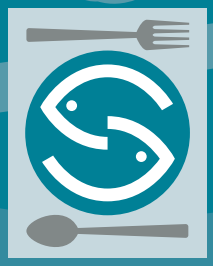
THE MARKETPLACE FOR SUSTAINABLE SEAFOOD

Growing Appetites and Shrinking Seas



seafood *choices* ALLIANCE

JUNE 2003

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Introduction

For many Americans, the most salient connection they have to the ocean is the seafood they eat. Unlike many other food products, consumers are often in the dark about where their seafood comes from, how it is caught, and its impact on the natural environment. Better information and more informed consumers are essential to achieving stronger protections of the ocean and ensuring a lasting and diverse supply of seafood. And the need for information has never been more urgent.

More than ever seafood is a global commodity. Our grocery stores are stocked with salmon from Norway and Chile, shrimp from Thailand and Peru. Swordfish and bluefin tuna caught in the north Atlantic are sold in markets in Japan. At the same time, fish once intimately connected with the character and culture of many regions are disappearing. Cod are in crisis in New England and Canada. In Maryland, the blue crab fishery is in decline. Wild Atlantic salmon are listed as an endangered species and all the Atlantic salmon consumed in the U.S. are farmed.

A sustainable fishery is one that is healthy and managed in a way to preserve fish populations for future generations. Likewise, sustainable fish farming respects the surrounding environment, uses water and other resources wisely, and does not interfere with natural, wild fish populations. Yet today, relatively few fisheries and aquaculture operations can be considered sustainable, or "ocean-friendly."

Too Many Boats, Too Few Fish

In many cases the problem with modern commercial fishing simply boils down to overfishing—catching more fish than can be replaced with the natural reproductive cycle of the species. Often this overfishing is not only a matter of sheer numbers (catching too many fish) it is also a matter of catching (and often discarding as dead) fish that are too small to have even reached reproductive maturity. In this case, overfishing depletes not just the current population, but it makes it very difficult for the population to replenish itself over time.

Another problem in many fisheries is that the gear used by the commercial fishing boats is indiscriminate—in other words, it catches everything and whatever is not the intended catch is discarded. Some examples of this include longlining, a method for catching large migratory fish like swordfish and tuna that baits miles of lines, attracting sharks, sea turtles, and other creatures. Referred to as "by-catch," these creatures become hopelessly hooked or tangled and drowned. Bottom trawling is a method of catching species like shrimp that involves dragging nets along the ocean floor, destroying important habitat and catching approximately 3 to 7 pounds (varies by location) of unwanted fish for every pound of shrimp.

Information from the federal government on the health of fish populations has been contradictory. On one hand, fisheries officials assure consumers they can be confident that all seafood found in a U.S. restaurant or market is sustainable because it is government managed. Yet, in its most recent *Annual Report to Congress,* the U.S. National Marine Fisheries Service identified 64 percent of wild fish stocks as overfished or experiencing overfishing. And, the number of species classified as "overfished" in 2002 is no less than it was in its first *Annual Report to Congress* in 1997.

Farming the Seas

Often called the "blue revolution" after agriculture's "green revolution," fish farming has been touted as a solution to relieve pressures on depleted wild fisheries while producing needed sources of protein to feed the world's population. To be sure, many types of aquaculture are providing important and environmentally responsible fish and seafood. Most notable of these are catfish farms which operate on land in closed systems that do not interfere with wild fish, and shellfish farms which help improve water quality due to the nature of these filter feeders. But not all aquaculture is ocean-friendly. The farming of salmon, which has lead to extremely low prices for this fish, has come at a high price to the environment. Its impacts include habitat destruction, escapes of farmed fish, and spread of disease to wild populations.

The Role of Seafood Choices Alliance

The Seafood Choices Alliance presents *The Marketplace for Sustainable Seafood: Growing Appetites and Shrinking Seas* as a reference for those who care about sustainable seafood. For the first time, this report brings together information on the U.S. seafood market and research on consumer attitudes towards seafood. With this information, the conservation community and the seafood sector will be better equipped in developing strategies that ensure consumers make informed seafood choices - choices that ensure a healthy seafood supply for years to come.

The Seafood Choices Alliance is the clearinghouse for all information related to sustainable seafood. Since 2001, Seafood Choices has been building interest in and awareness of sustainable seafood issues by working collaboratively with conservation organizations and the seafood sector to ensure the widest possible dissemination of information about sustainable seafood. Seafood Choices brings ocean conservation to the table by providing the seafood sector—fishermen, chefs and other purveyors—with the information they need to make sound choices about seafood and offer the best environmental options to their customers.

Overview of U.S. Seafood Supply

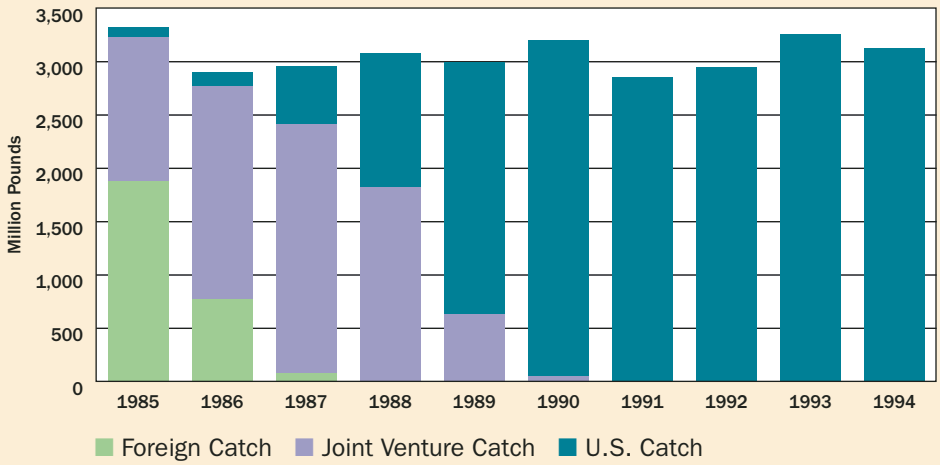
Unless indicated otherwise, the following sections contain data compiled by the U.S. Department of Commerce, National Marine Fisheries Service.

U.S. Wild Fishery Landings

Originally adopted by the U.S. Congress in 1976, the Magnuson Fisheries Conservation and Management Act is the primary federal marine fishery management law in the United States. Adopted in response to overfishing by foreign fleets, this legislation defined U.S. management authority over all fisheries in U.S. coastal waters by establishing an Exclusive Economic Zone (EEZ), extending 200 miles out from the coastline.

The gradual phase out within the EEZ of both foreign-flagged fishing[1] and joint venture operations (involving U.S. fishing vessels and foreign processing ships) led to a significant increase in U.S. commercial landings[2] of edible fishery products between 1988 and 1993. The impact of this transition was most notable in the Alaska pollock fishery, where foreign landings fell from close to 2 billion pounds in 1985 to zero landings in 1988 (See Figure 1.1).

Figure 1.1: Alaska Pollock Catch, U.S. vs. Foreign, 1985—1994



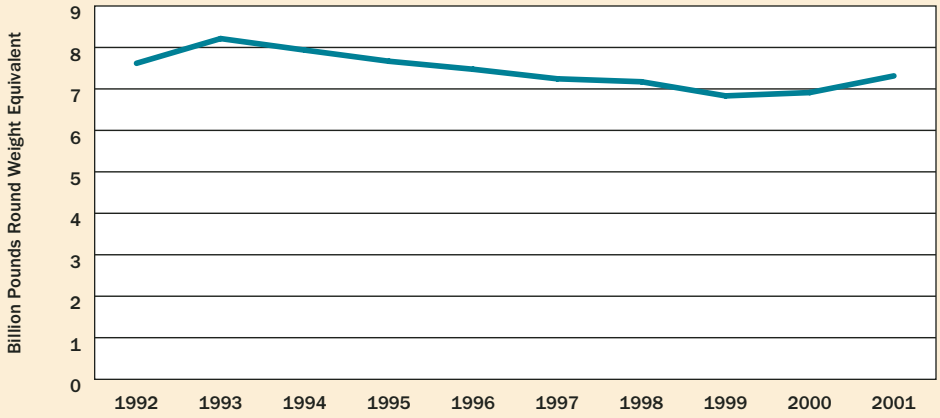
Source: National Marine Fisheries Service (NMFS)

[1] Foreign flagged fishing vessels are non-U.S. owned and/or registered vessels. The Magnuson Act was revised to restrict U.S. flagged fishing and processing vessels with a large percentage of foreign ownership. Currently, the law prohibits vessels constructed or registered in foreign countries to land fish catches at U.S. ports.

[2] The National Marine Fisheries Service defines commercial landings as the "quantities of fish, shellfish, and other aquatic plants and animals brought ashore and sold." Note that landings of fish may be in terms of round (live) weight or dressed weight

As the largest domestic fishery, Alaska pollock landings total 3 billion pounds, 40 percent of total U.S. commercial fish landings.

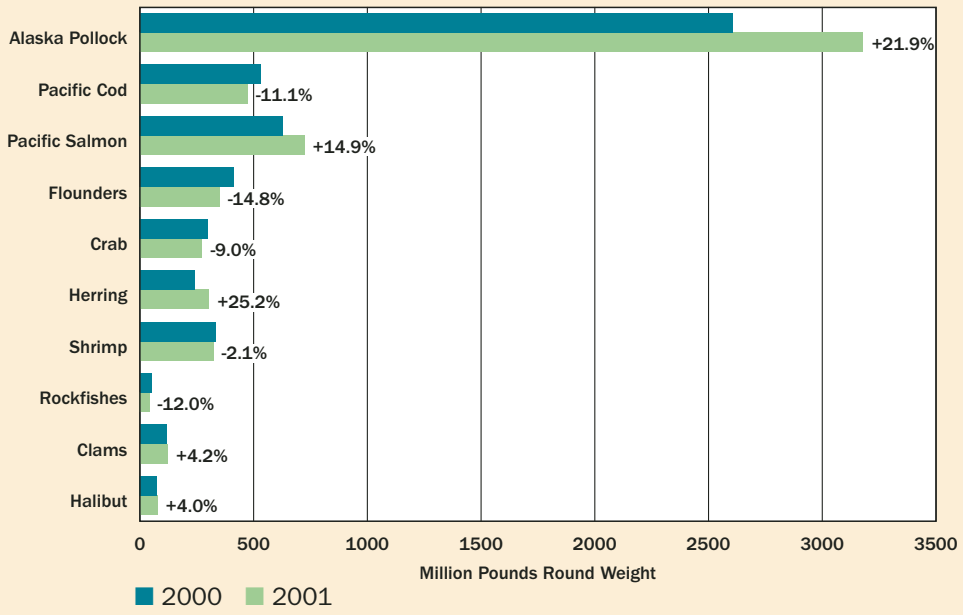
Figure 1.2: U.S. Commercial Fish Landings, by Volume, 1992–2001



Source: National Marine Fisheries Service

After peaking at 8.2 billion pounds in 1993, total commercial landings of edible fishery products began declining and, for the past several years, have hovered around 7 billion pounds[3], valued at approximately $8 billion (See Figure 1.2).

Figure 1.3: U.S. Wild Fishery Landings, 2000 vs. 2001



Source: National Marine Fisheries Service

Annual domestic commercial landings are now heavily dependent upon Alaskan production—as Alaska fisheries comprise 68 percent of total U.S. fish landings, valued at $870 million.

