# Untapped Markets for Louisiana Seafood

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# Executive Summary

This report provides novel information regarding current challenges facing the Louisiana seafood industry, as well as insights into potentially useful strategies and target markets for capturing a larger share of the premium end of the market. Through interviews with industry representatives and quantitative analysis of seafood menus in over 50 cities, we analyze current and potential markets for Louisiana seafood. Our evaluation provides opportunities to better understand the relationship between location, seafood offerings at restaurants and grocery stores, and price.

Key findings include:

- When seafood products are marketed as commodities (e.g., "shrimp" or "oysters"), they compete with global supply and gain market share only by lowering price.
    - Wild caught domestic products may have a competitive advantage when compared to imports, which may rely on inequitable labor, lower sanitation standards for cultivation facilities, and use of antibiotics.
- Growing market share for premium products will require enhancing the image of Louisiana seafood with an intensive focus on quality and creating recognized, differentiated products.
    - There is a need for coordinated advocacy work to assuage regulations or restrictions in other states to reduce barriers for Louisiana products and streamline process and requirements for selling to other states.
- Seafood branding and education is paramount to improving perceptions and demand for local seafood.
    - Regulations in certain states have limited the availability of gulf oysters to several months out of the calendar year, which may feed into negative perceptions about product quality.
    - Conversely, foreign seafood lacks federal regulations, yet the public is not educated on the tactics sometimes used in foreign aquaculture.
- Differences in average prices by city provide a measure of the overall level of demand within a given market (such as Seattle, San Francisco, and Lafayette).
- High-end restaurants rely on marketing that is tailored specifically to particular regions or thematic notes, which may produce the most opportunities for premium pricing of Louisiana seafood products.

Recommendations:

- Distributors should target cities with higher-priced seafood menus and grocery stores, especially those with easy transportation access to Louisiana.
- Gulf of Mexico based distributors and marketing groups can improve branding techniques for seafood marketability by:
    - Implementing unique branding to differentiate Gulf-caught products from imported, use of guerilla marketing, and launching education initiatives about the relative benefits of wild caught to foreign and/or domestic farmed products.
    - Working with restaurants or grocers to market the water-to-table supply line of seafood products; this connection may ensure that commercial fishers benefit from premium pricing.

Additional considerations:

- Targeting growth at new market segments (e.g., kosher and halal markets that have a strong demand for certain products and different supply chain processing) may provide opportunities to expand beyond marketing and distribution calibrated to the broader seafood market.
- Seafood certification programs can bolster marketing strategies that emphasize the identity of the seafood's origin and allow restaurants or grocery stores to place a premium price on individual seafood items.

# Acknowledgements

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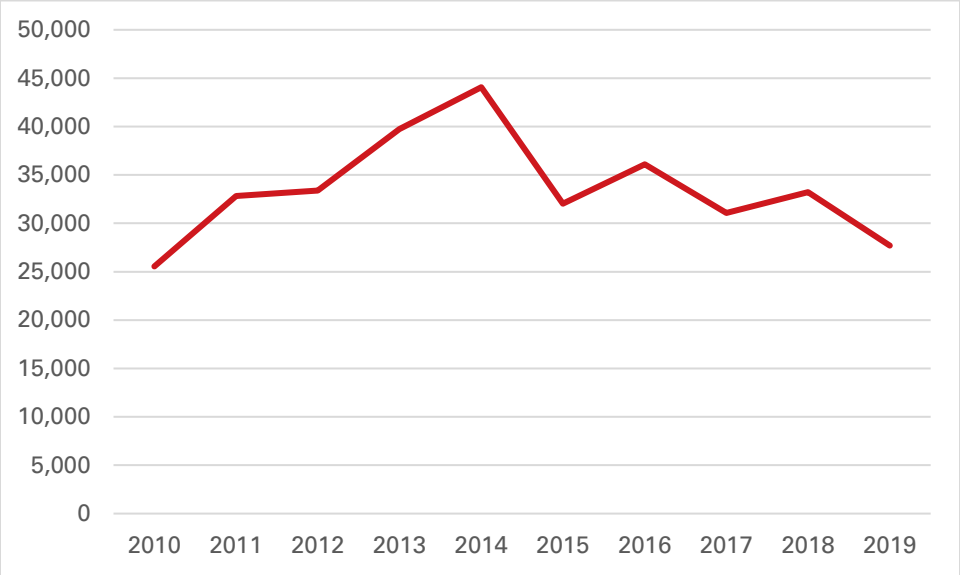
# Introduction

Louisiana has a $1.6 billion fisheries industry, and yet, it has been in a state of stagnation or decline for decades. Increasing price margins, pressure from foreign imports, and federal regulations have forced Louisiana fishermen to adapt to a difficult landscape. This report is designed to highlight opportunities to market Louisiana seafood at higher prices by cultivating differentiated products and targeting untapped markets.

Historical data on the fishing industry can help frame understanding of how the industry has changed. The National Oceanic Atmospheric Association (NOAA) has been tracking the Louisiana commercial fishing industry since 2010. They found that the entire industry, including harvesters, processors & dealers, importers, wholesalers & distributors, and retailers comprised approximately 25,000 jobs (National Marine Fisheries Service, 2022). After peaking in 2014 at roughly 45,000 jobs, employment has fallen to 27,000 industry professionals when last measured by NOAA in 2019 (Figure 1).

The Louisiana Department of Wildlife and Fisheries began recording commercial license statistics in 1987. At the time, there were 30,000 commercial fishing licenses issued amongst residents, non-residents, and seniors —this number is now closer to 11,000 (Figure 2). Meanwhile, the wholesale and retail dealer industry has stayed constant, just under 1,900 licenses are issued annually since the late 1980's (Louisiana Department of Wildlife and Fisheries, 2023). While employment has certainly fallen, there has also been stratification at the top of the industry, potentially resulting in fewer employees necessary to account for the domestic appetite for Louisiana seafood.

**Figure 1.** Total Fisheries Employment – Louisiana 2010-2019



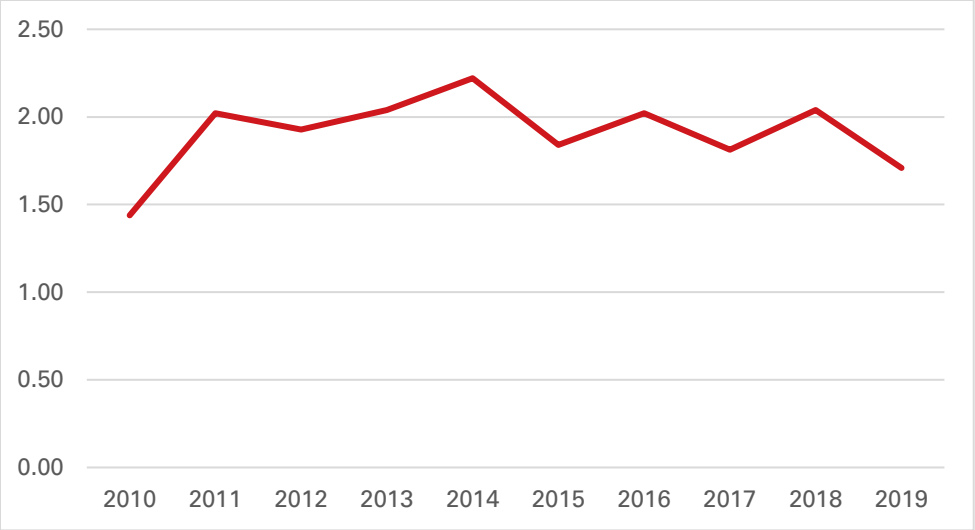

Source: NOAA National Marine Fisheries Service, commercial fishing (with imports) – includes commercial harvesters, seafood processors & dealers, importers, seafood wholesalers & distributors, and retail industries

**Figure 2.** Louisiana Commercial Fishermen and Wholesale/ Retail Dealers


Source: Louisiana Department of Wildlife and Fisheries, includes non-resident, resident, and senior commercial licenses for fishers, dealers, wholesalers, and transporters

The total economic impact of Louisiana seafood is about $1.6 billion annually, measured most recently in 2019 (Figure 3). While economic output for the Louisiana fisheries industry has been relatively constant for much of the last decade, sales are down from previous highs that surpassed $2 billion annually. More populous Gulf states like western Florida and Texas accounted for $19 billion and $5 billion respectively in 2019, well above Louisiana's $1.6 billion in annual sales. Alabama and Mississippi accounted for less than $1 billion in 2019 sales (Figure 4).

