AMARAL'S MARKET, KATE MASURY

AT THE MARKET

New England's seafood retail marketplace encompasses many places and people. It includes the fisherman selling lobsters from his boat at dockside, the seaside tourist destination offering clam cakes and cod fillets, and the corner grocery selling fish of many origins to neighbors of many origins. It includes the seafood counters at Hannaford's, Market Basket, Stop and Shop, and Shaw's. It includes the farmers' market vendor with fresh-caught scallops, the Community-Supported Fishery (CSF) with a surprise fish each week, and even the mail-order seafood company selling frozen, packaged seafood to online shoppers. Any place or person, real or virtual, where fresh, frozen, or prepared seafood is sold can be considered part of the New England seafood retail marketplace.

Eat Like a Fish citizen scientists developed an intimate understanding of the New England seafood retail marketplace. Their efforts to find the four species on their weekly Fish Lists produced an extensive assessment of the presence and absence of local seafood species in the marketplaces a whole, as well as detailed understandings of how the availability of seafood varies across different stores within this marketplace. The research team applied several analytical methods to the citizen science data set to understand patterns in local seafood availability, including a Market Availability Index, a Shannon-Wiener Index, and a logistic regression analysis.

- **Market Availability Index**: The Market Availability Index (MAI) was calculated by dividing the number of times a species was found by the total number of times it was searched for during the study period. Applied in the aggregate, this index represents the likelihood of finding each species in the New England retail marketplace (Figure 6). Applied to different market subsets, such as state (Figure 7), market type (Figure 8), and distance from the coast (Figure 9), the MAI serves as an assessment of how well different parts of the New England marketplace are doing at making a wide array of local seafood available to consumers. Market types are broken down into seafood markets, locavore markets, specialty markets, and supermarkets. Seafood markets are defined as brick-and-mortar shops selling primarily seafood. Locavore markets are ephemeral, explicitly local markets such as farmers' market vendors, CSFs, and direct-from-fisherman sales. Specialty markets are retail stores that sell a number of different products, but cater to specific market niches, such as ethnic markets, small general stores, and community cooperative markets. Supermarkets may be large or smaller chains of food stores, each having many departments in addition to seafood.

- **Shannon-Wiener Index**: To compare the diversity of local species available in different states (Figure 10), market types (Figure 11), and ranges of distance from the coast (Figure 12), we drew upon the Shannon-Wiener Index, an index typically used in the field of ecology to characterize the diversity of species in different communities. The Shannon-Wiener Index takes into account both the richness (number of unique species) and the evenness of species (how close to equal the various populations of species are, compared to one another).

- **Logistic Regression**: Logistic regression is a predictive analysis technique that assesses the relative effects of several factors on a binary dependent variable. It uses real data to predict hypothetical outcomes. In our analysis, we evaluated the relative influence of species, state, market type, and distance from the coast in predicting whether or not seafood would be found when searching for it in the marketplace.

The seafood marketplace includes not only *what* is on display, but also *who* is standing on both sides of the counter. Eat Like a Fish citizen scientists interacted with their fishmongers much more than the average customer does. Through the qualitative Fish Stories that they shared in their Fish Diaries, they provided reflections on these interactions and the role they played in their own decisions and experiences. Additionally, participants shared their excitement about finding new fish and the frustration they often felt when they failed to find any species on their Fish Lists. These firsthand reflections provide thoughtful, real-life information that can help marketers leverage personal values and interactions to increase the availability and diversity of local seafood in the New England marketplace.

SPECIES AVAILABILITY IN THE REGIONAL MARKET

FIGURE 6. MARKET AVAILABILITY INDEX

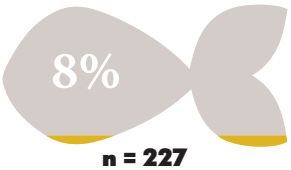
Species availability in the region was calculated for each of 52 New England seafood species using the Market Availability Index (MAI). This index was calculated by dividing the number of times a species was found by the total number of times it was searched for by citizen scientists during the 26-week study period. The MAI represents the likelihood of finding each species in the New England retail marketplace as a whole (similar indices for all species grouped by market type, state, and distance from coast are displayed in Figures 7-9). Species are displayed in order from highest to lowest in terms of their individual MAI scores.

% MARKET AVAILABILITY

n = Number of times a species was searched for in the project

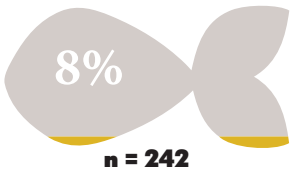
**** Starred names are categories containing more than one related species.***

