

MPC MAJOR RESEARCH PAPER

TITLE:

The (Un)sustainable Game:

An Exploration of rhetorical strategies and risk communication in
sustainable seafood campaigns

Brigitte Dreger-Smylie

Supervisor: Dr. Jessica Mudry

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Ryerson University
Toronto, Ontario, Canada

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Abstract

In the 1990s, following the Newfoundland Grand Banks cod fishery collapse along Canada's East Coast, the first seafood sustainability certification organization was formed to address this widespread crisis. Two notable campaigns were formed shortly thereafter, both programs the projects of marine aquariums along the West Coast, and have gained significant attention: Vancouver Aquarium's Oceanwise provides seafood recommendations to restaurants on the most sustainable choices and Monterey Bay Aquarium's Seafood Watch, creates and disseminates consumer guides. This MRP examines the communication strategies of Seafood Watch and Ocean Wise used to encourage the consumption of sustainable seafood and promote ocean conservation. More specifically, this MRP analyzes the organizations' use of environmental rhetoric, particularly in terms of framing and topoi, and how they communicate risk and urgency. How sustainable seafood campaigns establish credibility and rationale in the public sphere to communicate urgent, technical information surrounding fishery mismanagement is examined. This research will help inform future guidelines for social marketing campaigns to improve strategy and encourage consumer change. Recommendations for future research include the creation of evaluative programs to measure campaign effectiveness as well as an analysis of the niche markets established through the rising sustainable seafood market.

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Introduction

Northern cod was once one of the most numerous fish stocks on the planet (McGrath, 1911). For over 400 years, the cod fishery was a vibrant, plentiful staple in Canada's maritime provinces. In the early 1950s, commercial fishing technology began to advance rapidly, increasing yearly landed catch and bringing apparently limitless success to the industry. Within a decade, yearly catch had increased from 250,000 tonnes to over 800,000; the fishery, and Canada's maritime economy, was thriving.

The fishery was so strong that an article published in National Geographic in 1988 declared the "almighty Cod" as a resource immune to depletion. But management of the industry was poorly regulated, and the amount of fish being removed from the ecosystem eventually exceeded the amount of breeding adult fish required to maintain a healthy population. Only two years after the *Almighty Cod* article was published, a follow-up article appeared in the same magazine spelling out significant losses for the industry; yearly catch had fallen to 1,700 tonnes, a fraction of the industry's historical greatness, and fishermen were pulling up empty nets all over Atlantic Canada. A moratorium was placed on cod fisheries in 1993, banning all commercial fishing along the coast in an effort to provide opportunity for cod to rebound, but populations failed to recover. By 1995, the cod fishery had collapsed.

By the time of the Grand Banks disaster, sufficient evidence had been collected by scientists, governments and NGOs to realize that this trend was not unique to Canada's East coast: fisheries around the world were collapsing due to overexploitation (Cooke et al., 2011, p. 912). Today, the trend of fishery collapse continues to be seen around the globe; in 2005, 76 per cent of UN-monitored fish stocks had been "fully

exploited, over-exploited, depleted, or recovering from depletion” (Davis and Rangeley, p. 92, 2010). Overfishing is not only putting one of the most globally important sources of human protein at risk, but also degrading the ecological health of world oceans (Davies and Rangeley, p. 92, 2010). Coupled with rising global consumer demand for seafood and a growing human population, fish populations around the world face severe threats, including the release of invasive species, warming ocean temperatures, and irreversible destruction of habitat (Jacquet & Pauly, 2007, p. 308).

This evidence led to collaborative efforts between industry and NGOs to establish programs with the goal being to slow and ultimately reverse extensive marine damage (Cooke et al., 2011, p. 912; Jacquet & Pauly, 2007, p. 309). The Marine Stewardship Council (MSC) was one of the first of such organizations to be formed (Kaiser and Edwards-Jones, 2006, p. 393), and was established shortly after Newfoundland’s cod fishery collapse (Gien, 2000, p. 121). The MSC, a partnership between Unilever, a multi-national consumer goods company heavily involved in the commercial fishing industry, and World Wildlife Fund (WWF), the largest, private, non-profit conservation organization in the world (Constance & Bonanno, 2000, p. 125), was formed with the goal of linking market incentives to consumer preference through certification and eco-labeling (Constance & Bonanno, 2000, p. 125). The formation of the MSC in the wake of such an internationally impactful ecological and economic event helped the organization to quickly gain favour amongst consumers, industry employees, and environmental activists around the globe (Hamilton et al., 2004, p. 196).

Over the next decade, many more ocean conservation programs were formed, many of which were corporate initiatives or research ventures of aquariums and non-

profits in the developed world. Examples of such campaigns include Monterey Bay Aquarium's Seafood Watch and Vancouver Aquarium's Ocean Wise, both of which were established to educate consumers on ocean issues and encourage the consumption of sustainable seafood.

Seafood Watch was founded in 1999 to evaluate the sustainability of farm- and wild-caught seafood sold in the U.S. The program determines sustainability based on a species' ability to "exist into the long term by maintaining or increasing stock abundance" while preserving the surrounding ecosystem (Stevens, 2004, p. 2). Sustainability data is gathered from academic, peer-reviewed journals whenever possible and based on current fishery and ecosystem science, after which it is separated into categories: "best choice", "good alternative" and "avoid" (Stevens, 2004, p. 2). External scientists then review the data (though they may not necessarily endorse the program or its conclusions) and final recommendations and rankings are made by a team at Seafood Watch (Stevens, 2004, p. 2). Seafood Watch then distributes its information widely to consumers through downloadable guides, promotional materials, social media, and outreach events (Stevens, 2004, p. 2).

Vancouver Aquarium's Ocean Wise, which is also a recommendation program, targets Canadian restaurants. Established in 2002, the program is tasked with helping restaurants improve the sustainability measure of the seafood they serve (Ocean Wise, 2015). Their criteria are tailored to suit each restaurant individually, and the program's recommendations are based on species that are abundant and resilient to fishing pressures, well-managed based on current research, and caught using practices that limit by-catch and damage to marine environments (Ocean Wise, 2015). The data is based on

current scientific literature as well as standards set forth by Seafood Watch. Ocean Wise communicates directly with stakeholders and restaurant partners, as well as publicly through social media, annual reports, their website, and promotional materials.

This MRP examines the communication strategies of Seafood Watch and Ocean Wise used to encourage the consumption of sustainable seafood and promote ocean conservation. More specifically, this MRP analyzes the organizations' use of environmental rhetoric, particularly in terms of framing and topoi, and how they communicate risk and urgency. I examine how sustainable seafood campaigns establish credibility and rationale in the public sphere to communicate urgent, technical information surrounding fishery mismanagement. Currently, environmental rhetoric research exists, but there is little research surrounding its relationship with risk communication, and even less so with seafood sustainability campaigns, as this area is so new.

Ocean Wise and Seafood Watch consistently use particular words, phrases and tropes. As such, my research will use these patterns of communication to ask the following questions:

1. How are Ocean Wise and Seafood Watch communicating risk and urgency surrounding ocean conservation and sustainable seafood?
2. How are these organizations using rhetorical techniques such as environmental frames and/or topoi to communicate this urgency?
3. If so, are there significant differences between the organizations' use of these strategies?

Literature Review

In order to establish rationale for environmental rhetoric and its uses in seafood sustainability campaigns, I will first explore corporate social responsibility (CSR) initiatives, which hinge on the principles of social marketing and risk communication. I will subsequently address rhetorical strategy specifically within the environmental sphere, including the commodification of nature, the blending of the public and technical spheres, and environmental framing, after which I will explore some criticisms of environmental rhetoric.

Corporate Social Responsibility and Social Marketing

As introduced above, the MSC was one of the first sustainable seafood organizations to be formed, aimed at reducing and reversing extensive marine damage and fishery mismanagement. The MSC's establishment alluded to the irrevocable ecological damage that had been done to one of Canada's most prominent long-term industries (Gien, 2000, p. 121), and signaled the need for vast changes to the rest of globe's commercial fishing practices. Unilever's involvement indicated the corporation's particular responsibility to protect both existing and future fisheries along Canada's East coast and around the world (Hale and Held, 2011, p. 310). This type of involvement, in which a corporation demonstrates ethical, social, or moral involvement through initiatives that parallel their business mandate, is known as corporate social responsibility (CSR). Increasingly, companies are engaging in CSR initiatives "that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams and Siegel, 2001, p. 117). CSR campaigns can help corporations to increase

market share and improve positive reputation among the public (McWilliams and Siegel, 2001, p. 117).

To be effective, CSR initiatives must be congruent with the mandate of the organization, and consumers must be able to easily connect the company with its interest in the initiative (Sen and Bhattacharya, 2001, p. 227). The MSC demonstrated high congruency with Unilever's involvement in commercial fishing, in that it promoted the health and longevity of the fishing industry (Hale and Held, 2011, p. 309). The formation of the MSC also helped Unilever to mitigate reputational risk at a time of significant negative press, while entering a new market for which to increase their consumer base (Sen and Bhattacharya, 2001, p. 227). Similarly, Seafood Watch and Ocean Wise demonstrate congruency with the mandate of their organizations: both are ventures of aquariums in the developed world, and social marketing initiatives may help aquariums appeal to consumers with varying environmental, ethical, social, and economic interests (McWilliams, et al., 2005, p. 8). These initiatives make intuitive sense to consumers, while promoting a company's positive reputation within the consumer body (Sen and Bhattacharya, 2001, p. 227).

CSR initiatives face the unique challenge of having to provide both quantifiable deliverables to stakeholders while maintaining an appearance of social involvement to consumers (Jacquet & Pauly, 2007, p. 309). Social marketing ventures are not intended to generate profit; however, such initiatives are dependent on stakeholder engagement, and must therefore demonstrate clear benefits to investors. One way of achieving this is through the creation of niche markets, in which consumers pay a higher price for a certified item or one that offers some perceived benefit to consumers, such as organic

food's purported health benefits (Kaiser and Edwards-Jones, 2006, p. 393). Appeal for business stakeholders can also be created by proposing to maintain a company's positive image in the public sphere (Maignan, 2004, p. 7), or by increasing market share, as social initiatives can widen the pool of potential customers (Jacquet & Pauly, 2007, p. 309).

Yet challenges abound in translating moral or ethical benefits into true profit, particularly when the initiative is attempting to promote a shift in consumer purchasing habits: consumers prioritize "performance, value, safety and reliability" (Young, 2006, p. 1446) over perceived moral or ethical benefits. Consumers prioritize their health and finances above the sustainability of fish (Kaiser and Edwards-Jones, 2006, p. 393), and campaigns promoting a moral or ethical product without demonstrating any direct benefit to the consumer may be ineffective, even among consumers that identify as pro-environment. Even the specific issues campaigns communicate are of utmost importance: connecting social initiatives to timely events can increase altruistic views of the corporation, while advocating an ongoing cause, such as overfishing or climate change, may cause consumers to be skeptical of a corporation's motives (Becker-Olsen et al., 2006, p. 50). CSR initiatives are thus subject to the priorities and values of humans and, to be effective, must take this into account (Bates, 2010, p. 93).

Communicating Risk and Urgency

Chief among the issues faced by CSR initiatives in the sustainable seafood realm is the appropriate communication of risk and urgency without affecting the economic value of the promoted product. Within the sphere of food marketing, there is also a distinct dichotomy between risk, which is associated with and determined by science, and food, which is associated with pleasure. The content of the risk message must be

perceived as both valid and relevant by its audience, and overcome challenges in environmental messaging related to inherently uncertain risk levels and outcomes that extend forward for many centuries at a time (Leiss, 2004, p. 401). Humans are, by nature, not successful at managing risks with these types of characteristics, and as a public, we are often unsure of what to think and what actions to take in response to environmental claims (Ferreira, 2007, p. 861). This is particularly relevant when we consider the oceans, where environmental concerns are not easily seen. We are inherently detached from marine life that bears little to no resemblance to ourselves, and the marine ecosystem is one in which we have little understanding. Further, there is significant uncertainty among consumers regarding the true environmental and economic concerns of current fishing practices, as the shifting veracity of overfishing makes it difficult for consumers to intuit the need for immediate and substantial change in industry behaviour (Faulkner and Ball, 2007, p. 75).

This can partially be attributed to the difficulty in communicating and translating scientific models and uncertainties for a lay audience (Ciapuscio, 2003, p. 209), and the complexity of scientific information surrounding fishery mismanagement requires significant technical understanding to communicate appropriately. Scientists communicate with one another using technical language, presenting arguments and research in a formal manner that is understood only by that group (Sovacool, 2008, p. 341). This communication strategy must be adapted to be successful within the public sphere - in other words, to be understood by non-experts (Cox, 2012, p. 366). Yet a certain degree of technicality must be maintained in order to demonstrate a scientist's authority on a topic. Media exacerbates this sensitive challenge by portraying scientific

findings and outcomes as definitive statements, without accompaniment of uncertainty, risk, statistics, and previous knowledge and theory (Cox, 2012, p. 356).

Uncertainty, a lack of relevance, and competition with portrayal of science in the media has played into the public's inherent lack of trust in science experts. The sheer number of competing frames and narratives has made it difficult for non-experts to trust expert opinions, and caused scientific communication to often appear contradictory. The general public is asked to trust in the credibility of complex data with little to no understanding of how the data was determined and what the outcome of their actions will be. Further, consumers are asked to balance a number of risks and benefits associated with eating seafood, including exposure to mercury and other toxins, the health benefits of eating seafood, ethical concerns for how the fish is farmed or caught, and the environmental impact on marine ecosystems. The hierarchy of information, as it is determined by the public, will influence the perceived value of the fish item, and will determine subsequent widespread consumption choices.

Primarily, there are two methods through which food risk is communicated: alarmist, in that the communicative act is meant to change consumer behaviour through fear or urgency, or educational, where the purpose is simply to inform consumers of the risk (Ferreira, 2007, p. 851). Certain tactics can be employed to create lasting ties with an audience, including personalization of the issue, as humans feel more comfortable assigning value to a risk that's directly impactful to them (Lindenfield et al., 2014, p. 120). Consumers are also more likely to feel empathy towards a cause that's human-centric and over which they have control (Ferreira, 2007, p. 851). Further, humans respond more positively to clear, qualitative statements; for example, telling a consumer

that something is “safe” or “not safe” makes clear the intended action and helps consumers to manage risk that is technically complex. Combining risk communication strategies with rhetorical techniques can aid in the uptake of information and increase the likelihood of intended actions being taken by consumers.

Environmental Rhetoric

Environmental rhetoric can be better understood by discussing topoi. Topoi, or commonplaces, can be used to develop a perspective surrounding an argument. Contentless by nature, topoi can be applied to any argument, and encourage an audience to consider new perspectives. This helps to persuade an audience to make a subsequently recommended decision. One such example of environmental topoi is arguing the danger of oil spills on marine animals and ecosystem health to advocate for investment into renewable energy (Ross, 2013, p. 92). Topoi “aid memory [and] catalyze frames of understanding”, which can be effectively visualized in the contrasting heuristics that are invoked when an audience hears the term “global warming” versus “climate change” (Ross, 2013, p. 92). Such rhetorical tools can assist organizations to actuate an audience’s pre-existing understanding of a topic, particularly in the sciences, when evidence might be complex and data uncertain.