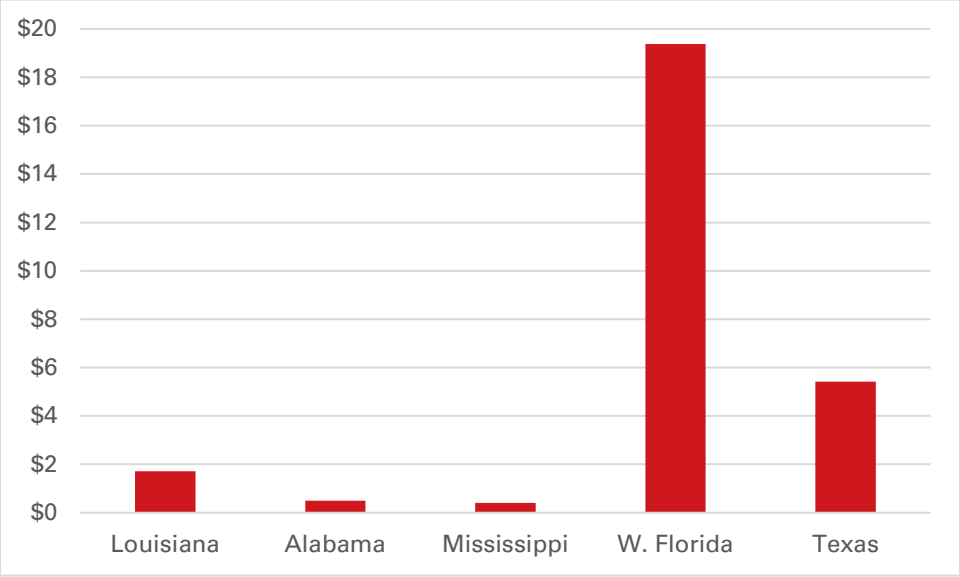
**Figure 3.** Total Fisheries Industry Sales ($ in billions) – Louisiana 2010-2019




Source: NOAA National Marine Fisheries Service, commercial fishing (with imports) – includes commercial harvesters, seafood processors & dealers, importers, seafood wholesalers & distributors, and retail industries

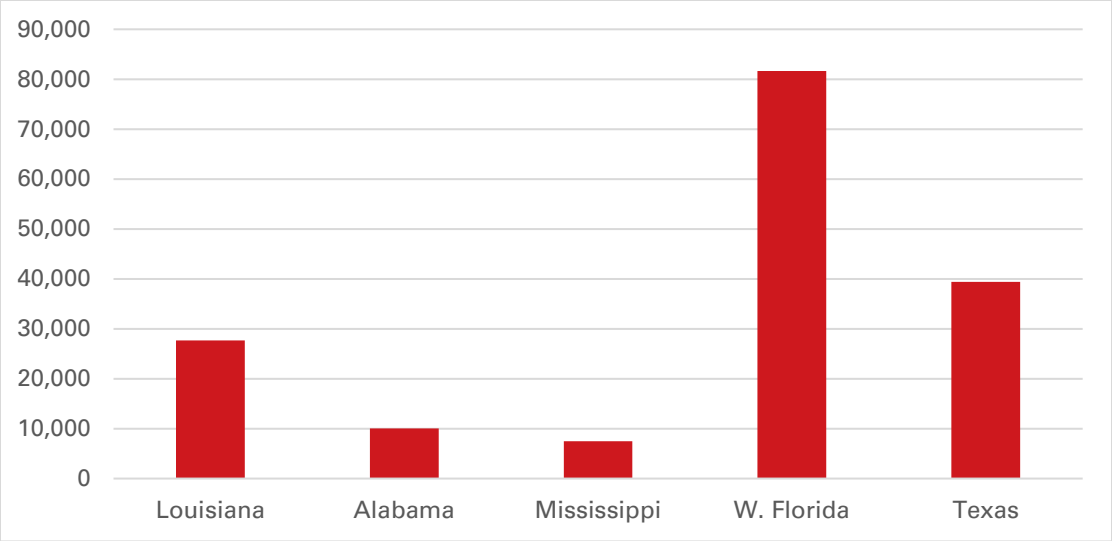
Including the effect of imports, distribution, and retail, western Florida and Texas employ far more people in the seafood industry, approximately 80,000 in western Florida and 40,000 in Texas (Figure 5) (Fisheries Economics of the United States, 2019). While the seafood industry clearly exhibited growth in the mid 2010's, Louisiana has witnessed declining sales and employment over the past couple years. Louisiana has a solid ratio of sales to fisheries jobs – each worker generates roughly $62k in sales, indirectly. However, this number is still well behind western Florida and Texas.

**Figure 4.** Total Fisheries Industry Sales (billions) – Gulf Coast 2019




Source: NOAA National Marine Fisheries Service, commercial fishing (with imports) – includes commercial harvesters, seafood processors & dealers, importers, seafood wholesalers & distributors, and retail industries

**Figure 5.** Total Fisheries Employment – Gulf Coast 2019




Source: NOAA National Marine Fisheries Service, commercial fishing (with imports) – includes commercial harvesters, seafood processors & dealers, importers, seafood wholesalers & distributors, and retail industries

The changing landscape of the fisheries industry has long term impacts on quality of life for Louisiana's coastal residents. Fisheries have historically offered opportunities for a fairly high wages and job satisfaction (Smith & Clay, 2010). Coastal communities have benefited in multiple ways from the role of this high value occupation within their workforce. Shifting impacts on coastal fishing from climate change look likely to increase the vulnerability of fishing dependent communities (Colburn et al., 2016). New opportunities to address the value proposition of Louisiana's seafood may change how the impact of climate change, industry transformation, and other factors impact Louisiana's communities.

# Methods

To evaluate where new opportunities exist for Louisiana's seafood industry, we use both qualitative and quantitative analyses that focus on two nodes of data collection: qualitative interviews with seafood buyers/dealers and proprietary seafood menu data from MealMe, which was further supplemented with menu data collected from high end restaurants. These two types of data provide complementary information that provide a well-rounded picture of challenges and opportunities.

## Interviews with Key Stakeholders

To inform a robust quantitative analysis of seafood product offerings at restaurants and grocery stores, we conducted a series of interviews with local seafood industry professionals in Louisiana. Using a semi-structured interview process, we discuss broad themes with a variety of industry professionals. Initial questions aimed at revealing the struggles that those currently engaged in the nation's seafood market face. The questions were framed to first identify issues in the production, distribution, and marketing of the seafood product. Second, the questions were used to define the regions of the country that Louisiana businesses currently engaging with in order to focus the quantitative research on the most relevant cities outside of the southeastern United States. Our interview protocol was approved by the UL Lafayette IRB in July 2022.

Interviewees were recruited using a snowball method. Using email addresses identified on the Louisiana fisheries task forces, we contacted prominent leaders in the industry. In addition to securing interviews directly with these individuals, we also sought referrals, which resulted in additional interviews. We interviewed 11 individuals during late summer and fall 2022.

Interviews were conducted via Zoom or phone depending on the interviewee's preference or ability, with those conducted over Zoom being recorded. Detailed notes were taken during both types of interviews. The transcripts and notes were analyzed and coded by hand using a grounded theory approach (Strauss & Corbin, 1998). Initial themes included Cold Storage, Imports, Government Action, Labor Supply, Costs of Operation, and Geographical. The research team used an iterative process to analyze themes and reflect on key concepts.

## Analysis of Seafood Market Data in Comparison Cities

Our second node of data analysis built on the information collected in the interviews and used quantitative data to measure the relationship between seafood menu language, price, and location. We look at language used in both restaurants and grocery stores to gain a better idea of how this language may impact the price received for Louisiana seafood.

The menu and grocery store research utilizes a proprietary API dataset from MealMe – a real-time order processing aggregator for restaurants and grocery stores. MealMe's application contains over 200,000 restaurants and 6 million grocery stores. Our seafood universe scraping method focused on entrees that included the following keywords: shrimp, oyster, crab, fish, lobster, scallop, crawfish, snapper, catfish, drum, tuna, and mackerel. We analyze language and price by grouping those items into four main categories relevant to Louisiana seafood: oysters, shrimp, crab, and fish.

We selected the cities based on any of the following qualifications: seafood demand, proximity to Louisiana, historical migration from Louisiana, or strong tourist ties with Louisiana including direct flights to New Orleans. The selection process identified approximately 50 cities across the United States. For a full list of these cities, please review *Appendix A* and *Appendix B.* To further supplement the MealMe restaurant data, we leverage Yelp to locate menus from high-end restaurants across 12 of these cities. These 12 cities are based locally on Louisiana's four largest cities (New Orleans, Baton Rouge, Lafayette, and Shreveport), as well as eight other cities across the country identified in interviews as high-value seafood cities. Using Yelp we identified 10 of the most expensive restaurants per city, manually supplementing our menu data to include seafood dishes from these high-end restaurants, which were not always captured using by MealMe. The dataset was compiled between December 2022 and February 2023.