HERRING



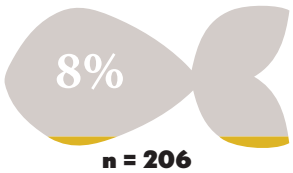
n = 227

ACADIAN REDFISH



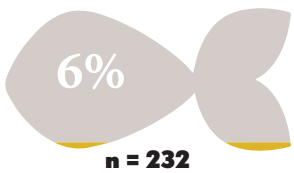
n = 242

OCEAN QUAHOG



n = 206

SURF CLAMS



n = 232

WINTER FLOUNDER

n = 201

WHELKS*

n = 242

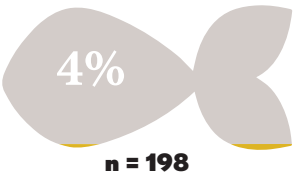
AMERICAN PLAICE

n = 248

SKATE

n = 252

WHITING



n = 198

BLUE CRAB

n = 244

RED HAKE

n = 199

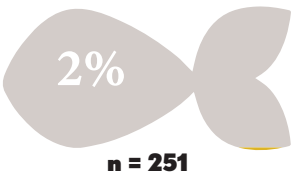
BUTTERFISH

n = 268

RAZOR CLAMS

n = 206

TAUTOG



n = 251

MAHI MAHI

n = 226

TILEFISH*

n = 234

JOHN DORY

n = 260

PERIWINKLES

n = 196

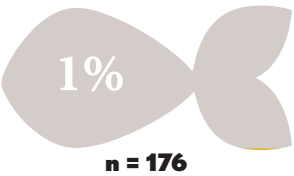
SEA URCHIN

n = 268

SEA ROBIN

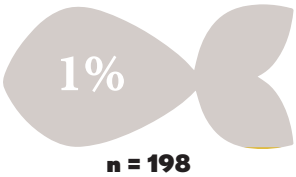
n = 236

CROAKER



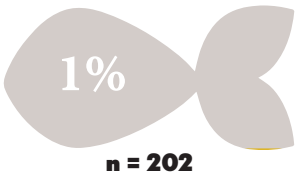
n = 176

SMOOTH DOGFISH



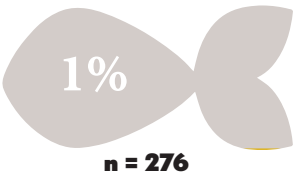
n = 198

SPOT



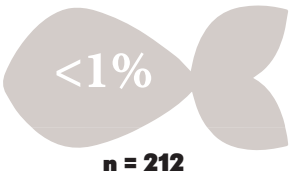
n = 202

SPINY DOGFISH



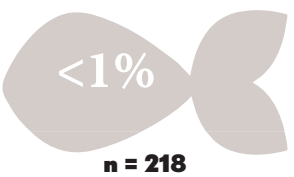
n = 276

WEAKFISH



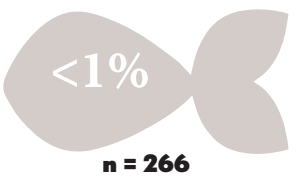
n = 212

CUNNER



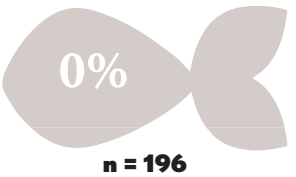
n = 218

BONITO



n = 266

SCULPIN*



n = 196

COMPARING MARKETS: AVAILABILITY

To understand how availability of local seafood varies across the New England marketplace, we calculated a Market Availability Index (MAI) for all species combined within each state (Figure 7), market type (Figure 8), and range of distance from the coast (Figure 9). These numbers do not strictly reflect the amount of local seafood available at each market, but rather reflect the likelihood of finding any given local species when searching for it. As such, MAI numbers serve as indicators of the degree to which each market subset tends to offer an ample array of local seafood.

Shoppers were most likely to find their assigned species when shopping in Maine, followed by Rhode Island, Massachusetts, Connecticut, and lastly, New Hampshire. The top three states have significant commercial fishing industries and a cultural heritage based on seafood, which may explain their higher success rates.

Shoppers were most likely to find their assigned species when shopping at seafood markets and locavore markets. These market types focus exclusively on selling seafood, and may consequently have greater in-house seafood expertise and a stronger focus on providing a variety of seafood. In contrast, at supermarkets and specialty markets, seafood competes with other products for attention. Additionally, chain markets may have less flexibility in what they can offer, due to volume purchasing practices and consumer expectations about homogeneity of products.

Shoppers' success rates declined sharply with distance from the coast, suggesting that local, diversified seafood is predominately a coastal phenomenon, with options much more limited inland.

FIGURE 7. AVAILABILITY BY STATE
MAI by state. Percentages indicate how often participants found species on their Fish Lists when shopping in each state.

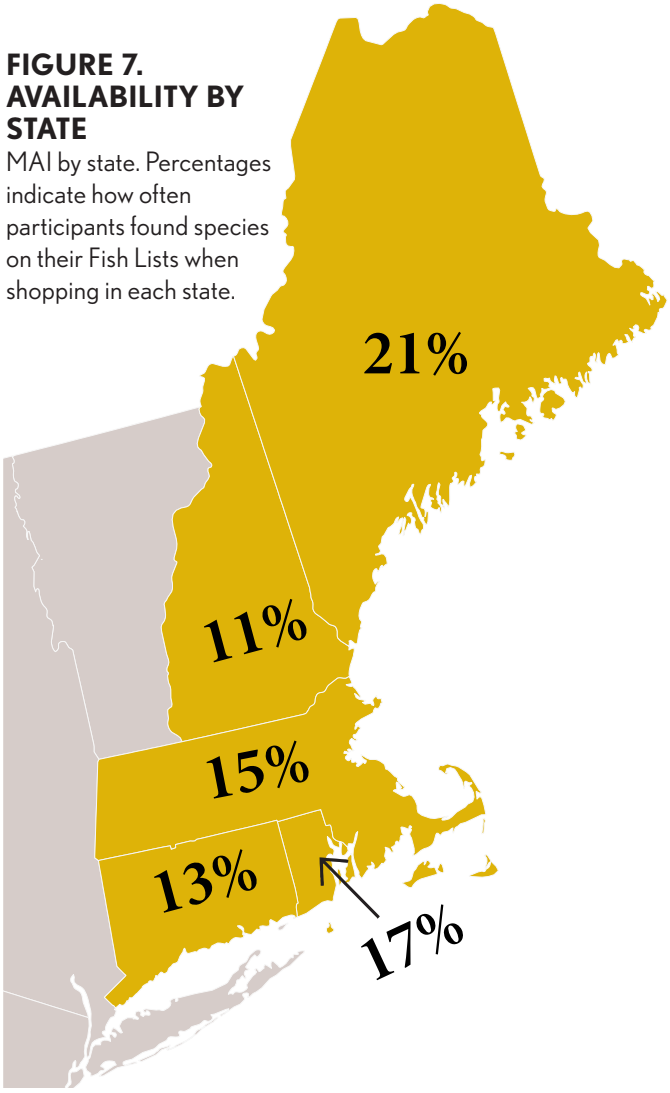


FIGURE 8. AVAILABILITY BY MARKET TYPE (ABOVE)
MAI by market type. Percentages indicate how often participants found species on their Fish Lists when shopping in each market type.

FIGURE 9. AVAILABILITITY BY DISTANCE (BELOW)
MAI by distance. Percentages indicate how often participants found species on their Fish Lists when shopping in markets at varying distances from the coast.