Not only is it important for topoi to fit into the larger cultural narratives of a society, but also to be applied to the local context; when an argument is timely and has a clearly defined audience, it resonates more effectively with its audience (Ross, 2013, p. 94). Special topoi, which are situation-specific rather than generic, resonate more strongly with their audience, though this also means topics have a shelf life, and will lose their effectiveness over time (Ross, 2013, p. 97). In a capitalist society, topoi in

environmental messaging often include one of economic relevance. Thus, arguing the economic disadvantages of fishery mismanagement would require a discussion of the local context, including major fishing corporations, the amount of people employed in the industry, and how much revenue fisheries generate for the economy each year. These topoi would be further refined depending on the audience and their unique values.

The use of topoi therefore help audiences to create cultural, social, and economic relevance for potentially complicated ideas (Ciapuscio, 2003, p. 209). Thus, topoi allow an audience to place the message into a hierarchy, a larger narrative that fits into what they already know; topoi also aid in the translation of scientific data for a lay audience, and technical detail can help support the notion that the speaker or organization has credibility.

Supporting this technique is framing, which helps to “situate humans in relation to natural environments, create and maintain hierarchies of importance, reinforce extant values and beliefs, justify action or inaction, suggest heroes and villains, [and] create past contexts and future expectations” (p4). The types of frames used will vary depending on the target audience and their subsequent beliefs and values (Lewicki et al., 2003). Bujis (2011) identified three factors that mark the effectiveness of an environmental frame: i) salience of beliefs and values; ii) how well it resonates with daily experiences; and iii) the extent to which it fits within the dominant narratives of the culture (p. 330).

In the developed world, social or cultural relevance often translates into the commodification of nature. In other words, nature is assigned a use-value as a commodity for consumption (Buell, 2009, p. 6). Western culture tends towards the belief that humans have complete “dominion over earth” (Buell, 2009, p 44) and nature assumes a utilitarian

role (Meister and Japp, 2002, p. 6). This is evident in the dialogue that surrounds fishery mismanagement, in which fish and the ocean serve a utilitarian purpose as human food or in ecotourism; very rarely is marine life in mass media portrayed as having a value aside from its

role in the human food chain (Meister and Japp, 2002, p. 7).

Seafood awareness campaigns, then, may market the economization of sustainably sourced fish or their desirability as a food item through the employment of well-known chefs or restaurateurs who publicly endorse sustainable practice and encourage the public to adopt said behaviour, either by purchasing only certified items or becoming accustomed to fish of smaller sizes and different species (Sawe & Hultman, 2014, p. 512). Employment of chefs, restaurateurs, and otherwise defined experts in a field can also help establish credibility in the message.

Criticisms of Environmental Rhetoric

Environmental movements face a number of challenges in crafting effective rhetoric, and, as such, their dominant means of establishing credibility, relevance, and rationale have been criticized for their failure to effect change on a large scale (Meister and Japp, 2002, p. 155). At the centre of this debate is the environmental sphere's inability to fit into the dominant narratives among society, thus failing to create "lasting communicative links with the public," (Sovacool, 2009, p. 341). So far, society has yet to appreciate the magnitude of current environmental problems, and is unaware as to the actions they should be taking to instill change (Leiss, 2004, p. 403). It is increasingly difficult for the public sphere to apply meaning to environmental problems in general, as problems have become distinct, and each with a distinct solution; issues have become

“too complicated for the general public to understand” (Astbury, 1996, p. 8). This has diminished the capacity for ordinary citizens to feel as though they can effect change, and environmental messaging has been criticized for promoting inaction (Lindenfield et al., 2013, p. 121).

Within the public sphere, issues of environmental importance have often been portrayed in one of two ways: as a “green oasis” or as a “world without refuge from toxic penetration” (Buell, 2009, p. 38). Environmental issues are often portrayed as dramatic, irreparable, apocalyptic events, dulling the audience to the urgency of the message and removing their ability to make informed decisions (Buell, 2009, p. 38). These types of arguments are easy to refute or ignore, particularly when they are not accompanied by uncertainty and risk and are inconsistent with the overarching narratives within society. The challenges associated with environmental messaging create significant challenges for environmental initiatives in effecting change and resonating with their audience, and further obstructs the ability to meaningfully protect and conserve the planet.

Methodology

Data Collection

Data was collected during 2015 from publicly available sources. This section will outline the data collection method used for social media, web, and promotional content.

Social Media

Social media data was collected over a three-month period from February 1, 2015 to June 1, 2015. Data was collected from the Facebook pages of Seafood Watch and Ocean Wise using *Netlytic*. Only content authored by Ocean Wise and Seafood Watch was included in the dataset; comments, shares, and posts by external users were excluded. Data was imported into Microsoft Excel for analysis.

A total of 178 posts were collected, with data significantly skewed towards Ocean Wise (Ocean Wise had 134 posts, Seafood Watch had 44). Only posts containing original content were analyzed; for example, photo updates or event postings were excluded if no original content accompanied the update. No images, external links, or comments were analyzed.

Web

Web content was collected from both organizations' websites during June (seafoodwatch.org and oceanwise.ca). Both text and images were collected. Content was collected from the first five accessible pages from each website. The pages collected are listed in Table 1 below.

Table 1. Web pages selected for analysis.

Seafood Watch	Ocean Wise
Home	Home
About Us (Landing Page)	About (landing page)
Recommendations (Landing Page)	Recommendation Policy
Ocean Issues (Landing Page)	Why Sustainable Seafood?
Consumers (Landing Page)	Fishing Techniques
Businesses & Organizations (Landing Page)	Aquaculture Techniques
FAQ	FAQ

Content was recorded directly into TextEdit (Apple) and converted to plain text so that it could be analyzed using *AntConc*. Content was then placed into Microsoft Excel so that individual sentences could be analyzed. In all, 121 lines of content were recorded for the Oceanwise website and 132 lines of content were recorded for the Seafood Watch website. Statements that could not be coded were removed; this included section titles, contact information, and other miscellaneous text.

Annual Reports

Annual reports from both aquariums were selected. The most recently available reports were from 2013 and both were available online. Text content was recorded directly into TextEdit and converted to plain text so it could be analyzed using *AntConc* and *Voyant* software. Documents were also saved to analyze visual components.

Next, text content was separated by sentence into Microsoft Excel. In all, 154 lines of content was recorded for the Oceanwise annual report and 151 for the Seafood Watch annual report.

Content discussing features of the aquarium, new building additions, partner names, and financial information was excluded from the analysis. In short, anything not relevant to Oceanwise or Seafood Watch, ocean issues, or fishing methods were not analyzed.

Method of Analysis

The method of analysis was structured and multimodal. Analysis spanned both manifest content (social media, web) as well as visual and text analysis (annual reports). Data was analyzed during May and June 2015. This section of my MRP will provide an overview of the method of analysis.

Text Analysis

All text posts, including social media, web and annual reports were organized in Microsoft Excel. After data was cleaned, I entered it into *AntConc* for an initial analysis of word frequency. Word frequency was corrected for “Ocean” and “Seafood” in each category where words reflected discussion of the organizations (i.e. as *Ocean Wise* or *Seafood Watch*). A list of stop words was included to remove frequently used words that were not of relevance to this MRP. All data was then entered into *AntConc* text tool to determine the frequency of words, as well as to determine changes in word and subject frequency over time.

After content was analyzed for word frequency, posts were analyzed for subject matter. Each post was identified as either “generic” or “specific” and then identified as one of the categories identified in Table 2. In order to be specific, the post had to reference a recent, timely and/or local event; generic posts referenced sustainable seafood, ocean conservation, or ocean threats in general, with no localization or personalization of content.

Table 2. Subjects identified from social media content and their definition.

Subject	Definition
Ocean Economy	Any post that referenced the economic benefit of the ocean in general.

Ocean Conservation	Any post that referenced conservation of the ocean in general or a particular ecosystem specifically; the post might reference a conservation event, group initiative, or related.
Sustainable Seafood	Any post that directly mentioned “sustainable seafood” or discussed a known sustainable species of fish.
Ocean Research	Posts pertaining to current, past or future research in ocean conservation.
Specific fish species ¹	Whenever a specific fish species was mentioned, either as a food source (commodity) or as an animal.
Aquaculture ²	Any reference to fish farming and/or the aquaculture industry.

Once subjects were identified, posts were coded for environmental frames, which were determined earlier in a pilot study. Table 3 defines all frames identified in the content.

Table 3. Environmental frames used in the social media strategies of Seafood Watch and Ocean Wise.

Frame	Definition
Human Interest	Reporting the issue using a human or emotional angle; personalizing, dramatizing, or emotionalizing the content. <i>E.g. “I think people have to start to realize the true cost behind the dirt-cheap seafood that they are buying is human trafficking.” Teddie from Ocean Wise speaks with reporter Nikki Bayley on the importance of promoting local, sustainable seafood options like spot prawns.</i>
Economic Value	Presenting an issue in terms of the value assigned to its continued existence or consequence to economy should it be threatened. <i>e.g. New investments and attention might flow into the ocean economy that could finally move conservation from a niche activity to a mainstream priority — recognizing that we all, indeed, need nature.</i>
Responsibility	Attributing responsibility to an individual or group (past) or assigning responsibility to the consumer (present; do more, use less). <i>e.g. Groundbreaking decision: U.S. Pacific Fishery council moves to protect</i>

¹ Fish species were recorded to identify issue-specific posts.

² Aquaculture was recorded to identify issue-specific posts.

² Aquaculture was recorded to identify issue-specific posts.

	<i>forage fish.</i>
Backed by Science	Presenting an argument in technical terms (use of jargon, scientific phrases) or attributing credibility based on scientific data. <i>e.g. Salmon ear bones (otoliths) act as a record of their life history and help scientists to study their migratory patterns.</i>
Future Earth	Presenting the argument in such a way as to denote the future of our planet due to human action or inaction; for example, presenting the future earth as a “green oasis” or “doomed.” <i>e.g. Teach a man to fish and you feed him for a lifetime. But teach a man to olive oil poach a dover sole, and you just might save the planet.</i>
Animal Rights/Ethics/Environmental Impact	Presenting the argument in such a way that an action is condemned/approved for its effect on animal populations or wellbeing, or discussed the impact to environment. <i>e.g. How do you remove sea lice from farm-raised salmon? Get other fish to eat them.</i>

After the posts were coded for frames, posts were identified for the promotion of nature as a commodity; posts either received a “1” or a “0” in this category. A post was considered to demonstrate the commodification of nature if it met the following criteria:

- i) If a marine animal was referred to as “seafood” or in a manner that identified it solely as a food product;
- ii) If a marine animal was referred to in such a way that it was identified as an economic resource; or,
- iii) If a marine ecosystem, climatic event, or animal population was referred to in such a way that demonstrated use-value, whether for tourism, fishing, or a related industry.

Posts that were identified as commodifying nature were then further categorized for whether they reflected a benefit to consumer/partner, including taste, cost, health, or benefit to business. In order for a post to receive a “1” in any of the categories, the post had to directly reference one of the categories through the use of adjectives, verbs, or subject matter.

Finally, method of establishing credibility was determined. To demonstrate or assert credibility, the post had to do one of the following:

- i) Refer to self (the organization) in such a way as an authority on the subject of sustainable seafood through reference from a notable public figure or company;
- ii) Discuss sustainable seafood or ocean conservation/economy from the perspective of a notable chef, restaurateur, food writer, or similar;
- iii) Support a point through use of a notable science figure or research study.

Next, risk and urgency were assessed for both social media and web content. Posts/sentences were coded as “educational” or “alarmist”. Next it was determined whether the statement was personalized, a qualitative judgment (ie. gave the consumer a yes/no option), and/or communicated uncertainty.³ Table 4 defines each of the risk assessment categories.

Table 4. Risk assessment tools and their definitions.

Risk Assessment Tool	Definition
Educational	A statement meant to inform consumers of the risk e.g. <i>Sustainable seafood can be defined as species that are caught or farmed in a way that ensures the long-term health and stability of that species, as well as the greater marine ecosystem.</i>
Alarmist	A statement directly aimed at changing consumer behaviour through the use of apocalyptic narratives, storylines or otherwise dramatizing the content. e.g. <i>A recent scientific study predicted a world-wide fisheries collapse by 2048.</i>
Personalized	If the risk is framed in terms that directly relate it to a quantifiable risk to the audience; risk the audience can relate to (ie. household risk).

³ Posts might have fallen into multiple or none of the categories.

e.g. *Guess what everybody? Surprise, you care about what you're eating. Check out the National Restaurant Association's 2015 culinary trends. Environmental sustainability ranks at #3 and sustainable seafood comes in at #8.*

Uncertainty	A statement that communicates scientific uncertainty of a statement.
Qualitative Judgment	A statement that offers an action in qualitative term. e.g. “eat” or “avoid”

Visual Analysis

Visual analysis was carried out only for annual reports, as these were the only sources of data that made significant use of imagery to communicate their message; social media also used images and videos, however, due to time constraints, these were not analyzed. Visual analysis was conducted using a format adapted from the University of Washington (Hattwig, 2015). The following table denotes the characteristics of visual images that were recorded.

Table 5. Visual analysis categories and definition.

Category	Data recorded
Content Analysis	What the image was about; Whether people were present and how/what they were doing; Effectiveness of image as a visual message.
Visual Analysis	Composition (background, foreground); Most important visual elements of the photo; Use of colour; Meanings conveyed by design choices.
Contextual Information	Information that accompanied the image; Whether this changed how the image was viewed; Informational/factual or influential; Context provided (who, what, where, when, why, how).

Once images were analyzed, major themes were identified using environmental framing and risk communication strategies determined in the text analysis of this MRP.

Both Vancouver Aquarium and Monterey Bay Aquarium were assessed separately.

Commodification was confirmed in images if they met the criteria listed above for the text analysis. Major themes or underlying messages were recorded, and means of commodification in the images was recorded. Risk communication in images was identified as either educational or alarmist only; certainty and science were not recorded, as they could not be definitively identified from the images alone. However, these qualities were noted for text content.

Results

Risk Communication

Social Media

Posts were most often educational for both organizations (93/116 posts). Qualitative judgment statements were common when referring to consumer recommendations, such as the following: “Choose ocean-friendly seafood – on Earth Day and every day! Share this infographic and let others know you care how your seafood is fished or farmed. Thanks for making choices that keep the ocean healthy and for asking, “Do you sell sustainable seafood?” See full size at blog.seafoodwatch.org.”

These types of statements were not present in other areas (e.g. when discussing an environmental problem, such as ocean warming) even when consumers were noted as having responsibility over the outcome. For example, the following Facebook post from Seafood Watch shows that an endangered marine species is endangered, and that illegal fishing is to blame; however, it is not accompanied by anything telling Western consumers how to help, donate, or avoid purchasing fish that might impact this species:

“Illegal fishing of the endangered totoaba has caused bycatch of Mexico's vaquita and is driving the species towards extinction. Hopefully enforcement of the new 2-year ban on gillnet use over 5000 square miles will help the species to rebuild.”