We constrained our sample by seafood menu items between $5 and $155 – this provided the best balance between removing pricing errors, side dishes, and party trays. We excluded fast food restaurants, cities that returned a small sample size, and menu items that included other main ingredients like steak or chicken when the seafood item might represent only a small part of the dish. We removed selections that included multiple forms of seafood (e.g., shrimp and oyster towers) to help better isolate potential marketing strategies for individual products, though this type of combination represents a unique marketing opportunity in itself. The final menu dataset includes roughly 131,000 observations from 36 cities. Grocery store data are based on approximately 20,000 observations from 30 different cities, after removing outliers and irrelevant items.

Our analysis focuses on species that make up a large share of Louisiana caught seafood and are regularly seen on restaurant menus or at grocery stores. We include oysters, shrimp, crab, and fish (crawfish, snapper, catfish, drum, tuna, and mackerel) in our analysis. These groups are particularly relevant for Louisiana. In fact, these specific fish categories represented the top five in trip ticket data from 2021 in Louisiana (Commercial Fisheries Landings, 2021). This analysis begins with the entire seafood universe to understand pricing in various cities. The dataset is then further refined to better understand specific pricing by seafood category and language associations. Lastly, we provide a brief market overview of grocery store pricing for seafood.

### Limitations

There are several limitations to this study. We were limited by the interviewees who volunteered to be included in the report. While their narratives were helpful in identifying personal challenges, those comments may not be representative of the entire industry. The quantitative data also had limitations. MealMe, and other menu aggregation companies are limited in scope—the collection of restaurants and grocery stores was a sample, rather than a universe of businesses. A larger scale survey of high-end restaurants would produce a more comprehensive dataset.

## Interviews with Seafood Producers and Distributors

Interviews were conducted with a range of industry contacts to establish a baseline understanding of challenges and opportunities for the industry and to aide in identifying untapped markets. These semi-structured interviews identified several major factors influencing the branding and competitiveness of Louisiana seafood in capturing premium pricing in the seafood market. Information gleaned from the interviews also revealed challenges within the supply chain and the need for more comprehensive research.

In general, many of those interviewed expressed concerns with imported seafood products, cold storage, labor force participation, public perception, as well as the interplay between these factors and their impact on the profitability of Louisiana seafood. These concerns, expressed uniformly through almost every interview, give a sense of direction as to how a premium price for Louisiana seafood could be secured, but also outline the major roadblocks to achieving the goal of increased profitability.

### Imported Seafood Products

Broadly, interviewees discussed competition with imported seafood products as a major challenge. Additionally, the interviewees outlined how aquaculture in other countries typically involves the use of inequitable labor, dirty cultivation conditions, and antibiotics. According to the interviewees, the result is a cheaper and more readily available product. Given the lower price, the competition between imported and Louisiana seafood is fierce; one interviewee notes that even getting on the menu can be a struggle when a restaurant can choose between "oysters from Korea or China that are pre-breaded […] or buying fresh oysters" (Anonymous interview 6, 2022). The interviewee went on to recount how, when dealing with a national chain, his company "did inventory and put-up product in advance for them, and [the chain] switched just out of the blue […] they just switched overnight to imports […] because of price" (Anonymous interview 6, 2022). In general, the profitability of domestic product is diminished by the fact that it fails to sell in the face of a more economical product, often with less regard from the consumer about the quality. One interviewee lamented that when it comes to domestic seafood "there's no market for [it], because of the fact that everybody wants something a little bit cheaper" (Anonymous interview 5, 2022).

Additionally, there is the problem of availability of domestic shrimp compared to imported shrimp. Due to the variety of climates and use of aquaculture to produce imported seafood, it is more consistently obtainable. "A lot of distributors have gone to the foreign market, because the availability: they can get [shrimp] year-round" (Anonymous interview 5, 2022). In contrast, most producers indicated that their peak production months were in warmer months (generally ranging from April to November), whereas most distributors reported that demand was highest during the Lenten season, which rarely overlaps with the early end of this time frame. The difference in peak season compared to peak demand highlights the importance of reliable cold storage, which can preserve product caught in times of peak production for times of peak distribution. The presence of imported seafood in the supply chain bodes poorly for domestic seafood producers due to the limited capacity for preserving product of any kind within the existing cold storage infrastructure. One respondent pointed out that there is "a one-year inventory of imported shrimp and surplus, and it's not just that shrimp are coming in, it's that it's too much" (Anonymous interview 6, 2022). Indeed, many interviewees responded that Americans do not consume enough shrimp to keep up with imported quantities, much less imported and domestic quantities combined. One interviewee noted, "if we don't slow these imports down, nothing else really helps, to be honest with you. It don't […] matter how well we can package our shrimp, it don't […] matter how well we can label our shrimp, it don't […] matter the quality of our shrimp—none of that matters, because if there's nowhere for them to go" (Anonymous interview 5, 2022).

Others, too, advocated for reform surrounding imported seafood, albeit in more concrete ways. A common point raised among several interviewees was that imported seafood product was not properly vetted at port. One interviewee estimated that the amount of imported seafood that was inspected was "less than one percent" (Anonymous interview 2, 2022). Estimates from other interviewees hovered around the one percent mark, and a study performed by Johns Hopkins researchers corroborates this to a degree: they place the number at less than two percent (Love et al., 2011).

Interviewees also indicated that inadequate enforcement of seafood labeling requirements impact gulf producers. One interviewee argued that "we need the [Louisiana Department of Health] to step up and start checking that [restaurants] have a sign on the door, and label every item on the menu," indicating the origin of the seafood served (Anonymous interview 7, 2022). Other interviewees corroborated this line of thinking about seafood labeling and enforcement. While the import of seafood into Louisiana markets can be challenging to address, Louisiana can step up regulation of signage and information about seafood origins.

## Perception of Gulf Seafood and Related Interstate Regulations

When it comes to creating a product that is viable in broader markets, interviewees expressed some concerns about the consumer relationship strictly with the domestic product (imported products notwithstanding) that display further challenges to the profitability of Louisiana seafood. Much of this concern had to do with perception and awareness, even despite prior successes. For instance, one interviewee noted that since moving to a nationwide distribution range that focused on "Southern California, San Diego, and Los Angeles […] [he] took over the market within a year" (Anonymous interview 1, 2022). Despite the enthusiastic market that once existed for Louisiana oysters in southern California though, concerns over the product's safety led to regulations that ban the product for two-thirds of the year. These regulations also likely, at least in part, contributed to the idea that the consumption of gulf oysters is not safe overall, which has perhaps reduced the demand in unrelated markets like Chicago and New York City. While regulations will be talked about in more length, these hold a special status for several reasons. The first is that they indicate

an existing view among some consumers in untapped markets: gulf seafood (i.e. Louisiana seafood) is unsafe for consumption. Secondly, they create a firm barrier for certain untapped markets, as there is no way to legally sell Louisiana seafood in these markets for two-thirds of the year and advocacy work may be needed to reduce or remove those barriers. The same interviewee expounded on the issue of perception, noting that altering this perception is the most important factor in becoming "considered the premier seafood product in the world, and we don't have true perception" (Anonymous interview 1, 2022).

The importance of an initiative addressing regulations in other states can be seen through all the interviews. One interviewee noted that interstate regulatory conditions require additional forethought as one cannot simply "deliver something with your truck into a state without proper licensing" (Anonymous interview 3, 2022). Therefore, in addition to promoting the safety of Louisiana seafood, it may make sense to engage in strategic lobbying for the industry to loosen certain regulations. In short, such methods could get the product's foot in the proverbial door. It was also suggested that a lack of familiarity with the product could be the underlying cause of the lack of demand. Despite the broadly negative reports on the impacts of imported seafood, one respondent did suggest that such product could potentially benefit from familiarity. One suggestion made was that imported product, if limited to a certain level, could be used to increase demand for specific seafood products, such as crawfish and shrimp. The interviewee further noted that domestic production currently lacks "the volume to fill [the market's] needs anyways" (Anonymous interview 3, 2022). Such conditions may likely already exist for foodstuffs such as crawfish, shrimp, and oysters, given the glut of imports of these species. As such, this phase of using imported seafood as a means of familiarizing consumers with these products and establishing patterns of higher consumption appears to have already occurred.

A focus, then, on pivoting consumers towards that domestic product could be useful. One suggestion for this has been to educate consumers about the abuses that occur in the production of foreign seafood (poor working conditions and poor aquacultural practices). For example, one interviewee mentioned that shrimp cultivated abroad "live in antibiotic induced water so that they can actually grow and produce them," given the poor quality of water in some of the nations that produce these seafood products (Anonymous interview 6, 2022). Citations of antibiotic use was wide, with another interviewee claiming that foreign competitors were "using… chemicals and pharmaceutical drugs or veterinary drugs that are banned in the United States" (Anonymous interview 10, 2022). It would follow that many health-conscious consumers would cease to consume imported seafood products if these abuses were elucidated to them, though it is unclear how effective raising awareness of these abuses would be at fundamentally altering the state of the US seafood market. Others have asserted that focusing on the quality differential of the products themselves may be similarly or even more important. When thinking about how to specifically fetch a higher price for domestic products, the latter route seems to be prime. For example, some emphasized that imported shrimp could have a less desirable texture and flavor, noting that it is "inferior just because of the species of shrimp that it is" (Anonymous interview 6, 2022). As such, highlighting and educating consumers about differences in quality between domestic and imported seafood could be one of the more effective ways of increasing the profitability of Louisiana seafood.