COMPARING MARKETS: DIVERSITY

To understand how the diversity of local species varies across the New England seafood marketplace, we used a Shannon-Wiener index (H'), defined as:

$$H' = \sum p_i \log(p_i)$$

where p_i represents the proportions of each species

MAI shares were converted to proportions by dividing each species' MAI score by the sum of all MAI scores in a given market category. If we assume that participants' likelihood of finding a species on their Fish List is indicative of that species' abundance, then we can use the Shannon-Wiener index to give a fair first impression of how local seafood diversity varies across segments of the New England marketplace.

In terms of state, Connecticut had the highest diversity of local seafood, followed by Maine, Rhode Island, Massachusetts, and lastly, New Hampshire. Connecticut's high ranking in H' and relatively low ranking in MAI suggest that availability of local seafood does not necessarily correlate with diversity.

Seafood markets had the highest diversity of local seafood, affirming our theory that businesses focused specifically on seafood offer a greater variety of local seafood than those offering many different kinds of food and non-food products.

H' values attenuated with distance from the coast, suggesting that seafood diversity may be heavily influenced by proximity to landings sites.

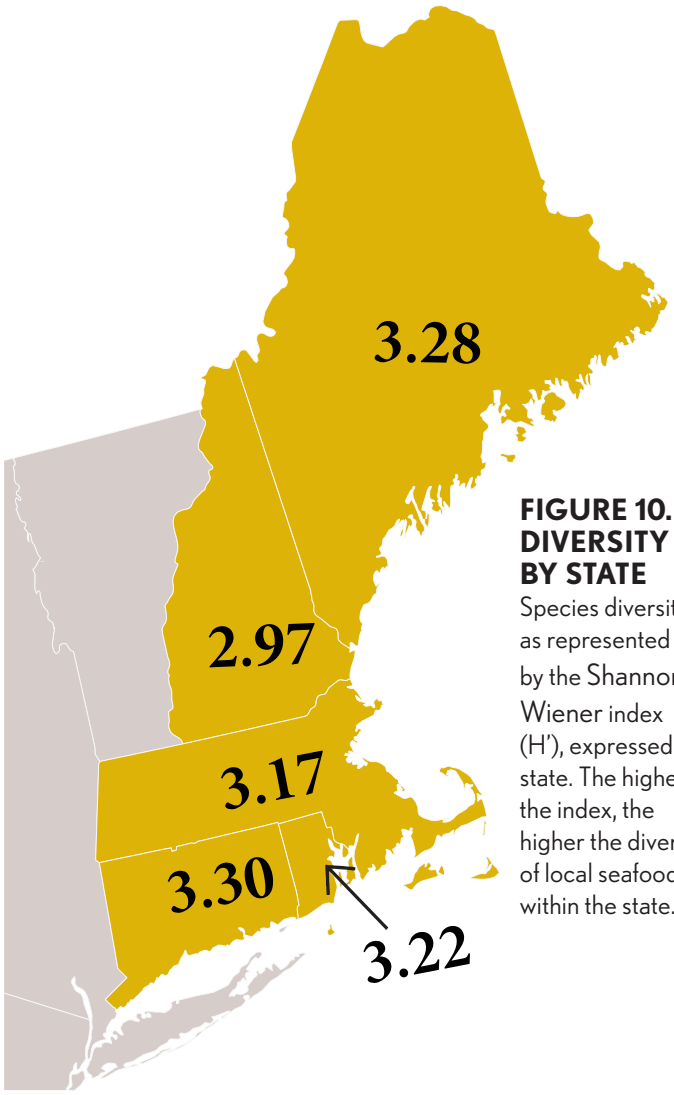
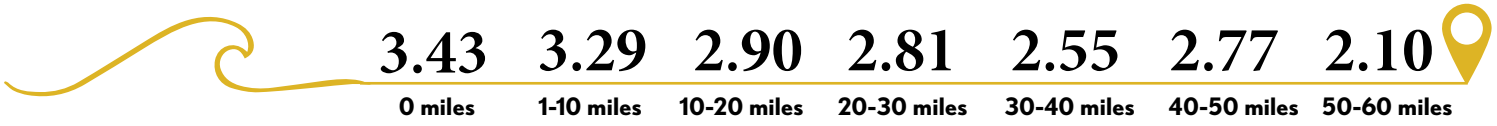


FIGURE 10. DIVERSITY BY STATE
Species diversity, as represented by the Shannon-Wiener index (H'), expressed by state. The higher the index, the higher the diversity of local seafood within the state.

FIGURE 11. DIVERSITY BY MARKET TYPE (ABOVE)
Diversity represented by the Shannon-Wiener index (H'), expressed by market type. The higher the index, the higher the diversity of local seafood within the market type.

FIGURE 12. DIVERSITY BY DISTANCE (BELOW)
Diversity represented by the Shannon-Wiener index (H'), expressed by distance from the coast. The higher the index, the higher the diversity of local seafood within the area.

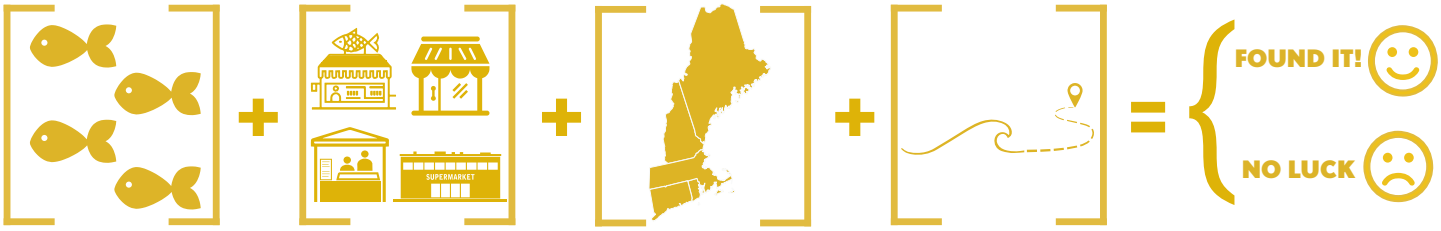


PREDICTING AVAILABILITY THROUGH LOGISTIC REGRESSION

While Figures 7-9 illustrate the probability of finding 52 local species within different categories of retail market, they do not compare the relative influence of market type, state, or other factors on the likelihood that any of the 52 species will be found. Logistic regression is an advanced statistical tool that can help answer this question.

