conducted for this study examined a broad range of restaurants within the city of Vancouver. While it was sufficient for the scope of the project, it left many areas of the Ocean Wise program and sustainable practices at restaurants untouched. The scale of this research allowed for only restaurants in Vancouver to be studied. As Ocean Wise continues to grow across Canada, similar studies could be conducted in other locations to determine what, if any, differences motivate restaurateurs in other parts of Canada to choose sustainable seafood.

This research also focussed mainly on "western" style restaurants. Although making up a larger percentage of the restaurants in Vancouver, Asian restaurants were largely absent from this study. Although many Asian restaurants were approached, language barriers were often too strong to allow for interviews to take place. Ocean Wise has recently paired with their first Chinese restaurant, the Szechuan ChongQing Seafood Restaurant (Ocean Wise, n.d.b). The huge number of Asian restaurants in Vancouver could be a large potential market for expansion of the program, especially given the high percentage of seafood items at many of these restaurants. A greater understanding of the motivating

factors for Asian chefs and restaurateurs to perform environmental acts would be very beneficial to the Ocean Wise program, and to other environmental ventures. As discussed by Mascia et al. (2003), understating of cultural beliefs can increase the effectiveness of conservation efforts.

This study found a significant correlation between Ocean Wise membership and membership in sustainable restaurant associations including the Green Table Society and Green Restaurant Association. Research on the avenues in which these programs could work together to reach a wider audience or have a greater impact could yield worthwhile results.

Research into the marine environment is being undertaken on vast scales, but human understanding of the oceans is still relatively limited. Research into the effect that Ocean Wise, and other sustainable seafood programs, are having on fish stocks themselves would be greatly important to these programs. If restaurateurs knew of the concrete effect that they were having on the environment, they may be more motivated to continue with these programs and increase the amount of sustainable products they are selling. While determining causality of such things is extremely difficult, research into this area could prove invaluable.

6 Conclusions

The Ocean Wise program has established itself well in a growing niche market. Sustainability programs, whether seafood based or otherwise, are proving to be not only efficient methods of educating the public and creating change, but also to be profitable. In Vancouver, the Ocean Wise program is a fixture at many high end restaurants as well as many more casual establishments. The growth in the program, both in restaurant numbers and volume of sustainable seafood being sold, is obvious in Vancouver, and that growth is spreading across Canada.

This study provides insight into the types of restaurants and restaurateurs drawn to the Ocean Wise program. It also provides information that may be used by Ocean Wise, and other restaurant-based sustainability programs, to attract and retain members. The research has shown that providing sustainable seafood products can be valuable to restaurants, through marketing avenues and increased price point. The New Environmental Paradigm scale may have been too general to show significant differences in values important to Ocean Wise membership, but other proxies were determined to be correlated. Restaurateurs with greater knowledge of fishing practices and sustainable seafood products, and who are committed to a range of green activities and common values are more likely to be members of the Ocean Wise program. By directing effort at such restaurateurs, sustainable seafood programs could use their (often limited) resources most efficiently. Alternatively, focussing energy on improving the knowledge of sustainable seafood products or fishing practices could create a bigger audience for which to sell the program. Marketing Ocean Wise restaurants as “greener” than conventional restaurants could bring added value to member restaurants, and create interest from another group of consumers.

Many Ocean Wise restaurateurs discussed having noticed negative changes in seafood products. Whether relating to size, supply, quality or price, noticeable changes in seafood products may create questions for restaurateurs, which could lead them to the Ocean Wise program, although causality was not analysed.

After nearly 8 years, the Ocean Wise program is well established in Vancouver. It is seen as a well-respected, trustworthy organisation. Although the impacts that consumer based marketing programs have on seafood stocks is not easily determined, the importance of education to environmentally sustainable behaviour is well established. The level of awareness in Vancouver has been made clear through the interviews conducted for this study. Continued growth of the program and increased awareness across Canada are achievable goals for the Ocean Wise program. While on the right track, further collaboration with other sustainability organisations, restaurant organisations, and government will aid in achievement of the program goals.

Environmental crises are a constant in today's world. The fisheries crisis is at such point that consumer based techniques alone are not the solution. These programs can however educate and empower consumers to vote with their purchases, forcing large scale changes towards sustainability. While not sufficient on their own, programs such as Ocean Wise can play an important role in achieving sustainable fisheries.