Some of those interviewed did highlight various methods for improving consumer education and awareness about Louisiana seafood. While some pointed to work on social media to this end, the largest distributors that reported the highest movement of product noted more direct and hands-on approaches. For instance, one distributor noted his success with guerilla marketing, which

ultimately led to being broadcast on the Today Show, going to New York and San Francisco to do food demos, and getting featured in Williams-Sonoma (Anonymous interview 10, 2022). This same interviewee cited product-specific organizations, such as the White Boot Brigade, as having "put [them] on the map" (Anonymous interview 10, 2022). It would appear from these experiences that non-traditional marketing methods, such as demonstrations that get Louisiana seafood directly into the mouths of potential consumers, do the most for the product's appeal. This strategy was also cited as a common tactic of the Louisiana Seafood, Promotion, and Marketing Board, with one distributor noting that the hope is "when the customer bites into that shrimp, they're hooked and they become a customer for life" (Anonymous interview 6, 2022). It would appear from these interviews that direct forms of nontraditional marketing can do quite a lot to improve the place of Louisiana Seafood in untapped markets, suggesting that further efforts into these realms could be an effective method of increasing the profitability of the product.

## Federal Support for the Fishing Industry

A common theme of the interviews is the desire for three types of government regulation: increased oversight when it comes to regulating imports, more lax regulations as it pertains to domestic fishing and harvesting and increased governmental support for those in the industry domestically. While the former two desires and their connections to other aspects of the struggles in the fishing industry have been made clear and were specific, the want for increased support, mostly in the form of monetary or structural reforms, is more of a catchall call to address any and all of the monetary woes that commercial fishermen face on a regular basis.

The structure of the seafood industry impacts the federal support available to producers. One clear delineation is between the role of the U.S. Department of Agriculture (USDA) and the Food and Drug Administration (FDA). Catfish is regulated by the USDA whereas other seafood is regulated by the FDA. This divide means that producers of catfish products have access to USDA programs and resources; this produces an asymmetry in that many producers perceive the USDA to have more resources at its disposal. One interviewee outlined the dynamic in detail, stating that the USDA's "programs are better, their capabilities are better. They just function better as an agency than the FDA […] The FDA needs better resources" to carry out its duties to consumers and those that work in the industry (Anonymous interview 6, 2022). Access to more robust programs and monies could be a significant driver of change in the industry and was suggested by several interviewees as an important deficiency in the current dynamic. Monetary interventions could be used to bolster interstate advertising endeavors. One interviewee argued that such money should be used for this expressed purpose as "it's the people in New York City that needed to know what Louisiana seafood is […] and very little marketing [is] done" (Anonymous interview 2, 2022).

Inequities in how different federal regulations impact producers of various sizes was also a common complaint. Many interviewees discussed the close relationship between production regulations and the costs of operation. One unpopular regulatory measure was that of the Turtle Excluder Device (TED). It was noted that the means of determining the requirement for such a device was capricious as it was based on the length of the boat; "how can they decide that a thirty-nine-foot boat won't catch a turtle, but a forty-foot boat does?" (Anonymous interview 5, 2022). Such devices are regarded as heavy, which exacerbates the already difficult fuel price situation. The same interviewee later outlined that "at five dollars a gallon for diesel… there's no way a forty-two-foot boat can hold enough shrimp in a day's time to make a living" (Anonymous interview 5, 2022).

Interviewees indicated bureaucracy and lack of a concrete plan for supporting the domestic fishers as an impediment to long-term industry sustainability in the context of increasingly strong storms in the Gulf of Mexico. Lack of a long-term plan to address the impacts of storms on fishing fleets, especially those smaller companies with more limited resources or numbers of boats, may impact the ability of those companies to recover. For instance, interviewees commonly noted that storm prep and aid were severely neglected. "Every time we have a storm, we have to have our hand out to the federal government trying to bring things back to normal," but the interviewee goes on to lament that there is never an effective plan to prep for the next round of storm relief at the state level (Anonymous interview 3, 2022). A similar sentiment was expressed by another interviewee who stated that, "even when we went to SBA Tax, [they] tell us 'Well, you got eight and a half million dollars with the damage. We lend only one million dollars on commercial loans, but before you even could get the first million, we need to know where the other seven and a half is going to come from'" (Anonymous interview 2, 2022).

Not only do these requirements burden those in the industry with the interim costs before federal aid goes into effect, it also puts an undue expectation on business owners to function and remain profitable even in the face of persistent natural disasters before aid is released to them.

## Cold Storage

Beyond the competition with imports at a cheaper price point, there is also a struggle to secure stable cold storage and transportation for domestic product that fails to sell as well as for their imported counterparts. One interviewee, whose company works in the seafood supply chain, indicated that surplus imported seafood dominated space in many of "the cold storage rentals that they have out there" (Anonymous interview 5, 2022). The interviewee expounded that they could furnish a processor with domestic seafood product only to be told that there is "no room to put them nowhere," and that there is "no market that's willing to take them" (Anonymous interview 5, 2022). This diminished cold storage capacity makes domestic seafood difficult to handle, as it must be sold quickly or risk spoiling in the face of inadequate demand and storage space. The shortened turnaround time contributes to a reduced profitability for domestic seafood. Overall, the relationship that the consumer market has with imported products diminishes the profitability and the viability of seafood produced domestically. A strategy to target specific species, size classes, or other markers of quality that can be better marketed as a differentiated product with unique attributes relative to imported seafood may help producers capture a larger share of the cold storage market if products can sell at higher prices or justify further expansions of cold storage.

## Fisheries Labor Force

The dwindling nature of the state's labor force for fisheries also poses major challenges to the profitability and long-term viability of the industry. Many interviewees stated that younger people, even those with a generational history in the industry, were not interested in participating due to the current situation. One responded, partially in jest, that "the industry is changing because the younger generation doesn't want to work… especially in this industry" given the difficulty of the work (Anonymous interview 5, 2022). Another interviewee fleshed this dynamic out in more detail, noting that they "don't have anybody young getting into the industry because there's really no way for them to see a future" (Anonymous interview 3, 2022). Inasmuch as this is true, the grim details outlined so far beget the situation described here. A third interviewee cited numbers to bolster this point: "twenty-two years ago, we were around twenty thousand commercial fishermen… I heard yesterday we're down to four thousand" (Anonymous interview 5, 2022). While the interviewee was slightly off the mark, per the Louisiana Department of Wildlife and

Fisheries, the number of licensed commercial fishermen active in the state is down from 18,061 in 2000 to 11,051 in 2021 (Figure 2), a decrease of 38.8% over the course of twenty-one years (Louisiana Department of Wildlife and Fisheries). While these numbers do not quite reflect the rate of decline perceived by the interviewee, they nonetheless indicate an extremely troubling downward trend in those working in the sector.

The same interviewee also drew attention to the aging nature of the fisheries workforce in Louisiana, stating that "the average fisherman is well over 55 years old," (Anonymous interview 5, 2022). This all points to a troubling yet imminent scenario in which the existing workforce ages and retires without a comparable younger workforce to carry the industry. Potential solutions to the workforce challenges were brought to light as well. One interviewee mentioned that shrimp producers are using "H-2B visa workers from Mexico in order to supplement the labor that they need" to sustain the industry (Anonymous interview 6, 2022). This same respondent would also suggest that corporately-owned fishing fleets may be the way of the future, but also stated that "we're years down the road from that happening" (Anonymous interview 5, 2022). Underpinning this workforce challenge is the limited market power of Louisiana commercial fishers when competing with imports from the global market. However, innovative cultivation of differentiated products and marketing may offer producers an opportunity raise prices and generate a more profitable business model that can help in addressing the perceived workforce challenges.

