Something Smells Fishy
A Look into the Sustainability of Smith College’s Seafood Consumption

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5/4/10
ABSTRACT

Pressure on the world’s oceans for economic gain and consumption has led to a rapid and unceasing decline in marine wildlife. Unsustainable fishing practices continue, as regulation is lax on enforcement around the world. Many species are on the verge of extinction and most fisheries on the brink of collapse, if extinction or collapse has not happened already. Health risks of seafood consumption due to mercury and other contaminants has become a notable reason for ceasing fish consumption. Despite health detriments and environmental degradation, seafood demand is high and increasing as the world population grows. In its increasing commitment to sustainability, Smith College should address its own impact on the world’s oceans, and if continuing to buy seafood, the college should buy the seafood that is recommended as sustainable.

Through email questionnaires to Dining Services, personal interviews with local fish suppliers in Northampton, and surveys to students, the actual sustainability of Smith seafood was assessed, and recommendations made to better our purchasing and consumption behavior. While currently Smith’s ocean impact is drastic, Dining Services is committed to making the best seafood choices possible. Already they are listening to student feedback and removing some of the unsustainable seafood, though it is just the beginning. Students seem interested in being included in the decision-making process regarding the seafood they consume, either by survey or taste-test. With appropriate recommendations of local, sustainable seafood sources, and student input to determine what we, the primary consumers want to eat, Smith’s impact on the world’s oceans can change for the better.
INTRODUCTION

Our Oceans

It is now a well-known fact that the world’s marine resources are overexploited. Many marine species are endangered, and many of these species are on the brink of extinction. Aside from the target species of seafood that are harvested en masse, there are issues with bycatch, which has diminished non-target species along with the target ones. Several factors have allowed for this phenomenon to occur. These include the myth that the ocean is “full of fish,” the economic concept that one should make as much money as possible, and the poor regulation and even poorer enforcement of the collection of marine resources. It is easy to ignore or forget these issues, especially if one is not directly on a coast or connected to marine harvesting (Allsopp et al 2009; v). The sad fact remains that the world’s fisheries are greatly overexploited, with few fisheries either under exploited or recovering from exploitation (Figure 1). Estimates vary, but approximately 90% of all large predatory fish are gone from the oceans, though few know and can comprehend what that means (Allsopp et al 2009; 33). The larger the fish, the more offspring, so depletion will continue as fewer fish are born and survive to reproduce, but fishing continues and increases with demand. The top predators of the ocean have vanished, resulting in cascade effects through the ecosystems as other organisms are left unchecked. Though now there is a shift towards better management and law enforcement regarding the harvest of marine resources, and new advances in aquaculture to ideally minimize environmental impact, there is still a long way to go, and many ways to go about getting there (Allsopp et al 2009; 33-83).
Behavioral change is notably the most difficult change to instill. Political and grassroots movements that emphasize sustainable seafood choices and ocean awareness have become spokespeople for the threatened resources of the oceans. Billions of people rely on the ocean for both economic livelihood and as a food sources. The rampant overfishing, if it continues to go unregulated, will result in economic collapse and dietary collapse, and already signs of this are appearing in developing countries. Due to the environmental damage to the ocean’s food webs and ecosystems, aquaculture facilities have been on the rise, both indoors and in ocean pens. Seemingly a great alternative, aquaculture has already cropped up its own set of environmental and health problems (Allsopp et al 2009; 89-113). In order to successfully remove pressure from the oceans so that the resources within are here for the future, consumers must make thoughtful choices and demand only the seafood that is safe and low-impact to the environmental and fish populations.

**The Worst and the Best**

As outlined by the Blue Ocean Institute and Monterey Bay Aquarium, a ranking system now exists to educate consumers on the best marine species to buy, the species that are decent alternatives, and the ones that people should avoid due to dangerous harvesting or low populations (Blue Ocean Institute 2008; Monterey Bay Aquarium 2010). These pocket guides allow for full awareness at markets and restaurants, allowing all consumers who purchase seafood to make the most sustainable choices. It aids in making healthy decisions, marking species known to have high levels of mercury and other toxins. It also denotes species that are coming from fisheries that have been deemed sustainable by the Marine Stewardship Council, a program that assesses fisheries and
their harvesting practices to determine that fisheries are indeed sustainable (Marine Stewardship Council 2010). While mismanagement and a lack of regulation are still chronic problems affecting the world’s oceans, these three organizations are only a handful of those that work towards increasing consumer awareness and sustainable seafood choices being made available. Globally, but especially in developed countries where demand is met with supply, there is no reason to not ask for sustainable choices as they are often easily obtainable.