[3] This estimate does not include aquaculture species production.

Alaska pollock landings, in particular, have rescued U.S. wild fishery landings from significant decline. As the largest domestic fishery, Alaska pollock landings total 3 billion pounds, 40 percent of total U.S. commercial fish landings. And, in 2001, alone, Alaska pollock landings increased by 22 percent (See Figure 1.3). Thus, a small percentage shift in the Alaska pollock supply can significantly affect total U.S. wild fishery landings.

As Figure 1.3 illustrates, Alaska pollock landings are followed—only distantly—by Pacific salmon and Pacific cod landings. But where Pacific salmon landings have increased in recent years, Pacific cod landings have declined. Significant declines in other U.S. commercial fisheries, such as Atlantic cod, are often not reflected in the total landings statistics.

U.S. Aquaculture

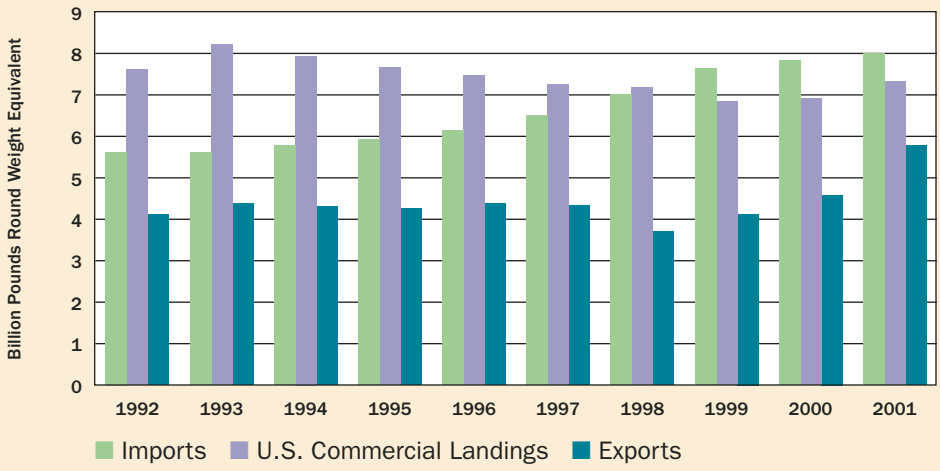
Although U.S. aquaculture production was down in 2001, due to reductions in catfish, trout, and tilapia output, aquaculture still contributes significantly to U.S. seafood supply. In 2001, domestic aquaculture contributed an estimated 800 million pounds to the U.S. seafood supply. Despite recent declines, growth in domestic aquaculture production has been fueled primarily by catfish production, which totaled 600 million pounds (live weight) in 2001.

In 2001, total U.S. edible seafood supply totaled 9.5 billion pounds worth some $14.7 billion.

Trade and the U.S. Seafood Supply

In 2001, total U.S. edible seafood supply[4] totaled 9.5 billion pounds, worth some $15.3 billion. The supply included domestic landings of 7.3 billion pounds (round weight) and 8 billion pounds of imports—minus 5.8 billion pounds of exports (See Figure 1.4). Imported seafood was valued at $9.9 billion while exports were worth $2.6 billion for a seafood trade deficit of $7.3 billion (See Figure 1.5).

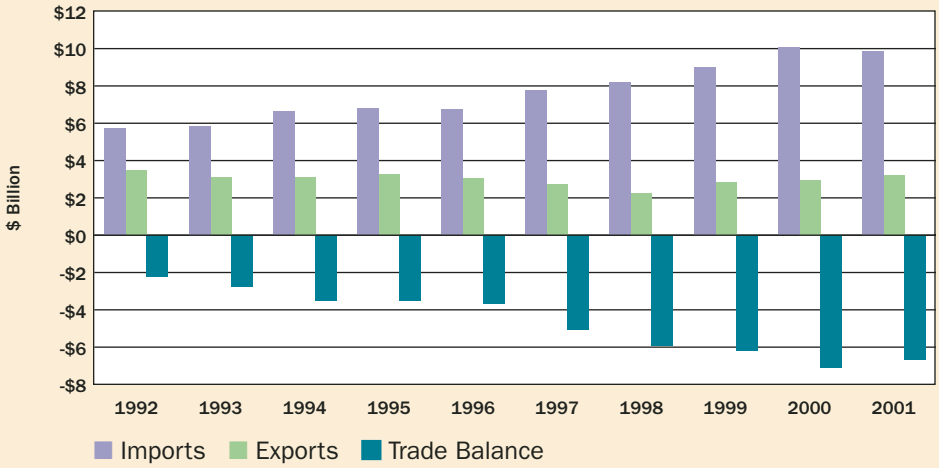
Figure 1.4: U.S. Seafood Trade, by Volume, 1992–2001



Source: National Marine Fisheries Service

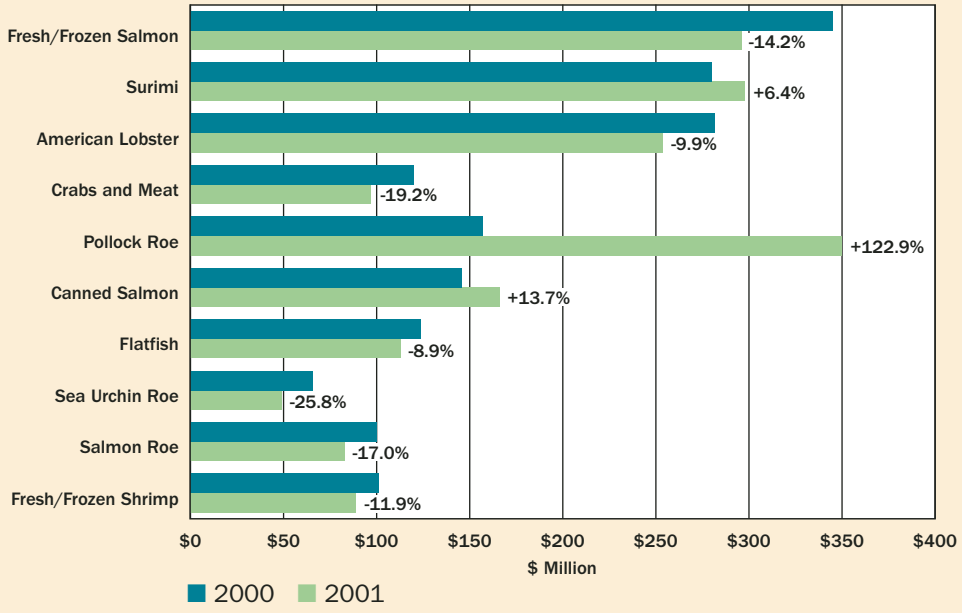
[4] The edible seafood supply equals domestic landings (not including aquaculture) of edible products plus imports of edible seafood, minus exports of edible seafood. It is expressed in round weight equivalent and is unadjusted for annual inventory changes.

Figure 1.5: U.S. Seafood Trade, by $ Value, 1992–2001



Source: National Marine Fisheries Service

Figure 1.6: Leading U.S. Seafood Exports, 2000 vs. 2001



Source: National Marine Fisheries Service

U.S. Seafood Exports

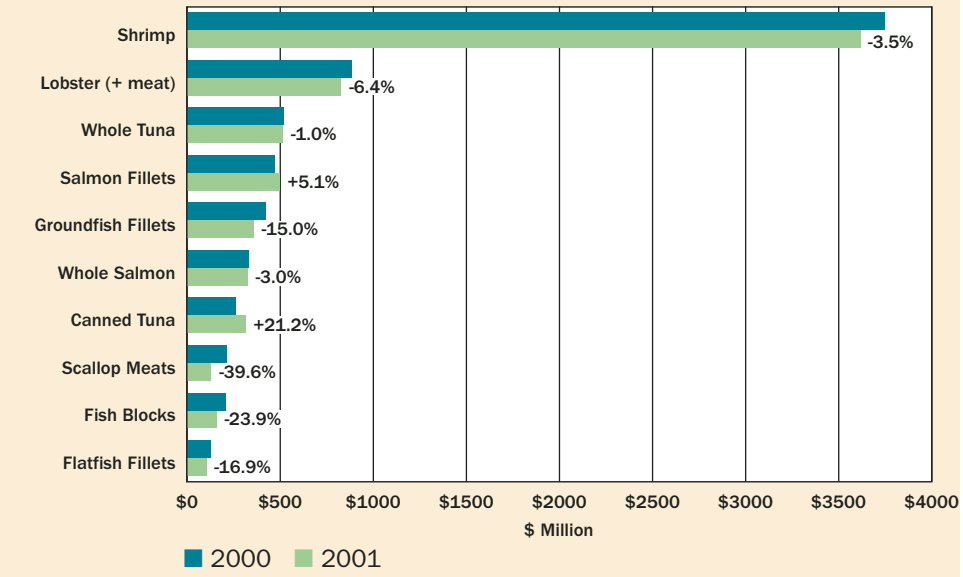
Of domestic fish landings, a significant percentage is exported to meet foreign demand for many U.S. species. In 2000 and 2001, the major U.S. exports were fresh/frozen salmon, surimi (pollock), and American lobster. In 2001, pollock roe exports increased by 123 percent, making it the top exported species in that year (See Figure 1.6)

U.S. Seafood Imports

According to the United Nations Food and Agriculture Organization (FAO), the U.S. imports 76 percent of all the seafood it consumes. This importation is of higher per pound value species ($2.40 per pound) compared to the lower per pound species we export ($1.25 per pound), which contributed to the $7.3 billion seafood trade deficit (in 2001). In 2001, seafood imports accounted for 2.1 percent of the overall U.S. trade deficit (for goods and services).

Shrimp leads U.S. seafood imports at $3.6 billion, despite a slight decline from 2000. Shrimp imports are trailed by lobster imports ($827 million), whole tuna imports ($515 million), and salmon fillet imports ($495 million) (See Figure 1.7).

Figure 1.7: Leading U.S. Seafood Imports 2000 versus 2001



Source: National Marine Fisheries Service

In fact, without imports it is certain that seafood would be far less available on restaurant menus, fish markets, and grocery store counters.

Implications of the Supply Data

In 2001, only 23 percent of U.S. edible seafood supply came from domestic sources (capture fisheries and aquaculture). In fact, without imports it is certain that seafood would be far less available on restaurant menus, fish markets, and grocery store counters. With domestic fisheries facing stronger fishing regulations and with limited growth opportunities in domestic aquaculture (because of land, water, climate, and political limitations), the U.S. seafood industry will continue to turn to foreign supply—of both wild and aquaculture species—in order to meet domestic demand for a variety of seafood products.

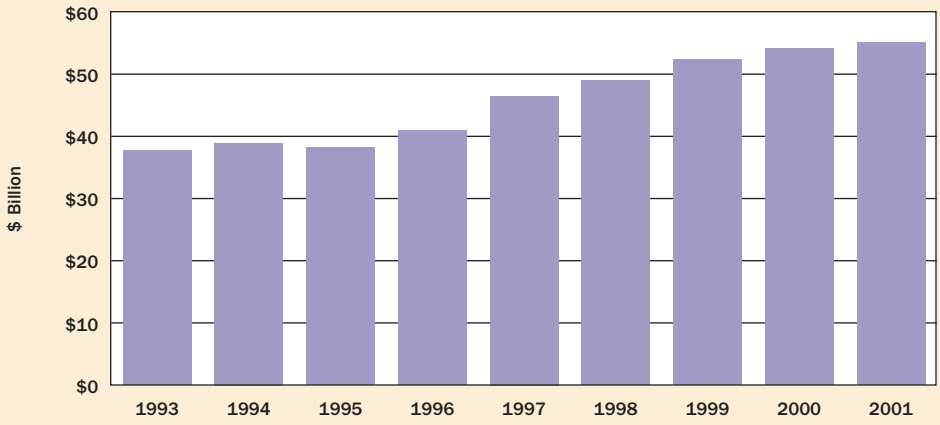
Overview of the U.S. Seafood Demand

Unless indicated otherwise, the following sections contain data compiled by the U.S. Department of Commerce, National Marine Fisheries Service.