Logistic regression adds a useful layer of analysis to the interpretation of citizen science market availability data by asking: what factors are most associated with whether or not local seafood is found? The advantage of logistic regression over the straightforward MAI scores presented on previous pages is that it eliminates the effect of covariance between different variables. Logistic regression can shed light on questions such as, "How much influence does shopping at a supermarket have on whether or not I'll find the local species that I'm searching for, all else being equal?" or "How much will it matter if I travel towards or away from the shore when looking for a local seafood species, all else being equal?" "All else" in this instance refers to the other variables we evaluated. By eliminating the effects of covariance, logistical regression effectively makes "all else equal."

The logistic regression model that we developed evaluated the relative influence of four independent variables: the species a person is looking for, the state a person is shopping in, the type of market a person visits, and how far the market is from the coast. Each of these is interpreted in terms of its potential to predict the outcome of binary variable: whether or not a piece of seafood is found when searched for. The graphic equation below illustrates this concept.



Findings reveal that all four variables are significant predictors of whether seafood is found. Species identity exhibited the strongest effect, followed by market type, state, and finally, distance. The analysis also estimated coefficients that explain the relative influence of each value within the three categorical predictor variables (species, market type, and state) on the binary outcome. These coefficients predict the relative influence of species (e.g., the fact that a shopper is looking for scup), market type (e.g., the fact that a shopper goes to a supermarket), and state (e.g., the fact that a shopper is in Connecticut) have on whether a shopper will to find their intended fish or not. These values, shown below and at right, are expressed relative to an arbitrarily chosen "zero value," which shows up as having no colored bar in the figures. In our analysis, we chose the species Acadian redfish, the state of Connecticut, and the seafood market type as "zero values," to which all others are compared. Distance was treated as a continuous, rather than a categorical value, and thus, it has not been plotted. However, modeling distance as a variable resulted a weighting of -0.15, indicating a slight decrease in the likelihood of finding one's intended fish as one shops further from the coast.

FIGURE 13. STATE COEFFICIENTS

State is the third most significant predictor of whether seafood is found, with Maine and Rhode Island having the highest likelihood of a positive outcome. Connecticut has the highest likelihood of a negative outcome.

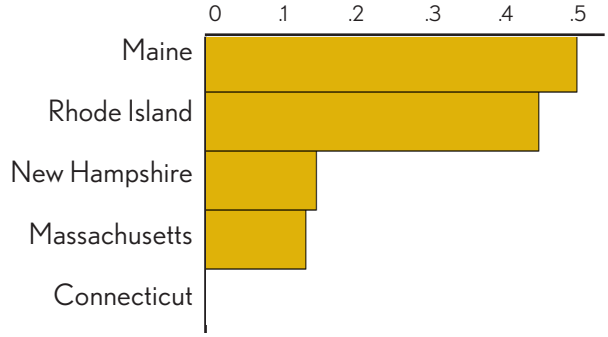
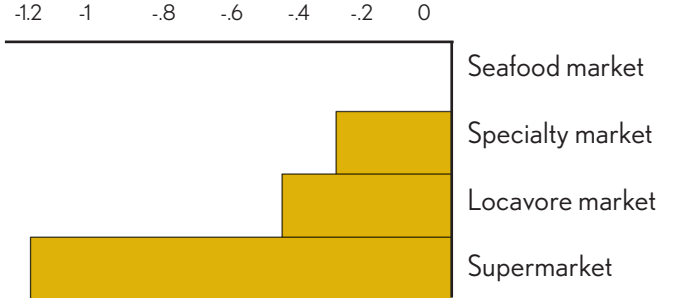


FIGURE 14. MARKET TYPE COEFFICIENTS

Market type is the second most significant predictor of whether seafood is found. Seafood markets having the highest likelihood of a positive outcome (finding one's intended fish). Supermarkets have the highest likelihood of a negative outcome.