**Smith’s Role in Ocean Degradation**

Due to the drastic, long-term effects of overfishing on the ocean, all those who consume seafood should be making better, more sustainable choices if they wish to have the seafood they enjoy in the future. Large institutions, simply from the quantities of food they order, have an enormous amount of purchasing power. Smith College is no different. It was of extreme interest to determine what fish was being served and how sustainable it was, and to offer alternatives if the discoveries revealed a lack of sustainability. The fish we buy is incredibly important, especially since Smith College has prided itself on working towards sustainability in recent years. The college has made an effort to buy from local farms for decades, and to provide healthy alternatives. It seems intuitive that alongside buying local and organic meat and produce, that Smith would also look to purchasing sustainable seafood, seafood that is healthy for the environment, economy, and students.

**METHODOLOGY**

For background information of the state of the world’s oceans, recent publications were consulted. Statistical data on the issues of bycatch and the problems with fisheries
were found in this supporting material. The Blue Ocean Institute and Monterey Bay Aquarium supplied information regarding sustainable fish choice, in conjunction with the Marine Stewardship Council.

All information pertaining to Smith’s purchasing of seafood was supplied via email communication with Dining Services, involving both the Director and Purchasing Manager. Data collection involved examining the fish species purchased, including the companies that supplied them and which fisheries the fish originated from. Also examined was how often the three most popular species were served, and a discussion on what Dining Services is changing in the near future regarding seafood purchasing. Both the dining halls and the Campus Center Café were examined, but not private functions, such as special occasion dinners, were not tallied. Online menus were used to determine how often and what types of fish were eaten over a 30-day period, beginning March 21st until April 20th. Only frozen filleted fish and shrimp were focused on, meaning canned tuna and pre-breaded fish items were not included in amounts.

Sustainable fish species were researched and recommended as possible options to replace the species used by Smith that are poor choices, both when speaking environmentally and health-wise. A list of local species was compiled, though the term local was widely defined, given that most of our fish is from Asia, and local could mean anything from the state of Massachusetts to the entire United States.

To compare Smith consumption to the options provided to the city of Northampton and surrounding communities, a look into Stop and Shop’s and North Shore Seafood’s offerings and prices was conducted. A casual survey with those working the counter was conducted, especially regarding what was most popular according to
customer consumption. Popularity seemed an appropriate focus for both Smith and
Northampton, as the demand should determine what is sold, and therefore which fisheries
were being harvested.

Finally, to gain insight on student opinion, as survey on fish preference and
consumption habits was conducted, with 32 responses collected. While the study was
underpowered, the results were interesting and it was important to obtain some student
opinion, as students are the primary consumers of the fish purchased by Smith College
(Table 1).

RESULTS

Current Smith College Consumption

Our most popular seafood items are salmon, cod, and shrimp, out of the seven
possible fish types Smith serves (Table 2). The table displays the species, consumption
data (where possible), supplier/brand, whether it is wild or farmed, and location of
processing. Table 1 is starkly contrasted to Figure 2, which is the Monterey Bay
Aquarium ‘Seafood Watch’ Guide. Highlighted are the fish that Smith consumes based
on data provided by Dining Services regarding brand, and the locations of fish harvesting
and processing.

What Dining Services Says

Dining Services serves a variety of fish to augment and diversify its protein
choices. Though they are using it improperly, Dining Services claims to consult the
Monterey Aquarium Guide when making fish choices. Dining Services works to provide
a diverse menu, and acknowledges that a student’s geographic location and culture
influence the amount and type of fish eaten, making it difficult to assess which students actually eat what fish and how often. Due to sustainable encouragement prior to this project, Dining Services, based on student feedback, will be removing the unsustainable, unpopular tilapia from the menu, and adding barramundi, a sustainable local alternative. The cost of fish to Dining Services was not released due to competitive bids that they did not wish to have jeopardized. While the information would not have been shared, it would have been interesting to find out the price per pound that was paid, as some of the fish served can be expensive based on supply and demand (Zieja, personal communication, April 16, 2010; Diggins, personal communication, April 19th, 2010).