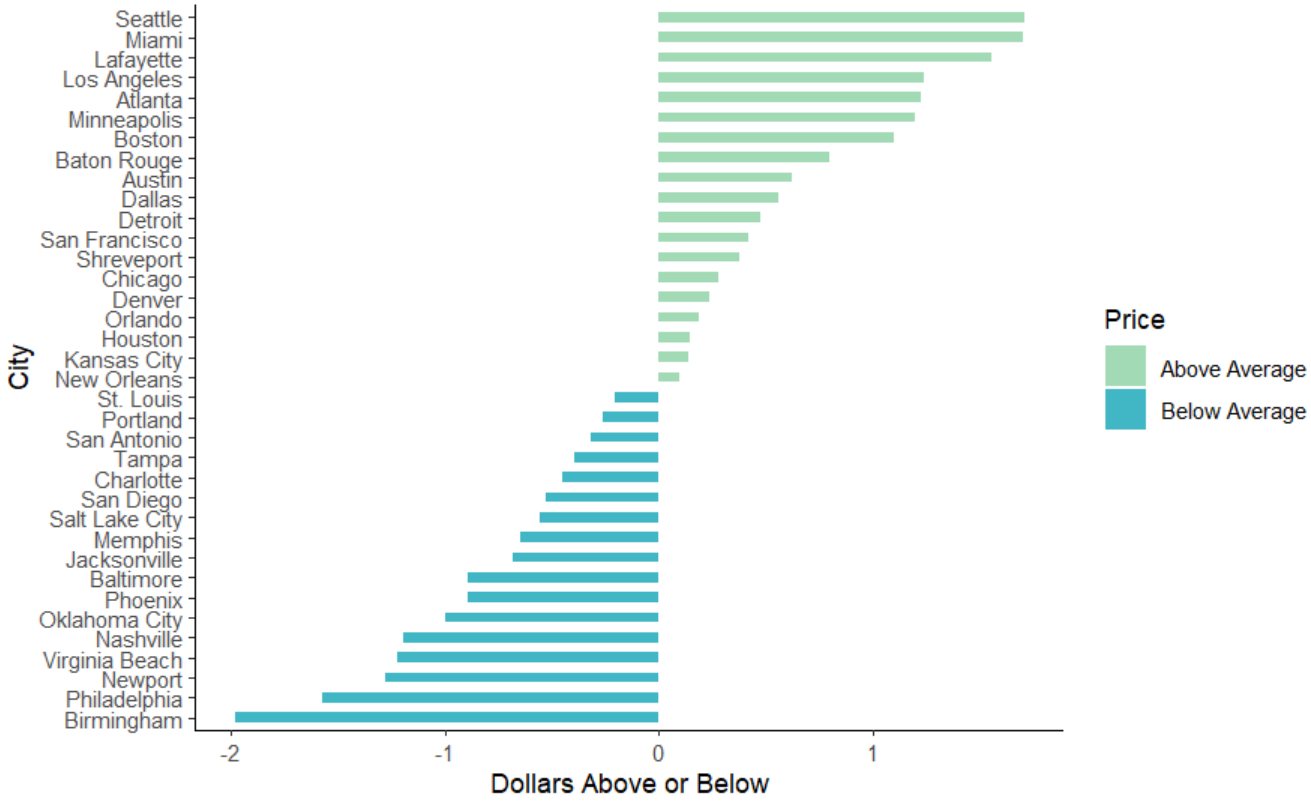
# Seafood Market Data from Comparison Cities

To better understand the relationship between seafood menu language, price, and location, we analyze seafood menu data from approximately 50 cities. We find that cities with higher cost of living generally have more expensive seafood restaurants. However, there are some cities (like Newport, RI, or Los Angeles, CA) that have affordable seafood, relative to their cost of living. According to the data, affordable seafood items are generally described with fewer words, fewer adjectives, and come from cheaper restaurants. Conversely, high-end restaurants use more descriptors for their expensive seafood entrees. Finally, we examine grocery stores across the nation, finding that certain items—like crab and fish—are much more expensive outside of Louisiana.

## Restaurant Comparisons by City and Region

First, we assess general differences in pricing between individual cities. We find the average price of seafood menu items is $16.20 across all cities included in the analysis. Places like Seattle (WA), Miami (FL), and Lafayette (LA) have the highest average seafood prices – averaging close to $2 above the mean from this sample. These higher prices likely reflect stronger demand and availability of higher quality products given each of these cities' proximity to water and availability of supply. On the low end, Birmingham (AL), Philadelphia (PA), and Newport (RI) have the lowest average price for seafood (Figure 6). Given that these three markets are relatively close to the coast, there may be more intense competition for consumers from non-seafood dishes popular in local cuisine or at least a relatively more abundant local supply relative to demand than seen in higher-priced cities, leading to a seafood menu discount for consumers.

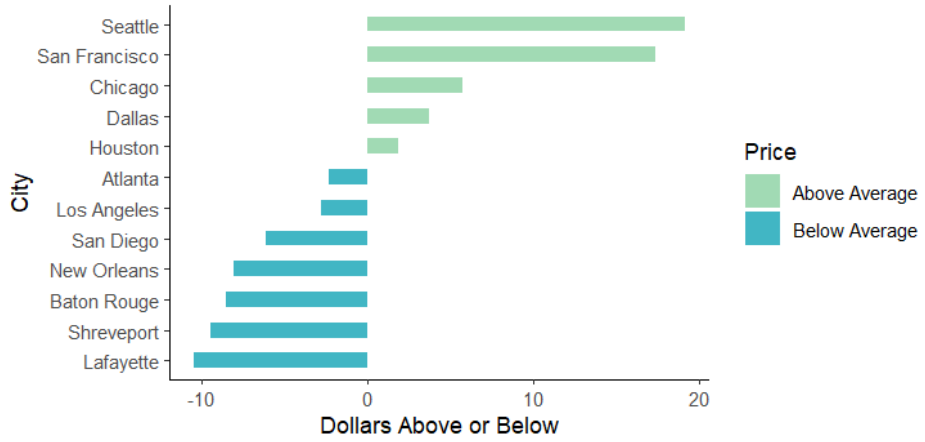
**Figure 6.** Price of Seafood by City, Above or Below Mean




Source: MealMe, Blanco Center, Yelp

We examine the price point variation for high-end seafood menus in cities with strong potential for Louisiana expansion. We look at seafood information from high-end restaurants in 12 select cities, eight of which were chosen based on our interview feedback as potentially lucrative markets for Louisiana seafood. Figure 7 illustrates the outcomes from expensive restaurants from this select group of cities – a combination of four Louisiana cities and eight cities outside Louisiana. Menu items from these higher priced restaurants regularly charge over $30 per plate. We found Seattle (WA) and San Francisco (CA) to have some of the most expensive seafood menu entries amongst this sample at approximately $50 per item or nearly $20 above the average of all menu items from this group. Cities in Louisiana, comparatively, had some of the least expensive seafood menu items when focusing solely on the high-end dining segment of the market. San Diego and Los Angeles, California had the most affordable seafood menu prices outside the Louisiana cities in this sample. Houston and Dallas, both near neighbors in the Gulf of Mexico region, charged more on average for high-end seafood than the Louisiana cities.

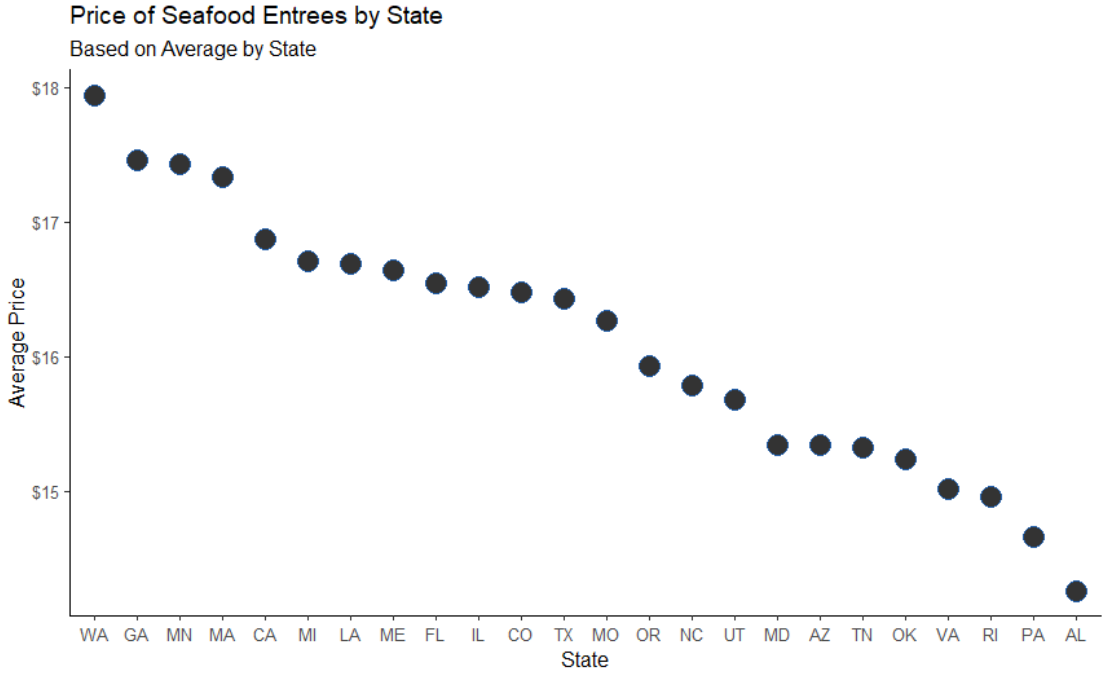
**Figure 7.** Price of High-End Seafood by City, Above or Below Mean




Source: Blanco Center, Yelp

While the previous analysis focused solely on cities, the following chart shows that certain states, Washington, Georgia, and Minnesota, had some of the highest average prices for seafood dishes (aided by Seattle, Atlanta, and Minneapolis). States with the lowest average prices were Rhode Island, Pennsylvania, and Alabama at approximately $15 per seafood plate. While these averages provide some measure of the overall level of demand within a market, the greater variability in pricing across high-end restaurants seen in Figure 7 suggests that targeted marketing strategies may provide more attractive opportunities to capture premium pricing at least for low to moderate volumes of product.