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Appendix A: Initial Contact Letter to Restaurateurs



To Whom It May Concern,

You have received this letter as your restaurant has been randomly selected to participate in a study supported by the Vancouver Aquarium's Ocean Wise program. This study aims to determine how Ocean Wise is currently serving Vancouver restaurants, and how they may better serve restaurants in the future. This study is being conducted to complete the requirements for a Master's Degree in Coastal and Marine Management. The information will be gathered through interviews of approximately 25-30 minutes, either in person or via telephone, with the person responsible for seafood purchasing at your restaurant. All information gathered will be used for research purposes only. Restaurants and restaurateurs will remain confidential, and only summary information will be provided to the Vancouver Aquarium.

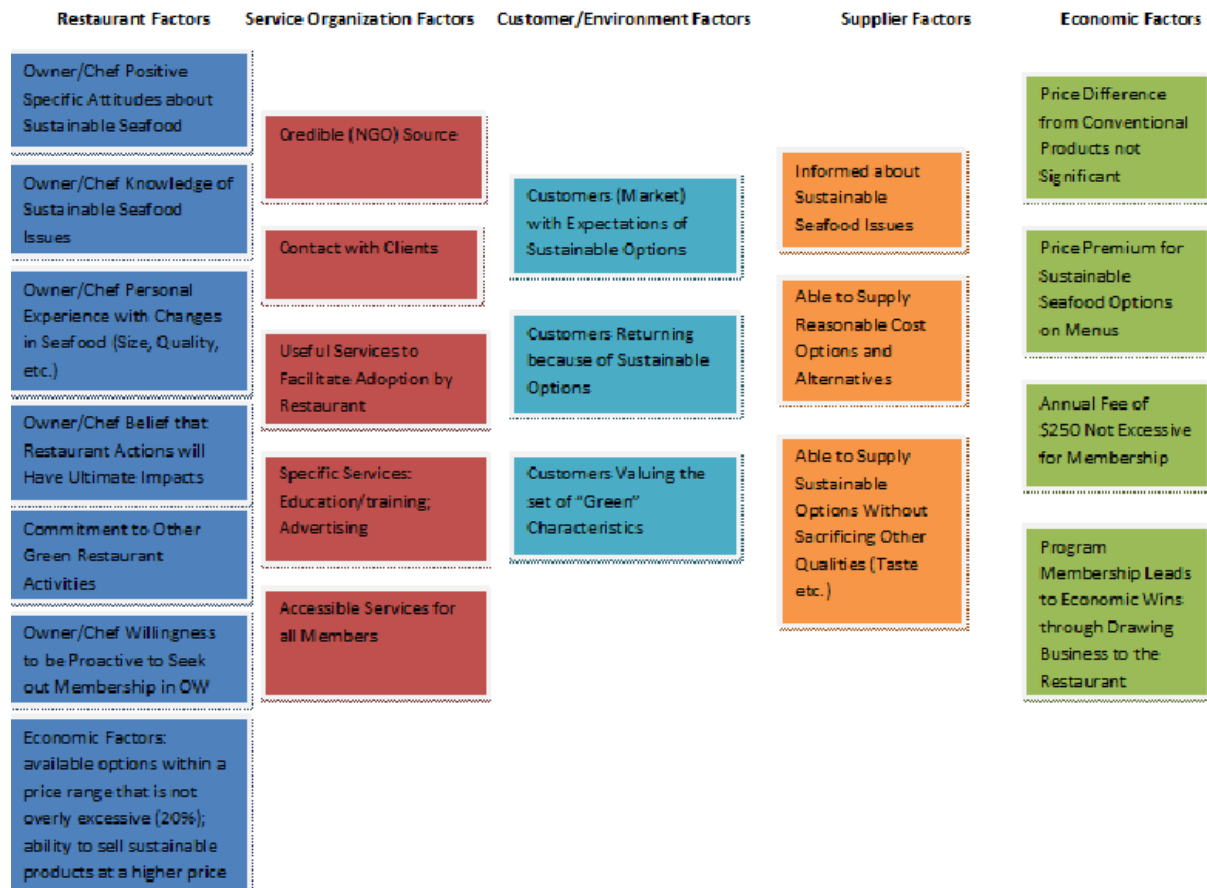
The interviews will be conducted by study manager Katherine Dolmage. She will be contacting you via telephone to set up an interview at your convenience. For more information regarding this study, or to set up an interview time, please contact Katherine at 604.441.3606 or katherine.dolmage@gmail.com. Any further questions can be directed to Ocean Wise Program Manager Mike McDermid at 604.659.3596 or mike.mcdermid@vanaqua.org.