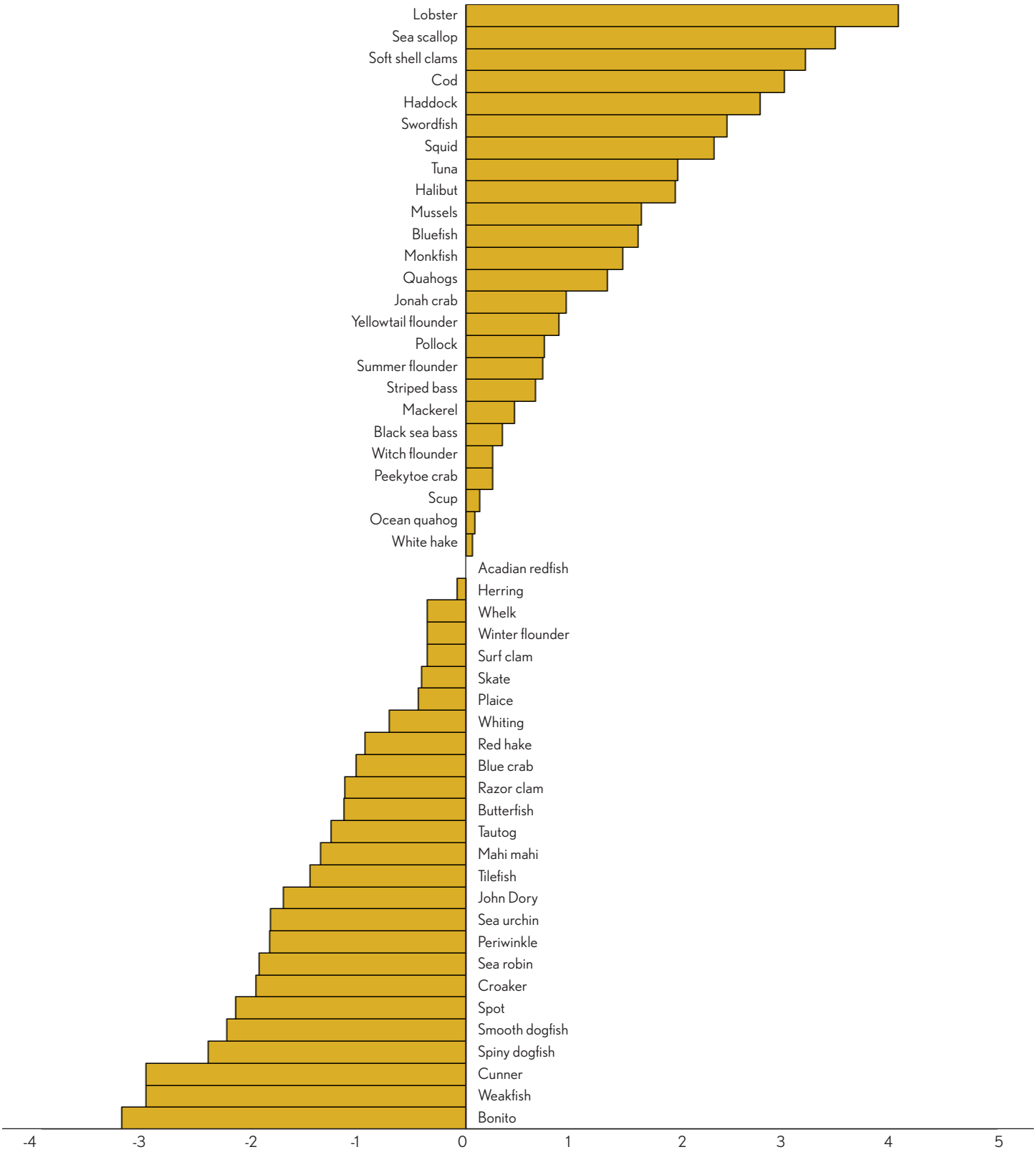


FIGURE 15. SPECIES COEFFICIENTS

Species' identity (the fact that they "are what they are") has the most significant effect on whether seafood is found in the marketplace. The more positive a species' value is (the longer its colored bar stretches to the right of the axis on the graph), the more likely it is to be found when looked for. The more negative a species value is (the longer its colored bar stretches to the left of the axis), the more likely it is that this species will elude shoppers. Sculpin is excluded from analysis because it was never found in the market, and therefore it provided no data on market availability that could be fed into the model. We can assume that looking for sculpin has a very strong negative effect on the likelihood that a shopper will not find his or her intended fish.

THE "HARBOR FISH EFFECT"

Harbor Fish market in Portland, Maine, prides itself on offering "an astounding array of fresh seafood" (according to its website), and its seafood diversity is apparent to anyone who walks in its door. Harbor Fish was a popular destination for many of the Eat Like a Fish citizen scientists. In fact, 127 of the 2,946 market visits made by participants during the study period took place at Harbor Fish. In contrast, the next most visited market received 63 visits. In part, this pattern emerged because a large cluster of participants resided in the Portland area. But it was also a result of adaptive learning: as participants in the area realized they could achieve a higher success rate when searching for Fish List species at this market compared to other markets, they began to shop here more often.

Because Harbor Fish received a high number of market visits during the project and because it tends to have a high availability and diversity of local fish, its disproportionate representation had the potential to skew the patterns observed in availability (Figures 7, 8, and 9) and diversity (Figures 10, 11, and 12) of local seafood in the marketplace. Due to these concerns, we repeated the basic availability and diversity analyses without data from Harbor Fish, for comparison. Those results are summarized in the tables at the lower right.

As these tables suggest, Harbor Fish made a noticeable difference with regard to findings on the availability and diversity of seafood within Maine markets. Without the "Harbor Fish effect," Maine would have come in second (rather than first) among states in MAI scores, and fifth (rather than second) in Shannon-Wiener scores. This is significant: had this single market not been included in participants' shopping radius, Maine would have had the lowest diversity scores of any state. Interestingly, this is what might be expected based on the relatively lower diversity of the Gulf of Maine ecosystem compared to other regions. In fact, at present, the Gulf of Maine is heavily dominated by one species: lobster. Lobsters were available at nearly every single market visited in Maine, whether or not Harbor Fish was included in the analysis. Other species, however, might not have registered at all in Maine were it not for this unique seafood market. The "Harbor Fish effect" was less noticeable when comparing market types, but was quite noticeable when comparing markets by their distance from the coast.

These results illustrate the impact that a single market can have on participants' ability to find a diversity of local seafood. But rather than cast doubt on the results of the Eat Like a Fish research project, this pattern highlights the difference that a model market can make in breaking new ground and starting new trends. While Harbor Fish was not the only market in this project that excelled in terms of its availability and diversity of local seafood, it stood out because of its ability to attract a large customer base of citizen scientists who could not find diverse local seafood elsewhere.

Additional research underway by Eating with the Ecosystem will utilize key informant interviews with retail market personnel to investigate why some markets do better than others at offering an abundance and variety of New England seafood.

HARBOR FISH, KATE MASURY

"Harbor Fish is my new go-to! They seem to have EVERYTHING and always know where it came from."
- KAT CHAMPIGNY

State: Maine			
Availability (MAI)		**Diversity (H)**	
+ Harbor	- Harbor	+ Harbor	- Harbor
21%	16%	3.28	2.92

Market Type: Seafood Market			
Availability (MAI)		**Diversity (H)**	
+ Harbor	- Harbor	+ Harbor	- Harbor
21%	20%	3.35	3.28

Distance: Zero Miles			
Availability (MAI)		**Diversity (H)**	
+ Harbor	- Harbor	+ Harbor	- Harbor
28%	20%	3.43	2.98

TABLE 1. HARBOR FISH EFFECT
Availability (MAI) and diversity (H') scores are presented for market subsets influenced by the "Harbor Fish effect." Scores from Figures 7-12 are repeated here for comparison (indicated by a "+ Harbor" designation), alongside the same scores calculated without Harbor Fish included (indicated by a "-Harbor" designation).