The following graph shows the number of posts that communicated risk in some way and how this was achieved.

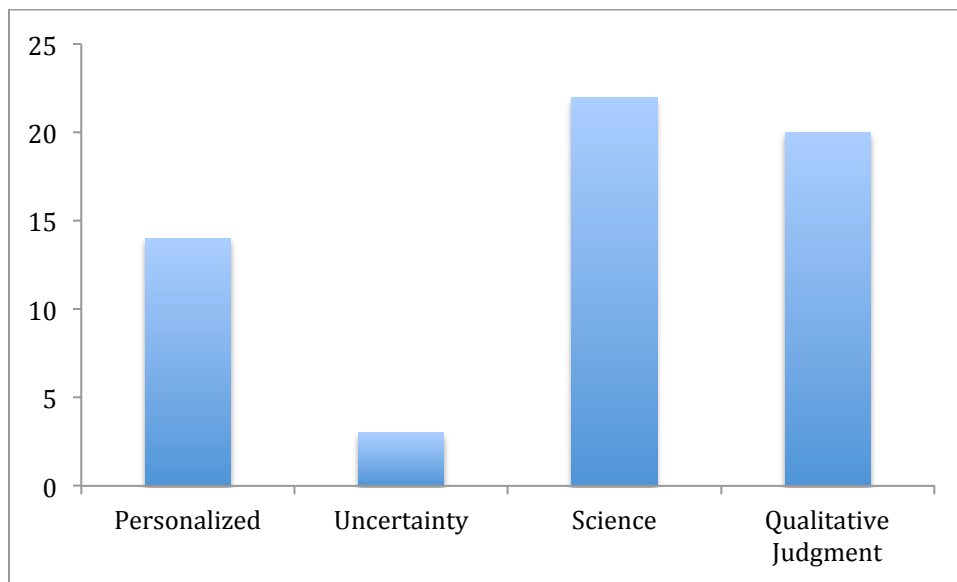


Figure 1. Communication of risk and urgency in social media content using personalization, uncertainty, scientific knowledge, and qualitative judgment statements.

Risk message effectiveness might have been obstructed by inconsistencies that existed in the social media strategy of the campaigns. For example, one post discussed seaweed as being so sustainable that all species were Oceanwise-recommended; however, a later post discussed the impact climate change was having on Japan’s seaweed industry: “‘Seaweed is so sustainable that all species of seaweed grown anywhere in the world are Ocean Wise™ recommended.’ Learn more about the latest sustainable seafood trend with the Water Brothers tonight on TVO at 7 pm.”; “Rising temperatures are affecting Japan's seaweed industry.”

Other inconsistencies that may have challenged or obstructed efficacy of risk messaging included sharing recommendations that promoted the consumption of large, predatory fish, even though both web and social media content explicitly describe up to 90 per cent of large predatory fish as extremely endangered: “This month's new and updated seafood recommendations have been posted: capelin, swordfish, tilefish, tuna, yellow perch and more.”

These might have been aided through the use of science to assert credibility. However, science was infrequently used to communicate risk and urgency: only 23 posts of 105 credited a scientific expert or research study. Further, technical details were not often communicated and only four posts in total demonstrated uncertainty surrounding marine conservation or sustainable seafood. The majority of posts shared generic concerns, such as ocean warming, illegal, unreported, unregulated (IUU) fishing, or aquaculture concerns, but did not discuss how these had been determined and what the specific concerns were: "Aquaculture has suffered a very bad reputation for very correct reasons," Béné said. "Like any new industry, they were booming everywhere with a very serious impact. But a lot of people have been working hard to see how we can improve it."

Web Content

As found in the social media data, web content from both Oceanwise and Seafood Watch was constructed primarily as educational statements; however, alarmist content was much more frequent than in social media, and occurred in 27 per cent of all content. Qualitative judgment statements were made consistently when referring to recommendations or types of fish to eat, and were frequently made when the audience

was restaurant owners. Qualitative judgment statements through web content were framed in a “do more” rather than “use less” way (*i.e.* choose or eat this, not “avoid” or “don’t eat” this; this will be discussed in the framing section of my analysis). The following chart shows the breakdown of risk communication in web content.⁴

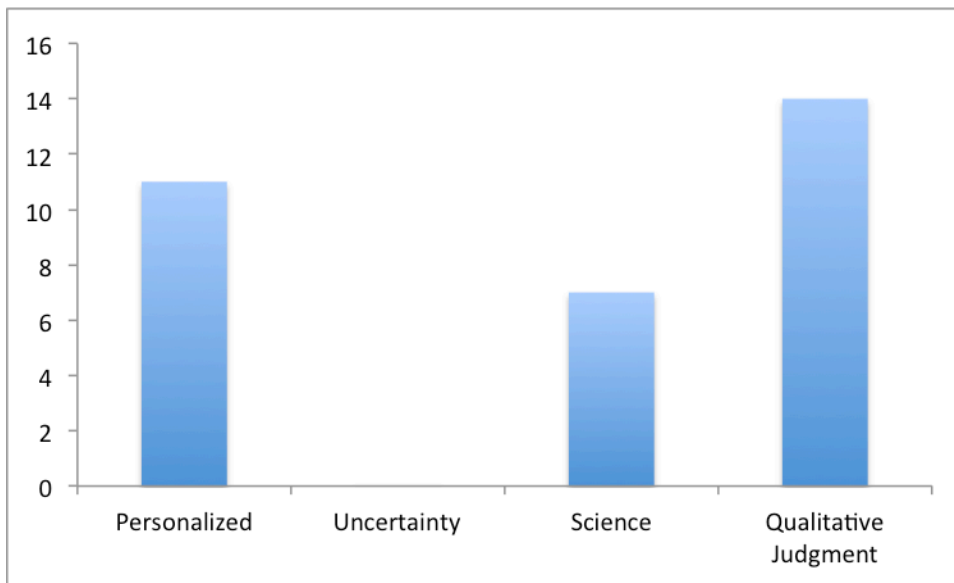


Figure 2. Communication of risk and urgency in web content using personalization, uncertainty, scientific knowledge, and qualitative judgment statements.

Though recommendations were accompanied by a statement reflecting their scientific credibility, very few were accompanied by a description of uncertainty, methodology, or links to the research studies used to inform the recommendations. For example: “A recent scientific study predicted a world-wide fisheries collapse by 2048. (*Why Sustainable Seafood, Oceanwise website, 2015*); or “Sustainable seafood can be defined as species that are caught or farmed in a way that ensures the long-term health and stability of that species, as well as the greater marine ecosystem.” (*Recommendation Policy, Oceanwise, 2015*).

⁴ Note that a total of 159 statements were coded in this section, while only 32 statements showed risk communication in some form.

Often, impact to the ocean was framed in such a way as to denote an absolute risk or outcome should one path or another be taken, without accompaniment of rationale or a credible scientific source: “The only solution is to turn back from the brink, and to begin consuming seafood in a sustainable manner.” (*Why Sustainable Seafood?*, *Oceanwise*, 2015); “Through better practices, we can create healthy, abundant oceans for everyone.” (*About Us*, *Seafood Watch*, 2015).

Alarmist statements were also more frequently used in web content than social media. Alarmist statements generally discussed marine ecosystems or the ocean broadly, and did not assign personalized risk. Inconsistencies existed in web content, and, similar to social media, were particularly pertaining to large, predatory fish.

There were also some challenges in the presentation of scientific data: for example, this statement was presented in web content: “a recent scientific study predicted a world-wide fisheries collapse by 2048” (*Oceanwise*, 2015). The cited study was controversial, in that it did not account for a large proportion of fish stocks that were, in fact, replenishing, as well as for extrapolations to populations where the data was not sufficient (de Vrieze, 2012). Other studies explicitly stated population sizes of large, predatory fish, though this data is uncertain (de Vrieze, 2012). Other inconsistencies in messaging included the use of a qualitative judgment statement without a clear benefit to the consumer; for example, consumers were encouraged to eat local seafood with the benefit of improving “global ocean health.”

Annual Reports

Annual reports were similar to social media and web content in terms of communication of risk and urgency. Almost all content was educational (115/130). Very little personalization, uncertainty, science, or qualitative judgment statements were present. Though there were a number of statements that discussed environmental impact, very little was backed up with scientific fact. Many statements about impact were vague; most definitive statements regarding the health of specific populations existed without supporting research to ascertain how it was determined: “The status of key species—sea otters, white sharks and bluefin tuna—reflects the underlying health of ocean ecosystems.”

Similarly, the status of endangered shorebirds like snowy plovers reflects how people interact with critical coastal habitats. We and our partners both rescue and study wildlife to help threatened populations recover and to advance scientific understanding of species so important to the future of our ocean planet.” (*Seafood Watch Annual Report, 2014*).

Environmental Frames/Topoi

Social Media

Word/Subject Analysis

The most common words that appeared were “sustainable” and “seafood”. Other frequent words were “chef/chefs”, “fish”, “partners”, “ocean” and “salmon”, in order of frequency. The entire list of subjects can be found in Appendix I.

The most common subject was “sustainable seafood.” Next to this was ocean conservation, followed by specific fish species. Subject data is shown in Table 7.

Table 6. Subjects in social media data.

Subject	Number of Posts
Sustainable Seafood	86
Ocean Conservation	41
Specific fish/marine species	21
Aquaculture	8
Ocean Economy	6
Ocean Research	0

Frames/Topoi

A total of 85 out of the 179 posts collected were issue specific; the rest shared generic news surrounding sustainable seafood. The most commonly used frames were economic value (62/179 posts) and responsibility (30). The majority of responsibility frames were oriented to consumers as “do more” (18). Human interest was the least used frame.

Commodification of nature occurred in 164 posts; commodification data is shown in Table 8.

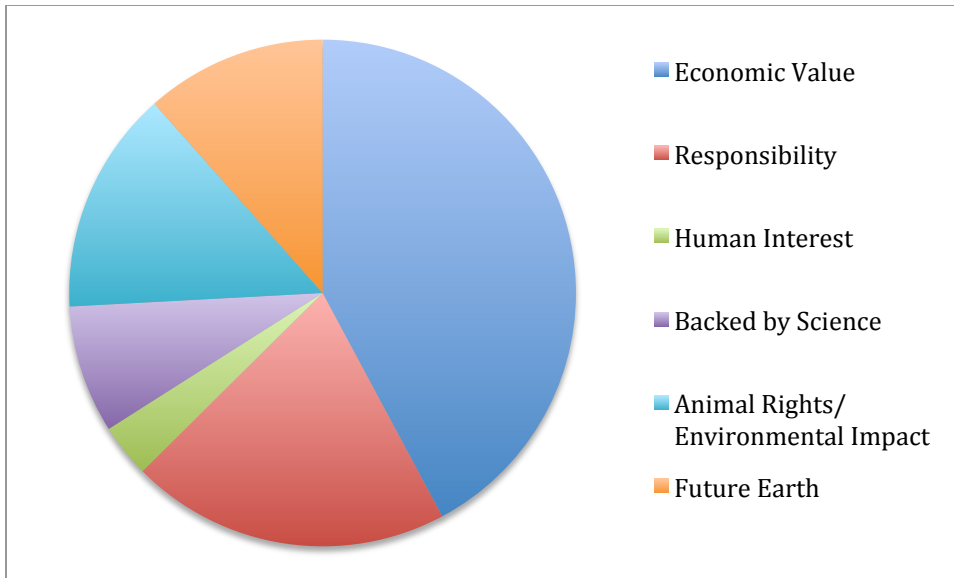


Figure 2. Environmental frames used in social media content.

Table 7. Posts demonstrating the commodification of nature and records of reference to a consumer benefit.

	Commodification Posts	Taste	Cost	Health
Oceanwise	125	14	2	0
Seafood Watch	39	3	0	0
Totals	164	17	2	0

The organizations most often used notable chefs/authors/restaurateurs to assert credibility. Credibility was also frequently framed as self-assertion; for example, posts discussed that a person of note used “seafoodwatch recommendations to make a helpful list”. A lot of posts showed a chef’s opinion surrounding the movement, demonstrating a sustainable recipe, or their faith in either the Oceanwise or Seafood Watch program.

Web

Frames/Topoi

Web content was found to be similar to social media data; however, there were significantly more animal rights/environmental impact framed content. Backed by science was also significantly more popular in web content; economic value posts were directed at consumers. Figure 3 shows the most common environmental frames used in web content.

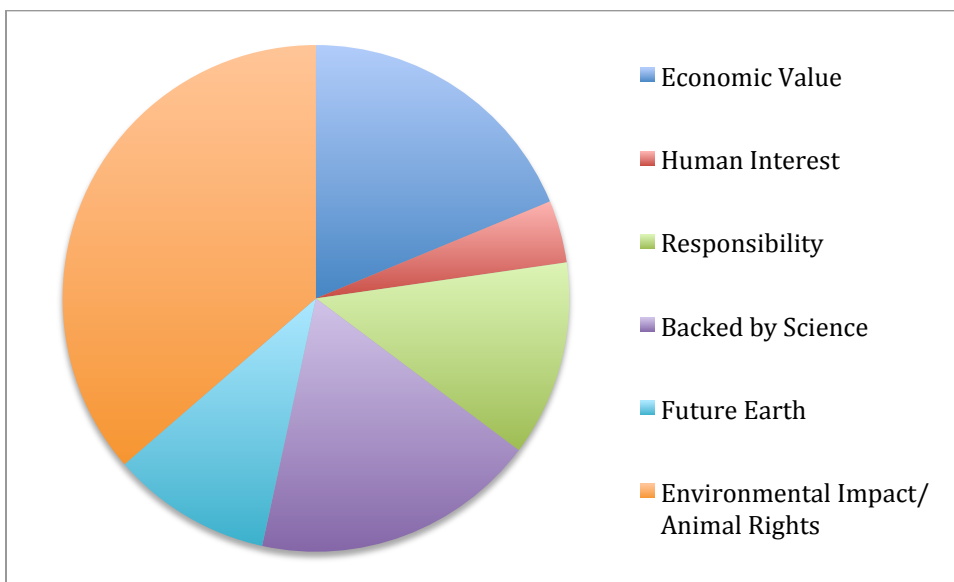


Figure 3. Environmental frames used in web content.

Commodification of nature occurred frequently as well. Unlike social media data, commodification was framed more often as a business value than taste, cost, or health.

Table 8. Posts demonstrating the commodification of nature and reference to consumer benefit.