**Figure 8.** Price of Seafood by State, Average

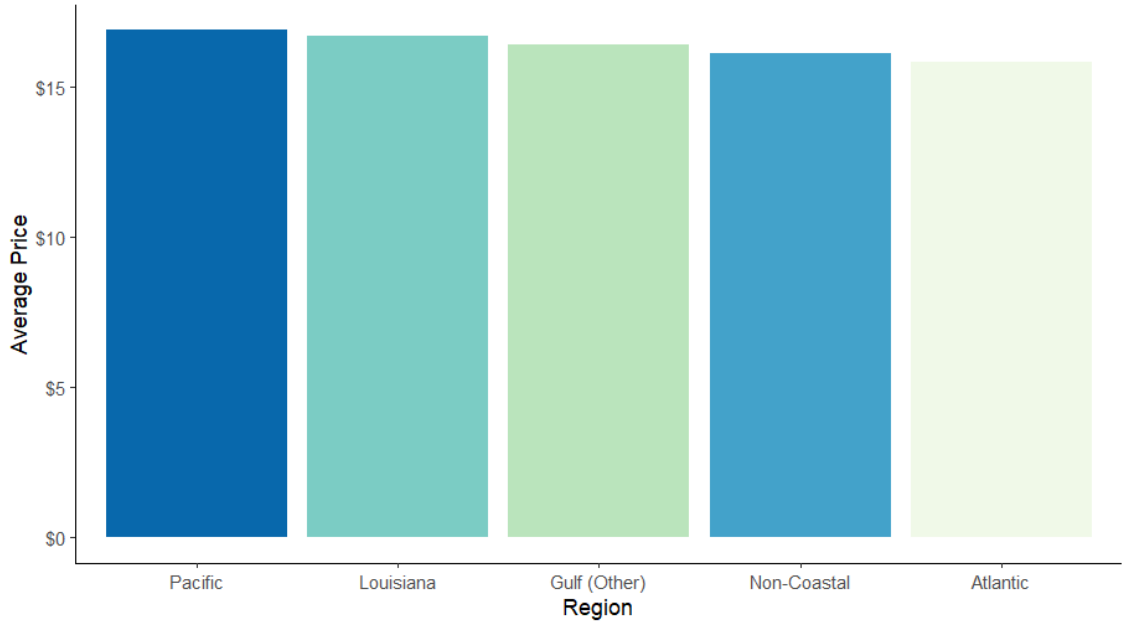



Source: MealMe, Blanco Center, Yelp

To explore more general pricing patterns throughout the country compared to Louisiana, a final summary was created looking at regional seafood restaurant prices. States were assigned into regional buckets based on which body of water they bordered – Gulf (other), Pacific, Atlantic, or non-Coastal. Florida was assigned Gulf (other) and Louisiana cities were given their own bucket.

Regionally, cities from our sample in the Pacific had the highest average seafood restaurant prices ($16.90 per item). Louisiana seafood is also expensive ($16.70) relative to most regions, while other cities in the Gulf, non-coastal states, and Atlantic regions have cheaper average prices for seafood at restaurants (Figure 9). This regional-scale analysis may indicate that a focus on specific cities and higher-end restaurants might be more useful than focusing on how a regional level. At the regional level, pricing differences seem much less distinct than focusing on specific cities.

**Figure 9.** Price of Seafood by Region, Average

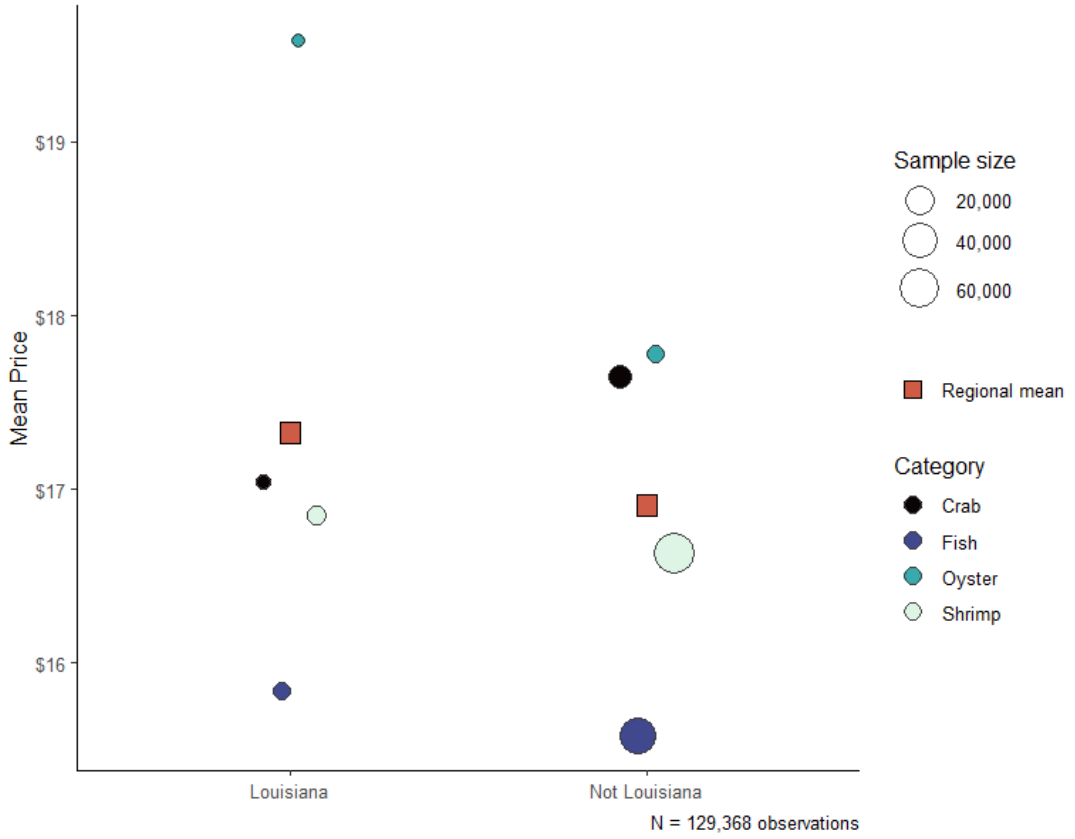



Source: MealMe, Blanco Center, Yelp

Disaggregating the seafood by type also provides insights into price differences. Figure 10 shows the average price of seafood by category for Louisiana and non-Louisiana cities. Shrimp, fish, and oysters are more expensive locally in Louisiana cities. Alternatively, crab is often more expensive at restaurants outside Louisiana. Figure 10 also highlights the specific price-premium on oysters sold locally at Louisiana restaurants. The regional mean compares the average price of seafood locally vs. outside of Louisiana, finding that seafood is slightly more expensive at Louisiana restaurants ($17.30 compared to $16.90).

By disaggregating the data into types of seafood, we see there may be an advantage to selling oysters locally, rather than outside the Louisiana region. This pattern may indicate a potential price advantage in continuing to sell seafood locally, which was further bolstered by Figure 9's regional analysis that found Louisiana only behind the Pacific cities in terms of average seafood restaurant prices. However, the local price premium may also be indicative of better local marketing or other local factors.

**Figure 10.** Price of Seafood Categories, Louisiana vs. Not Louisiana (Average)




Source: MealMe, Blanco Center, Yelp

We also provide additional detail on seafood pricing for multiple other cities. A full detailed list of seafood prices by city is available in *Appendix A: Restaurant Prices by City*. These are categorized by 10th, median, and 90th percentile statistics for all seafood menu items.

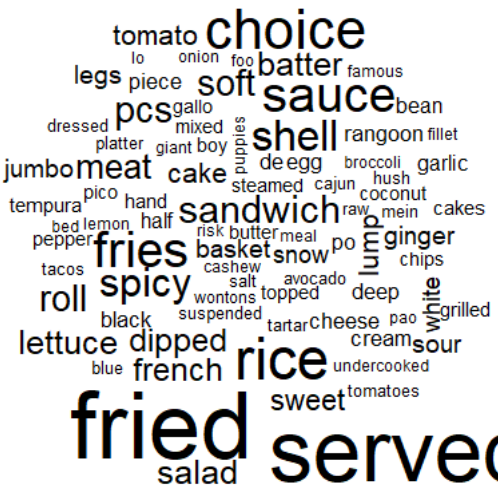
## Names, Descriptions, and Language

While average pricing offers some indication of market conditions in different cities, states or regions of the country, there is much more to be learned to inform a targeted strategy for securing premium pricing. This section focuses on the relationship between menu names, descriptions, and price. Our analysis uses natural language processing by counting the frequency of common phrases (n-grams) or keywords (unigrams). By detaching the item name (e.g., crab cakes) from the description (e.g., dressed with coleslaw on a bun) we're able to better understand the frequency of specific n-grams, which in turn, can be relevant for pricing.