I look forward to speaking with you soon.

Katherine Dolmage

Mike McDermid

Appendix B: Model: Factors Associated with Ocean Wise Adoption



Appendix C: Interview Guide: A

Ocean Wise Restaurateur Survey

Form A: Ocean Wise Restaurants

Interviewee Name: _____

Interviewee Job Title/Position: _____

Restaurant: _____

Date and Time of Interview: _____

SECTION 1: RESTAURANT BACKGROUND (from Menu)

of menu items

of menu items that are seafood

of menu items that are sustainable seafood

Dollar value sustainable items

Dollar value unsustainable items

SECTION 2: SUSTAINABLE SEAFOOD BACKGROUND KNOWLEDGE

Please describe what “sustainable seafood” means to you. What are the key issues involved?

SECTION 3: BUSINESS BACKGROUND

1. How long has your restaurant been in business?
2. How long have you (head chef) been with the restaurant?
3. How would you describe your cuisine?
4. How important is seafood to the image of your restaurant?
5. What percentage of these sales are sustainable seafood items?

SECTION 4: SEAFOOD PURCHASING

1. Who supplies your seafood?

2. Is the majority of your seafood wild or farmed?
3. What fishing methods are used for the seafood that you purchase?
4. What are the most important factors, from your perspective, when it comes to purchasing seafood (price, supply, quality, environmental quality etc)?
 - a. How important are each of these factors when purchasing seafood? (1= not at all important...5= extremely important)
 - Price
 - Taste
 - Quality
 - Freshness
 - Environmental Sustainability
 - b. Rank from 1-5 (with 1 being the most important and 5 the least) the priority of each of the following when purchasing seafood
 - Price
 - Taste
 - Quality
 - Freshness
 - Environmental Sustainability
5. Would you pay more for
 - a. Sustainable seafood? Yes/No?
 - b. Local seafood? Yes/No?
 - c. Higher quality seafood? Yes/No?
 - d. How much more would you be willing to pay for these things (percentage)
6. How much seafood do you sell (kg/week)?

SECTION 6: ENVIRONMENTAL BEHAVIOUR

1. Does your restaurant commit to any other green activities (recycling etc.)
2. Are you a member of the Green Restaurant Association or any other conservation group? No

SECTION 7: INVOLVEMENT WITH OCEAN WISE

7.1 Initial Incentive and Services Received

1. Why did you decide to become involved with Ocean Wise?
 - a. How did you first hear about the program?
 - b. How did you first becoming involved?
2. How long has your restaurant been involved with Ocean Wise? Don't know
3. Have you personally noticed changes in fish stocks over the years that you have been serving seafood?

4. Which of the following services offered by the Ocean Wise program have you received?
 - a. Advertising
 - b. Training
 - c. Sourcing Seafood
 - d. Marketing events
 - e. Other (please describe)
 - f. Which of these services do you feel is most valuable to your business?

7.2 Ways in Which Restaurant is Currently Using Ocean Wise

1. Do you provide information to customers in addition to the menu statement?
2. Are your staff members trained to understand and answer questions regarding the Ocean Wise program?

7.3 Perceived Benefits of Ocean Wise

1. How do customers respond to the program?
2. Has the program had a financial impact on your restaurant? (in terms of overall sales, reputation, attracting a particular customer base, etc.)? If so, what impact has it had?
3. What do you feel are the impacts of your involvement in the program on fisheries/fish stocks?

7.4 Barriers to Providing Sustainable Seafood

1. Do you have trouble finding the sustainable sources for the seafood items you wish to sell? Please describe.
2. Are the sustainable options more expensive than non-sustainable options? Is this expense significant?