Commodification Posts	Taste	Cost	Health	Business value
160	0	0	0	7

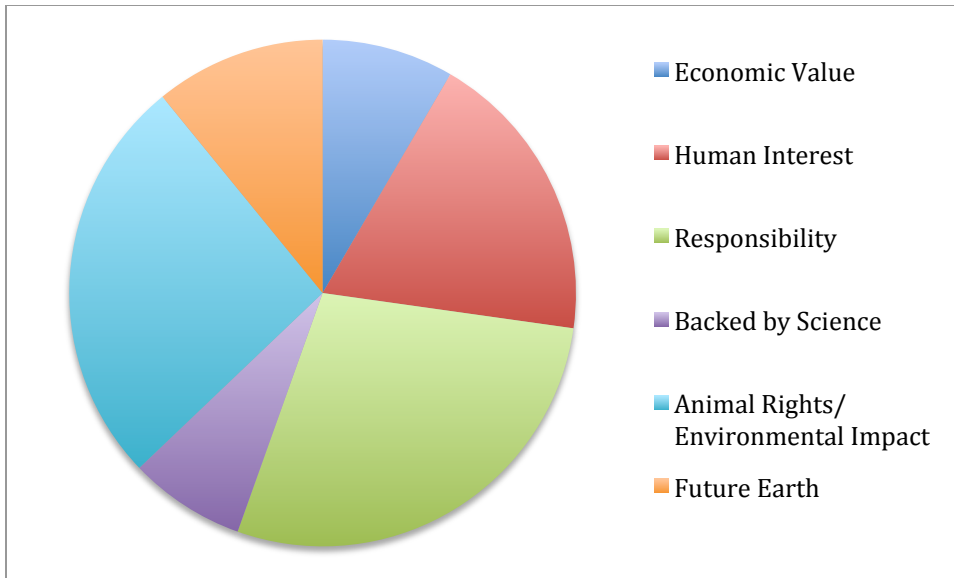
Annual Reports

There were some significant differences between annual reports and other content studied in the MRP. The majority of frames employed in annual reports were of animal rights/environmental impact (53) and responsibility (57). Human interest was asserted significantly more frequently than in other data collected from web and social media (38). Commodification was apparent, though benefit to consumer/business was infrequently mentioned; the most common mentioned benefit was business value, which was to be expected as the audience was stakeholders and interested parties (Table 8). The “Future Earth” frame was portrayed frequently in posts to demonstrate rationale for endeavors. Figure 4 shows the most commonly used frames in annual reports.

Table 8. Commodification in annual reports.

Commodification Posts	Taste	Cost	Health	Business value
29	0	0	0	7

Figure 4. Environmental frames used in annual reports.



Visual Analysis

Vancouver Aquarium

The majority of differences between Oceanwise and Seafood Watch were identified in annual reports than any other content analyzed; the Vancouver Aquarium annual report primarily contained photos that spoke to the nature of their research. Images were significantly skewed towards marine invertebrates and nursery habitats, and denoted educational or research endeavours. In contrast to the Monterey Bay annual report, there was a stronger focus on research than education. The main focus of images was environmental impact, animal rights, and ethics. Animals were presented in their natural environment, in contrast to Monterey Bay Aquarium's annual report, which contained images that primarily denoted the intersection of humans and animals in controlled environments.

Monterey Bay

The images here were heavily focused on children interacting with or observing marine life in the MBA exhibits. Along with accompanying text, images denoted the importance of the educational programs at MBA to inspire students to conserve the ocean and become stewards of the blue planet. The images were primarily framed as “future earth”, where children and education are the stewards of ocean conservation. Each of the images instilled a sense of learning, education and exploration in the Monterey Bay Aquarium. The intersection of nature and humans is also very clear in the photographs: in each image, humans were either present, or a mark of their presence (e.g. infrastructure, buildings) existed.

Almost every image portrayed animals in such a way that denoted their economic value, which differed from the Oceanwise annual report. This also gave the sense of humans having dominion over the animals: animals were either behind glass in an exhibit, being observed and/or handled by children, measured by biologists, helped by people, or as seafood.

Discussion

Commodification

One of the most intriguing findings from the data was the explicit commodification of nature. Commodification spanned general discussion of the ocean as an economic resource to highly localized issues, such as new Oceanwise restaurant partners on the West coast. Though this was expected from the data, as commodification is aligned with dominant cultural narratives of capitalism in North America, it was still

relied on more often than expected in the data set. Interestingly, commodification was often presented in such a way that it did not demonstrate a benefit to the consumer. As discussed by Meister and Japp, commodification should be accompanied by a clear benefit so that it resonates with the consumer and provides them with sufficient rationale to make the proposed change (2002, p. 8). Examples of benefits that can be marketed to consumers in food communications include better taste, lower cost, or improved health; benefits to a stakeholder might include increased market share or maintenance of a positive reputation within the public sphere. Yet neither Oceanwise nor Seafood Watch accompanied commodification with a relevant consumer or stakeholder benefit through any of their channels; out of the 179 commodification posts, only 19 specifically referenced taste or cost, and none of the posts advocated a health benefit.⁵ The website data demonstrated a similar finding: of 160 statements relating directly to use-value, only 16 discussed a direct consumer benefit.

Failing to demonstrate a tangible benefit to consumers when the aim is a shift in consumer purchasing behaviour is problematic: by presenting an item as a commodity without similarly demonstrating its superiority over other similar items, consumers would have no rationale for purchasing sustainable seafood over any other item. As identified by Young (2006) and Kaiser and Edward-Jones (2006), consumers prioritize health, finances, and basic needs over sustainability or moral or ethical benefits. In the case of sustainable seafood, consumers are effectively being asked to purchase a product that has no perceivable benefit to them over a similar product, save that it is the more sustainable choice. Without appealing to a consumer's priorities, campaigns are more likely to be

⁵ This aligns with content found on Oceanwise's FAQ, which states that Oceanwise is not a health recommendation program.

ineffective, even among consumers that identify as pro-environment (Kaiser and Edwards-Jones, 2006, p. 393).

Though commodification was clear through all channels, value propositions were asserted more frequently in web content when compared with social media, and were of a different nature, specifically statements geared towards prospective restaurant partners; value was asserted as media exposure through multiple channels and the opportunity to increase a restaurant's consumer base by offering products that appealed to a broader group of consumers. Oceanwise asserted this statement primarily by advocating their strong social media network, access to Open Table, and opportunity for the restaurant to showcase its partnership with the organization to improve its reputation (Oceanwise, 2015).

When commodification was applied, it often referenced the local context: both Oceanwise and Seafood Watch advocate delicious or cost-friendly sustainable seafood options within their local region (Vancouver and California, respectively). These posts would have only been specific to a very small proportion of seafood eaters, and an even smaller subset (those that followed either of the groups on social media, read the post, and then subsequently went out to try new seafood).

Oceanwise and Seafood Watch both heavily promoted the consumption of local, sustainable options; both organizations seemingly aim to drive pressure away from charismatic, overfished animals such as tuna, swordfish and cod towards smaller, less popular seafood such as rockfish, spot prawns, and seaweed. However, as discussed by Jacquet and Pauly (2006), eating smaller, previously unpalatable options may have significant – but predictable – impacts on seafood industry in the future, as human taste is

“essentially a reflection of the changes in marine ecosystems” (p. 308). This calls into question the effectiveness of the strategy, and whether pressure will simply be shifted to a new species rather than removed or reduced.

The products being promoted by these organizations also have an appeal that’s incredibly localized: food items, such as spot prawns, were discussed heavily through social media, though these animals are available almost exclusively on the West coast of Canada. This makes it difficult for consumers from the global ecosystem to intuit the action they should take, specifically if the products being promoted are not ones specific to their local area. Messaging such as this runs the risk of lacking relevance amongst the consumer body, and many may be more likely to ignore the messaging completely.

A point of interest was how recommendations for local or sustainable seafood consumption were framed; recommendations were always posted as food items described as a “good choice”, and all recommendations focused on the fish consumers should be eating. In contrast, fish that are significantly threatened due to fishery mismanagement, such as Bluefin tuna or Atlantic cod, were not discussed, and consumers were not recommended to avoid such species. Thus, all qualitative judgment statements were framed as “do this” and never “avoid this.” Yet its important for consumers to understand that some fish truly should be avoided as they are highly endangered. For example, at least five of the eight species of tuna are at risk of extinction, yet the non-expert consumer would likely be unable to tell the difference – without help from an app or printed guide – to tell apart an endangered species from a non-endangered one from a list. Oceanwise and Seafood Watch printing recommendations with tuna as a “best choice” can be confusing for the consumer. Similarly, the lack of statistical data, uncertainty, and

credibility to back up recommendations and social media statements makes it increasingly hard for consumers to intuit need for change. Particularly for audiences that are less familiar with seafood sustainability and ocean conservation, leaving out critical information such as this might be misleading.

Frames

Within social media, both Oceanwise and Seafood Watch largely avoided framing environmental arguments as “apocalyptic” or “green oasis” scenarios, a common tactic of environmental messaging. However, this was not similarly present in web content. Here, both organizations relied heavily on future-oriented rhetoric that shifted between visualizing an empty ocean to one that was bountiful far into the future – the “apocalyptic” versus “green oasis” rhetorical model. This can be impactful if used infrequently and when accompanied by specific details. On the website, apocalyptic metaphors were more common than optimistic ones. For example, the following paragraph was pulled from the Oceanwise website: “Overfishing is the greatest threat to our oceans today. The world’s marine life is quickly being depleted. An estimated 90% of all large, predatory fish are already gone from the world’s oceans. A recent scientific study predicted a world-wide fisheries collapse by 2048. The only solution is to turn back from the brink, and to begin consuming seafood in a sustainable manner.”

This paragraph was interesting for a number of reasons. First, it demonstrated an overwhelmingly apocalyptic view of the future of marine life as a result of human action. Second, it assumed charismatic animals or large predatory fish as being the only animals in the ocean that mattered – “the world’s marine life is quickly being depleted” refers to predators including tuna, dolphins, and large sharks, and overlooks marine invertebrates, crustaceans, small skates and rays, and a number of other fish species that are not in

immediate danger and, in some instances, actually increasing in number. Further, the content cited a highly controversial study that received significant negative media attention as well as fire from the scientific community for projecting a study into the long term; the extrapolation made by the researchers cannot be confirmed in scientific study and does not hold up to analysis. Perhaps most interestingly, however, is that this paragraph declares that consumption, or commodification, is the only way to save the future of the ocean from overfishing, saying that the only way to save the oceans is to *consume* seafood. This is altogether misleading, illogical, and paints a picture of an empty ocean should the consumer choose not to eat more sustainable seafood. As stated by Jacquet and Pauly (2007): “perhaps NGOs should even consider a ‘no fish’ campaign that encourages boycotting fish altogether and distribute bumper stickers reading, ‘Save the Oceans! Eat a Chicken.’” (p. 312).

Throughout each channel, the most commonly used frame was economic value. Oceanwise and Seafood Watch relied on the use-value of fish supposedly to help consumers assign meaning to the issue, and assist them in placing the information into a hierarchy of importance. Theoretically, consumers can then assign a value to protecting and conserving the marine environment. Examples of economic value frames were primarily general and overarching, though some demonstrated localization of context: "New investments and attention might flow into the ocean economy that could finally move conservation from a niche activity to a mainstream priority — recognizing that we all, indeed, need nature."; ““The monetary value of the world’s oceans has been estimated at US\$24tn in a new report that warns that overfishing, pollution and climate change are putting an unprecedented strain upon marine ecosystems.”

Promoting the economic value of one choice over another makes intuitive sense when appealing to consumers, as it establishes a connection with the attitudes and values of the target audience (Bates, 2010, p. 73). However, general, overarching statements are often shown to be less effective than local or situation-specific ones, as it is more difficult for a consumer to identify with a problem that does not have a clear connection to their life. That said, both Oceanwise and Seafood Watch relied on primarily generic statements surrounding economic value, and these statements could have been more impactful with their audience if the context had been localized.

The “responsibility” theme was also used regularly in all channels, and was sometimes assumed to a particular industry or group, such as government (e.g. many of the Obama administration’s policies on illegal, unreported fishing were cited to support the sustainable seafood industry). Most notable of the responsibility frame, however, was references to the aquaculture industry: responsibility was assigned in such a way as to accept wrongdoings of the industry in the past, and paint a picture of the aquaculture industry as the future of the “blue revolution”: "Aquaculture has suffered a very bad reputation for very correct reasons," Béné said. "Like any new industry, they were booming everywhere with a very serious impact. But a lot of people have been working hard to see how we can improve it." Responsibility was also assigned to government and conservation groups, mostly in ways that were positive and denoted how positive changes were happening for the fishing industry due to the work of conservation groups and government action.

When responsibility was assigned to the consumer in an active way (*i.e.* to encourage the consumer to assume responsibility and effect change in fishery management), it was

often assigned as a “do more” frame: “When purchasing swordfish from Atlantic Canada, choose harpoon-caught swordfish over those caught by longline.” Interestingly, this tactic has been shown to be the least effective frame amongst consumers, as they are being asked to work harder to make the better choice for no increase in value. If combined with a clear yes/no statement, this might be effective; however, if there is no clear qualitative judgment statement or the value of the proposed choice over the other is not clear, there is a strong likelihood this will not be effective.

Another way of achieving resonance with the audience is by demonstrating credibility through science or local authorities. Both organizations demonstrate significant blending of the public and technical sphere; the “Backed by Science” frame was the most commonly used, after “Economic Value” and “Responsibility” in all content analyzed, and this is in line with what is previously known of environmental framing. Both organizations made positive use of encompassing “informal language used for more general audiences” (Sovacool, 2009, p. 341) while presenting technical data. This is effective because scientific rhetoric is inherently based on expertise. Both Oceanwise and Seafood Watch find a balance between user-friendly language and technical comprehensiveness.

Another important aspect of environmental rhetoric is tying into the dominant narratives of our time. I previously discussed the presentation of environment as economically valuable. Other dominant narratives include climate change, ocean warming, oil spills, and food security and availability. Both Oceanwise and Seafood Watch, when referencing dominant environmental narratives, most often referenced ocean warming. However, warming was always presented in a manner that was objective,

unaccompanied by tangible detriment, and removed responsibility from an individual, organization, or group. For example: “An increase of up to 3C in water temperature could hurt migrating Pacific salmon.”; “Rising temperatures are affecting Japan's seaweed industry.”

These posts were written quite dissimilarly from the other posts that appeared on both social media accounts: words such as “hurt” and “affecting” were used, which made it unclear what the detriment would be, on what timescale, and what the relevance of the information was. From a risk communication perspective, this is often ineffective, as humans are not successful at managing risks with ambiguous risk and timelines (Ferreira, 2007, p. 861). The organizations’ attempts to establish urgency surrounding their claims should have been evident in these posts discussing ocean warming; yet urgency wasn’t established, and no action could be intuited from this. It was also contradictory, as Oceanwise also published a number of posts advocating that all species of seafood were Oceanwise-certified and recommended for consumption. Conflicting messages from groups is another challenge that environmental messaging encounters, one that can lead to their failure to create lasting ties with their audience (Lindenfield et al., 2014, p. 120), as they are unable to intuit need, action, and to make informed opinions. Further, the discussion of the larger, more dominant frames were some of the only content shared by each organization that were localized: they advocated general issues such as climate change, rather than discussing specific effects they were having on industry, fisheries, and marine ecosystems.