Although growth in the U.S. economy slowed in 2001, U.S. consumer expenditures on seafood have continued to rise—with seafood expenditures peaking at $55 billion in 2001.

Although growth in the U.S. economy slowed in 2001, U.S. consumer expenditures on seafood reached an all time high of $55 billion (See Figure 2.1). A sharp increase in shrimp consumption combined with growth in restaurant sector demand for higher value seafoods including crab, fish fillets, and shrimp spurred a $14 billion growth in expenditures between 1996 and 2001.

Figure 2.1: U.S. Consumer Expenditures on Seafood, 1993–2001

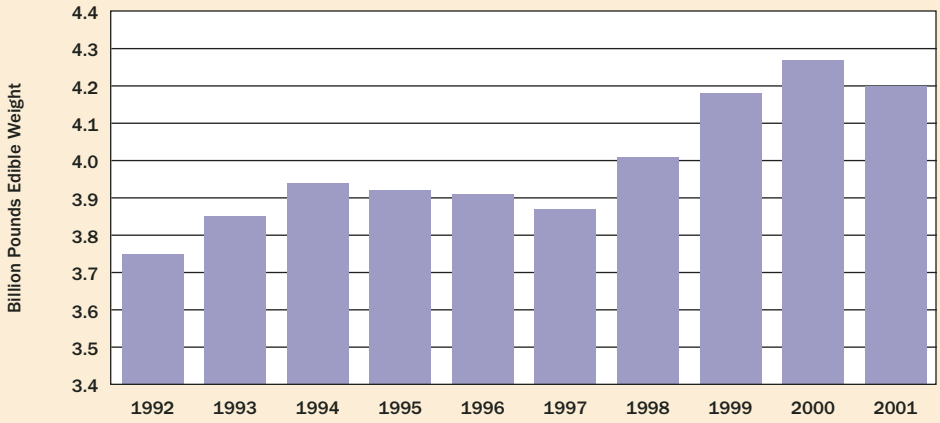


Source: National Marine Fisheries Service

While per capita consumption of seafood has remained relatively constant over the past several decades—around 15 pounds edible weight—overall U.S. seafood consumption has increased due to growth in the U.S. population (See Figure 2.2). From 1992 to 2001, the volume of U.S. seafood consumption grew by approximately 450 million pounds (edible weight).

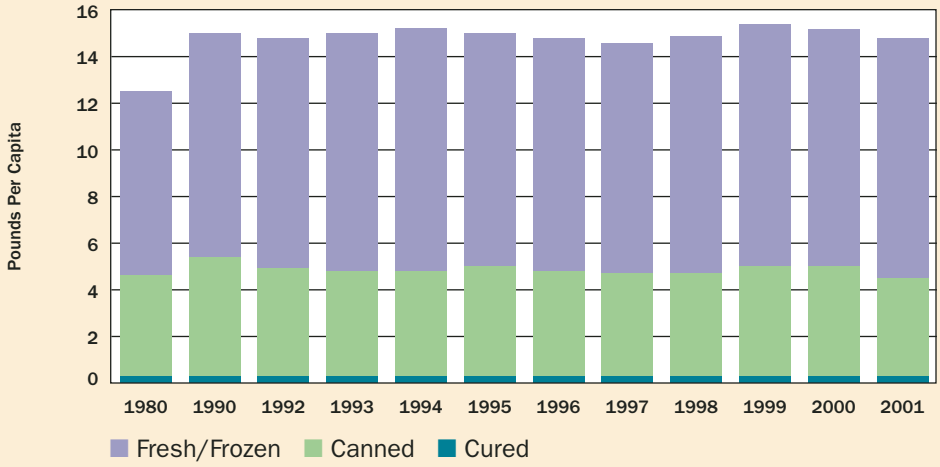
There has also been significant change in product form and species preferences in the past decade. Declines in canned seafood consumption have been offset by increased demand for fresh seafood (See Figure 2.3). In fact, in 2001, canned tuna was displaced by shrimp as the leading seafood consumed in the U.S. (See Figure 2.4).

Figure 2.2: U.S. Seafood Consumption Volume



Source: National Marine Fisheries Service

Figure 2.3: U.S. Seafood Consumption 1980–2001



Source: National Marine Fisheries Service

Out-of-home consumption represents two-thirds of all consumer expenditures of seafood.

Of the volume of seafood consumed in the U.S., one-third is consumed out of the home. But in dollar terms, out-of-home consumption represents two-thirds of all consumer expenditures on seafood. In 2001, consumer spending at food-service establishments totaled $38 billion. This volume to value ratio is explained by the significant amounts of canned tuna and other lower cost seafoods consumed at home, relative to higher cost seafoods consumed at restaurants.

The USDA forecasts that the foodservice sector of the domestic seafood market will grow at a faster rate (both in terms of volume and value) than at-home consumption over the next several decades. Currently, according to the *2001 Restaurants and Institutions Menu Census*, salmon and shrimp (both high cost items) continue to be the most frequent seafood menu items. Salmon is on 39 percent of all foodservice menus, 71 percent of fine dining menus, and 49 percent of casual dining menus.

U.S. consumption of salmon (fresh, frozen and canned) increased 366 percent between 1988 and 2001. Currently, over 80 percent of non-canned consumption of salmon in the U.S. is farmed.

Figure 2.4: The Most Consumed Seafoods in the U.S.

- **Shrimp**—Shrimp is the most popular seafood in the U.S. and the world. In 2001, the U.S. imported $3.6 billion worth of shrimp from over 40 countries, with Thailand as its leading supplier. Shrimp is both caught in the wild and farmed (in over 60 countries around the world). According to the *Restaurants and Institutions Menu Census for 2001*, shrimp topped menus at family/mid-scale restaurants and fast food establishments.
- **Canned Tuna**—Although it has fallen to second place in U.S. consumption, canned tuna remains a popular seafood item. Almost all canned tuna is produced outside the continental U.S., but U.S. flagged vessels are still a major supplier to canneries.
- **Salmon**—U.S. consumption of salmon (fresh, frozen and canned) increased 366 percent between 1988 and 2001. This increase is the result of major aquaculture production, most notably in Chile. Currently, over 80 percent of the non-canned consumption of salmon in the U.S. is farmed. According to the *Restaurants and Institutions Menu Census for 2001*, salmon is the top menued fish/seafood item at fine dining restaurants, casual/theme restaurants, and hotel/motels.
- **Pollock**—Alaska pollock is a major component of U.S. seafood consumption. Pollock finds its way into the U.S. diet as surimi seafood (artificial crab), fish sticks, fish sandwiches, and as low-priced fillets. Alaska pollock is managed to maintain an annual output of 2 to 3 billion pounds.
- **Catfish**—Catfish consumption has increased steadily in the U.S. through the development of aquaculture operation in the southern states. Currently, U.S. fish farmers produce approximately 600 million pounds (round weight) of catfish each year.

Implications of Demand Data

Despite the recent stability of U.S. seafood demand, increases in U.S. population and changing demographics are expected to push demand higher over the next several decades. The USDA Economic Research Service estimates that per capita consumption of seafood will rise to 16 pounds (from 14.8 pounds in 2001) by 2020, while per capita consumption of beef will drop. By 2020, the USDA also estimates that there will be 70 million Americans over the age of 60, leading to a larger percentage of the population that will be both eating healthier and spending more on food items. These forecasted changes translate into an increase in seafood demand of some 4 billion pounds (round weight) annually by 2020.

Consumer Attitudes on Sustainability

The following section relies on data from The Seafood Choices Alliance Nationwide Survey of U.S. Seafood Consumers.

In 2001, Seafood Choices Alliance undertook a comprehensive look at U.S. consumer attitudes on issues of seafood sustainability. The first phase of this research included focus groups and a national survey of seafood consumers. This section highlights the major results from this research. The questionnaire used in the Survey is attached in Appendix 2.[5]

The Survey reached 1,000 adults who consume seafood at least once a month. Most of those consumers eat seafood more than once a month and over a third consume seafood at least once a week (see Figure 3.1).

Figure 3.1: Frequency of Seafood Consumption

N=1000	
Once a month	29%
Once every couple weeks	25%
Once a week	31%
More than once a week	16%

There is much greater awareness of health issues associated with seafood consumption than there is of the environmental impacts of the commercial seafood industry.

Awareness of Seafood Health and Sustainability Issues

At the time of the study, consumers had low awareness of sustainability issues associated with the capture or production of seafood. In fact, there was much greater awareness of health issues associated with seafood consumption than there was of the environmental impacts of the commercial seafood industry (See Figure 3.2). For example, more than half (57 percent) of seafood consumers had heard a great deal about the positive health benefits associated with eating fish compared to only a third (33 percent) who had heard a great deal about harmful environmental impacts associated with some types of commercial fishing.

[5]Consumer Survey Methodology Footnote

The nationwide survey of U.S. seafood consumers was conducted in March 2001. The survey was conducted using a Random Digit Dial sample methodology to ensure statistically validity. The questionnaire was designed and survey conducted by the independent market research firm, The Mellman Group. The survey reached 1,000 respondents 18 and older who reported they consume seafood at least once a month. The margin of error for the sample as a whole is +/- 3.0 percentage points at the 95% confidence level. The margin of error for subgroups of the sample varies and can be larger.

A total of six focus groups were conducted; two each in Washington, DC, Chicago, and Los Angeles. Three of the groups were conducted among male seafood consumers and three among female consumers. Respondents were chosen for paying at least some attention to current affairs and on the basis of being at least occasional seafood eaters who spend at least $15 on seafood meals in restaurants several times per year. Focus groups and interviews are qualitative in nature and cannot be statistically projected onto the larger universe of seafood consumers. The small, non-random nature of the sample precludes generalization. The findings from the focus group research presented here cannot be considered reliable or valid in the statistical sense.

Figure 3.2: Awareness of Seafood Health and Sustainability Issues

N=1000

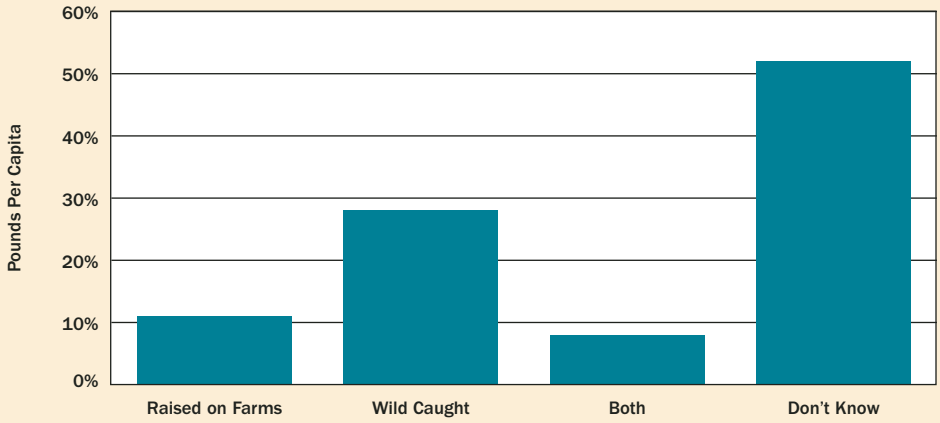
	Great Deal	Some	Not Too Much	Nothing
Positive health benefits of eating fish	57%	32%	7%	4%
Harm from eating contaminated/unsafe fish	41%	37%	15%	6%
Harm done to ocean environment by certain kinds of commercial fishing	33%	38%	17%	11%
Harm done to the environment by certain kinds of fish farming	12%	23%	26%	34%

Question: *I'm going to list some things you may have heard about fish and fishing. After each, please tell me whether you have heard a great deal, some, not too much, or nothing at all about this aspect of fish and fishing. If you are not sure please say so. Question items were rotated.*

Awareness of harmful impacts associated with some types of fish farming was quite low, with only 12 percent having heard a great deal.