5.5 Overall Satisfaction/Perceptions of Impacts

1. How satisfied are you, overall, with the Ocean Wise program (1=not at all satisfied, 5=extremely satisfied)
2. How important is your participation in the program in terms of the image that you want to create for your business (1=not at all important, 5=extremely important)
3. By supporting programs like Ocean Wise, how significant a role do you think that restaurants can have in ensuring sustainable fisheries? (1=not a very significant role, 5=a very significant role)

7.6 Additional Services Needed

1. What additional services could Ocean Wise provide that would benefit your business?

SECTION 8: Vancouver Aquarium, Ocean Wise, and Role of Govt/NGO?

1. Do you feel that Ocean Wise is a reliable source for information on sustainable seafood?
 - a. Would you feel more confident in a label from another NGO?
 - b. Would you feel more confident in a label created by a government organisation, such as the Department of Fisheries and Oceans?

Appendix C: Interview Guide: B

Ocean Wise Restaurateur Survey

Form B: Non-Ocean Wise Restaurants

Interviewee Name: _____

Interviewee Job Title/Position: _____

Restaurant: _____

Date and Time of Interview: _____

SECTION 1: RESTAURANT BACKGROUND (from Menu)

of menu items

of menu items that are seafood

of menu items that are sustainable seafood

Dollar value sustainable items

Dollar value unsustainable items

SECTION 2: SUSTAINABLE SEAFOOD BACKGROUND KNOWLEDGE

Please describe what “sustainable seafood” means to you. What are the key issues involved?

SECTION 3: BUSINESS BACKGROUND

1. How long has your restaurant been in business?
2. How long have you (head chef) been with the restaurant?
3. How would you describe your cuisine?
4. How important is seafood to the image of your restaurant?
5. What percentage of these sales are sustainable seafood items?

SECTION 4: SEAFOOD PURCHASING

1. Who supplies your seafood?

2. Is the majority of your seafood wild or farmed?
3. What fishing methods are used for the seafood that you purchase?
4. What are the most important factors, from your perspective, when it comes to purchasing seafood (price, supply, quality, environmental quality etc)?
 - a. How important are each of these factors when purchasing seafood? (1= not at all important...5= extremely important)
 - i. Price
 - ii. Taste
 - iii. Quality
 - iv. Freshness
 - v. Environmental Sustainability
 - b. Rank from 1-5 (with 1 being the most important and 5 the least) the priority of each of the following when purchasing seafood
 - i. Price
 - ii. Taste
 - iii. Quality
 - iv. Freshness
 - v. Environmental Sustainability
5. Would you pay more for
 - a. Sustainable seafood? Yes/No?
 - b. Local seafood? Yes/No?
 - c. Higher quality seafood? Yes/No?
 - d. How much more would you be willing to pay for these things (percentage)
6. How much seafood do you sell (kg/week)?

SECTION 6: ENVIRONMENTAL BEHAVIOUR

1. Does your restaurant commit to any other green activities (recycling etc.)
2. Are you a member of the Green Restaurant Association or any other conservation group?

SECTION 7: INVOLVEMENT WITH OCEAN WISE

1. Are you aware of the Ocean Wise program?
2. Are you interested in becoming a member of Ocean Wise? If Yes, what features of the program are you interested in...If No, why are you not interested?
3. What factors would encourage you to become involved in Ocean Wise, or another sustainable seafood program?
4. What do you feel are the barriers to sourcing sustainable seafood?

5. Ocean Wise charges a \$250 fee for their services; would this affect your decision to become Ocean Wise?

SECTION 8: Vancouver Aquarium, Ocean Wise, and Role of Govt/NGO?

3. Do you feel that Ocean Wise is a reliable source for information on sustainable seafood?
 - a. Would you feel more confident in a label from another NGO?
 - b. Would you feel more confident in a label created by a government organisation, such as the Department of Fisheries and Oceans?

Appendix C: Interview Guide: C

Ocean Wise Restaurateur Survey

Form C: Former Ocean Wise Restaurants

Interviewee Name:

Interviewee Job Title/Position:

Restaurant:

Date and Time of Interview:

SECTION 1: RESTAURANT BACKGROUND (from Menu)

of menu items

of menu items that are seafood

of menu items that are sustainable seafood

Dollar value sustainable items

Dollar value unsustainable items

SECTION 2: SUSTAINABLE SEAFOOD BACKGROUND KNOWLEDGE

Please describe what “sustainable seafood” means to you. What are the key issues involved?