INTERPRETING SCARCITY IN THE MARKETPLACE

There are many reasons that a species might be difficult to find in the marketplace. In some cases, it may be because it is rare in the ocean ecosystem. Simply put, there aren't that many of them to catch. Perhaps the best example of this is John Dory, a solitary fish that is exclusively caught as bycatch, typically in the squid trawl fishery. Its small numbers and elusive habits mean that it is not the subject of a targeted fishery, despite its popularity with consumers. For species like John Dory, scarcity in the market is simply a reflection of scarcity in the ecosystem. This kind of market scarcity is not a problem that needs to be fixed; rather, it is in keeping with a commitment to ecosystem-marketplace balance.

However, there are many species that are rare in the market despite being common in the ecosystem. A parallel research project underway at the University of Rhode Island (URI) recently calculated preliminary estimates of ecological production rates of a number of ocean-dwelling New England species. "Production" is the annual amount of biomass generated each year by each species. A species' production is a function of how many individuals there are in a species' population, how big these individuals are, how many offspring they have, and how quickly they grow. Preliminary results from that study suggest that many of the species that are scarce in the New England marketplace are actually among the most productive in the ocean ecosystem. For example, spiny dogfish, herring, croaker, butterfish, and ocean quahog were found to have some of the highest production in the ocean of all New England species. However, these species were nearly absent in citizen scientists' searches of the New England marketplace. Similarly, although coastal species were not included in the URI study, it is common knowledge among coastal fishermen that periwinkles, whelks, cunner, sea robin, and sculpin are highly abundant in local waters—yet they are almost totally missing in the New England marketplace.

Understanding the factors that make some species rare in the marketplace despite a high abundance in the sea is a critical first step to attaining a better balance between ecosystems and markets. In some instances, species may be caught in large numbers, but the bulk of the catch may be shipped elsewhere. For example, whelks constitute a significant catch for New England fishermen, but they are rarely found in New England markets. Instead, most of the whelks caught in New England are shipped abroad to countries such as China. This pattern reflects a combination of low market demand at the local level and high demand elsewhere. In other cases, a species may be destined for purposes other than food. For example, herring—one of New England's most bounteous forage fish species—is common in both the ocean ecosystem and in fishermen's catches. However, the vast majority of herring is used as bait to attract lobsters, not to feed humans. Still other species may be processed into unidentifiable forms before reaching the marketplace. For example, ocean quahogs are rarely sold as whole, live clams, but are generally turned into clam strips and minced clams for use in fried clam products and chowders. They reach the New England marketplace, but are no longer recognizable by species when they do.

Sometimes, species may be caught and marketed locally in large numbers, but not in the Eat Like a Fish study area. For example, participants' Fish Lists included blue crab, croaker, and spot, which are commonly caught in Mid-Atlantic waters and are predicted to become more regularly abundant in New England catches as a result of climate change. However, citizen science data reveals that these species are extremely rare in the New England marketplace at present. As they become more common in local waters, these species will likely produce some blank stares at the fish market, as fishmongers and seafood customers figure out what to do with them.

A final category of species—and one that is particularly important from the perspective of economic development and ecosystem-marketplace balance—includes those that are avoided by fishermen, thrown back when caught, and rejected by prevailing market mentalities, as well as those that are landed in considerable quantities, but fall short of meeting their full harvest potential due to slow market demand. Sea robin, sculpin, and periwinkles are all examples of the former pattern, while dogfish, butterfish, and scup are all likely examples in the latter. Both sets represent species whose marketing potential is not currently realized. Put differently, these species could benefit from a marketing boost. The sections that follow provide insights gleaned from citizen scientists' personal experiences regarding the potential of species like these to attract greater interest from New England consumers.

MAKING CHOICES AT THE SEAFOOD COUNTER

Although Eat Like a Fish citizen scientists often struck out completely on finding the species on their Fish Lists, and were sometimes elated to find anything at all, there were 425 occasions on which they had to choose between more than one species. When that occurred, participants entered information into the Fish Diary on the relative importance of 12 factors in driving them to prefer one species over another. These results, while somewhat rudimentary in comparison to a formally structured consumer choice experiment, provide some "real-life" data on how consumers make decisions at the seafood counter.

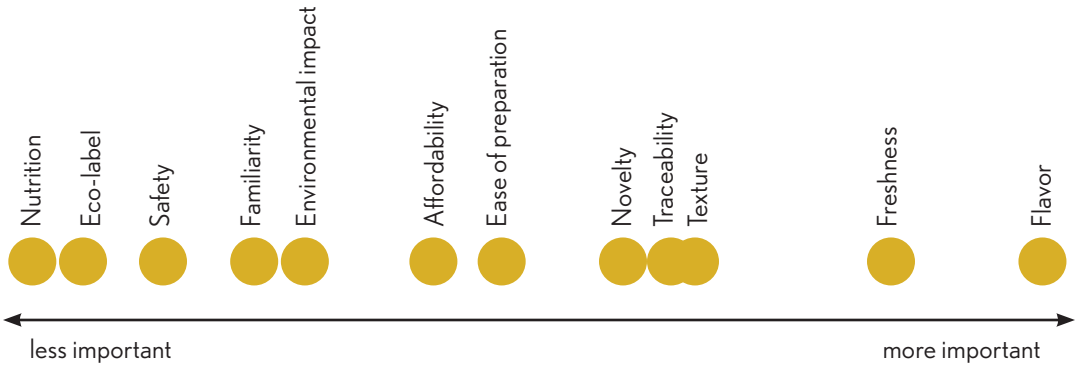


FIGURE 16. DECISION FACTORS
Whenever a participant chose between two species, (s)he was prompted to rank the importance of 12 factors in determining which species (s)he chose. The bubbles on this plot represent the average scores given by participants to each factor. Averages ranged from 1.97 (nutrition) to 2.94 (flavor) on a scale of 1-5. The talk bubble below offers some explanations for these rankings.