Figure 3.3: Awareness of Seafood Source, Wild Caught or Farmed

Do you know if most of the fish or other seafood you buy is raised in farms or caught in oceans and rivers?



American seafood consumers appear to know little about the source of the fish and shellfish they eat, as evidenced in Figure 3.3. A majority (52 percent) are unable to say whether the seafood they purchase is wild-caught or farmed. Slightly over one-third (39 percent) believe they know—28 percent believe their fish and shellfish to be wild-caught, while 11 percent believe it to be farmed.

Key Factors In Seafood Purchasing

Improving and maintaining one's health is the most significant factor consumers cite when considering their reasons for eating seafood. In focus groups, consumers

Box A: *In Focus: What are the main reasons you eat seafood?*

- It's nutritious. *(male, Los Angeles)*
- You want to avoid the red meat. *(male, Chicago)*
- It is high protein, low fat. *(male, Chicago)*
- Health. *(female, Chicago)*
- Fish oils that are good for your digestive system. *(female, Chicago)*
- It's very healthy. *(female Los Angeles)*
- Yes, it's got Omega-3. *(female Los Angeles)*

talked about their desire to reduce or limit the amount of red meat in their diets as well as information about the benefits of Omega-3 fatty acids (See Box A).

When asked to think about the various factors they consider when purchasing seafood, most consumers give primary importance to freshness, health, taste, and price. Freshness and the possibility of contamination are the most critical factors (See Figure 3.4). Following these immediate health considerations, consumers rank the taste and texture of the fish, its nutritional or health benefit, and price as the next most important factors in determining their seafood buying decisions. Given consumers' low awareness of environmental impacts associated with seafood, it is not surprising that these aspects do not weigh as heavily in their purchasing decisions as others previously mentioned. Indeed, sustainability

Figure 3.4: Factors in Seafood Purchasing

N=1000

	Great Deal of Importance	Very Important
Freshness or smell	44%	48%
Possibility of contamination	37%	41%
Taste or texture	33%	54%
Health/nutrition	21%	49%
Price	18%	35%
Eaten before	16%	39%
Whether species overfished	15%	29%
Possible harm to other ocean creatures	14%	33%
Possible harm to ocean environment	13%	30%

Question: *Now I am going to read you a list of things that some people have told us they consider when they are deciding what kind of fish or other seafood to buy in a store or restaurant. After each, please tell me whether it is* ***one of the most*** *important factors that you personally consider, a* ***very*** *important factor, a* ***somewhat*** *important factor, a* ***not too*** *important factor, or* ***not an important factor at all*** *when you decide what kind of fish or other seafood to buy. If you are not sure about a particular item, please say so.*

Thirty-seven percent of consumers reported they had decided not to buy a certain kind of seafood because of potential environmental impacts to the ocean…it represents a significant number of consumers who are willing to modify their seafood purchases when a concern is brought to their attention.

factors—such as the biological status of the species and whether the capture or farming of the species causes harm to other ocean creatures or the ocean environment—are of much less importance to seafood consumers at the present time.

At the same time, many seafood consumers report that they have made seafood selections in the past with environmental considerations in mind. Thirty-seven percent (37 percent) reported they had decided not to buy a certain kind of seafood because of potential environmental impacts to the ocean. While this is far fewer than the 57 percent who have decided not to purchase a particular seafood due to health or contamination concerns, it represents a significant number of consumers who are willing to modify their seafood purchases when a concern is brought to their attention.

In focus groups, when asked to think about environmental issues associated with fish and fishing, consumers gravitate toward pollution and overfishing. They are concerned about possible health issues related to eating fish caught in contaminated or polluted water. They also draw on their recollections of hearing that certain fish are being "fished-out" (See Box B).

Box B: *In Focus: What if anything, have you heard about environmental issues and fishing?*

- I have seen documentaries on that, particularly in New England where they are fished-out. *(male Chicago)*
- Well, was it the rockfish, which was like endangered around this area, people stopped serving rockfish. Well why was that? Because we were going to fish it out. *(male DC)*
- Well, it's just like crabs. At one time they were this big, now you only get them this big. And that's because we're over fishing them. And I think our hunger for them is making the fishermen overfish the area. Eventually we may not have any more. *(male DC)*
- This is a 25 year old problem that Jacques Cousteau identified. We are over-harvesting and killing off fish. The sea is no longer going to be a resource for nutrition. *(male Chicago)*
- Mercury in the fish. *(male Chicago)*
- When I buy fish, I do have concern for the waters that they are swimming in and what kind of pollution is going into the waters and what is absorbed in them. I wish there was some meter or something so you would know what kind of toxins are in the fish that you are eating. *(male Chicago)*

Desire for Information

Generally speaking, American seafood consumers do not feel that they have enough information about the seafood available to them. In particular, when asked about their ability to identify specific seafood that is overfished or produced in way that may harm other ocean life or the environment, only 2 in 10 consumers say they have enough information to do so. Consumers feel only slightly better able to distinguish seafood that poses a health risk (See Figure 3.5).

A majority of seafood consumers (67 percent) say they are interested in getting more information about the environmental impacts associated with

Generally speaking, American seafood consumers do not feel that they have enough information about the seafood available to them.

Figure 3.5: Seafood Information

N=1000

	Have enough information	Do not have enough
Do you feel like you do or do not have enough information to be able to identify kinds of seafood that are overfished or caught in a way that is harmful to other sea creatures or the ocean environment?	20%	76%
Do you feel like you do or do not have enough information to be able to identify kinds of seafood that pose a health risk to you or your family?	28%	70%

A majority of seafood consumers (67%) say they are interested in getting more information about the environmental impacts associated with seafood.

Figure 3.6: Interest in Types of Seafood Information

N=1000

	Extremely Interested	Very Interested	Somewhat Interested
Information about the health risks associated with eating certain kinds of seafood	21%	42%	20%
Information about where the fish you buy come from and how they were caught	17%	34%	23%
Information about the positive health impacts associated with eating certain kinds of fish and seafood	16%	41%	22%
List of different kinds of fish and seafood to avoid because of harmful impacts to the ocean environment	12%	34%	31%
A list of questions you can ask at the grocery store or restaurant to help you determine what environmental impacts are associated with the fish you are buying	12%	31%	26%
List of fish that are preferred alternatives to fish caught in a way that harms the ocean environment	11%	32%	34%
Information about the range of harmful environmental impacts associated with commercial fishing for popular fish and seafood	11%	31%	31%

Question: *I'm going to list some types of information you can get about seafood. After each, please tell me how interested you are in receiving that kind of information—are you extremely interested in receiving that kind of information, very interested, somewhat interested, not too interested, not at all interested. If you are not sure about a particular item please say so.*

Seventy-one percent (71 percent) indicate that seeing an "environmentally responsible" label would make them more likely to buy a particular seafood item.

seafood. When asked, "How interested are you in getting more information about what types of seafood are overfished or caught in a way that is harmful to other sea creatures or the ocean environment," 26 percent of respondents said they were "very interested" and 41 percent were "somewhat interested." This compares favorably to 17 percent who were "not too interested" and 14 percent who were "not at all interested."

The types of information consumers are most interested in receiving center on health risks and benefits of eating fish, as is demonstrated in Figure 3.6. When it comes to environmental concerns, 51 percent of seafood eaters are "extremely" or "very interested" in learning how and where their fish and shellfish were caught. A significant number (46 percent "extremely" or "very interested") also express interest in receiving specific guidance about which fish they might want to avoid because of associated harmful environmental impacts.

Support for Labeling

Beyond simply getting information, seafood consumers support labeling fish and seafood at the point of purchase—specifically, whether it was caught in a way that might harm the ocean environment. Labeling is by far the preferred way to get such information when compared to news articles, other printed materials, or even the Internet (See Figure 3.7).

Indeed, consumers indicate they would use labels to make different choices, and they are favorably disposed toward restaurants and grocery stores that would use an "environmentally responsible" label on their seafood. Survey respondents were asked three questions about their likelihood to purchase fish and seafood that carried an environmentally responsible label (See Figure 3.8). Seventy-one percent (71 percent) indicate that seeing an "environmentally responsible" label

Figure 3.7: Preferred Seafood Information Channels

N=1000

	Extremely Interested	Somewhat Interested	Very interested
Label on the fish you buy in the store	31%	35%	18%
Cookbook containing recipes for fish that are good environmental choices	20%	31%	22%
Newspaper articles	19%	32%	28%
A website about seafood	11%	19%	20%
Articles in food or cooking magazines	10%	23%	26%
A printed card to carry in wallet	10%	15%	21%
A file to download on PDA or cell phone	4%	10%	13%

Question: *I'm going to list some ways in which you could get that information on what types of seafood are not overfished or caught in a way that harms the ocean environment. After each, please tell me how interested you are in receiving information in that way—are you extremely interested in receiving information in that way, very interested, somewhat interested, not too interested, not at all interested. If you are not sure about a particular item please say so.*

would make them more likely to buy a particular seafood item. Similarly, 67 percent would be inclined to order an "environmentally responsible" seafood item at a restaurant. Many seafood consumers agree that the use of such labels at grocery stores and restaurants would increase their favorable feelings toward these establishments.

When survey respondents were presented with a range of possible solutions—from bans on certain species to mandatory changes in fishing gear—to mitigate harmful environmental impacts from fishing and fish farming, they generally favored most proposals. However, consumers are most enthusiastic for the use of labeling. In particular, as demonstrated in Figure 3.9, they support labels stating whether the species is overfished, caught in a way that can harm the ocean environment, or caught in a environmentally responsible manner.