SECTION 3: BUSINESS BACKGROUND

1. How long has your restaurant been in business?
2. How long have you (head chef) been with the restaurant?
3. How would you describe your cuisine?
4. How important is seafood to the image of your restaurant?
5. What percentage of these sales are sustainable seafood items?

SECTION 4: SEAFOOD PURCHASING

1. Who supplies your seafood?

2. Is the majority of your seafood wild or farmed?
3. What fishing methods are used for the seafood that you purchase?
4. What are the most important factors, from your perspective, when it comes to purchasing seafood (price, supply, quality, environmental quality etc)?
 - a. How important are each of these factors when purchasing seafood? (1= not at all important...5= extremely important)
 - i. Price
 - ii. Taste
 - iii. Quality
 - iv. Freshness
 - v. Environmental Sustainability
 - b. Rank from 1-5 the priority of each of the following when purchasing seafood
 - i. Price
 - ii. Taste
 - iii. Quality
 - iv. Freshness
 - v. Environmental Sustainability
5. Would you pay more for
 - a. Sustainable seafood? Yes/No?
 - b. Local seafood? Yes/No?
 - c. Higher quality seafood? Yes/No?
 - d. How much more would you be willing to pay for these things (percentage)
6. How much seafood do you sell (kg/week)?

SECTION 6: ENVIRONMENTAL BEHAVIOUR

1. Does your restaurant commit to any other green activities (recycling etc.)
2. Are you a member of the Green Restaurant Association or any other conservation group?

SECTION 7: INVOLVEMENT WITH OCEAN WISE

7.1 Initial Incentive and Services Received

1. Why did you decide to become involved with Ocean Wise?
 - g. How did you first hear about the program?
 - h. How did you first becoming involved?
2. How long was your restaurant been involved with Ocean Wise?
3. Have you personally noticed changes in fish stocks or fish supply over the years that you have been serving seafood? What changes have you noticed? Did this play a role in your joining/leaving the Ocean Wise program?

4. What services did you find helpful from Ocean Wise?
 - a. What services did you not find helpful?

7.2 Ways in Which the Restaurant Used Ocean Wise

1. Did you provide information to customers in addition to the menu statement?
2. Were your staff members trained to understand and answer questions regarding the Ocean Wise program? What training did they receive?

7.3 Perceived Benefits of Ocean Wise

1. How did customers respond to the program?
2. Did the program have a financial impact on your restaurant? If so, what impact did it have?
3. What did you feel were the impacts of your involvement in the program on fisheries/fish stocks?

7.4 Barriers to Providing Sustainable Seafood

1. Did you have trouble finding the sustainable sources for the seafood items you wished to sell?
2. Were the sustainable options more expensive than non-sustainable options? Was this expense significant?

7.5 What Were The Main Reasons For Leaving Ocean Wise?

7.6 What Additional Services Would Have Kept Your Restaurant Involved?

SECTION 8: Vancouver Aquarium, Ocean Wise, and Role of Govt/NGO?

1. Do you feel that Ocean Wise is a reliable source for information on sustainable seafood?
 - a. Would you feel more confident in a label from another environmental organisation?
 - b. Would you feel more confident in a label created by a government organisation, such as the Department of Fisheries and Oceans?

Appendix C: Survey Guide

Knowledge and Attitude Survey

Part A: Sustainable Seafood Background Knowledge

1. How would you describe your overall knowledge of sustainable fishing/fish farming practices (1- not at all knowledgeable 2- not knowledgeable 3- neutral 4- somewhat knowledgeable 5- completely knowledgeable)
1 2 3 4 5
2. How would you describe your overall knowledge of sustainable seafood products (1- not at all knowledgeable 2- not knowledgeable 3- neutral 4- somewhat knowledgeable 5- completely knowledgeable)
1 2 3 4 5
3. Which of the following seafood products do you believe are fished or farmed in a sustainable manner? (Circle all that apply)
 - a. Wild caught Chilean sea bass
 - b. Farmed Arctic char
 - c. Wild caught Pacific cod
 - d. Wild caught Atlantic cod
 - e. Farmed Atlantic halibut
 - f. Wild caught Pacific halibut
 - g. Wild caught Coho salmon
 - h. Farmed Atlantic salmon
 - i. Wild caught Pacific spot prawn
 - j. Farmed tiger prawn
4. Which of the following methods of fishing do you believe are sustainable? (Circle all that apply)
 - a. Trolling (hook and line)
 - b. Benthic Long-lining
 - c. Mid-water long-lining
 - d. Benthic trawl
 - e. Mid-water trawl
 - f. Seining
 - g. Trap
5. In your opinion, what criteria apply to sustainable seafood? (Circle all that apply)
 - a. Must be wild caught
 - b. Cannot be a threatened species
 - c. Free of antibiotics
 - d. Has organic certification
 - e. Has no preservatives
 - f. Caught using fishing methods that reduce bycatch and minimize damage to the environment
6. In your opinion, are government regulations strict enough with regards to fisheries and aquaculture, circle one: too strict, okay, not strict enough, don't know (con't on reverse)