**Fish on the Menu**

Tracking the dining hall and Campus Center Café menus, of the 30 days followed, 19 of the days had fish, and ranged from one to four fish options on any given day (Table 3). Results possibly skewed due to the observance of Passover, in which fish the main protein served those days (April 3rd and 4th). Figure 3 shows a breakdown of the fish served over the 30 day time period (Smith College Menus 2010).

**What Northampton Is Eating**

Table 4 outlines the popular fish that are eaten at Smith, which are popular beyond the Grecourt Gates. Shrimp, cod, and especially salmon were the most popular fish bought at both Stop & Shop and North Shore Seafood Market. The table displays the three species, their price per pound, and fishery location, for both of the stores. There was a $3.00 difference in the prices of the fish for each location, Stop & Shop having the lower compared to North Shore (Stop & Shop employee, personal communication, April 18th, 2010; North Shore Seafood employee, personal communication, April 28th, 2010).
What the Students Say

Figure 4 shows the survey results for the 32 students on whether or not they eat fish here, at home, or at all. Of the 32 surveyed, only 10 of the students eat Smith prepared fish, the remaining 22 either not eating seafood or not eating Smith prepared seafood. Of 24 Smithies to comment regarding why they do not consume fish here at Smith, 9 do not like frozen fish, 11 think it is poorly prepared, and 4 do not consume it due to unsustainable practices (Figure 5). The students unanimously agreed that a survey or taste-test from Dining Services would be helpful in choosing with fish to buy and serve.

DISCUSSION

Problems with Current Consumption

Based on the results of this examination of Smith’s seafood sustainability, as of right now, Smith College is doing poorly. Most striking are the comparisons between Table 2 and Figure 2, which shows how many of the seafood choices currently consumed by Smith College are poor choices for the environment. Almost all imported fish has huge environmental implications from harvesting and aquaculture, and several of the fish species that Smith consumes comes from Asian sources. The fishing and aquaculture industry has more slack regulations, unlike beef, for example, and it is often underreported in countries other than the United States (Allsopp et al 2009; 33-45). Aside from a lack of use of local fish stocks, the environmental destruction associated with tilapia and shrimp farming as lands are cleared for ponds, wild fish stocks face competition, and untreated water allows antibiotics, chemicals and waste to enter the water (Allsopp et al 2009; 86-93). Swordfish harvesting gathers excessive sea turtle,
shark, and seabirds as bycatch. Swordfish are also marked as a species with high mercury levels, making them less than ideal.

The shrimp is perhaps the biggest problem of all the species offered through Smith College Dining Services. Of the 30 days studied, it was served 11 times, far more than any of the other fish species (Figure 3). This is probably due to quantity and ease of preparation, as shrimp are quick to cook and versatile. With imported shrimp containing pollutants and antibiotics from feed and acting as a source of pollution due to waste mismanagement, they are not ideal as a protein source. This seemingly has disastrous environmental and health impacts (Allsopp et al 2009; 86-95). Luckily, Contessa® itself, the brand of shrimp Smith uses, is the only imported shrimp to have received a “Good Alternative” rating by the Monterey Bay Aquarium SeaWatch Program. It commits to sustainable seafood and this makes its environmental impact less severe. According to their website, they have eliminated antibiotic use and work to maintain mangrove ecosystems, which are often destroyed in the farming process (Contessa 2010). While shrimp is still not an ideal species to consume, Smith Dining at least has found a source of seafood that is less harmful both to the environment and human health.

The same pollution issues exist for imported tilapia. Though Dining Services has suggested dropping tilapia altogether, as it is unpopular when served, they could continue to serve it if it switched to a U.S. farm. More so, the local farm in Hadley, Bioshelters, offers tilapia, the wastes of which go to growing hydroponic plants. With re-use of 99.7% of water, and minimal use of fishmeal and fish oil, the fish are an incredibly sustainable option and regulated by the U.S. government. Located just up the road, it is ideal for supporting a local business (Bioshelters 2004). Again, tilapia has fallen out of favor with
Smith students, so its time on the menu is limited, and even if we are no longer consuming it, removal of the fish from the menu is also ideal, as it has drastic environmental impacts when raised in Asia, which is where our product is raised (Table 2).