Willingness to Change Consumption

When it comes to changing seafood consumers' dining habits, the old adage "there are plenty of other fish in the sea" appears to hold true. Survey respondents were willing to reduce their consumption of or give up any type of seafood about which

Figure 3.8: Impact of "Environmentally-Responsible" Seafood Label

N=1000

	Much More	Somewhat More	No Difference	Less*
Suppose some kinds of seafood were labeled as "environmentally responsible," would you be more or less likely to buy seafood that had an "environmentally responsible" labelor wouldn't it make any difference?	41%	31%	18%	11%
Suppose some seafood items on menus in restaurants were labeled as "environmentally responsible," would you be more or less likely to order seafood that was labeled as "environmentally responsible" or wouldn't it make any difference?	39%	28%	19%	14%
If you were to find seafood labeled as "environmentally responsible" in your supermarket or on a restaurant menu, would it make you feel more or less favorable about that store or restaurant or would it not make any difference?	34%	32%	25%	8%

*Less is "much less "&" somewhat less" combined

Figure 3.9: Solutions to Problems with Commercial Fishing

N=1000

	Very Good Idea	Somewhat Good Idea	Not so good/ Not good at all
Labeling certain kinds of seafood as caught in an environmentally responsible manner *(n=500)*	49%	39%	10%
Making information available to consumers about how to make environmentally responsible choices	49%	37%	12%
Requiring special gear to reduce unintended catch, for example requiring turtle excluder devices on shrimp trawling boats *(n=500)*	49%	32%	10%
Requiring better fishing gear and technology in order to reduce waste and catch only the target species *(n=500)*	47%	40%	8%
Labeling certain kinds of seafood as overfished or caught in a way that harms the ocean environment *(n=500)*	47%	34%	15%
Ban on catching specific species that are overfished *(n=500)*	44%	35%	16%
Regulations to reduce harmful environmental impacts from overfishing	43%	42%	11%
Only allowing farming of fish that can be raised in ways that do not pose threats to the surrounding environment	43%	39%	13%
Encouraging consumers not to buy seafood that is overfished or caught in a way that harms the ocean environment *(n=500)*	40%	40%	17%
Lowering the amount fishermen are legally allowed to catch of overfished species *(n=500)*	39%	40%	17%
Consumer boycotts of seafood that is overfished or caught in a way that harms the ocean environment *(n=500)*	35%	37%	23%

Question: *Now I'm going to list some possible solutions people have suggested for dealing with the problems caused by commercial fishing. After each, please tell me whether it is a very good solution to the problem, a somewhat good solution to the problem, a not so good solution, or a not at all good solution to the problems caused by commercial fishing. If you are not sure, please say so.*

Figure 3.10: Likely Consumption of Fish and Seafood Upon Learning of Environmental Concerns

	Give up entirely	Eat less	Eat same	Total who would reduce consumption	% of Sample who currently eat this species
Atlantic salmon	28%	45%	28%	73%	65%
Swordfish	35%	35%	31%	70%	49%
Snapper	27%	39%	34%	66%	59%
Chilean sea bass	30%	35%	35%	65%	43%
Pollock	30%	35%	35%	65%	54%
Scallops	25%	39%	36%	64%	59%
Canned tuna	22%	42%	36%	64%	86%
Lobster	25%	37%	38%	62%	68%
Shrimp	21%	38%	41%	59%	87%

Question: *For each of the following kinds of seafood, please tell me if you found out that it was overfished or caught in a way that is harmful to other sea creatures or the ocean environment how that would affect your decision about whether to eat that particular seafood. Would you give up eating that kind of seafood entirely, continue eating that kind of seafood but eat less, or would you continue eating the same amount of that kind of seafood? If you are not sure about a particular item, please say so.*

they were asked, if they were to learn that it is overfished or caught in a way that is harmful to other ocean creatures or the ocean environment. Consumers were willing to forgo even the most popular items like shrimp and tuna.

Implications of Consumer Attitudes to Sustainability

Although questions of sustainability are not top-of-mind for seafood consumers, their receptivity to receiving information about environmental implications of seafood consumption indicates public tastes and purchasing habits can be harnessed to create change in this market. Significant numbers of consumers are willing to purchase "ocean-friendly" fish once they are aware there is a choice to be made. The coming decade will be a critical period to influence purchasing criteria in favor of sustainability as seafood consumption rises and this market expands.

Chef, Restaurateur, and Retailer Attitudes on Sustainability

In August of 2001, the Seafood Choices Alliance conducted a nationwide survey of chefs, restaurateurs, and seafood retailers. The survey reached 400 chefs and restaurateurs and 150 seafood retailers across 15 markets. The survey was designed and conducted by the independent research firm, Edge Research. For the chef/restaurateur sample, qualifying establishments were screened for a minimum of 25 percent of their menu composed of seafood dishes. For the retailer survey, establishments were screened to ensure they had a fresh seafood counter, not just frozen seafood. The chef, restaurateur and retailer questionnaires are attached as Appendix 3 and 4 to this report.

Awareness of Seafood Health and Sustainability Issues

Professional purveyors of seafood, similar to consumers, know much more about the health benefits associated with fish than they do about issues of sustainability (see Figure 4.1). However, within the purveyor community, chefs and restaurateurs are much more likely to be aware of environmental considerations related to commercial fishing than retailers.

Figure 4.1: Awareness of Seafood Health and Sustainability Issues

	Heard a Great Deal		Heard Some	
	Chef/Restaurateur *N=400*	Retailer *N=150*	Chef/Restaurateur *N=400*	Retailer *N=150*
Positive health benefits of eating fish	66%	53%	31%	41%
Health risks from eating contaminated/unsafe fish	44%	36%	37%	39%
Environmental impacts of certain kinds of commercial fishing	31%	21%	43%	47%
Environmental impacts of certain kinds of fish farming	23%	13%	46%	42%

Question: *I'm going to list some different things you may have heard about fish and fishing. After each, please tell me whether you have heard a great deal about this aspect of fish and fishing, some, not too much, or nothing at all about this aspect of fish and fishing. If you are not sure, please say so.*

Unlike general consumers, chefs and retailers are very aware of the source of their seafood and of their reliance on farmed fish and seafood (see Figure 5.2). When asked about the source of fish and seafood sold in their restaurants and stores, 49 percent of chefs say that it is sourced about equally from wild-capture fisheries and fish farms. Retailers are slightly more depending on aquaculture with 57 percent saying they source about equally from wild caught and farmed.

Notably, many chefs and retailers report having taken a seafood item off their menus or out of their stores because of environmental considerations. Nearly a third (30 percent) of chefs and restaurateurs and 20 percent of retailers said they decided not to sell a certain kind of fish or seafood because they were concerned about potential environmental impacts to the ocean.

In addition, as illustrated in Figure 4.3, chefs and retailers are willing to change their offerings in response to environmental concerns. For example, among the 70 percent of chefs who offered Atlantic farmed salmon, 23 percent would stop selling it if they learned it was farmed in away that is harmful to other marine life or the ocean environment, while 51 percent would look for alternatives. Only 24 percent reported that they would continue selling farmed Atlantic salmon as before. Shrimp is one of the top consumed seafoods in the U.S., yet 12 percent of the retailers who carry farmed shrimp would be willing to drop it for environmental impact reasons.

Figure 4.2: Source of Fish and Seafood

	Chef/ Restaurateur *N=400*	Retailer *N=150*
Primarily farmed	9%	8%
Primarily wild-caught	40%	35%
About equal	49%	57%

Question: *As you may know, aquaculture is the practice of farming or raising fish in enclosed tanks, or inland ponds or in enclosed pens in the ocean. Is most of the fish or other seafood you sell farmed or is most of the fish or other seafood you sell caught in oceans and rivers, is it about equally divided between the two or aren't you sure?*

More than receiving information or acting to educate consumers, purveyors want to find a way to facilitate ocean-friendly seafood choices at their establishments.

Interest in "Environmentally-Responsible" Seafood

Chefs and retailers expressed some interest in learning more about environmental concerns associated with fish and seafood. The majority of chefs and restaurateurs said they were interested in getting more information about which types of seafood are abundant, well-managed, and caught or farmed in a way that is friendly to the ocean environment. The same was true for over a third (37 percent) of retailers (See Figure 4.4).

Finally, the survey revealed that chefs and retailers alike are most interested in connecting to suppliers and fishing groups that can source environmentally responsible seafood (See Figure 4.5). More than receiving information or acting to educate consumers, purveyors want to find a way to facilitate ocean-friendly seafood choices at their establishments.

Figure 4.3: Response to Seafood Environmental Concerns

	Stop Selling		Look for Alternatives		Continue Selling/ No impact	
	Chef/ Restaurateur	Retailer	Chef/ Restaurateur	Retailer	Chef/ Restaurateur	Retailer
Among those carrying item	*N=400*	*N=150*	*N=400*	*N=150*	*N=400*	*N=150*
Atlantic farmed salmon	23%	11%	51%	32%	24%	58%
Chilean sea bass	24%	13%	54%	43%	22%	43%
Farmed shrimp	18%	12%	45%	27%	34%	58%
Wild-caught shrimp	18%	9%	40%	32%	40%	55%

Question: *For each of the following kinds of seafood, please tell me if you found out that it was overfished or caught or farmed in a way that is harmful to other sea creatures or the ocean environment how that would affect your decision about whether to sell that particular seafood. Would you stop selling that kind of seafood entirely, continue selling that kind of seafood but look for comparable alternatives, or would you continue to sell the seafood as before? If you are not sure about a particular item, please say so. Please tell me if you do not currently sell that type of seafood.*

Figure 4.4: Interest in Information About Sustainable Seafood

	Chef/ Restaurateur *N=200*	Retailer *N=75*
Very interested	17%	4%
Somewhat interested	49%	33%
Not too interested	24%	32%
Not at all interested	12%	29%

Question: *How interested are you in getting more information about what types of seafood are abundant, well-managed and caught or farmed in a way that is friendly to the ocean environment? Are you very interested, somewhat interested, not too interested or not at all interested?*

Figure 4.5: Willingness to Act

	Chef/ Restaurateur *N=400*	Retailer *N=150*
Buy fish from environmentally responsible suppliers or fishing groups		
Very Willing	36%	17%
Somewhat Willing	26%	43%
Somewhat Unwilling	12%	17%
Very Unwilling	16%	19%
Not Sure	10%	3%

	Chef/ Restaurateur *N=400*	Retailer *N=150*
Provide literature in your establishment on seafood and the ocean environment so customers can decide		
Very Willing	5%	3%
Somewhat Willing	19%	16%
Somewhat Unwilling	26%	19%
Very Unwilling	43%	57%
Not Sure	7%	5%

Question: *Please tell me how willing you would be to do each of the following activities—are you very willing, somewhat willing, somewhat unwilling, or very unwilling to.... If you are not sure about a particular item please say so.*

Implications of Purveyor Attitudes to Sustainability

As setters of food trends, chefs and restaurateurs are key players in creating greater consumer demand for sustainable seafood. The fact that chefs and restaurants are interested in serving consumers ocean-friendly seafood dishes offers promise that it is possible to increase awareness and appreciation of seafood that tastes good and is also good for the environment. These "gatekeepers" will continue to be an important avenue for educating the public and influencing the commercial fishing industry. Increasing the supply of "ocean-friendly" products in grocery stores and fish counters will be a critical step in bringing good seafood choices into consumers' homes.

Conclusion

U.S. per capita seafood consumption has increased in the last decade due to population growth, and forecasters predict that the overall demand for seafood will become even stronger in the coming decades. With U.S. fish landings remaining relatively static for some time, it is unlikely that domestic fishing output will meet increasing seafood demand in the U.S. This shortfall will have to be made up through aquaculture and seafood imports.

A strong case can be made for the role of sustainable fisheries and fish farms in meeting this demand. Items offered in the seafood case and on the menu today should still be available twenty years from now. Seafood that comes from environmentally responsible and well-managed sources ensures both a lasting and diverse supply of seafood for the future.

While consumers currently have low awareness about sustainability issues related to seafood, a significant number (over one third) indicate they are willing to modify their seafood purchases in favor of environmentally responsible seafood. And a majority is interested in obtaining more information about the environmental impacts associated with seafood. Seafood purveyors (chefs, retailers, and suppliers) express a similar interest in obtaining such information.