Risk was most often communicated in an educational manner, rather than alarmist, and qualitative judgment statements, which provided consumers a clear set of

options, were made most often when referring to recommendations (fish that were marked as “eat” or “avoid”). Such statements did not often accompany messaging that had to do with overarching or widespread ocean problems; this information was most often presented in a passive, non-assuming way. There was also little personalization of messaging from both Oceanwise and Seafood Watch, even though personalization of the message is shown to be more effective. Most often, risk and urgency was presented in an educational way, where no intended action or consequence was discussed, and the direct effect on the consumer was not evident. For example: “Because the oceans seem so vast and their resources limitless, these threats are often “out of sight, out of mind.” But overfishing issues are not just for future generations to endure; they're very real problems threatening our current seafood supply and the health of our oceans. The good news is that there is much we can do—if we act now.”

This content went on to discuss that consumers had access to regularly updated guides to inform their seafood purchasing habits. However, there is an issue in the paragraph above as it a) does not directly discuss issues for the current consumers; b) does not fit into the dominant narratives of Western society and c) would not be consistent with what the consumer faces each day in the supermarket. If the problems don't feel real for the consumer today, it would be hard to intuit the need for vast shifts in behaviour and purchasing decisions.

As discussed previously, it is imperative in environment and science for credibility to be asserted through the message to be seen as a valid source of information by the consumer. In the channels of Oceanwise and Seafood Watch, credibility was most often asserted in three ways. Most common was the use of well-known chefs,

restaurateurs or food writers endorsing the consumption sustainable seafood: “EcoWatch used our recommendations to make this helpful list.”; “Celebrity chefs and culinarians from our Blue Ribbon Task Force – Michael Cimarusti, Susan Feniger, Chef Kerry Heffernan, Ed Kenney, Chef Nathan Lyon, Chef Rick Moonen, Jonathon Sawyer and Virginia Willis – talk about the Monterey Bay Aquarium Seafood Watch program, why choosing sustainable seafood matters for the ocean and how you can help.”

This is a strategy in food marketing that is often relied on in order to create rationale for making a certain decision, and is particularly important as chefs are seen as authorities on subjects involving taste, cost, and health. Both Oceanwise and Seafood Watch asserted their own authority by discussing themselves in the context of how other public figures or members of the chef community endorsed their practice. Another way the organizations used chefs or restaurateurs to spread their message was to communicate the importance of eating sustainable fish: “Seaweed is so sustainable that all species of seaweed grown anywhere in the world are Ocean Wise™ recommended.” Learn more about the latest sustainable seafood trend with the Water Brothers tonight on TVO at 7 pm.”; “I think people have to start to realize the true cost behind the dirt-cheap seafood that they are buying is human trafficking.” Teddie from Ocean Wise speaks with reporter Nikki Bayley on the importance of promoting local, sustainable seafood options like spot prawns.”

Scientific credibility was the second-most common means of asserting authority. Both Seafood Watch and Oceanwise endorsed their own practices or employees by discussing them as “Ocean research expert...” or something similar, or endorsing their programs through their use of well-known chefs or restaurateurs. However, this was not

often reflected in the web content, and though studies were sometimes referred to, their statistics were taken out of context and often framed in dramatic, deliberative manners.

Conclusion

This MRP focused on the rhetorical strategies and risk communication techniques employed by sustainable seafood campaigns in North America, Seafood Watch and Oceanwise. Throughout all of the research, there were several findings that were particularly noteworthy, including:

- The commodification of nature (i.e. application of economic value to marine species or the ocean more generally) without accompaniment of benefit to the consumer and/or stakeholder;
- Conflicting messaging in different areas of publicly available communication, such as the presentation of predatory species of fish as “good choices” while documenting their dangerously low population levels in other content;
- The employment of well-known chefs, food writers, or restaurateurs to endorse the practice of consuming sustainable seafood options;
- The lack of scientific credibility to support claims;
- The presentation of responsibility of consumers in the fishery mismanagement problem in a “do more” frame; and,
- The presentation of the future ocean as something that can only be saved through increased consumption (albeit of sustainable seafood products).

Most striking from the research was the explicit commodification of nature, where fish was presented as a commodity with a use-value only as food. Contrary to this, however, commodification was not accompanied by a perceivable consumer benefit, such as improved taste, reduced cost, or associated health benefit; sustainable seafood was marketed to consumers with the benefit being improved ocean health, and the benefits

that consumers prioritize (taste, cost, and health) were infrequently addressed, if at all. This was further confused by unclear or inconsistent messaging, either in that it contradicted itself by promoting an ocean item in distinctly different ways, or without accompanying the statement with a clear action for the customer to follow. Since consumers are shown to react most positively to statements that have discrete options, Oceanwise and Seafood Watch could benefit from tailoring their messages in such a way as to clearly demonstrate to consumers the appeal of sustainable seafood and discrete courses of action.

Both Oceanwise and Seafood Watch also demonstrated significant inconsistency in their messages, which is problematic for consumers. It is often challenging for consumers to discern the relevance or credibility of scientific information in media, and when messaging is inconsistent or contradictory from a single scientific body, this can make it particularly hard to encourage consumer change. For example, recommended marine food items were often later contradicted by messages that declared challenges in that specific industry, such as tuna or seaweed. This can lead to consumers either ignoring the message completely, or believing that the organization or body sharing the message lacks credibility; either way, this can be detrimental to organizations trying to promote a particular course of action.

Though credibility was not effectively promoted through the use of science, both Oceanwise and Seafood Watch capitalized on the employment of chefs, restaurateurs, or well-known food bloggers to demonstrate credibility, specifically through social media. Chefs and food writers were used to assert the importance and rising popularity of sustainable seafood, while creating rationale for the sustainable seafood movement. This

is in line with what is known to be effective in food communication strategies. Chefs are often noted in food marketing as having significant power over consumer choices, as they are authorities on the subject of food; however, in both the Oceanwise and Seafood Watch strategy, resident chefs were local and thus likely would not have resonated far beyond the West coast.

Communicating risk can often be a challenge in environmental movements, particularly ones relating to the ocean. This is due to the fact that we know very little about the marine environment, and lack attachment to sea life, as it bears little resemblance to ourselves. Risk communication, then, often hinges on the use of commodification, and the loss of a precious food resource should the ocean not be protected. Both Oceanwise and Seafood Watch primarily shared risk through the use of educational statements over alarmist ones, choosing to focus on sharing knowledge with the public surrounding ocean issues. Interestingly, negative statements, such as ocean warming, were often present in non-descript, neutral means, and most risk was presented as something that could be avoided through action or responsibility. For example, discussion of threats to the ocean was usually followed by a means of reversing or slowing the negative trend, most often through consuming more sustainable seafood.

When issues being shared through the different channels were beyond the level of a specific fish species, such as an overarching climate or environmental issue like ocean warming, responsibility was removed. Often, responsibility-framed posts were asserted to demonstrate that it was the consumer's responsibility to make lasting, positive change for oceans. This included such content as encouraging the consumer to choose a specific sustainable option over another, or encouraging them to ask restaurants if they serve

sustainable seafood. Education and the future of the earth were heavily promoted, particularly within web content. However, there was little difference in the strategy between how marketing was carried out to consumers versus how to stakeholders, even though these groups have theoretically different interests.

From this, there are a number of potential future research areas that would be of interest to pursue; for example, commodification, which was highly relevant in this research, was often specific to the local content: it would be interesting to identify whether it is effect in its local context (in this case, California and Vancouver), as well as if these strategies reach beyond that. As well, research could be done into how these organizations expect to generate interest from anyone outside of their audience, which already identifies as pro-environment. Coupled with this, audience members could be polled on a number of different topics, including whether or not they know what species of fish are sustainable, which they should always avoid, and whether or not they identify as making positive ocean changes.

While many of the findings in this MRP demonstrate the need for significant improvements to the communications strategy to be effective, it must be noted that the sustainable seafood industry is quite young: the first certification organization was formed in the late 1990s, and there has not been sufficient time to evaluate and adapt strategies to create lasting communicative links with their audience. It is still also uncertain whether sustainable seafood campaigns can be effective at effecting change on a large scale, and whether this change would simply lead to shifting the target from one species to another. It can be said, though, that as awareness grows surrounding overfishing, many individuals, groups and organizations are working to change the

industry, and sustainable seafood awareness campaigns will continue to have a central place in this movement.

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Appendix I

Table 9. All subjects identified from Seafood Watch and Oceanwise web content, social media, and annual reports.

Subject	Definition
IUU	Illegal, Unreported, Unregulated Fishing
Ocean Economy	Statements depicting the economic value of the ocean through tourism, fishing, or a related industry
Sustainable Seafood	Statements explicitly referring to fish as a food item, and one that is sustainable; this also extends to statements that discuss avoiding unsustainable seafood.
Ocean Research	Statements discussing Oceanwise, Seafood Watch, or a third-party research study done on ocean health.
Salmon	Fish Species
Dover Sole	Fish Species
Spot Prawns	Fish Species
Halibut	Fish Species
Aquaculture	Any content discussing the fish farming or aquaculture industry.
Ocean Conservation	Statements discussing movements on individual, group, or government effort to protect marine habitat, species, or related.
Seaweed	Fish Species
Human Trafficking	Statements discussing the impact of fishing on human trafficking.
Humboldt Squid	Fish Species
Caviar	Fish Species
Shellfish	Fish Species
Sturgeon	Fish Species

Raw Data

Seafood Watch Raw Data (Social Media - Rhetoric)

Date	Author	Post	Subject	Generic/Sp	F: Human	I: F: Economic	F: Respons	F: Do More
29-May		Outside Magazine on sustainable seafood (and	sustainable seafood	G			1	
27-May		"What's in the can matters." SeafoodWatch's J	sustainable seafood; JS					1
26-May		Want to know what the top consumed seafood	sustainable seafood	G				1
21-May		Celebrity chefs and culinarians from our Blue R	sustainable seafood; JS					1
19-May		Wonder what's going on with salmon in the Pac	ocean conservation; JS					
18-May		In the June issue of Outside magazine, Blackli	sustainable seafood	G				
15-May		Bon Appetit magazine shares advice on cookin	sustainable seafood; JS					
15-May		Today is the 10th anniversary of Endangered S	sustainable seafood; JS					
14-May		Public radio station KQPR in CA shares drought	sustainable seafood	S				
11-May		Monterey Bay Aquarium's 10th Sustainable Foo	sustainable seafood	S				
07-May		Highlighting a great conservation effort: PBS at	ocean conservation	G				
06-May		EcoWatch used our recommendations to make	sustainable seafood	G				
05-May		Congratulations to all of this year's James Bea	sustainable seafood	G				
04-May		Saturday was World Tuna Day. Don't worry if y	sustainable seafood; JS					1
30-Apr		NOAA needs your input to fight IUU fishing an	IUU; ocean conservat	S			1	1
28-Apr		Join us for a webinar this Thursday, April 30, at	ocean economy; gro	S			1	
27-Apr		Georgetown University held a Sustainable Oce	ocean conservation; JS	G			1	
24-Apr		Consumer Reports' lowdown on shrimp shoppi	sustainable seafood; JS					
23-Apr		Here are seven Food and Wine recipes using fi	sustainable seafood	G				
22-Apr		Choose ocean-friendly seafood – on Earth Day	sustainable seafood	G				1
22-Apr		Choose ocean-friendly seafood – on Earth Day	sustainable seafood	G				1
21-Apr		News report exploring the state of Gulf of Mex	ocean conservation	S				
20-Apr		Watch Monterey Bay Aquarium executive direc	ocean conservation	G				
17-Apr		Interesting LA Times article about the good ne	ocean economy; aqua	S			1	
15-Apr		Proud to welcome Sailors for the Sea as our ne	ocean conservation	S				
13-Apr		New recipe up on the website: Chilipepper Roc	sustainable seafood	S				
09-Apr		Tips from The Nest on how to buy sustainable	sustainable seafood	G			1	
07-Apr		Apparently, The Rock eats a lot of cod. Instead	sustainable seafood; JS				1	1
07-Apr		Join our Cooking for Solutions on the Road aw	sustainable seafood	G				
06-Apr		April recommendations are posted with good	sustainable seafood; JS					
30-Mar		Thanks to our Blue Ribbon Task Force partner	sustainable seafood	G				
30-Mar		Please join us today in welcoming our first crui	ocean conservation	S				
26-Mar		10 to eat and 10 to avoid: here's an easy guide	sustainable seafood	G				
25-Mar		Yes, there is more yummy seafood besides shrim	sustainable seafood; JS					
20-Mar		Here's a bit of weekend reading for you. The A	ocean conservation; JS				1	
19-Mar		Members of the Seafood Watch team just retur	sustainable seafood	G				
16-Mar		Read the Monterey Bay Aquarium statement re	ocean conservation; JS				1	
13-Mar		This month's new and updated seafood recom	sustainable seafood; JS					
12-Mar		Seafood Watch program director Jennifer Dian	sustainable seafood; JS					
11-Mar		Groundbreaking decision: U.S. Pacific Fishery	ocean conservation; JS					
10-Mar		Cooking Light offers their favorite halibut recip	sustainable seafood; JS					
06-Mar		Guess what everybody? Surprise, you care abo	sustainable seafood	G			1	
05-Mar		To help you start choosing more ocean-friendl	sustainable seafood	G				
02-Mar		In today's LA Times, Seafood Watch Blue Ribb	sustainable seafood; JS				1	
TOTALS				G	0	11	2	6

Oceanwise Raw Data (Social Media – Rhetoric)