Since the main focus of this research project is the diversification of local seafood diets, it is pertinent to ask: How do these 12 factors incentivize or deter seafood consumers from purchasing a new or unfamiliar local species?

One pattern that emerged was that the project structure itself played a role in how participants made choices. For example, after many weeks of eating "generic" whitefish (a frequent complaint in participants' Fish Stories), participants experienced a strong incentive to favor novelty over familiarity.

Additionally, the social camaraderie that many participants enjoyed as part of the Eat Like a Fish Facebook group might have given them greater confidence and a sense of friendly competition that motivated them to choose new species over familiar ones. Participants took to Facebook to consult with one another on preparing new species and enjoyed sharing "new fish" photos with the group. These aspects of the project may have given greater weight to the novelty factor than would have ordinarily been the case—but that in itself is a valuable lesson, suggesting that shared learning experiences can make an important contribution to diversification of seafood diets.

Participants clearly valued the story that comes with seafood. Traceability can be interpreted literally (e.g., a QR code that lets customers scan a ticket on their fish to learn exactly who caught it) or more broadly to refer to learning about a species, where and how it is caught, its stock status, and what makes it unique. The value that many participants placed on sharing the story behind their fish suggests that seafood is most successful when it excites the imagination.

Novelty: "We wanted to branch out and try something new, so we went with the exotic-sounding sea urchin over our old favorite of soft shell clams." "Haddock seemed a bit too conventional, so I decided to go with red hake."

Familiarity: "Most of my fish species were easy to find in the fish market. However, from prior experience, I chose to purchase a fish I knew was easy to prepare, tasty, and most importantly, sustainable."

Traceability: "Reading a New York Times article, I learned that several chefs helped elevate it [*note: peekytoe crab*] to star status by establishing relationships with fishermen/pickers Downeast. When food has a story like this one, it instantly becomes more desirable to the consumer."

Sustainability: "I was only able to find two at my first location—squid and grey sole. I chose to purchase squid for a few reasons; I do enjoy fried calamari and never made it before, I had grey sole last week, and most importantly, it is a more sustainable option."

Freshness: "I was planning to buy the black sea bass, but after looking at the two fish, the scup looked fresher, so I ended up buying it."

Affordability: "Because crab meat was pretty expensive ($14.99 for half a pound), I decided to go with the soft shell clams."

SHOPPING TALES

In the market, citizen scientists' Fish Stories told many tales. There were helpful fishmongers, ill-informed fishmongers, fish-finding successes, and fish-finding failures. By describing the influence of these experiences on how participants felt and behaved, Fish Story data provides important lessons for the marketing of local and diverse seafood in the New England marketplace. Several thought-provoking themes emerged from citizen scientists' Fish Stories with regard to their experiences at the market:

- Many species are hard to find, despite interest: Participants shared 80 stories about failed attempts to locate species of interest.
- Positive fishmonger interactions: Participants shared 113 stories about positive interactions with fishmongers.
- A need for more informed fishmongers: Participants shared 29 stories about uninformed fishmongers.
- Special orders: A number of participants discovered they could ask their fishmongers to special-order hard-to-find species.

THEME 1: MANY SPECIES ARE HARD TO FIND, DESPITE INTEREST

Citizen scientists fully embraced the challenge and were eager to try "new" species. Unfortunately, their interest in trying less familiar species was often hindered by a lack of availability of these species in the marketplace. Participants were often forced to purchase more common fish when they would have preferred to buy a more novel species on their list.

HADDOCK, SHERRI DAROCHA

"For lucky Week 13, I spent a little time looking back at all of the fish recipes that I've prepared so far, the new-to-me species that I've been lucky enough to find, and all of the great little seafood shops I've been introduced to as my search region has expanded. At the inception of Eat Like a Fish, I had no doubt that I would find, prepare, and marvel at my brilliance with new, exotic, local species of seafood each week! It would be a great excuse to seek out specific ingredients and expand my culinary horizons. I never dreamed that most weeks it would be so challenging to find even one fish on my list. After 13 weeks, I've got lots of pent-up fish envy that will only be soothed by finding species that have eluded me, like cunner and red hake (and dozens of others). I have no doubt that I will continue the quest even after the study has concluded. On the other hand, I've greatly expanded my fish recipe repertoire for species that are more commonly found in my neck of New England."

-SHERRI DAROCHA, RHODE ISLAND

"It is really quite remarkable that the only way for me to get locally caught seafood that is something other than a white flaky fish or shellfish (possibly tuna), is to be able to get to one specific local fish market in the middle of the day. I live within a five minute drive of the coast and work on the Saco River. It is disappointing that I have so few options available to me, when I live and work within minutes of the Gulf of Maine."

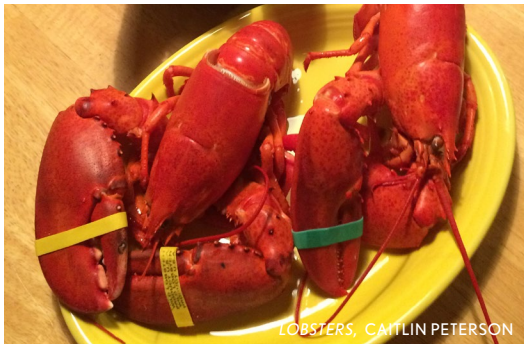
- ZACH MILLER-HOPE, MAINE

HALIBUT, CATHERINE SCHMITT

TUNA, DEBORAH MAGER

"My first thought when I received my Fish List this week was, 'This is going to be a challenge.' The only familiar fish on my list was tuna. I then automatically went to the Eat Like a Fish website to research my other fish species. I found that scup is also known as porgy. I was hoping to find that in my search, but it was not to be. I would have also liked to try either spot or smooth dogfish, but neither of those species was available either. When I called my usual 'go-to' fishmonger, he said he had local yellowfin tuna, so tuna it was."