It's clear that a marketplace for sustainable seafood exists, and that there is a need for information at both the consumer and the purveyor levels.

Seafood Choices Alliance is the mechanism for facilitating this information exchange. As a clearinghouse for seafood purveyors, Seafood Choices makes useful information (from government, scientific, and conservation sources) conveniently available through our quarterly newsletter and online SeaSense database of popular seafood items. Seafood Choices Alliance has reached out to over 1,700 individuals from the seafood sector who are interested in meeting both an economic and environmental bottom line. Subscribing is free and entails no further obligation than endorsing our Statement of Principles (See page 40).

Seafood Choices Alliance also assists the conservation community in its education efforts aimed at consumers. Seafood Choices has established partnerships with over 30 conservation organizations working on sustainable seafood issues, leveraging these individual efforts in support of the larger goal: better conservation of our ocean resources.

Appendices

Appendix 1: List of Markets Surveyed for the Chef, Restaurateur and Retailer Survey

MARKETS SURVEYED	REGION
Boston	East
NYC (some NJ)	East
Philadelphia (some NJ)	East
Chicago	Midwest
Detroit	Midwest
Atlanta	South
Charleston	South
DC (DC+WV+VA+MD)	South
Miami	South
New Orleans	South
Denver	West
Portland (all OR)	West
San Francisco	West
Los Angeles	West
Seattle	West

Appendix 2: Survey of Consumers

Seafood Choices Alliance
National Survey Results (Sample Size=1000)
March 2001

Note: All results given as percentages.

Male 48%
Female 52

1a. Are you registered to vote at this address?
Yes 84%
No 16
don't know/refused 1

1. About how often would you say you eat fish or other seafood at home or in restaurants? **READ LIST:**
Never ..... TERMINATE
Once a year ..... TERMINATE
A couple of times a year ..... TERMINATE
Once a month 29%
Once every couple of weeks 25
Once a week 31
More than once a week 16
[VOL] Don't know/not sure ..... TERMINATE

2. How much responsibility do you have for FOOD OR GROCERY shopping in your household—are you completely responsible, partly responsible, or not at all responsible for your family's shopping decisions?
Completely 57%
Partly 36
Not at all 7
Don't know 0

3. How much responsibility do you have for making your family's decisions about what seafood to buy—are you completely responsible, partly responsible, or not at all responsible for your family's decisions about what seafood to buy?
Completely 54%
Partly 39
Not at all 6
Don't know 1

READ: For purposes of this survey, we will use seafood to mean both fish with fins, like tuna and salmon, and shellfish, like shrimp and lobster.

4. Do you eat fish or other seafood more often at home or in restaurants?
At home 42%
In restaurants 40
Restaurants and home equally [vol] 17
Someplace else [vol] 1
Don't know 1

5. As you may know, aquaculture is the practice of farming or raising fish in enclosed tanks, or inland ponds or in enclosed pens in the ocean. Do you happen to know if most of the fish or other seafood you buy in stores or restaurants is raised in fish farms or if most of the fish or other seafood you buy is caught in oceans and rivers or don't you know about this?
Raised on farms 11%
Caught in oceans and rivers 28
Both (vol.) 8
Don't know/not sure 52

[ROTATE Q.6 AND Q.7/Q.8]

6. How important is the potential *environmental impact* of a product to your decision about whether to buy that product—is it one of the most important factors, very important, somewhat important, not too important or not at all important in your decision about whether to buy that product?
One of most 10%
Very important 36
Somewhat important 30
Not too important 12
Not at all important 8
Don't know 4

SPLIT SAMPLE A

7. How important is your familiarity with a brand in your decision about whether to buy that product—is it one of the most important factors, very important, somewhat important, not too important or not at all important in your decision about whether to buy that product?
One of the most important 12%
Very important 35
Somewhat important 28
Not too important 14
Not at all importantt 8
Don't know 2

SPLIT SAMPLE B

8. How important are the potential health benefits of a product in your decision about whether to buy that product—is it one of the most important factors, very important, somewhat important, not too important or not at all important in your decision about whether to buy that product?

One of the most important	22%	Not too important	6
Very important	50	Not at all important	3
Somewhat important	19	Don't know	1

[ROTATE Q.9 AND Q.10]

9. Have you ever decided NOT to buy a certain kind of fish or other seafood because you were concerned about potential environmental impacts to the ocean or aren't you sure?

Yes	37%	Don't know/undecided	10
No	53		

10. Have you ever decided NOT to buy a certain kind of fish or other seafood because you were concerned about contamination or food safety?

Yes	57%	Don't know	2
No	41		

I'm going to list some different things you may have heard about fish and fishing. After each, please tell me whether you have heard a *great deal about this aspect of fish and fishing, some, not too much, or nothing at all about this aspect of fish and fishing.* If you are not sure, please say so and we'll go on.

[ROTATE LIST]	Great deal	Some	Not too much	Nothing at all	Don't know
11. The positive health benefits of eating fish	57%	32	7	4	0
12. The harm from eating certain kinds of contaminated or unsafe fish	41	37	15	6	1
13. The harm done to the ocean environment by certain kinds of commercial fishing	33	38	17	11	1
14. The harm done to the environment by certain kinds of fish farming	12	23	26	34	5

Now I am going to read you a list of things that some people have told us they consider when they are deciding what kind of fish or other seafood to buy in a store or restaurant. After each, please tell me whether it is *one of the most* important factors that you personally consider, a *very* important factor, a *somewhat* important factor, a *not too* important factor, or *not an important factor at all* when you decide what kind of fish or other seafood to buy. If you are not sure about a particular item, please say so and we will move on.

[ROTATE LIST]	One of Most	Very impt	Smwt impt	Not too impt	Not at all	Don't know
15. Price	18%	35	31	11	4	0
16. Health and nutritional benefits	21	49	22	6	2	0
17. The possibility of contamination with bacteria or harmful chemicals	37	41	12	6	3	1
18. Taste and texture	33	54	11	1	1	1
19. Freshness or smell	44	48	6	1	0	0
20. Whether the species is overfished, that is catching so many fish that the species is being depleted	15	29	29	11	11	5

SPLIT SAMPLE A

21. Whether this fish is caught in a way that harms the ocean environment	13%	30	25	13	11	7

SPLIT SAMPLE B

22. Whether this fish is caught in a way that harms other marine creatures	14%	33	25	13	10	5

RESUME ASKING EVERYONE

23. Whether you have eaten that kind of fish before	16%	39	24	10	7	4

24. Do you feel like you do or do not have enough information to be able to identify kinds of seafood that are overfished or caught in a way that is harmful to other sea creatures or the ocean environment?

Yes, do have enough information	20%	dk	4
No, do not have enough information	76		

25. Do you feel like you do or do not have enough information to be able to identify kinds of seafood that pose a health risk to you or your family?

Yes, do have enough information	28%	Don't know	2
No, do not have enough information	70		

26. How interested are you in getting more information about what types of seafood are overfished or caught in a way that is harmful to other sea creatures or the ocean environment—Are you very interested, somewhat interested, not too interested or not at all interested?

Very interested	26%	Not at all interested	14
Somewhat interested	41	Don't know	2
Not too interested	17		

For each of the following kinds of seafood, please tell me if you found out that it was overfished or caught in a way that is harmful to other sea creatures or the ocean environment how that would affect your decision about whether to eat that particular seafood. Would you give up eating that kind of seafood entirely, continue eating that kind of seafood but eat less, or would you continue eating the same amount of that kind of seafood? If you are not sure about a particular item, please say so. Please tell me if you do not currently eat that type of seafood.

[ROTATE LIST]	Give up entirely	Cont eat less	Cont eat same	Don't eat	Don't know
27. Atlantic salmon	18%	29	18	32	4
28. Lobster	17	25	26	28	4
29. Chilean [chil-LAY-in] seabass	13	15	15	46	10
30. Swordfish	17	17	15	45	6
31. Shrimp	18	33	36	11	2
32. Canned tuna	19	36	31	12	3
33. Scallops	15	23	21	35	6
34. Snapper	16	23	20	37	5
35. Pollock, the fish in fishsticks	16	19	19	40	6

Now I'm going to list some possible solutions people have suggested for dealing with the problems caused by commercial fishing. After each, please tell me whether it is *a very good solution to the problem, a somewhat good solution to the problem, a not so good solution, or a not at all good solution to the problems caused by commercial fishing.* If you are not sure, please say so and we'll go on.

[ROTATE LIST]	Very good	Smwt good	Not so good	Not at all	Don't know
36. Regulations to reduce harmful environmental impacts from overfishing	43%	42	9	2	4
37. Voluntary agreements by the fishing industry not to overfish	40	37	14	7	2

SPLIT SAMPLE A

38. A ban on catching specific species of fish that are overfished	44%	35	11	5	4

SPLIT SAMPLE B

39. Lowering the amount fishermen are legally allowed to catch of overfished species	39%	40	12	5	3

RESUME ASKING EVERYONE

40. Making information available to seafood consumers about how to make environmentally responsible seafood choices	49%	37	9	3	2

SPLIT SAMPLE A

41. Consumer boycotts of seafood that is overfished or caught in a way that harms the ocean environment	35%	37	16	7	5

SPLIT SAMPLE B

42. Encouraging consumers not to buy seafood that is overfished or caught in a way that harms the ocean environment	40%	40	12	5	3

	Very good	Smwt good	Not so good	Not at all	Don'f know
RESUME ASKING EVERYONE					
43. Only allowing farming of fish that can be raised in ways that do not pose threats to the surrounding environment	43%	39	9	4	5
SPLIT SAMPLE A					
44. Labeling certain kinds of seafood as caught in an environmentally responsible manner	49%	39	6	4	2
SPLIT SAMPLE B					
45. Labeling certain seafood as overfished or caught in a way that harms the ocean environment	47%	34	10	5	4
SPLIT SAMPLE A					
46. Requiring better fishing gear and technology in order to reduce waste and catch only the target species	47%	40	5	3	4
SPLIT SAMPLE B					
47. Requiring special gear to reduce unintended catch, for example requiring turtle excluder devices on shrimp trawling boats	49%	32	7	3	9

SPLIT SAMPLE A

I'm going to list some types of information you can get about seafood. After each, please tell me how interested you are in receiving that kind of information—are you extremely interested in receiving that kind of information, very interested, somewhat interested, not too interested, not at all interested. If you are not sure about a particular item please say so and we will move on.

	Extremely	Very	Smwt	Not too	Not at	Don't know
48. A list of different kinds of fish and seafood to avoid because of harmful impacts to the ocean environment	12%	34	31	11	11	1
49. A list of fish that are preferred alternatives to fish caught in a way that harms the ocean environment.	11%	32	34	12	10	2
50. Information about the range of harmful environmental impacts associated with commercial fishing for popular fish and seafood	11%	31	31	14	11	1
51. Information about the positive health impacts associated with eating certain kinds of fish and seafood	16%	41	22	10	9	1
52. Information about the health risks associated with eating certain kinds of fish and seafood	21%	42	20	8	8	1
53. Information about how and where the fish you buy come from and how they were caught	17%	34	23	13	12	1
54. A list of questions you can ask at the grocery store or restaurant to help you determine what environmental impacts are associated with the fish you are buying	12%	31	26	14	17	1

SPLIT SAMPLE B

I'm going to list some ways in which you could get that information on what types of seafood are not overfished or caught in a way that harms the ocean environment. After each, please tell me how interested you are in receiving information in that way—are you extremely interested in receiving information in that way, very interested, somewhat interested, not too interested, not at all interested. If you are not sure about a particular item please say so and we will move on.