Date	Author	Post	Subject	General/Specific?	E: Human Interest	E: Economic Value	E: Reputational	E: Do More	E: Live Well
31-May		The Caribbean lobster	UI	5		1			
30-May		New investments and	Ocean Eco	5		1			
29-May		Just tell me what fish	Sustain+ab	5	1				
28-May		Salmon eat bones (also	Ocean Rea	5					
28-May		Teach a man to fish w	Sustain+ab	5					
27-May		Check out this offshore	Sustain+ab	5					
27-May		Good use of technology	UI	5					
26-May		Spot prawn season is b	Sustain+ab	5		1			
25-May		Check out an awesome	Sustain+ab	5					
24-May		The 2015 Tenet ympic	Sustain+ab	5					
23-May		Toddler shines "What m	Sustain+ab	5					
19-May		Excited about Coal Nati	Sustain+ab	5					
18-May		We can't wait for this at	Ocean Cor	5					
17-May		We are excited for River	Ocean Cor	5					
16-May		How to get the most b	Sustain+ab	5					
15-May		*According to the Nati	Ocean Eco	5					
15-May		Chief Naid Bill may hav	Ocean Cor	5				1	
14-May		Spot prawn 101!	Sustain+ab	5					
14-May		The Ocean Wise team at	Ocean Cor	5				1	
13-May		*Taken collectively, the	Ocean Eco	5					
13-May		Avenue Magazine — C	Sustain+ab	5					
13-May		Outside and Corbett for	Ocean Cor	5					
13-May		"Wild salmon campaign"	Ocean Cor	5					
12-May		BC Spot Prawn season	Sustain+ab	5					
12-May		We are looking forward	Sustain+ab	5					
11-May		The open nature of nat	Ocean Eco	5					1
11-May		Spot prawn season up	Sustain+ab	5					
09-May		Simply put, the more w	Ocean Cor	5					
09-May		Working and celebrati	Ocean Cor	5					
08-May		Have you tried any of th	Ocean Eco	5				1	
08-May		Happy to see many of	Ocean Eco	5					
07-May		Finding sustainable and	Ocean Cor	5					1
06-May		In case you missed last	Ocean Eco	5					
06-May		Proud to see that Ocean	Ocean Cor	5					
05-May		*What started out as a	Ocean Cor	5					
05-May		*Sawweed is so sustain	Sustain+ab	5					
04-May		*Aquaculture has susta	Ocean Eco	5					1
04-May		Our new executive dire	Sustain+ab	5					
03-May		*Have you ever consid	Sustain+ab	5					1
02-May		We've looking forward	Sustain+ab	5					
01-May		*The monetary value of	Ocean Eco	5					
30-Apr		Vancouver Aquarium in	Sustain+ab	5					
30-Apr		The Vancouver Aquariu	Ocean Cor	5					
30-Apr		Supporting tonight's	Sustain+ab	5					
29-Apr		Cute puffins = sustain	Sustain+ab	5					1
29-Apr		*I think people have to	Sustain+ab	5	1				
28-Apr		Thank you to everyone	Sustain+ab	5					
27-Apr		To celebrate Ocean Wi	Sustain+ab	5					
27-Apr		For the first time tong	Ocean Cor	5					
26-Apr		How does sustainabil	Sustain+ab	5					
25-Apr		RowStar at the "Pinn	Sustain+ab	5					
24-Apr		Thanks to Scout Waga	Sustain+ab	5					
23-Apr		Our executive chief, Tim	Sustain+ab	5					
23-Apr		Only a few days left to	Sustain+ab	5					
22-Apr		Tuesday, April 22nd is	Sustain+ab	5					1
21-Apr		Celebrating 10 years of	Sustain+ab	5					
21-Apr		Calabrese hallway seas	Sustain+ab	5					
20-Apr		Did you know? Ocean W	Sustain+ab	5					
19-Apr		Proud to see Ocean Wi	Sustain+ab	5					
18-Apr		How do Northern Dair	Sustain+ab	5					
17-Apr		Do you have your rock	Sustain+ab	5					
17-Apr		Do you know about all	Sustain+ab	5					1
16-Apr		Top water conservation	Ocean Cor	5					1
15-Apr		Let's make National Sm	Sustain+ab	5					
15-Apr		*That might be a little	Sustain+ab	5					
14-Apr		The farmed salmon beg	Ocean Cor	5					
13-Apr		*Trying to find someone	Ocean Eco	5					1
12-Apr		We are looking forward	Sustain+ab	5					
11-Apr		Congratulations to Oa	Sustain+ab	5					
10-Apr		What follows suffer ab	Sustain+ab	5					

1st	Educational? Alarmist?	Personalized Uncertainty? Science?	Deliberative - yes/no	Notes - Incom
the Caribbean lobster f	1		1	
New investments and i	1		1	
Just tell me what fish I can eat," my		1		1
Almon ear bones (otol)	1		1	
Each a man to fish and you feed h		1		
heck out this edition d	1			
ood use of technology	1		1	
ot prawn season is be	1			
heck out an awesome	1			
he 2015 Terror sympo	1			
iddle shares "What m	1	1		
icted about Chef Nathan Brown's 100% Ocean Wise menu at Fairmont Pacific Rim's Orl				
le can't wait for this annual fundraising gala at the Vancouver Aquarium for ocean conservation featuring some of Vancouver's top Ocean Wise ch				
le are excited for River Cafe's collaborative dinner to celebrate Ocean Wise's 10th anniversary! With chefs from the Fish Counter, Catch, Shokuni				
ow to get the most ba	1		1	
According to the Natic	1		1	
hef Ned Bell may have summed it	1			
ot prawn 101!	1			
e Ocean Wise team a	1			
aken collectively, the rise of postw	1	1		
venue Magazine — C&	1			
elide and Colleen for	1			
Wild salmon campaign	1	1		1
Spot Prawn season's	1			
le are looking forward	1		1	
ie open nature of net pens carries the risk of transfer of diseases and p		1	1	1
ot prawn season ope	1			
imply put, the move v	1			
orking and celebratin	1			
ave you tried any of these small fish?				
apply to see many of our Ocean Wise partners in the Food Network's list of 10 Great Seafood Joints!				
nding sustainable shri	1		1	1
case you missed last	1			
oud to see that Ocean Wise sustainable seafood makes the list!				
What started out as a local, grassroots organization has flourished into the most recognized sustainable seafood program in the country".				
leaweed is so sustain	1		1	
aquaculture has suffered a very ba	1			
ur new executive chef, Tim Bedford, shares his favourite places to grab a bite in Vancouver with LABATTOR Secret Location FABLE Boulevard i				
ave you ever consider	1	1		
le're looking forward to the Chef's Table Society of British Columbia's annual spot prawn festival this May 17th!				
the monetary value of the world's	1		1	
ancouver Aquarium executive chef, Tim Bedford, and Four Seasons chef, Ned Bell, come together for a special Ocean Wise oyster presentation.				
he Vancouver Aquarium brought together leaders in sustainable seafood – including scientists, chefs, and industry partners – for an evening of in				
opening tonight: EAT! VANCOUVER Canadian Flavours Gala! Experience Nanamata Bench Wineries first spring pours with culinary offerings fro				
ute puppies + sustainable seafood – a winning combination! Find an Open Farm pet food provider near you!				

Paul Greenberg asks th	1																		
Sustainable seafood is t	1			1															
Great to see partners P	1																		
Outside Magazine on su	1			1															
"What's in the can matt	1			1															
Want to know what the	1																		
Celebrity chefs and culi	1																		
Wonder what's going on with salmo		1																	
In the June issue of Out	1																		
Bon Appetit magazine s	1																		
Today is the 10th anniv	1																		
Public radio station KVP	1																		
Monterey Bay Aquarium	1																		
Highlighting a great cor	1																		
EcoWatch used our rec	1																		
Congratulations to all o	1																		
Saturday was World Tur	1																		
NOAA needs your input to fight UL		1																	
Join us for a webinar th	1																		
Georgetown University	1																		
Consumer Reports' low	1																		
Here are seven Food an	1																		
Choose ocean-friendly :	1																		
Choose ocean-friendly :	1																		
News report exploring the state of C		1																	
Watch Monterey Bay Ac	1																		
Interesting LA Times art	1																		
Proud to welcome Sailo	1																		
New recipe up on the w	1																		
Tips from The Nest on f	1																		
Apparently, The Rock ei	1																		
Join our Cooking for So	1																		
April recommendations	1																		
Thanks to our Blue Ribb	1																		
Please join us today in v	1																		
10 to eat and 10 to avo	1																		
Yes, there is more yum	1																		
Here's a bit of weekend	1																		
Members of the Seafoo	1																		
Read the Monterey Bay	1																		
This month's new and u	1																		
Seafood Watch program	1																		
Groundbreaking decisio	1																		
Cooking Light offers the	1																		

Guess what everybody?	1								
To help you start choose	1							1	
In today's LA Times, Sel	1							1	
	93	23	0	14	3	22	20		

Oceanwise Raw Data – (Web – Rhetoric)

Sentence	Subject	Generic/Sp	F	Human	I	F	Economic	F	Respects	F	Do More	F	Use Less	F	Becked	I	F	Green	O	F	Apocalyptic	F	Environmental Impact	Commodes	Credible	Taste?	Coast	Health?
Ocean Wise is a Vancouver Aquarium conservation program created to educate and empower consumers about the issues surrounding																												
Top Table Celebrates 10th Anniversary of Ocean Wise (Vancouver)																												
This summer, each Top Table restaurant will feature a showcase of Ocean Wise seafood to celebrate the 10th anniversary of the Vancouver Aquarium's sustainable seafood program. Read more																												
BC Shellfish and Seafood Festival (Comox, BC)																												
We are excited for the BC Shellfish and Seafood Festival this June in Comox, BC!																												
Join us for a series of industry and consumer focused workshops on the weekend of the 13th/14th as well as Comox Bay The Sea celebration on the 20th!																												
Salmon Celebration, Vancouver																												
Sunday, June 20 come celebrate the return of salmon at Trout Lake! Read more																												
About Ocean Wise™																												
Overfishing is the biggest threat our oceans face today.																												
The Ocean Wise symbol next to a seafood item is the Vancouver Aquarium's assurance of an ocean-friendly seafood choice.																												
With over 600 Ocean Wise partners across Canada, Ocean Wise makes it easy for consumers to make sustainable																												
How is Ocean Wise seafood recognized?																												
The Ocean Wise symbol next to a seafood item is the Vancouver Aquarium's assurance of an ocean-friendly seafood choice.																												
Our Ocean Wise Partners																												
The Vancouver Aquarium's Ocean Wise program works directly with restaurants, markets, foodservices and se																												
The options are highlighted on their menus and display cases with the Ocean Wise symbol, making it easier																												
Our Sponsors																												
Ocean Wise would like to acknowledge the following organizations for their support of the program: the John Hardy Mitchell Family Foundation, VanCity enviroFund, Capers Community Market																												
Ocean Wise was made possible by a start-up grant generously donated by the David and Lucile Packard Foundation.																												
Our Collaborators																												
Ocean Wise is one of 18 organizations from North America which form part of the Conservation Alliance for Seafood Solutions.																												
The Conservation Alliance connects seafood expertise to businesses with the goal of																												
Learn more about the Conservation Alliance for Seafood Solutions here.																												
Items																												
Ocean Wise's recommendations are based on 4 criteria.																												
An Ocean Wise recommended species is:																												
Abundant and resilient to fishing pressures																												
Well managed with a comprehensive management plan based on current research																												
Harvested in a method that ensures limited bycatch on non-target and endangered species																												
Harvested in ways that limit damage to marine or aquatic habitats and negative interactions with other species.																												
Ocean Wise Partners - All																												
Our Ocean Wise partners are as diverse as our marine ecosystems. Our partners incl																												
All of our partners have one common goal: a commitment to serve or provide sustain																												
Overfishing is the greatest threat to our oceans today.																												
The world's marine life is quickly being depleted.																												
An estimated 90% of all large, predatory fish are already gone from the world's oceans.																												
A recent scientific study predicted a world-wide fisheries collapse by 2048.																												
The only solution is to turn back from the brink, and to begin consuming seafood in a sustainable manner.																												
Sustainable seafood can be defined as species that are caught or farmed in a way that ensures the long-term health and stability of th																												
Ocean Wise's classification system is based on two categories: sustainable or unsustainable, simply a good or bad choice for our ocea																												
Species are regularly updated and/or reclassified with the latest scientific information.																												
Classifications, including changes to and Ocean Wise recommendations are provided regularly to Ocean Wise participants.																												
The issues																												
Issues that trouble our marine environment in order to feed an ever-grow																												
Overfishing Global consumption of seafood has doubled since the 1970																												
Now, roughly 158 million tons of seafood is harvested every year.																												
Improvements in fisheries related technology have allowed us to remove organisms																												
With an estimated 90% of all large, predatory fish already gone from our world's ocea																												
Catch simply our marine species cannot reproduce fast enough to keep up with the hunt.																												
Bycatch Not all marine life that is captured by fishing gear makes it to the dinner table.																												
An estimated 40% of what is caught in commercial fisheries is unintended catch (bycatch) and discarded.																												
Bycatch can include unmarketable species, undersized species, and endangered species.																												
Unfortunately the majority of the animals tossed back onboard do not survive.																												
It is important to understand how your seafood has been harvested as some fishing gear types, like pelagic d																												
Habitat Damage Certain fishing and farming practices can have negative impacts on critical marine or aquatic habitats.																												
With the loss of crucial habitats such as spawning, nursery, breeding or sheltering areas, many species find it challenging to survive, let alone thrive.																												
Communities such as coral reefs, kelp forests, mangroves and wetlands provide critical habitat for a wide array of organisms and damage to these key areas can have dra																												
How Different Harvest Methods can be Sustainable or Unsustainable																												
The different types of fishing and aquaculture techniques used to harvest seafood influence the environmental integrity of our marine ecosystems.																												
This influence can be sustainable or unsustainable.																												
The issues of bycatch and habitat damage and their extent are principally determined by the type of fishing or farming method used.																												
What is Ocean Wise?																												
Ocean Wise is a Vancouver Aquarium conservation program, created to help businesses and their customers																												

Sentence	Subject	Generic/Sp	F: Human	I: Economic	F: Response	F: Do More	F: Use Less	F: Backed	F: Green	O: F: Apology	F: Environmental Impact	Commodi	Credible	Taste?	Cost?	Health?
The Ocean Wise symbol next to a seafood item assures you that option is the best choice for the health of the oceans.																1
How does the Ocean Wise program work?																1
In turn, participating businesses identify these options on their menus or display cases with the Ocean Wise logo allowing their patrons to easily identify the most sustainable options.																1
We are constantly working to source sustainable seafood options and our partners at _____ 1																1
How are the Ocean Wise sustainable seafood choices evaluated and recommended?																1
The sustainability of each species harvested for seafood is evaluated on an individual basis.																1
We review the current scientific literature and speak with researchers from governmental and non-governmental organizations, academe																0
What is the difference between Ocean Wise and the Marine Stewardship Council (MSC)?																1
Ocean Wise is a recommendation program, whereas MSC is a certification program.																1
The MSC has developed its own standards for sustainable fishing and seafood traceability.																1
Authorized third-party certifying bodies assess and audit the fisheries against the MSC standard.																1
Ocean Wise and the VSC have different criteria for sustainability and thus not all VSC certified fisheries are Ocean Wise.																1
Is farmed seafood unsustainable?																1
It depends on how the seafood is farmed! Some farming methods such as land-based recirculating tanks and shellfish farming have very few environmental impacts.																1
Other farming methods such as open net pens and shrimp ponds which destroy mangrove forests are associated with negative ecosystem impacts.																1
Should I be concerned about Fukushima radiation?																1
Ocean Wise makes sustainability recommendations, not health recommendations.																1
However, in 2014, the Vancouver Aquarium hosted a public talk by Dr. Ken Buersele on the impacts of Fukushima radiation.																1
Should I be concerned about mercury levels in seafood?																1
Ocean Wise makes sustainability recommendations, not health recommendations.																1
For more information on health topics including mercury, please click here or check out the Environmental Working Group's Seafood Calculator for best choices for human health and healthy ocea																1
o I have to give up sushi in order to eat sustainable seafood?																1
Not at all!																1
Many sushi restaurants provide tasty sustainable alternatives such as wild salmon (sake), sablefish (gundar) instead of unsustainable eel (unagi), and albacore tuna (bitchu) instead of Bluefin tuna.																1
In fact, in March 2014, the first 100% sustainable sushi restaurant opened in Vancouver.																1
You can read about it here. For a list of sustainable seafood used in sushi, click here.																1
Where can I find Ocean Wise partners?																1
You can find a list of our official Ocean Wise restaurants, suppliers, and retailers here.																1
You can also download the Ocean Wise app for a full list of partners, assessed seafood items, as well as an interactive map which shows the location of Ocean Wise partners.																1
Does a restaurant have to offer 100% sustainable options to join Ocean Wise?																1
No!																1
We encourage partners to slowly replace their unsustainable items with sustainable alternatives over time, but																1
ow much is the partnership fee?																1
As a non-profit organization, Ocean Wise started implementing nominal partner fees in 2006 out of necessity, as the program started growing.																1
H The restaurant partner fee is \$250 per year.																1
Please contact an Ocean Wise representative for more details on supplier fees and additional location fees.																1
I am a restaurant owner. If I purchase seafood that is Ocean Wise, can I describe the seafood on my menu as being Ocean Wise?																1
Only official partners may describe their menu as being "Ocean Wise" or use the Ocean Wise symbol and logo, as these are trademarked.																1
What are the benefits of becoming an Ocean Wise partner?																1
Up-to-date recommendations on seafood based on regular scientific reports.																1
This is a great way to stay current and knowledgeable about the changing status of seafood species!																1
Ocean Wise symbol for easy identification on menus so that your customers not only																1
A consumer-facing page on our website showcasing your partnership with a direct li																1
Opportunity to participate in our annual Chowder Chowdown or other events across																1
Our media stories reached over 112 million people in 2013 – the equivalent of \$1.8 t																1
Our partners enjoy exposure to social media.																1
We reach over 4000 people on Facebook, 15,000 people on Twitter, and have a stro																1
The most important benefit of joining the program however, is the opportunity to change the wa																1
As fisheries are heavily influenced by consumer demand, joining the Ocean Wise net																1
How did the Ocean Wise program start?																1
The Vancouver Aquarium launched the concept of Ocean Wise in January 2005 at C Restaurant, our founding restaurant partner.																1
The Ocean Wise program released its first Dining Guide on April 22nd 2005, Earth Day A																1
A list of the first 16 restaurants was included on these rack cards.																1
Each of these restaurants removed at least one item from their menu and committed to promoting at least one sustainable option.																1
TOTALS			2	16	2	7	1	12	2	7	26	0	111			