While seafood producers may have only limited control over how menus describe and market seafood, insights from this analysis may provide direction for efforts to cultivate more identifiable differentiated products that position restaurants for success. While not from one of the target cities included in this study, a famous example is Mama's Fish House in Maui, HI, which lists the name of the person who caught the fish and location of catch for some menu items. By connecting a dish with a broader narrative, quality seafood can stand out on a menu and sustain a higher price.

In Figure 11 we counted the most common 1, 2, 3, and 4-word phrases from menu names and descriptions, separated them into single words, and created a word cloud that correlates text size with frequency. For our sample, words like “fried,” “served,” “rice,” “choice,” and “fries” were the most common association with seafood menus. This visual illustration of language choices will become particularly illuminating when associated with seafood category and price.

**Figure 11.** Most Common Phrases Word Cloud




Source: MealMe, Blanco Center, Yelp

## Oysters

For oysters, we took a selection of the most common unigrams, bigrams, trigrams, and quadrigrams from the menu items and their descriptions. After removing duplicates, the frequencies show the most common phrases and their average prices (Table 1). Generally, oysters that were fried, served as a po boy, or in a basket were cheaper than oysters Rockefeller, on the half shell, or steamed. The descriptions show very little variability in oyster pricing in relation to text.

Table 2 displays the most expensive oyster dishes in our dataset – these are served with caviar, on the half shell, and with unique sauces – all important indicators for selling higher-priced oyster. In Figure 12 we create a word cloud of the most common keywords of oyster menu items – these are highlighted by “fried,” “po boy,” “pcs,” and “basket.”

**Table 1.** Most Common Oyster Items and Descriptions

| | Name | Count | Avg Price | | Description | Count | Avg Price |
|---|---|---|---|---|---|---|---|
| 1 | fried | 646 | $16.7 | 1 | fried | 284 | $17.6 |
| 2 | po boy | 105 | $18.4 | 2 | french fries | 224 | $19.0 |
| 3 | basket | 98 | $18.2 | 3 | bread | 102 | $19.6 |
| 4 | rockefeller | 56 | $20.7 | 4 | butter | 73 | $20.0 |
| 5 | platter | 44 | $22.6 | 5 | cocktail sauce | 54 | $17.6 |
| 6 | raw | 43 | $19.1 | 6 | lettuce tomato | 52 | $19.8 |
| 7 | deep fried | 41 | $18.2 | 7 | with lettuce | 49 | $20.5 |
| 8 | with ginger | 30 | $21.0 | 8 | cajun fries | 40 | $17.8 |
| 9 | half shell | 25 | $20.8 | 9 | tartar sauce | 38 | $16.9 |
| 10 | steam oyster | 24 | $24.9 | 10 | your choice of | 33 | $17.9 |

Source: MealMe, Blanco Center, Yelp

**Table 2.** Top 10 Highest Priced Oyster Items and Descriptions

| Name | Description | Price | Store |
|---|---|---|---|
| oysters & caviar | NA | $110.00 | Angler |
| rose | flash fried oysters, roasted pepper sauce | $38.00 | Mazen Grill |
| jones | flash fried oysters, brown meuniere sauce | $38.00 | Mazen Grill |
| oysters rockefeller | spinach, pernod, gruyere, hollandaise | $34.00 | Daniel's Broiler |
| oyster on a half shell | migonette cocktail sauce lemon | $29.00 | STK Steakhouse |
| oyster on half shell | east coast/west coast | $29.00 | Ocean Prime |
| oysters rockefeller | 1/2 dozen | $29.00 | mar'sel |
| miyagi oysters | green apple & persian cucumber relish, wasabi crème fraiche | $28.00 | Niku Steakhouse |
| oysters on the half shell | served raw, cocktail sauce, horseradish | $28.00 | Daniel's Broiler |
| east coast oyster | NA | $28.00 | Stake Chophouse & Bar |

Source: Blanco Center, Yelp

**Figure 12.** Oyster Word Cloud


Source: MealMe, Blanco Center, Yelp

## Shrimp

Shrimp is one of the most common seafood menu items in the dataset. Across all dollar sign categories, most shrimp dishes are from Chinese restaurants and often served with rice. On average, these plates range in price from $13 - $16. When filtering the data by three- and four-dollar sign restaurants from the previous sample of 12 cities, we see that shrimp is commonly used in French and Italian cooking alongside pasta and other vegetables. Expensive shrimp dishes are priced in the high $30s. Dishes containing “jumbo shrimp” and “shrimp curry” can be sold for more on average than “shrimp tempura” or “shrimp rolls.” The word cloud is highlighted by “fried,” “tempura,” “garlic,” “salad,” and “grilled.”

**Table 3.** Most Common Shrimp Items and Descriptions

| | Name | Count | Avg Price | | Description | Count | Avg Price |
|---|---|---|---|---|---|---|---|
| 1 | grilled | 2727 | $17.1 | 1 | white rice | 4802 | $15.6 |
| 2 | shrimp tempura | 2714 | $13.4 | 2 | spicy | 4791 | $17.8 |
| 3 | jumbo | 2563 | $18.3 | 3 | cheese | 4529 | $17.6 |
| 4 | fried rice | 2529 | $15.3 | 4 | onion | 3418 | $18.0 |
| 5 | salad | 2528 | $16.4 | 5 | fried rice | 2058 | $16.2 |
| 6 | fried shrimp | 2479 | $14.8 | 6 | grilled shrimp | 1929 | $17.6 |
| 7 | roll | 2189 | $12.0 | 7 | jumbo shrimp | 1915 | $20.8 |
| 8 | spicy | 1770 | $16.9 | 8 | pico de gallo | 1701 | $17.0 |
| 9 | curry | 1520 | $18.4 | 9 | with steamed | 1643 | $17.1 |
| 10 | broccoli | 1503 | $16.2 | 10 | served with fries | 668 | $16.6 |

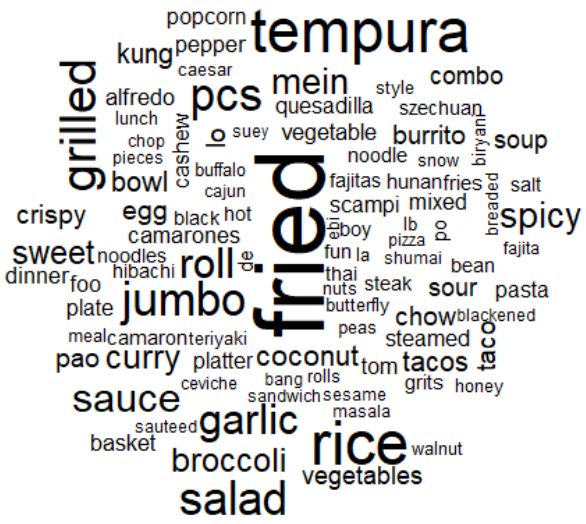
Source: MealMe, Blanco Center, Yelp

**Table 4.** Example of Expensive Shrimp Items and Descriptions

| Name | Description | Price | Store |
|---|---|---|---|
| stuffed shrimp a'la maison | stuffed jumbo shrimp wrapped in bacon and grilled. heirloom grits and tasso gravy accompaniment | $39.00 | Jimmy's Seafood and steak |
| shrimp spicy garlic or wasabi pepper | NA | $38.00 | Nobu Atlanta |
| shrimp alfredo | garlic shrimp, fettuccine | $38.00 | New york prime |
| fried colossal shrimp | w spicy remoulade & vegetable | $38.00 | Stab's steak &seafood |
| broiled jumbo shrimp scamp | with a black pepper pasta | $38.00 | Bob's Steak & Chop House |
| wild white shrimp & saffron risotto | cast iron seared gulf shrimp over saffron spiced creamy arborio rice, english peas, garlic roasted mushrooms, parmesan reggiano, satsuma-chili drenched french feta and crispy olive tapenade. | $37.00 | Commander's Palace |
| gulf shrimp amandine | a new orleans classic - marcona almonds, haricots verts, preserved lemon butter | $37.00 | Brennan's |
| spinach with dry miso and grilled shrimp | NA | $36.00 | Nobu Atlanta |
| fried jumbo shrimp | NA | $36.00 | Bob's Steak & Chop House |
| wild shrimp | NA | $35.95 | Little Alley Steakhouse |

Source: Blanco Center, Yelp

**Figure 13.** Shrimp Word Cloud




Source: MealMe, Blanco Center, Yelp

## Crab

As a category, crab is the most expensive of our seafood deep-dive. While "soft shell" and "crab cake" are common bigrams, phrases like "snow crab" and "king crab" are correlated with pricier entrees (Table 5). When studying high-end restaurants exclusively, king crabs with drawn/infused butter could sell for over $100 at certain restaurants (Table 6).