Swordfish was only served once over the 30-day period. As mentioned, high mercury levels and high bycatch make it an unsustainable, and unhealthy, seafood option. Swordfish prices can range from ~$9-13/lb, depending on demand, so for such a rarely used item, it is an expensive one to offer. It may be offered more often for special dinners, such as those hosted at the President’s house. If students and those consuming swordfish are fine with the risks of mercury, then there are at least more local, and thereby more sustainably harvested swordfish from the Atlantic (Blue Ocean Institute 2008). Since it is seemingly a rare issue, though quoted as popular by Dining Services, the health risks associated with mercury and environmental destruction make swordfish a prime candidate for removal.

Other than the three seafood products listed above, the other items are either good alternatives or best choices when it comes to sustainable seafood. Tuna was a difficult one to determine, as it too is rarely served, and the species of tuna was not disclosed. Seeing how it is another one that is processed in Asia, and tuna fishing ranks related to species and method, as opposed to region, it is incredibly unclear. The only hint given by the menu was ‘Ahi,’ which denotes Yellowfin tuna. This leaves Smith’s tuna as either a good alternative or on the avoid list, two drastically different scenarios. Neither are ideals in sustainability, and like swordfish, there are mercury threats. With the lack of use, again seemingly for special occasions, and health and environmental risks, tuna should ideally
be limited to canned tuna, but with careful assessment to ensure sustainability (Monterey Bay Aquarium 2010).

Finally there is the salmon and cod, the two most popular fish, other than shrimp. The salmon is an interesting situation. Though the company, Orca Bay, and Dining Services, claim it is wild Pacific salmon, most Smithies seem to think it is farmed, either due to preconceived costs of farmed versus wild salmon, or because they think it is too poor in quality and taste to be Pacific salmon. All Atlantic salmon in the United States is indeed farmed, either from Norway, Canada, or Chile (Blue Ocean Institute 2008). Our lox are supposedly smoked, wild Pacific salmon, though the company we receive our lox from primarily deals in farmed salmon. Based on Dining Services responses that our salmon is wild-caught Pacific salmon, it is one of the good choices on the menu. Unlike cod, which is easily replaced by other white fish, salmon is salmon, and it is popular at Smith. Since it is a sustainable choice, the biggest issue is transportation costs and pollution, but these probably do not outweigh the environmental impacts of switching to farmed, pollutant-filled salmon harvested in Atlantic waters. Ideally, its frequency on the menu can be reduced to minimize demand, possibly phasing it out or to once a month (Diggins, personal communication, March 9th, 2010).

Luckily the cod Smith College consumes is Pacific Cod, which has fared well despite demand to replace the decimated Atlantic Cod populations. Based on the Monterey Seafood Guide, the cod we serve is environmentally sustainable and a good choice, though the processing in China could alter this. Since the guide used is a Northeastern Atlantic guide, Pacific Cod had to be added to it (Monterey Bay Aquarium 2010). This speaks to the issue of distance and transportation having a negative impact,
more so than sustainability. It does not make sense to serve product that is caught in the Pacific and processed in China, especially when the demand for cod in general has resulted in other more sustainable (and more local) species in aquaculture facilities.

While the cod on our menu “passes” for sustainable, the transportation cost may put a damper on its sustainability within the ocean. Where salmon is hard to replace since it is so distinct, there are a number of white fish that can pass as cod, such as farmed Arctic Char and farmed Striped Bass easily replace cod in recipes, and aquaculture facilities exist in the Northeast. Even if they are outside the Northeast, California is closer than Asia, so really anything the lower 48 states could be counted as “local” when discussing Smith’s fish consumption, and as stated, the United States is more regulated.