7. How much emphasis do you place on the following issues when you are making decisions to purchase specific seafood for your restaurant: (1=no emphasis; 5=a great deal of emphasis)
- Whether the seafood is in a category that has been overfished
 - Whether the fishing gear that was used causes damage to habitat
 - Whether the fishing technique results in bycatch
 - Impacts of aquaculture on the environment
 - Whether the seafood is caught locally
 - Whether the seafood is delivered fresh
 - The price of the seafood
 - The taste of the seafood

Part B:

Revised NEP

Balance of Nature

In your opinion, how do you feel about the following statements (1- strongly disagree, 2- disagree 3-somewhat disagree, 4- neutral 5- somewhat agree 6-agree 7- strongly agree)

- When humans interfere with nature, it often produces disastrous consequences
1 2 3 4 5 6 7
- The balance of nature is very delicate and easily upset
1 2 3 4 5 6 7
- The balance of nature is strong enough to cope with the impacts of modern industrial nations
1 2 3 4 5 6 7

Eco-Crisis

In your opinion, how do you feel about the following statements (1- strongly disagree, 2- disagree 3-somewhat disagree, 4- neutral 5- somewhat agree 6-agree 7- strongly agree)

- Humans are severely abusing the environment
1 2 3 4 5 6 7
- The so-called "ecological crisis" facing humankind has been greatly exaggerated
1 2 3 4 5 6 7
- If things continue on their present course, we will soon experience a major ecological catastrophe
1 2 3 4 5 6 7

Antiexemptionalism

In your opinion, how do you feel about the following statements (1- strongly disagree, 2- disagree 3-somewhat disagree, 4- neutral 5- somewhat agree 6-agree 7- strongly agree)

7. Human ingenuity will insure that we do not make the earth unliveable
1 2 3 4 5 6 7
8. Despite our abilities, humans are still subject to the laws of nature
1 2 3 4 5 6 7
9. Humans will eventually learn enough about how nature works to be able to control it
1 2 3 4 5 6 7

Limits to Growth

In your opinion, how do you feel about the following statements (1- strongly disagree, 2- disagree 3-somewhat disagree, 4- neutral 5- somewhat agree 6-agree 7- strongly agree)

10. The earth is like a spaceship with very limited room and resources
1 2 3 4 5 6 7
11. We are approaching the limit to the number of people the earth can support
1 2 3 4 5 6 7
12. The earth has plenty of natural resources if we just learn how to develop them
1 2 3 4 5 6 7

Antianthropocentrism (Human Domination)

In your opinion, how do you feel about the following statements (1- strongly disagree, 2- disagree 3-somewhat disagree, 4- neutral 5- somewhat agree 6-agree 7- strongly agree)

13. Plants and animals have as much right as humans to exist
1 2 3 4 5 6 7
14. Humans have the right to modify the natural environment to suit their needs
1 2 3 4 5 6 7
15. Humans were meant to rule over the rest of nature.
1 2 3 4 5 6 7

Appendix C: Survey Guide: Scoring

Knowledge and Attitude Survey

Part A: Sustainable Seafood Background Knowledge

1. Value identified
2. Value identified
3. Correct answer score 1, incorrect answer score 0*
4. Correct answer score 1, incorrect answer score 0*
5. Scores not calculated, used for comparison
6. Scores not calculated, used for comparison
7. Value identified

*Due to the design of this survey, it was not possible to determine if questions left blank were “unknown” or “not sustainable”, answers left blank because of lack of knowledge could result in positive or negative score.