- DEBORAH MAGER, CONNECTICUT



LOBSTERS, CAITLIN PETERSON

"I was hoping to find sea robin in the market, but they told me even though it is a local species, they do not have a market for them. There were no whole, live crabs available at the time. The picked crab meat available could have been peekytoe or Jonah crab or a combination of the two. Not specific enough for me to purchase for the project. Blue crab is almost always from Maryland and not New England, and usually available in early spring in the form of soft shell crabs... [So] we had delicious, sweet, soft shell lobster. I steamed the lobster then used the picked meat on a pizza with a white sauce. Yum!"

- RACHEL FECTEAU, MAINE

THEME 2: POSITIVE FISHMONGER INTERACTIONS

Because citizen scientists were required to search for four species of fish or shellfish each week and to verbally verify that those fish had been landed in New England, participants interacted with their fishmongers (seafood sales staff) more than the average consumer. The majority of these experiences were positive, and many participants recounted forming close relationships with their fishmongers. Some were even invited to tour the cutting room and the docks. They grew to trust fishmongers who could answer questions about their seafood, and they appreciated when fishmongers provided them with tips on preparation or notified them when they got interesting species into the market. These influences were a two-way street: some participants even reported that markets started carrying more local seafood as a result of their expressions of interest.

RYAN RASYS, RED'S BEST

"I was so happy to find my fish this week! I think the fishmonger, who I've been visiting each week, was also thrilled to finally have something I was looking for. We chatted about John Dory as he filleted it for me, and it was so nice to learn about how they're caught and hear his perspective! My husband and I both loved the fish and would gladly purchase it again! Plus our dog, Otto, was so excited to have a little treat of the skin :) Looking forward to next week!"

- ELIZABETH LADUCA, MASSACHUSETTS

"'There is nothing more authentic in New England than eating native fish.' The engaging fishmonger at Red's Best said this to me while diving deep into the importance and value of seeking out local, wild fish. He was spot on. Every experience during this project with the team at Red's Best has been so meaningful. I really value their genuine passion for what they do and how willing they are to share their experience (and tasty recipes too!) at the counter. I was able to purchase a lovely piece of hake for this week's assignment. It was fresh off fisherman Bob Eldridge's boat named Unicorn out of Chatham and the price was right. At $11/pound, I have found my new favorite local fish!"

- DARYL POPPER, MASSACHUSETTS

"Initially, I had a little trouble, but the folks at Sanders are just great. They were supposed to get some hake in. That didn't end up happening, but the lovely gentleman remembered when I called for the hake that, 'You were also looking for tautog, weren't you?' They had some coming in that day (Friday) that would be cut on Saturday. I came in on Saturday afternoon, just before going to my friend's cookout, and was presented with two beautiful one-pound fillets."

- CHARLEEN THORBURN, NEW HAMPSHIRE

"I was pleasantly surprised by the taste of ocean perch (Acadian redfish). That's the first thing I learned (two names for the same fish). Asking the fish counter about where their fish comes from was an adventure in itself. The man at Big Y was actually a fish buyer in New York, working part-time evenings at the store. Who would have guessed? If I had not started explaining to him about this citizen scientist project, I would never have known that such a knowledgeable person would be helping me first-hand. Looking forward to next week!"

- JAYNE MARTIN, CONNECTICUT

THEME 3: NEED FOR MORE INFORMED FISHMONGERS

Not all fishmongers were helpful or knowledgeable about their seafood. Participants found it frustrating when markets didn't know what a local species was or couldn't tell them where an item was from. Local seafood knowledge became a basic expectation for participants, and when markets couldn't meet this expectation, they downgraded their impressions of the market and moved on.

"Fish is a big part of my diet and my life. As an avid fisherman (use to be commercial fisherman) I enjoy all things that come with consuming fish. One thing I am surprised by is the actual lack of knowledge of some of the shop workers I buy the fish from. None of them knew what tautog was (which I find is common north of Cape Cod) or whelk, which is one of my favorites and another one I have trouble finding."

- TAYLOR FEUTI, MAINE

"I have been frustrated by the inability of our local grocery stores to tell me anything beyond country of origin for the fish that they sell. Much of it may be from New England, but they are unable or unwilling to share this information. "

-BARBARA ROTGER, MASSACHUSETTS

JOHN DORY, ELIZABETH LADUCA

ACADIAN REDFISH, JAYNE MARTIN

THEME 4: FISHMONGERS CAN SPECIAL-ORDER HARD-TO-FIND SPECIES

Some participants felt frustrated when they were unable to find their four Fish List species week after week. Luckily, this annoyance prompted them to start asking their fishmongers why these species were so hard to find. The answer, more often than not, was lack of demand. In fact, many participants found out that if they were able to guarantee a ready sale by pre-ordering a species, a fishmonger often had no trouble finding it on the wholesale market.

"I ventured farther from home and am very pleased I did. The fishmongers at both Daily Catch in Smithfield and Anchor Seafood in Warwick were not only aware of many locally caught species, but told me I could call with my Fish List. They would then ask their suppliers if they had any in their daily catch, and have it sent with the order. Both gentlemen were highly knowledgeable and extremely accommodating. I feel like I may have hit the jackpot!!"

- MICHELLE PECHIE, RHODE ISLAND

AMARAL'S MARKET, KATE MASURY

TAKEAWAY

Species vary widely in their availability in the marketplace. Although all of the species that citizen scientists searched for are available in the marine ecosystems that border New England's shores, many of them are all but absent from New England's seafood retail marketplace. A few well-known species clearly dominate the market—namely, lobsters, sea scallops, soft shell clams, cod, and haddock—all "traditional New England" species. Markets that focus exclusively on seafood and rely on shorter supply chains seem to be doing a better job of making a diverse array of local seafood available to customers, and markets with well-informed, friendly fishmongers are well poised to engage these customers in diversifying their diets to include new species. Currently, "early adopter" customers who are interested in trying new species are often stopped short by many species' lack of availability in the marketplace, but by working with their fishmongers, they can often procure these species and build demand for them in the future.