**Northampton and Smith College**

When the three most popular fish at Smith are compared to the availability in the town, the most popular fish bought from both Stop & Shop and North Shore Seafood was salmon and cod, and shrimp to a lesser extent. The two stores differ greatly, both in price and method of obtaining fish. North Shore, a smaller business opens in the afternoons and has slightly higher prices, due to more direct connections to east coast fisheries and being a smaller business in general. Stop & Shop, like most commercial supermarkets, sells more than just seafood, and received fish from all over the world. Due to size, prices were approximately $3 lower than those in North Shore, which may dictate consumption habits (Table 3). In both stores, all the salmon was farmed, as it was all Atlantic salmon, either from Norway or Chile (Stop & Shop employee, personal communication, April 18th, 2010; North Shore Seafood employee, personal communication, April 28th, 2010). The cod from North Shore was also Atlantic cod, a less than ideal choice due to
overfishing. The origin of the cod was unclear in Stop & Shop, as it only listed United States or Canada, making either Pacific or Atlantic Cod possible (Stop & Shop employee, personal communication, April 18th, 2010). Overall Northampton and Smith are having a negative impact, and which local store is doing better or worse than the other should be judged on a species-by-species basis. Ideally, customers can voice their requirements to commit to sustainability, forcing the stores to follow, but that speaks to larger issues of environmental awareness.

**Student Input and Involvement**

The survey responses provided interesting insight to how students feel about fish at Smith. While 32 responses cannot be inferred back to the student population, the responses were important. One of the struggles Dining Services said they faced was accounting for who did and did not eat fish. They suggest that the students who eat seafood are typically from the coasts, as opposed to the Midwest, and may be catering to the diversified diet (Zieja, personal communication, April 16th, 2010). While many Smithies do eat fish, many more do not, or only eat fish that is fresh, which Smith seafood is not (Figure 4; Figure 5). Another complaint was the way the seafood was prepared. There was some concern for the sustainability of the seafood. Again, a survey similar to the one used, sent jointly by Dining Services and students working on sustainability may provide useful information as to which recipes they should use, and to determine which fish is preferred. There could also be questions as to the frequency of fish consumption (Smith College Menus 2010). The menu suggested that fish is constantly offered, and it may turn out to be more than students are used to, which produces unnecessary waste (Table 3). Student input on the frequency of fish being
served, the type of fish being served, and how the fish is prepared would be advantageous in working towards sustainability. Sustainable and preferred fish species could be chosen, and prepared in ways to ensure it is being consumed, thereby reducing waste.

**Recommended Alternative Seafood**

The student input received already suggested the types of fish they wished to see on the menu, and taken off the menu, which aided and agreed with the fish recommendations that were compiled. The most popular suggestion was Barramundi, an Australian species, easily farmable and listed as a best choice when farmed in the United States. A barramundi farm, Australis, has been established in Turner’s Falls, Massachusetts, only a short distance from Smith. The company itself is entirely green, being 99% carbon emission free and using state-of-the art recirculation systems to raise Barramundi, which requires low fishmeal levels when compared to other fish. All wastes are provided to local farms as a source of fertilizer (Australis Aquaculture 2010). With low environmental impacts and incredible sustainability, Barramundi would be a great fish to have on the menu, and is already being looked into by Dining Services for future use (Zieja, personal communication, April 16th, 2010).

To replace cod and tilapia, the white fish on our menu, Arctic Char and Striped Bass are also two options. Josh Goldman, the CEO of Australis, also helped start the tilapia farm, Bioshelters, mentioned above that exists in Hadley. He went on to build a Striped Bass farm, which used heated water from a factory next door for all of its heating. He also helped develop an Arctic Char farm in West Virginia, Isis Arctic Char LLC, which uses a reclaimed mine to pull clean, already cold groundwater, for tank water. While West Virginia is outside of the Northeast, it is relatively close when compared to
the current Asian origins of the fish Smith consumes (Australis Aquaculture 2010; America’s Heartland 2007). Arctic Char and Striped Bass, when grown in recirculating systems such as the one in West Virginia, have low pollution risks with all the wastewater being treated. Considering that much of our seafood currently comes from Asia, “local” could be expanded to mean the United States, let alone New England or Western Massachusetts.

Another seafood that could be looked into are shellfish, including clams, scallops, and oysters. While their current counterparts were not studied, Massachusetts aquaculture has become recognized as best choices by the Marine Stewardship Council (Marine Stewardship Council 2010). Easily grown by placing shellfish larvae on raft trays or seabed trays, the shellfish do not require feed beyond what the ocean provides and filter the water, making it cleaner. New England grown shellfish make buying local and being sustainable very easy, and could potentially replace shrimp for an easily cooked, versatile seafood (Massachusetts Aquaculture Association 2006).