	Extremely	Very	Smwt	Not too	Not at	Don't know
55. An article in the newspaper	19%	32	28	10	10	0
56. An article in a food or cooking magazine	10%	23	26	21	20	1
57. A website about seafood	11%	19	20	17	29	4
58. A file you can download into your Palm Pilot or cell phone	4%	10	13	18	49	6
59. A list printed on a card you can carry in your wallet	10%	15	21	17	35	2
60. A label on the fish you buy in the store	31%	35	18	7	8	1
61. A cookbook containing recipes for fish and seafood that are good environmental choices	20%	31	22	12	15	0

RESUME ASKING EVERYONE

[ROTATE NEXT 2 QUESTIONS]

62. Suppose some kinds of seafood were labeled as "environmentally responsible," would you be more or less likely to buy seafood that had an "environmentally responsible" label or wouldn't it make any difference? **[IF MORE/LESS ASK]** Is that much (MORE/LESS) likely or only somewhat (MORE/LESS) likely?

Much more likely	41%	71%
Somewhat more likely	31	
Somewhat less likely	6	
Much less likely	5	11
No difference	18	

63. Suppose some seafood items on menus in restaurants were labeled as "environmentally responsible," would you be more or less likely to order seafood that was labeled as "environmentally responsible" or wouldn't it make any difference? **[IF MORE/ LESS ASK]** Is that much (MORE/LESS) likely or only somewhat (MORE/LESS) likely?

Much more likely	39%	67%
Somewhat more likely	28	
Somewhat less likely	8	
Much less likely	6	14
No difference	19	

64. If you were to find seafood labeled as "environmentally responsible" in your supermarket or on a restaurant menu, would it make you feel more or less favorable about that store or restaurant or would it not make any difference? **[IF MORE/LESS ASK]** Is that a great deal (MORE/LESS) favorable or only somewhat (MORE/LESS) favorable?

Great deal more	34%	Great deal less	2
Somewhat more	32	No difference	25
Somewhat less	6		

65. Suppose you went to the store and saw that some of the fish at the fresh fish counter were labeled as organic. How likely would you be to select a fish labeled as organic over a fish of the same species or a similar tasting fish that was not labeled as organic? Would you be more likely to select the organic labeled fish, less likely to select the organic labeled fish or would it not make a difference in which fish you selected?

[IF MORE LIKELY ASK:] Is that much more likely or only somewhat more likely?

Much more likely organic	17%	No difference	33
Somewhat more likely organic	19	Don't know/not sure	16
Less likely organic	16		

THANK YOU. THE REMAINING QUESTIONS ARE FOR STATISTICAL PURPOSES ONLY.

66. Generally speaking, do you think of yourself as a Republican, a Democrat, an independent, or something else? **[IF REPUBLICAN OR DEMOCRAT ASK:]** Do you consider yourself a strong (Republican/Democrat) or a not so strong (Republican/ Democrat)? **[IF INDEPENDENT ASK:]** Would you say that you lean more toward the Republicans or more toward the Democrats?

Strong Republican	21%	32%
Not so strong Republican	8	
Indep. leans Republican	4	
Independent	26	
Indep. leans Democratic	6	
Not so strong Democrat	8	
Strong Democrat	20	34
Don't know/na/other	8	

67. Do you consider yourself very liberal, somewhat liberal, moderate, somewhat conservative or very conservative? **[IF MODERATE, ASK:]** Do you tend to lean toward the liberal or conservative side?

Very liberal	11%	29%
Somewhat liberal	14	
Moderate leans liberal	4	
Moderate	30	
Moderate leans conservative	5	
Somewhat conservative	16	
Very conservative	15	36
Don't know/na	5	

68. What is your age? [CODE ACTUAL AGE. REFUSED=99] _____

18-29	16%	50-59	16
30-39	20	60+	25
40-49	21	NA	2

69. What was the last level of schooling you completed?

Less than high school graduate	6%	College graduate	24
High school graduate	29	Post graduate	10
Some college	30	NA	1

70. Are you Hispanic or of Spanish descent?

Yes	6%	Don't know	4
No	90		

71. Are you black, white, Asian, or some other race?

Black	9%	Other	6
White	79	NA	3
Asian	2		

71. Do you have children, 18 years old or younger living at home?

Yes	35%	Refused/NA	1
No	64		

72. Do you have access to the Internet, either at work or at home, or at both places?

Home	25%	No access	35
Work	11	Don't know/refused	1
Both	29		

[ASK ONLY IF HAVE INTERNET ACCESS]

I'm going to read a list of different kinds of websites you may have visited. For each of the following, have you visited a website offering that type of content in the past?

	Yes	No	Don't know
73. Environmental or wildlife conservation	24%	75	1
74. Food and cooking information	39	60	1
75. Fashion and lifestyle	30	69	2
76. News sites like CNN or MSNBC	57	42	1
77. Food/product safety information	17	82	2

RESUME ASKING EVERYONE

78. Do you have cable TV or a satellite dish?

Yes	81%	Refused/NA	2
No	17		

Which of the following activities have you yourself actively participated in during the last twelve months:

[ROTATE]

	Yes	No	Don't know
79. Recreational or sport fishing in the ocean	14%	85	1
80. Snorkeling or scuba diving in the ocean	9	90	1
81. Donating money to an environmental group	23	75	2
82. Donating time to an environmental group	8	91	1

How often, if ever, do you listen to, read, or watch each of the following: almost every day, 3 or 4 times a week, once or twice a week, hardly ever, or never. If a particular type of communication is not available to you, please say so.

	Almost every day	3 or 4 x week	1or 2 x week	Hardly ever	Never	Not avail	dk
[ROTATE BY QUESTION]							
83. Local evening television news	63%	17	9	6	3	1	0
84. National evening television news	49%	18	16	10	6	1	1
85. Your local newspaper	50%	12	19	9	9	1	1
86. Radio news programs	34%	15	14	21	15	1	1

	Almost every day	3 or 4 x week	1or 2 x week	Hardly ever	Never	Not avail	Don't know
87. National newspapers like the *New York Times, Washington Post,* and *Los Angeles Times*	7%	5	12	23	49	3	1
88. USA Today	4%	6	16	24	47	2	1
89. Cooking programs on TV	7%	12	24	22	33	1	1
90. News Magazines like *TIME* and *Newsweek*	4%	9	22	24	39	1	1

How often, if ever, do you read each of the following kinds of magazines: every month, every two or three months, a few times a year, hardly ever, or never. If a particular type of communication is not available to you, please say so.

	Every month	2-3 months	Few x year	Hardly ever	Never	Not avail	Don't know
[ROTATE BY QUESTION]							
91. Food magazines like *Cooking Light* and *Gourmet*	11%	8	13	18	49	1	0
92. Fashion magazines like *GQ, Vogue,* etc	9%	7	11	16	55	1	0
93. Lifestyle magazines like I*n-Style, Esquire* and *Martha Stewart Living*	6%	7	11	16	58	1	1
94. Nature magazines like *National Geographic* or *Audubon*	16%	10	18	17	38	1	1
95. In-flight magazines published by the airlines, like *Hemispheres* published by United Airlines	3%	4	10	19	61	2	1

96. Is your income or your family's income dependent on ocean resources, like commercial fishing or ocean oil drilling?
    - Yes 2%
    - No 97
    - Don't know 2

97. In which of the following ranges does your family income fall?

Below $12,000	5%	40 to 50 thousand	12
12 to 20 thousand	10	50 to 75 thousand	12
20 to 30 thousand	12	Above 75 thousand	11
30 to 40 thousand	14	NA	24

98. What is your zip code? ____ ____ ____ ____ ____

That completes our public opinion survey. Thank you very much for your time and cooperation, and have a pleasant (day/evening).

Appendix 3: Survey of Chefs and Restaurateurs

Seafood Choices Alliance
Chefs and Restaurateurs Survey Results (Sample Size=400)
August 2001

12. In terms of your role in the decision making process regarding the purchase of seafood, which statement best describes your position? READ:

You are the sole decisiomaker	39%	You do not participate in decisionmaking	0
You are one of several decisionmakers	61		
You make recommendations but are not involved in the final decision	0		

IF CODE 1 OR 2 CONTINUE. IF CODE 3 OR 4, ASK TO SPEAK TO PRIMARY DECISION MAKER.

13. What percentage of your menu is seafood?

25%	37%	50+	12
26% to 49%	51	Mean	34%

14. What is the average portion size, in ounces, for your seafood entrées?

1-7 oz	22%	9+ oz.	26
8 oz.	52	Mean	8.3 oz.

15. Is your restaurant independently owner operated, part of an independent or corporate owned restaurant group, part of a regional restaurant chain or part of a national chain?

Independently owner operated	93%	Part of regional chain	1
Part of independent/corporate owned chain	6	Part of national chain	1

16. Would you describe your restaurant as formal or casual?
[IF FORMAL/CASUAL] Would you say your restaurant is very [formal/casual] or just somewhat [formal/casual]?

Very formal	7%	Somewhat casual	28
Somewhat formal	18	Very casual	11
In between [VOL]	36		

17. Thinking about the most popular entrée item at the restaurant right now, is that entrée a fish or seafood based dish, a meat or poultry based dish, a vegetarian dish or something else?

Fish/seafood	41%	Other _____	4
Meat poultry	48	Not sure	4
Vegetarian	4		

18. Now, thinking just about the overall health and quality of the oceans today -- would you rate them as excellent, good, only fair, or poor, or don't you have an opinion on this?

Excellent	3%	Poor	4
Good	58	Don't know	5
Fair	30		

ROTATE NEXT TWO QUESTIONS

19. As far as you know, are regulations controlling seafood safety and handling too strict, about right, not strict enough or don't you have an opinion on this?

Too strict	4%	Not strict enough	23
About right	70	Not sure/don't know	4

20. As far as you know, are environmental protection regulations on the commercial fishing industry too strict, about right, not strict enough or don't you have an opinion on this?

Too strict	3%	Not strict enough	25
About right	65	Not sure/don't know	7

21. As you may know, aquaculture is the practice of farming or raising fish in enclosed tanks, or inland ponds or in enclosed pens in the ocean. Is most of the fish or other seafood you sell farmed or is most of the fish or other seafood you sell caught in oceans and rivers, is it about equally divided between the two or aren't you sure?

Raised on farms	9%	About equal	49
Caught in oceans and rivers	40	Not sure	3

ROTATE NEXT TWO QUESTIONS

22. Have you ever decided NOT to sell a certain kind of fish or other seafood because you were concerned about potential environmental impacts to the ocean or aren't you sure?

Yes	30%	Don't know/undecided	2
No	68		

23. Have you ever decided NOT to sell a certain kind of fish or other seafood because you were concerned about contamination or food safety?

Yes	42%	Don't know	1
No	57		

24. I'm going to list some different things you may have heard about fish and fishing. After each, please tell me whether you have heard a *great deal about this aspect of fish and fishing, some, not too much, or nothing at all about this aspect of fish and fishing.* If you are not sure, please say so and we'll go on.

[ROTATE BY LIST]	great deal	some	not too much	nothing at all	Don't know
a. The positive health benefits of eating fish	66%	31	3	0	0
b. Health risks from eating contaminated or unsafe fish	44%	37	19	0	0
c. Environmental impacts of certain kinds of fish farming	23%	46	26	6	0
d. Environmental impacts of certain kinds of commercial fishing	31%	43	20	7	0

SPLIT SAMPLE A

22. How interested are you in getting more information about what types of seafood are overfished or caught or farmed in a way that is harmful to other sea creatures or the ocean environment—Are you very interested, somewhat interested, not too interested or not at all interested?