Seafood Watch Raw Data (Web – Rhetoric)

Sentence	Subject	General/Sp. F.	Human I. F.	Economic F.	Response F.	Do More F.	Use Less F.	Backed I. F.	Green O. F.	Apocaly. F.	Environmental Impact	Communit. F.	Credibility I.	Issue?	Case
Helping people make better seafood choices for healthy oceans						1									
Our recommendations help you choose seafood that's fished or farmed in ways that have less impact on the						1									
Ocean issues															
It's Time for a Sea Change															
The oceans supply us with food, help regulate our climate, and provide						1									
We depend on them for recreation and renewal.						1									
But the bounty of our seas is not endless.															
Today, no part of the oceans remains unaffected by human activities.						1									
And among the many factors influencing our ocean ecosystems, few have as great a						1									
Through better practices, we can create healthy, abundant oceans for everyone.										1					
Wild Seafood															
There's a limit to the fish in the sea						1									
Ocean fish are wild—the last such creatures that we hunt on a large scale															
And while the sheer size of the oceans is awesome, there are many signs that we have found their limits.										1					
Aquaculture															
Some Farm Fresh Facts															
Aquaculture, or fish farming, could be a great solution to the ever-increasing pressure						1									
But the ecological impact of fish farming depends on the species chosen, where the farm is located, and how they are raised.															
Fishing & Farming Methods															
The way fish are caught or farmed can have a significant effect on ocean health.															
Some methods are much more destructive than others, causing greater habitat damage, discards, pollution or other effects on wild populations.															
Video: Can the Oceans Keep Up with the Hunt?															
This 15-minute film explores the last wild hunt on our planet—our quest for seafood.															
Our oceans seem vast, but the bounty beneath the surface has limits. Around the globe, fisheries are in trouble.										1					
Will our appetite for seafood leave behind empty oceans?										1					
Can the "blue revolution" of aquaculture lead the way to a sustainable future?						1									
Seafood Recommendations															
Our recommendations are available in many forms, so it's easy for you to make ocean-friendly choices where						1									
Read our seafood reports online and learn the stories behind your seafood.															
Wild Seafood															
With more fishing capacity on our oceans than at any time in history, some 90 percent						1									
The View From Below															
From above it may seem that there are plenty of fish in the sea, but dive beneath the surface and it's a different story.															
Overfishing, lack of effective management and our own consumption habits are just a few factors contributing to a decline in wild fish.															
Evidence of these problems abounds.															
Scientists know that nearly two-thirds of assessed fish populations are unhealthy and those that have not been assessed are likely in decline.						1									
In just the past decade, Atlantic populations of halibut and yellowtail flounder joined this list of species at all-time lows.										1					
The cod fishery, once a backbone of the North Atlantic economy, collapsed completely.						1				1					
The breeding population of Pacific bluefin tuna is now at only four percent of its original size, and										1					
Other harmful effects of fishing—some of which are preventable with modifications to gear—also impact the oceans, including the accidental catch of unwanted species (
What You Can Do															
Use Our App															
The Seafood Watch app for Android and iPhone brings you up-to-date recommendations for ocean-friendly seafood and sushi.															
Ask the Question: "Do You Serve Sustainable Seafood?"										1					
By asking this simple but important question at your grocery store or restaurant, you can help shape the demand						1									
Consumers play an important role in shaping ocean health, so start making a difference today!						1									
How Did We Get Here?															
One reason is the advent of industrial-scale fishing, which began in the late 1800s and						1									
By the mid-1990s, these fishing practices had made it impossible for natural fish stocks to keep up.										1					
Ninety percent of the world's fisheries are now fully exploited, overexploited or have collapsed.														1	
Out of Sight, Out of Mind?															
Because the oceans seem so vast and their resources limitless, these threats are often "out of sight, out of mind."															
But overfishing issues are not just for future generations to endure; they're						1									

Seafood Watch and Oceanwise (Web Content - Risk)

Sentence	Educational? Alarmist?	Personalized Uncertainty? Science?	Deliberative - yes/no	Notes - Inform
Ocean Wise is a Vancouver Aquarium conservation program created for	1			
This summer, each Top Table restaurant will feature a showcase of Oc	1			
We are excited for the BC Shellfish and Seafood Festival this June in t	1			
Join us for a series of industry and consumer focused workshops on th	1			
Overfishing is the biggest threat our oceans face today.		1		
The Ocean Wise symbol next to a seafood item is the Vancouver Aqu	1			
With over 600 Ocean Wise partners across Canada, Ocean Wise mak	1			
The Ocean Wise symbol next to a seafood item is the Vancouver Aqu	1			
The Vancouver Aquarium's Ocean Wise program works directly with n	1			
The options are highlighted on their menus and display cases with th	1			
Ocean Wise would like to acknowledge the following organizations fo	1			
Ocean Wise was made possible by a start-up grant generously donat	1			
Ocean Wise is one of 18 organizations from North America which fo	1			
The Conservation Alliance connects seafood expertise to businesses	1			
Learn more about the Conservation Alliance for Seafood Solutions here.				
Ocean Wise's recommendations are based on 4 criteria.	1			
An Ocean Wise recommended species is:	1			
Abundant and resilient to fishing pressures	1			
Well managed with a comprehensive management plan based on cur	1			
Harvested in a method that ensures limited bycatch on non-target an	1			1
Harvested in ways that limit damage to marine or aquatic habitats an	1			
Our Ocean Wise partners are as diverse as our marine ecosystems. O	1			
All of our partners have one common goal: a commitment to serve or	1			
Overfishing is the greatest threat to our oceans today.		1		
The world's marine life is quickly being depleted.		1		
An estimated 90% of all large, predatory fish are already gone from the world's oc		1		
A recent scientific study predicted a world-wide fisheries collapse by 2048.		1		
The only solution is to turn back from the brink, and to begin consuming seafood		1		
Sustainable seafood can be defined as species that are caught or far	1			
Ocean Wise's classification system is based on two categories: sustai	1			
Species are regularly updated and/or reclassified with the latest scien	1			1
Classifications, including changes to and Ocean Wise recommendatio	1			
Issues that trouble our marine environment in order to faced an ever-growing popu		1		
Overfishing Global consumption of seafood has doubled since the 1970s.		1		
Now, roughly 158 million tons of seafood is harvested every year.		1		
Improvements in fisheries related technology have allowed us to remove organ		1		
With an estimated 90% of all large, predatory fish already gone from our world's c		1		
Quite simply our marine species cannot reproduce fast enough to keep up with th		1		
Bycatch Not all marine life that is captured by fishing gear makes it to the dinner t		1		
An estimated 40% of what is caught in commercial fisheries is unintended catch (f		1		
Bycatch can include unmarketable species, undersized species, and e		1		
Unfortunately the majority of the animals tossed back overboard do not survive.		1		
It is important to understand how your seafood has been harvested a		1		
Habitat Damage Certain fishing and farming practices can have negat		1		
With the loss of crucial habitats such as spawning, nursery, breeding or sheltering		1		
Communities such as coral reefs, kelp forests, mangroves and wetlands provide cr		1		
The different types of fishing and aquaculture techniques used to har		1		
This influence can be sustainable or unsustainable.		1		
The issues of bycatch and habitat damage and their extent are princ		1		
Ocean Wise is a Vancouver Aquarium conservation program, created		1		
The Ocean Wise symbol next to a seafood item assures you that opti		1		
We work individually with each partner business to help them make s		1		
In turn, participating businesses identify these options on their menu		1		

Sentence	Educational? Alarmist?	Personalized Uncertainty? Science?	Deliberative - yes/no	Notes - Incomplete
The sustainability of each species harvested for seafood is evaluated	1			
We review the current scientific literature and speak with researchers	1			
Ocean Wise is a recommendation program, whereas MSC is a certifier	1		1	
The MSC has developed its own standards for sustainable fishing and	1			
Authorized third-party certifying bodies assess and audit the fisheries	1			
Ocean Wise and the MSC have different criteria for sustainability and	1			
It depends on how the seafood is farmed! Some farming methods su	1			
Other farming methods such as open net pens and shrimp ponds whi	1			
Ocean Wise makes sustainability recommendations, not health recom	1			
However, in 2014, the Vancouver Aquarium hosted a public talk by Dr	1			
Ocean Wise makes sustainability recommendations, not health recom	1			
For more information on health topics including mercury, please click	1			
Not at all!	1			
Many sushi restaurants provide tasty sustainable alternatives such as y	1			
In fact, in March 2014, the first 100% sustainable sushi restaurant ope	1			
You can read about it here. For a list of sustainable seafood used in su	1			
You can find a list of our official Ocean Wise restaurants, suppliers, an	1			
You can also download the Ocean Wise app for a full list of partners,	1			
No!	1			
As a non-profit organization, Ocean Wise started implementing nomi	1			
H The restaurant partner fee is \$250 per year.	1			
Please contact an Ocean Wise representative for more details on supp	1			
Only official partners may describe their menu as being "Ocean Wise	1			
Up-to-date recommendations on seafood based on regular scientific	1			1
This is a great way to stay current and knowledgeable about the chan	1			
Ocean Wise symbol for easy identification on menus so that your cust	1			
A consumer-facing page on our website showcasing your partnership	1			
Opportunity to participate in our annual Chowder Chowdown or oth	1			
Our media stories reached over 112 million people in 2013 – the equ	1			
Our partners enjoy exposure to social media.	1			
We reach over 4000 people on Facebook, 15,000 people on Twitter, i	1			
The most important benefit of joining the program however, is the op	1			
Chefs are in a strategic position for influencing consumer choice, as p	1			1
As fisheries are heavily influenced by consumer demand, joining the	1			
The Vancouver Aquarium launched the concept of Ocean Wise in Jan	1			
The Ocean Wise program released its first Dining Guide on April 22nd	1			
A list of the first 16 restaurants was included on these rack cards.	1			
Each of these restaurants removed at least one item from their menu	1			
Our recommendations help you choose seafood that's fished or farm	1			
It's Time for a Sea Change	1			
The oceans supply us with food, help regulate our climate, and provi	1			
We depend on them for recreation and renewal.	1			
But the bounty of our seas is not endless.	1			
Today, no part of the oceans remains unaffected by human activities.	1			
And among the many factors influencing our ocean ecosystems, few have as grea	1			
Through better practices, we can create healthy, abundant oceans for everyone.	1			
Wild Seafood				
There's a Limit to the Fish in the Sea				
Ocean fish are wildlife—the last such creatures that we hunt on a large scale.	1			
And while the sheer size of the oceans is awesome, there are many si	1			
Aquaculture				
Some Farm Fresh Facts				
Aquaculture, or fish farming, could be a great solution to the ever-inc	1			

Sentence	Educational? Alarms?	Personalized Uncertainty? Science?	Deliberative - yes/no	Notes - Incon
But the ecological impact of fish farming depends on the species cho	1			
Fishing & Farming Methods				
The way fish are caught or farmed can have a significant effect on o	1			
Some methods are much more destructive than others, causing greater habitat da	1			
Video: Can the Oceans Keep Up with the Hunt?				
This 15-minute film explores the last wild hunt on our planet—our quest for seafo	1			
Our oceans seem vast, but the bounty beneath the sapphire surface has limits. An	1			
Will our appetite for seafood leave behind empty oceans?	1			
Can the "blue revolution" of aquaculture lead the way to a sustainable future?	1			
Seafood Recommendations				
Our recommendations are available in many forms, so it's easy for you	1		1	
Read our seafood reports online and learn the stories behind your sea	1			
Wild Seafood				
With more fishing capacity on our oceans than at any time in history, some 90 per	1			
The View From Below				
From above it may seem that there are plenty of fish in the sea, but d	1			
Overfishing, lack of effective management and our own consumption	1			
Evidence of these problems abounds.	1			
Scientists know that nearly two-thirds of assessed fish populations are unhealthy a	1			
In just the past decade, Atlantic populations of halibut and yellowtail flounder joir	1			
The cod fishery, once a backbone of the North Atlantic economy, collapsed comp	1			
The breeding population of Pacific bluefin tuna is now at only four percent of its d	1			
Other harmful effects of fishing—some of which are preventable with modification	1			
What You Can Do				
Use Our App	1		1	
The Seafood Watch app for Android and iPhone brings you up-to-dat	1		1	
Ask the Question: "Do You Serve Sustainable Seafood?"	1		1	
By asking this simple but important question at your grocery store or	1		1	
Consumers play an important role in shaping ocean health, so start m	1			
How Did We Get Here?				
One reason is the advent of industrial-scale fishing, which began in th	1			
By the mid-1990s, these fishing practices had made it impossible for	1			
Ninety percent of the world's fisheries are now fully exploited, overexploited or hav	1			
Out of Sight, Out of Mind?				
Because the oceans seem so vast and their resources limitless, these	1			
But overfishing issues are not just for future generations to endure; they're very re	1			
The good news is that there is much we can do—if we act now.	1			
Aquaculture				
Aquaculture, or farming of fish and other seafood, holds great promi	1			
A Growing Practice				
Today, half of the seafood eaten in the U.S. is farmed, and the practic	1			
Just as we raise cattle and chickens to eat, we're now raising seafood	1			
But the environmental impact of fish farming varies widely, dependi	1			
When the environment is considered and good practices are used, it'	1			
Such operations limit habitat damage, disease, escapes of non-native	1			
Seafood A-Z Sushi A-Z				
Best Choice				
BEST CHOICES				
Buy first, they're well managed and caught or farmed in ways that cau	1		1	
GOOD ALTERNATIVES				
Buy, but be aware there are concerns with how they're caught or farm	1		1	
AVOID				
Don't buy, they're overfished or caught or farmed in ways that harm c	1		1	
Use the Seafood Watch App				