Other recommendations for local seafood are also available through the University of Massachusetts-Amherst. They have been sponsoring a long-term outreach program to encourage local, sustainable fish farming in Massachusetts and New England. They have listings of local farms and their products, and may be able to provide further resources for finding local, sustainable fish farms in the Northeast (University of Massachusetts Amherst 2009).

**Final Recommendations and Conclusions**

Smith College has already made great strides in becoming more sustainable and environmentally friendly in its actions. To further increase sustainability, food
consumption remains a hot topic, especially in regards to the seafood we eat. Several of
the current fish species are unsustainable choices, linking Smith College directly to the
degradation of oceans, or terrestrial environments where aquaculture takes place. Based
on student responses thus far, Dining Services already has plans to improve its seafood
selection. These responses rely on students’ active input regarding dinner, either through
email or the dining hall comment boxes. Though it places more work on Dining Services,
perhaps they could make a survey similar to the one used here and utilize student
responses, with the temptation of a gift card, if the knowledge of lower ocean impact is
not incentive enough to complete it. This would allow for Dining Services to accurately
assess how much seafood should be bought in the first place, to minimize waste. If
Dining Services actively gathered fish preferences and favorite recipes from students,
there would less waste at the end of the night, and perhaps more interest in the fish being
served.

In an ideal situation, all Smith students would be concerned about the food they
consumed, especially fish with all the environmental implications surrounding it. It is
easy to forget the idea of choice and responsibility when someone else is preparing the
food and a timed schedule exists for meals. A joint collaboration, utilizing the students’
solicited requests for fish type and recipes, with the purchasing power of Dining Services,
and the sustainable mindset shared by both parties, will have far reaching effects.
Ultimately, a behavioral change in diet and partnership with local, sustainable fisheries
and aquaculture facilities will reduce Smith’s impact on the world’s oceans, setting an
example for other colleges and communities to follow. No longer will something smell
fishy, but as fresh as the ocean air.
TABLES AND FIGURES

**Table 1**: List of survey questions and response choices used to poll Smith students (to be used/expanded).

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you eat seafood?</td>
<td>Yes, never, or not at Smith</td>
</tr>
<tr>
<td>Which fish do you eat at Smith (check all that apply)?</td>
<td>List of all seafood options, fillet/breaded/etc*</td>
</tr>
<tr>
<td>Where do you eat seafood served at Smith?</td>
<td>Dining halls, CC Café, Both, I don’t.</td>
</tr>
<tr>
<td>If you eat Smith fish, why?</td>
<td>Love seafood, eat whatever the protein is, diet, only when only thing offered.</td>
</tr>
<tr>
<td>If you eat seafood but not here, why?</td>
<td>Don’t like frozen, bad preparation, it’s unsustainable.</td>
</tr>
<tr>
<td>Does environmental concern affect your/family’s fish choices?</td>
<td>Yes always, sometimes, no.</td>
</tr>
<tr>
<td>Do you think Dining Services should offer a poll/taste test?</td>
<td>Poll, taste-test, both, no.</td>
</tr>
<tr>
<td>What fish should/should not be offered?</td>
<td>Response box for each.</td>
</tr>
<tr>
<td>Do you have a certain seafood recipe you would like to see offered?</td>
<td>Response box*</td>
</tr>
<tr>
<td>Any other comments/questions?</td>
<td>Response box.</td>
</tr>
</tbody>
</table>

*Indicates added or modified question/response not used for initial data collection. Survey created using poll creation website, [http://www.surveymonkey.com/](http://www.surveymonkey.com/).

**Figure 1**: The status of the world’s total marine fisheries and their exploitation level, based on data from the Food and Agriculture’s 2007 report (Allsopp et al 2009; 34-36).