Very interested	10%	Not at all interested	16
Somewhat interested	43	Don't know	1
Not too interested	32		

SPLIT SAMPLE B

23. How interested are you in getting more information about what types of seafood are abundant, well-managed and caught or farmed in a way that is friendly to the ocean environment?– Are you very interested, somewhat interested, not too interested or not at all interested?

Very interested	17%	Not at all interested	12
Somewhat interested	49	Don't know	0
Not too interested	24		

RESUME ASKING ALL

24. For each of the following kinds of seafood, please tell me if you found out that it was overfished or caught or farmed in a way that is harmful to other sea creatures or the ocean environment how that would affect your decision about whether to sell that particular seafood. Would you stop selling that kind of seafood entirely, continue selling that kind of seafood but look for comparable alternatives, or would you continue to sell the seafood as before? If you are not sure about a particular item, please say so. Please tell me if you do not currently sell that type of seafood.

[ROTATE BY LIST]	Stop selling	Cont alter	Cont sell same	Don't sell	Don't know
a. Atlantic farmed salmon	16%	36	17	30	2
b. Chilean [chil-LAY-in] seabass	16%	36	15	33	1
c. Farmed shrimp	13%	33	25	26	3
d. Wild-caught shrimp	16%	36	36	10	2

27. Please tell me how willing you would be to do each of the following activities—are you very willing, somewhat willing, somewhat unwilling or very unwilling to….[READ ITEM] If you are not sure about a particular item please say so and we will move on.

ROTATE LIST

		Very willing	Smwt willing	Smwt unwilling	Very unwilling	Don't know
a.	Participate in a pilot program that would promote good environmental seafood choices for your customers using language on your menus or on cards at the table	2%	22	23	49	4
b.	Run weekly specials of a single fish like wild salmon or halibut and highlight the positive environmental impacts of choosing these fish	9%	43	25	19	4
c.	Only serve fish that are not classified as overfished	4%	37	34	19	6
d.	Only serve seafood caught with the best technology available to prevent habitat destruction	7%	39	26	20	8
e.	Only serve seafood caught with the best technology available to minimize the non-target fish and marine mammals that are caught as well	7%	37	28	21	8
f.	Carry fish certified by a fishing industry association as environmentally-friendly	5%	42	20	25	9
g.	Provide literature in your restaurant on seafood and the ocean environment so your customers can decide for themselves	5%	19	26	43	7
h.	Remove farmed salmon from the menu and only sell wild-caught salmon	10%	16	24	36	15
i	Buy fish from environmentally responsible suppliers or fishing groups	36%	26	12	16	10

39. How long have you been using the Internet or do you not use the Internet?

Less than 1 year	2%	3 years but less 5 years	9
1 year but less than 2 years	12	More than 5 years	5
2 years but less than 3 years	15	Do not use	58

[SKIP TO THANK YOU]

40. How often do you access the Internet?

Several times a day	14%	At least once a week	11
Once a day	36	Less than once a week	4
Several times a week	36		

41. And, what Internet browser do you primarily use? Do you use … [READ LIST]

Microsoft Internet Explorere	32%	Other	8
Netscape	17	Varies [DNR]	2
America On-Line	41	Other	2

42. What is the speed (baud) of the modem you are using? [READ LIST]

56K or less	35%	Other	1
Cable modem	41	Don't know	7
DSL modem	18		

Thank you for completing this survey.

Appendix 4: Survey of Retailers

Seafood Choices Alliance
Retailer Survey Results (Sample Size=150)
August 2001

1. Does your store have just a fresh fish counter, just a frozen seafood section, or both?
   - Fresh counter only 42%
   - Frozen only [TERMINATE] 0
   - Both 58
   - Other _____ 0

2. If you wanted to stop carrying a certain fish or seafood item, would that be up to you alone to decide, would you need to talk with other decisionmakers and make a group decision or would you just make a recommendation but not be involved in the final decision?
   - Up to me 47%
   - Talk with others for group decision 53
   - Make recommendations but others decide [TERMINATE] 0
   - Not sure [TERMINATE] 0

3. Which of the following best describes your store:
   - Fishmonger specializing in fish and seafood only 60%
   - Gourmet food store 4
   - Grocery store 34
   - Other _____ 2

4. Is your store independently owner operated, part of an independently owned chain, part of a local or regional chain or part of a national chain?
   - Independently owner operated 83%
   - Part of independently owned chain 12
   - Part of local/regional chain 3
   - Part of national chain 2

RESUME ASKING EVERYONE

5. Now, thinking just about the overall health and quality of the oceans today—would you rate them as excellent, good, only fair, or poor, or don't you have an opinion on this?
   - Excellent 6%
   - Good 61
   - Fair 24
   - Poor 2
   - Don't know 7

ROTATE NEXT TWO QUESTIONS

6. As far as you know, are regulations controlling seafood safety and handling too strict, about right, not strict enough or don't you have an opinion on this?
   - Too strict 7%
   - About right 70
   - Not strict enough 16
   - Not sure/don't know 7

7. As far as you know, are environmental protection regulations on the commercial fishing industry too strict, about right, not strict enough or don't you have an opinion on this?
   - Too strict 7%
   - About right 64
   - Not strict enough 20
   - Not sure/don't know 9

8. As you may know, aquaculture is the practice of farming or raising fish in enclosed tanks, or inland ponds or in enclosed pens in the ocean. Is most of the fish or other seafood you sell farmed or is most of the fish or other seafood you sell caught in oceans and rivers, is it about equally divided between the two or aren't you sure?
   - Raised on farms 8%
   - Caught in oceans and rivers 35
   - About equal 57
   - Not sure 1

ROTATE NEXT TWO QUESTIONS

9. Have you ever decided NOT to sell a certain kind of fish or other seafood because you were concerned about potential environmental impacts to the ocean or aren't you sure?
   - Yes 20%
   - No 79
   - Don't know/Undecided 1

10. Have you ever decided NOT to sell a certain kind of fish or other seafood because you were concerned about contamination or food safety?
   - Yes 29%
   - No 71
   - Don't knows 0

11. I'm going to list some different things you may have heard about fish and fishing. After each, please tell me whether you have heard a *great deal about this aspect of fish and fishing, some, not too much, or nothing at all about this aspect of fish and fishing.* If you are not sure, please say so and we'll go on.

[ROTATE LIST]	Great deal	Some	Not too much	Nothing at all	Don't know
a. The positive health benefits of eating fish	53%	41	7	0	0
b. Health risks from eating contaminated or unsafe fish	36%	39	23	2	0
c. Environmental impacts of certainkinds of fish farming	13%	42	36	7	1
d. Environmental impacts of certain kinds of commercial fishing	21%	47	25	7	0

SPLIT SAMPLE A

19. How interested are you in getting more information about what types of seafood are overfished or caught or farmed in a way that is harmful to other sea creatures or the ocean environment—Are you very interested, somewhat interested, not too interested or not at all interested?

Very interested 5%
Somewhat interested 35
Not too interested 25
Not at all interested 33
Don't know 1

SPLIT SAMPLE B

20. How interested are you in getting more information about what types of seafood are abundant, well-managed and caught or farmed in a way that is friendly to the ocean environment?– Are you very interested, somewhat interested, not too interested or not at all interested?

Very interested 4%
Somewhat interested 33
Not too interested 32
Not at all interested 29
Don't know 1

RESUME ASKING ALL

21. For each of the following kinds of seafood, please tell me if you found out that it was overfished or caught or farmed in a way that is harmful to other sea creatures or the ocean environment and how that would affect your decision about whether to sell that particular seafood. Would you stop selling that kind of seafood entirely, continue selling that kind of seafood but look for comparable alternatives, or would you continue to sell the seafood as before? If you are not sure about a particular item, please say so. Please tell me if you do not currently sell that type of seafood.

[ROTATE LIST]	Stop selling	Cont alter	Cont sell same	Don't sell	Don't know
a. Atlantic farmed salmon	7%	21	38	34	1
b. Chilean [chil-LAY-in] seabass	7%	24	24	44	1
c. Farmed shrimp	9%	21	45	23	2
d. Wild-caught shrimp	8%	27	47	15	3

26. Please tell me how willing you would be to do each of the following activities—are you very willing, somewhat willing, somewhat unwilling or very unwilling to….[READ ITEM] If you are not sure about a particular item please say so and we will move on.

ROTATE LIST	Very willing	Smwt willing	Smwt unwiling	Very unwilling	Don't know
a. Participate in a pilot program that would promote good environmental seafood choices for your customers using signage that lists all the best choices	1%	17	28	49	5
b. Use product tags to indicate which fish in the seafood case are good environmental choices	2%	34	30	31	3
c. Run weekly promotions of a single fish like wild salmon or halibut highlighting the positive environmental impacts of choosing these fish	3%	29	35	29	5
d. Only carry fish that are not classified as overfished	2%	27	36	29	7
e. Only carry seafood caught with the best technology available to prevent habitat destruction	2%	32	32	27	7
f. Only carry seafood caught with the best technology available to minimize the non-target fish and marine mammals that are caught as well	3%	33	31	27	5
g. Carry fish certified by a fishing industry association as environmentally-friendly	1%	30	23	39	7

ROTATE LIST	Very willing	Smwt willing	Smwt unwilling	Very unwilling	Don't know
h. Provide literature in your store on seafood and the ocean environment so your customers can decide for themselves	3%	16	19	57	5
i. Remove farmed salmon from the store and only sell wild-caught salmon	5%	5	21	56	13
j. Buy fish from environmentally responsible suppliers or fishing groups	17%	43	17	19	3

35. How long have you been using the Internet or do you not use the Internet?

Less than 1 year	3%	3 years, but less than 5 years	9
1 year but less than 2 years	7	More than 5 years	5
2 years but less than 3 years	7	DO NOT USE	71

[SKIP TO THANK YOU]

36. How often do you access the Internet?

Several times a day	14%	At least once a week	11
Once a day	27	Less than once a week	9
Several times a week	39		

37. And, what Internet browser do you primarily use? Do you use … [READ LIST]

Microsoft Internet Explorere	34%	Other	7
Netscape	9	Varies [DNR]	5
America On-Line	39	Other	7

38. What is the speed (baud) of the modem you are using?… [READ LIST]

56K or less	48%	Other	0
Cable modem	25	Don't know	16
DSL modem	11		

Thank you for completing this survey.

Seafood Choices Alliance Statement of Principles

As people who fish, sell, buy, serve, or just enjoy seafood, and are subscribers to the Seafood Choices Alliance:

- We are increasingly concerned that the oceans are in trouble.
- We believe that healthy oceans are vital to a sound, plentiful supply of seafood.
- We believe in the importance of selling, buying, and serving seafood that comes from abundant wild populations; which are under sound management; that are caught or farmed in a way that is not harmful to the ocean environment and to other ocean creatures; and that support local fishing communities.
- We take responsibility for our role in preserving a lasting and diverse supply of seafood for future generations.
- We are seafood lovers—we enjoy catching, eating, serving, and finding creative ways to prepare it.

To learn more about Seafood Choices Alliance or to become a subscriber, visit our website at www.seafoodchoices.com.

seafood *choices*
ALLIANCE

bringing
ocean conservation
to the table

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