Sentence	Educational?	Alarmist?	Personalized	Uncertainty?	Science?	Deliberative	- yes/no	Notes	- Inca
Our app for Android and iPhone brings you up-to-date recommendations	1						1		
Use Our Consumer Guides									
Our printable guides are broken down by region so you can find sustainable	1						1		
Our Criteria									
Learn how we make our recommendations.	1								
Learn how to help protect fish and ocean animals by making good decisions	1								
By asking one simple but important question you can help shape the	1								
Mackerel									
Seafood & Your Health									
Faux-Nagi									
Sustainable Seafood Recipes									
Businesses & Organizations									
School of fish									
Be a Part of the Movement									
Today, over 50 percent of U.S. consumers say that buying sustainable	1				1				
Making a commitment to source environmentally responsible seafood	1				1				
Become a Partner									
Learn how you can help transform the marketplace in favor of environmental	1								
Our Partners									
These businesses are working to build awareness about ocean-friendly	1								
Partner Tools									
Learn about the issues with our training materials and resources.	1								
Our Blue Ribbon Task Force More business sustainable seafood resources	1								
The Monterey Bay Aquarium's Seafood Watch program helps consumers	1								
School of barracuda									
Our Mission									
Our mission is to empower consumers and businesses to make choices	1								
What is Seafood Watch?									
The Monterey Bay Aquarium's Seafood Watch program helps consumers	1								
Our recommendations indicate which seafood items are "Best Choice"	1								
We raise public awareness about sustainable seafood issues through	1								
Since 1999, we've distributed over 45 million consumer guides and	1								
We also encourage restaurants, distributors and seafood purveyors to	1								
v	123	34	0	11	0	7	14	0	0

Oceanwise Raw Data (Annual Report)

sentence	Genetic/Sp. F.	Human I/F	Economic F.	Repro/Inf. F.	Do More F.	Use Less F.	Budget B.	Green O.F.	Apocalypse F.	Animal Rights/Ethics	Commodity	Credibility	†Taste?	Cost?	Health?
2013 ANNUAL REPORT Message from the President and CE	1	1	1	1			1				1	1			0
This past year has been another amazing year of growth and											1	1			0
Construction moved ahead on the first phase of our multi-ph		1									0	0			0
The exciting addition of a larger new front entrance, an out											1	1			0
The revitalization is the largest and most ambitious addition								1			1	1			0
As a conservation organization, the Aquarium continues to e											1	1			0
A good part of 2013 was spent developing new strategic an											1	1			0
Year 2014 will see exciting new initiatives on this front.											1	1			0
From studying British Columbia's wild killer whales to connec											1	1			0
Our breadth of conservation, research and education progra											1	1			0
We set another record for total attendance in 2013 with over											1	1			0
They tell us we are on the right track, and that is affirmed wh											1	1			0
Every new connection we've made this year has made a last											1	1			0
Today, made up of more than 1,100 volunteers and 450 eme											1	1			0
Coupling that passion with our members from 79,000 strong											1	1			0
G											1	1			0
We would like to extend a warm thank you to our Patrons fo											1	1			0
to be nominated as a Patron is the Aquarium's highest level											1	1			0
											1	1			0
Conservation Stats 99,280 Kilograms of litter removed as pa									1		1	1			0
58,500 Canadians participated in protecting our waterways t											1	1			0
3,0,000+ Hours of rehabilitation and care provided to sick ar											1	1			0
528 Ocean Wise partners across Canada											1	1			0
4 Arctic research partnerships launched											1	1			0
											1	1			0
Research Stats											1	1			0
5,000 Cetacean sightings reported to our B.C. Cetacean Sig											1	1			0
4,800+ Kilometers surveyed in the field by our Cetacean Res											1	1			0
80 Killer whales confirmed in the southern resident populati											1	1			0
63 Active animal breeding projects											1	1			0
63 Informal research projects taking place at Vancouver Aqu											1	1			0
37 Active research projects											1	1			0
G											1	1			0
Education Stats											1	1			0
23,000+ Community members engaged in far-reaching Aqu											1	1			0
13,077 Students inspired to become stewards of the sea thr											1	1			0

Seafood Watch Raw Data (Annual Report)

Sentence	F: Human	F: Economic	F: Response	F: Do More	F: Use Less	F: Backed	F: Green	F: Appeal	F: Animal Rights/Ethics	Commodi	Credibility	Issue?	Cost
MONTEREY BAY AQUARIUM 2013 ANNUAL REVIEW 2013													
Inspiring a love of the oceans			1										1
Just under 2 million visitors enjoyed our exhibits, animals and programs—the fourth highest attendance in our history.													0
More than 80,000 schoolchildren and teachers visited the Aquarium for free, with support from our Children's Education Endowment.													1
Our pioneering sea otter program was the subject of a popular national													1
More than 100,000 business locations across North America rely on our													1
Our animal care team succeeded in breeding and raising beautiful fluke													1
23 ecosystem-based science into their classrooms.													1
In addition to weekend workshops and summer institutes, we again hosted our Ocean Plastic Pollution Summit—engaging teachers and students in learning and outreach activities at													1
Looking ahead, we crafted an ambitious long-term vision for our education													1
This vision includes expanding our services for teachers, with the goal to													1
Your contributions to our Children's Education Fund, including endowm													1
This year we also welcomed new leadership for our conservation and sci													1
In particular, legislation was sponsored to end the shark fin trade in Calif													1
Our sustainable seafood initiative, Seafood Watch, is now in its 15th ye													1
Today, more than 100,000 business locations in North America rely on Seafood Watch science to													1
With our collaborators, we're driving global business change in how sea													1
I'm so proud of all that we've achieved together this past year in continuing to lead our field in re													1
Thank you for joining me on this journey, and for all you do to support o													1
As I reflect on the year 2013, it's easy to get discouraged by the slow pace of human action to reverse the critical environmental trends that seem to escalate year by year.													1
But there's always one bright spot for me, and that's the growing impact of the Monterey Bay Aquarium in building a constituency for the ocean.													1
It starts with our living exhibits.													1
They're the heart of what we do.													1
Yet they also represent just the beginning of our work to inspire conserv													1
I'm proud to report that in 2013 we contributed in more ways than ever to shaping a future with													1
Our impact begins when we bring people face to face with ocean wildlif													1
In 2013, we welcomed the fourth highest number of visitors in our histor													0
Thanks to your generosity, especially to our Fund for the Animals, we completed major improvements like the upgraded sea otter exhibit that opened in April 2013.													1
Your contributions also supported our imperative care for the animals in our living collection, and													1
Successful development of this challenging exhibition reflects the amaz													1
Inspiring exhibits are just the starting point.													1
With a long-term goal to create a generation of young adults who are inspired, ocean literate and ready to act on the ocean's behalf, our programs for young people continued to gr													1
It's gratifying to see our deep investment in young people pay off through programs like our long-term partnership with high schools in the diverse community of Pajaro Valley.													1
Here's three graduates with a strong science background, environmental values and self-confidence that will shape their, and our, future.													1
Our programs for educators extend our reach even further, giving teach													1
Over nearly 30 years, we've taken more than 54 million people on an ins													1
For us, their visits represent an important step along a path that connects them to a world that may be out of sight, but that is critical to our very survival.													1
And, it's being changed every day, by the growing impact of our human													1
The Monterey Bay Aquarium Board of Trustees has been gifted with exceptional leadership over the past three decades.													1
David Packard, our first chairman, cast a vision that still guides our work.													1
Peter Berg, whom I succeeded last year, continued the legacy and built													1
It has been a great joy to serve as a trustee, alongside both													1
These inspiring leaders helped build a public aquarium that is second to none in the world—and one that is also recognized as a global leader in ocean conservation.													1
Your generous support has allowed the Aquarium to turn bold dreams into reality, time and time again.													1
Together, we have truly made a difference.													1
With your help, we've built research programs to map the vast migrator													1
And yet, the need to protect the ocean remains urgent and we have mu													1
Providing a place where even more schoolchildren and teachers can come and learn about the ocean will take on an ever more important role in this process, and we have inspirin													1
With your help, we have accomplished great things.													1
With your continued support, we will do even more to protect the ocean in the years to come.													1
On behalf of our Board of Trustees, thank you.													1
Inspiring the Next Generation													1
Today's students are tomorrow's scientists, policymakers and citizens.													1
Their decisions will affect the future of the oceans—and their lives will be shaped by the health of ocean ecosystems.													1
Our education programs for young people and teachers are shaping a gl													1
Your support for our Children's Education Fund, including endowment gifts, means w													1
With your help, we will dramatically expand the reach of our education impact in the years to come.													1
Our work with middle school science teachers is paying big dividends.													1
As teachers gain skills through our Science Institutes, they also gain new													1
That's because we engage them with new technology, and connect them													1
More than 400 middle and high school students took part in our teen pr													1
Nearly 80 percent of the teens said they came away with the skills and confidence to pursue their dreams and make a difference in their communities.													1
Our Teen Conservation Leaders program provides hands-on service opportunities for 150 teens a year, who learn science content and practice leadership skills.													1
This program is made possible through funding from the Indaver Institute of Museum and Library Services and contributions to our Children's Education Fund.													1

Sentence	F. Human	F. Economy	F. Response	F. Do More	F. Use Less	F. Backed	F. Green	F. Apology	F. Animal Rights/Ethics	Command	Credibility	Issue?	Cost
Our Watsonville Area Teens Caring for Habitat program	1	1	1								1		
The program serves high school students in the predominantly Hispanic			1								1		
We expanded our Free to Learn and Shift to Share programs, making it easier for special needs communities and people from low-income households to visit the Aquarium.												1	
Participants from these programs and visiting school groups	1										0		
As California's demographics change, we continue to attract and inspire visitors who reflect the new face of the state.											1		
In 2013, 25 percent of Aquarium visitors were Hispanic—a 70 percent increase from			1								0		
More important than the numbers, these visitors tell us they come away											1		
Training Science Teachers			1								1		
New Conservation Leaders											1		
Skills Award-Winning Teen Program Providing Free Access The Changing											1		
Learning Science & Leadership			1								1		
Changing Face of California			1								1		
Great exhibits begin with incredible animals.											1		
Your support for our Fund for the Animals provides the resources our ad			1								1		
In 2013, we raised extraordinary animals for the 2014 special exhibition, including successfully capturing flamboyant cuttlefish and bright reef squid.											1		
We and our university colleagues tagged an additional 25 great white sharks in Calif											1		
Tag data deepens our understanding of white shark migration patterns			1								1		
With research colleagues, we launched a three-year study of sea otters			1								1		
Our goal is to understand how otters are faring in an estuary habitat and			1								1		
The project will help inform sea otter recovery as they re-colonize other			1								1		
With Pacific bluefin tuna populations down by 96 percent from historic levels, we're stepping up			1								1		
In 2013, we expanded our work across the ocean and collaborated with the Japanese government			1								1		
We welcomed a new member into our flock with the hatching of Mago, an African Blackfooted po			1								1		
She is the fourth chick to hatch in our penguin colony; all members of the colony are part of a Sp			1								1		
Snowy plovers, tiny migratory shorebirds, face myriad threats in the wild			1								1		
That's why we work to save these threatened dune-dwelling birds.			1								1		
In 2013 we rescued, raised and released 15 plovers into the wild—a total			1								1		
The young loggerhead sea turtle that made a name for itself before arriv			1								1		
The turtle was rescued by the North Carolina Aquarium at Pine Knoll Sh			1								1		
They have since sent us a new "Traveling Turtle" that you can see in our			1								1		
It too will eventually be released back to the wild.											1		
White Shark Conservation			1								1		
A New Sea Otter Study											1		
Tagging Tuna in Japan			1								1		
Birth of a Penguin											1		
Snowy Plover Milestone			1								1		
Traveling Turtle Heads Home			1								1		
Saving Ocean Animals			1								1		
Our work with ocean wildlife is at the heart of all that we do.			1								1		
The status of key species—sea otters, white sharks and bluefin tuna—refl			1								1		
Similarly, the status of endangered shorebirds like snowy plovers reflect			1								1		
We and our partners both rescue and study wildlife to help threatened			1								1		
The life of one sea otter pup captured hearts nation wide in 2013.			1								1		
Saving Otter 501 on PBS Nature documents our nearly 30 years of plent			1								1		
The show follows her upbringing as she learns to dive, hunt and eat, and finally her r return to the ocean.											1		
One viewer was so inspired that he included a generous gift in his estate plan to support our work.											1		
Taking Action for the Oceans			1								1		
Thanks to you, we're raising awareness of ocean issues and inspiring thi			1								1		
We're engaging with businesses, political leaders and change makers to influence policy and pul			1								1		
From our own restaurant to supermarket shelves and restaurants across			1								1		
We brought together more than 200 experts from 24 countries to share			1								1		
Menus in our new Cindy's Waterfront restaurant and our café— created under the direction of our James Beard Award-winning culinary partner Cindy Pawloyn—provide visitors with c											1		
In December, our Seafood Watch team convened 20 culinary leaders from across the country to			1								1		
The chefs are carrying the message to customers and peers nationwide.			1								1		
Today, 95 percent of the U.S. fisheries we assess are rated "Best Choice" or "Good Alternative"			1								1		
The last legal shark fin was sold in California on June 30, 2013.											1		
With your help, the Aquarium led the way for legislation that outlawed the shark fin trade in the state—a major win for sharks, and for healthy oceans.											1		
Seafood Watch added many business and chef partnerships in 2013, building market demand for seafood from sustainable sources.											1		
One major new direction: Our partnership with Mats Picciani U.S., which			1								1		
Convening International Experts											1		
Sustainable and Delicious			1								1		
Blue Ribbon Chef Partners			1								1		
Good News for Seafood			1								1		
Shark Fin Trade Ends in California			1								1		

Sentence	F: Human	F: Economic	F: Response	F: Do More	F: Use Less	F: Blocked	F: Green	F: O: Apocalyptic	F: Animal Rights/Ethics	Commod	Credibility	Taste?	Cost?	Health?
Shark Fin Trade Ends in California				1						1				0
A Perfect Seafood Partnership				1						1				0
Thank you for joining me on this journey, and for all you do to support it.				1						1				0
Knowing that conservation of the oceans will be a never-ending task, Jane and Marshall Steel, Jr. established our endowment fund in 1996, with a generous lead gift.				1						1				0
Since that time, others have contributed to the fund and our Board of Trustees has established a Board Designated Endowment to secure for the future our education programs, note				1						1				0
Providing over 2 million schoolchildren with free access to the Aquarium is a hallmark of our institution and in 2011, we established our Children's Education Endowment Fund to ensure				1						1				0
Together, our endowment funds now total \$108 million and provide until				1						1				0
in 2013, \$3.5 million was distributed from our endowment funds for our				1						1				0
Growing our endowment is a top priority to advance our work, inquire me				1						1			1	0