**Table 2**: Seafood served at Smith (all frozen, not including pre-breaded or canned).

<table>
<thead>
<tr>
<th>Fish Species</th>
<th>Brand/Supplier</th>
<th>Wild or Farmed</th>
<th>Processing Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cod</td>
<td>Trident</td>
<td>Wild</td>
<td>China</td>
</tr>
<tr>
<td>Lox**</td>
<td>Duck Trap River</td>
<td>Wild</td>
<td>Maine</td>
</tr>
<tr>
<td>Salmon**</td>
<td>Orca Bay</td>
<td>Wild</td>
<td>China</td>
</tr>
<tr>
<td>Shrimp*</td>
<td>Contessa</td>
<td>Farmed</td>
<td>India/Indonesia/Thailand</td>
</tr>
<tr>
<td>Swordfish*</td>
<td>Crocker &amp; Windsor</td>
<td>Wild</td>
<td>Singapore</td>
</tr>
<tr>
<td>Tilapia*</td>
<td>Sea Best</td>
<td>Farmed</td>
<td>China</td>
</tr>
<tr>
<td>Tuna**</td>
<td>N/A – not given</td>
<td>Wild</td>
<td>Indonesia</td>
</tr>
</tbody>
</table>

Based on Monterey Bay Aquarium Seafood Watch: *Indicates an AVOID species **Unsure
Figure 2: Monterey Bay Aquarium’s Seafood Watch Guide, with Smith’s fish species highlighted (Monterey Bay Aquarium 2010).

Table 3: Calendar denoting 30-day period in which fish was served in varying amounts on any given day.

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar 21&lt;sup&gt;st&lt;/sup&gt;</td>
<td>22&lt;sup&gt;nd&lt;/sup&gt; Tilapia</td>
<td>23&lt;sup&gt;rd&lt;/sup&gt; Shrimp, Swordfish</td>
<td>24&lt;sup&gt;th&lt;/sup&gt; Shrimp</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>26&lt;sup&gt;th&lt;/sup&gt; Shrimp</td>
<td>27&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
<td>28&lt;sup&gt;th&lt;/sup&gt;</td>
<td>29&lt;sup&gt;th&lt;/sup&gt; Salmon</td>
<td>30&lt;sup&gt;th&lt;/sup&gt; Shrimp, Tilapia, Salmon</td>
<td>31&lt;sup&gt;st&lt;/sup&gt; Shrimp</td>
<td>Apr 1&lt;sup&gt;st&lt;/sup&gt; Shrimp</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Lox</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Cod, Lox</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>6&lt;sup&gt;th&lt;/sup&gt; Tilapia, Cod, Salmon, Shrimp</td>
<td>7&lt;sup&gt;th&lt;/sup&gt; Shrimp</td>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>9&lt;sup&gt;th&lt;/sup&gt; Tuna, Shrimp</td>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>12&lt;sup&gt;th&lt;/sup&gt; Cod</td>
<td>13&lt;sup&gt;th&lt;/sup&gt; Salmon, Shrimp</td>
<td>14&lt;sup&gt;th&lt;/sup&gt; Shrimp</td>
<td>15&lt;sup&gt;th&lt;/sup&gt; Tuna</td>
<td>16&lt;sup&gt;th&lt;/sup&gt; Tilapia</td>
<td>17&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>18&lt;sup&gt;th&lt;/sup&gt;</td>
<td>19&lt;sup&gt;th&lt;/sup&gt; Tuna</td>
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</tbody>
</table>

Table 4: Prices and origins of cod, salmon, and shrimp offered at local food stores in Northampton.

<table>
<thead>
<tr>
<th>Fish Species</th>
<th>Stop n Shop Price*</th>
<th>North Shore Price*</th>
<th>Stop n Shop Source</th>
<th>North Shore Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cod</td>
<td>$7.49</td>
<td>$10.99</td>
<td>U.S. Atlantic</td>
<td>U.S. Atlantic</td>
</tr>
<tr>
<td>Salmon</td>
<td>$7.99</td>
<td>$10.99</td>
<td>Farmed in Chile</td>
<td>Farmed in Norway</td>
</tr>
<tr>
<td>Shrimp</td>
<td>$8.99</td>
<td>$11.99</td>
<td>Farmed in Asia</td>
<td>U.S. Wild</td>
</tr>
</tbody>
</table>

*Stop n Shop price as of 4/18/2010; North Shore price as of 4/28/10.
Figure 3: The seven main fish types and the frequency they were served over a 30-day period by Dining Services in both the dining halls and CC Café.

Figure 4: Survey responses regarding Smithies who do and do not eat fish.

Figure 5: Survey responses regarding why some Smithies do not eat Smith prepared fish.
LITERATURE CITED