**Table 5.** Most Common Crab Items and Descriptions

| | Name | Count | Avg Price | | Description | Count | Avg Price |
|---|---|---|---|---|---|---|---|
| 1 | soft shell | 991 | $17.1 | 1 | crab meat | 1105 | $17.5 |
| 2 | roll | 951 | $13.0 | 2 | cream cheese | 692 | $11.4 |
| 3 | crab cake | 933 | $19.3 | 3 | avocado | 600 | $16.8 |
| 4 | crab rangoon | 862 | $9.4 | 4 | spicy | 559 | $17.4 |
| 5 | snow crab | 743 | $25.6 | 5 | onion | 555 | $19.4 |
| 6 | fried rice | 621 | $20.0 | 6 | egg | 536 | $21.7 |
| 7 | crab meat | 608 | $15.1 | 7 | soft shell | 476 | $17.5 |
| 8 | spicy | 397 | $13.8 | 8 | deep fried | 423 | $14.1 |
| 9 | crab legs | 330 | $38.8 | 9 | crab cakes | 299 | $23.9 |
| 10 | blue crab | 329 | $17.3 | 10 | fried rice | 265 | $20.9 |

Source: MealMe, Blanco Center, Yelp

**Table 6.** Example of Expensive Crab Items and Descriptions

| Name | Description | Price | Store |
|---|---|---|---|
| alder + fruit wood grilled alaskan king crab (1-pound) | black garlic puree, celery root puree, mint pesto, scichimi togarashi charred lemon, pickled red onion | $135.00 | Ascend |
| grilled king crab | herb-garlic butter, curry aioli | $135.00 | RPM Seafood |
| premium red king crab | served with drawn butter, per lb | $125.00 | The Oceanaire Seafood Room |
| alaskan king crab | 18-20 oz. steamed, drawn butter, garlic mashed potatoes, seasonal vegetable | $100.00 | Daniel's Broiler |
| dutch harbor king crab | 1/2 lb drawn butter mustard dressing lemon | $75.00 | Kevin Rathbun Steak |
| alaskan king crab | 8 oz. [gf] | $66.00 | Hugo's Frog Bar & Fish House |
| alaskan red king crab legs | NA | $66.00 | The Gibson Bar & Steakhouse |
| alaskan king crab legs | cocktail sauce, drawn butter & aioli | $62.00 | Maple & Ash |
| king crablegs 18-20 oz | alaskan king crablegs served warm with drawn butter and grilled lemon | $60.00 | Ruth's Chris Steak House |
| maryland crab cakes | mixed baby greens, old bay remoulade | $60.00 | Loch Bar |

Source: Blanco Center, Yelp

**Figure 14.** Crab Word Cloud


Source: Meal ME, Blanco Center, Yelp

## Fish

Fish encompasses a diverse spectrum of results. We include keywords containing “fish,” “crawfish,” “catfish,” “snapper,” “drum,” “tuna,” and “mackerel.” These plates are very popular at Japanese sushi restaurants, but we also discovered a plethora of fried fish dishes. Catfish is the most common name in the diverse fish category (Table 7). The most common description includes tartar sauce or fries. The most expensive items from our sample include snapper, ahi tuna, sole, and redfish (Table 8). The fish word cloud is strongly populated with how fish is eaten, including descriptive words like “sandwich,” “roll,” and “salad.”

**Table 7.** Most Common Fish Items and Descriptions

| | Name | Count | Avg Price | | Description | Count | Avg Price |
|---|---|---|---|---|---|---|---|
| 1 | catfish | 3912 | $17.3 | 1 | tartar sauce | 2150 | $15.8 |
| 2 | tuna salad | 3137 | $13.1 | 2 | with fries | 1477 | $16.0 |
| 3 | fish fillet | 1537 | $19.2 | 3 | pico de gallo | 1031 | $14.9 |
| 4 | fish sandwich | 1488 | $11.5 | 4 | served with rice | 631 | $19.2 |
| 5 | spicy tuna roll | 1424 | $11.9 | 5 | batter dipped fish | 623 | $12.4 |
| 6 | fried fish | 1375 | $15.3 | 6 | and hush puppies | 518 | $15.1 |
| 7 | fish tacos | 1325 | $16.5 | 7 | tartar sauce and | 513 | $14.1 |
| 8 | sashimi | 1110 | $17.5 | 8 | with lettuce tomato | 433 | $13.2 |
| 9 | crawfish | 1076 | $16.8 | 9 | of our famous batter | 327 | $14.7 |
| 10 | grilled | 1035 | $17.5 | 10 | onions salt and pepper | 309 | $9.8 |

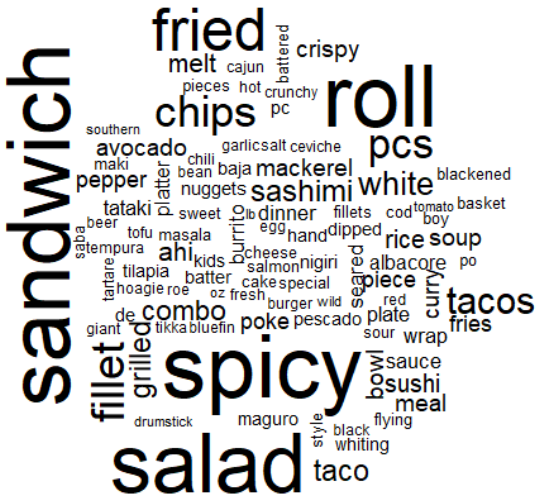
Source: MealMe, Blanco Center, Yelp

**Table 8.** Example of Expensive Fish Items and Descriptions

| Name | Description | Price | Store |
|---|---|---|---|
| snapper | saffron, mushroom escabeche, red charmoula | $125.00 | Mourad |
| ahi tuna | seasonal preparation | $61.00 | El Gaucho |
| whole fried tai snapper | smokey ham broth braised cabbage, chanterelles, pear | $59.00 | Juniper & Ivy |
| sesame crusted yellowfin tuna | lemon chili buttered bok choy and radish, carrot apple ginger puree | $57.00 | Aqua by El Gaucho |
| grilled ahi tuna | peppercorn crusted, lemon cream orzo, castelvetrano olive & heirloom tomato relish | $56.00 | Daniel's Broiler |
| whole grilled snapper | greek style, lemon, olive oil, oregano | $55.00 | Hugo's Frog Bar & Fish House |
| ahi tuna | mango, avacado, cashews, spicy sesame soy glaze | $53.00 | Ocean Prime |
| dover sole fish & chips | sauce gribiche, cornichon | $53.00 | RPM Seafood |
| bigeye tuna | NA | $52.00 | Mastro's Steakhouse |
| redfish "on the half shell" | ginger lime vinaigrette, serrano | $52.00 | State of Grace |

Source: Blanco Center, Yelp

**Figure 15.** Fish Word Cloud

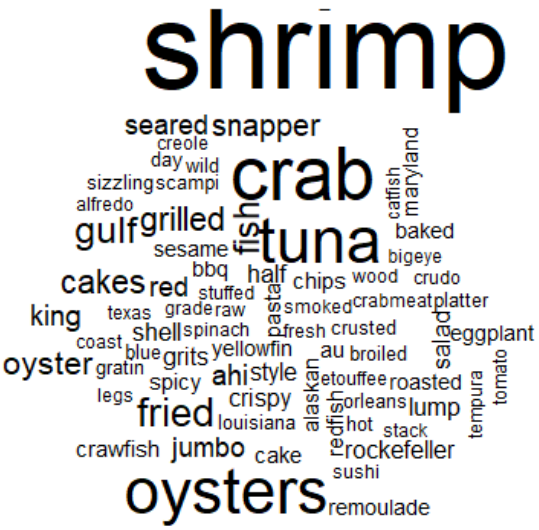



Source: MealMe, Blanco Center, Yelp

## High-End Restaurants

Expensive restaurants (three- and four-dollar signs) use words like smoked, sizzling, seared, remoulade, crusted, fresh, grade, coast, and wood when describing their menu items. There is certainly a pattern when pricing a high-end entrée—more adjectives, special sauces, and descriptions of where the seafood was sourced are important in achieving a certain price point. The word cloud (Figure 16) illustrates the emphasis of shrimp at expensive restaurants, but also shows how specific types of other kinds of seafood stand out.

**Figure 16.** Three- and Four-Dollar Sign Restaurant Word Cloud

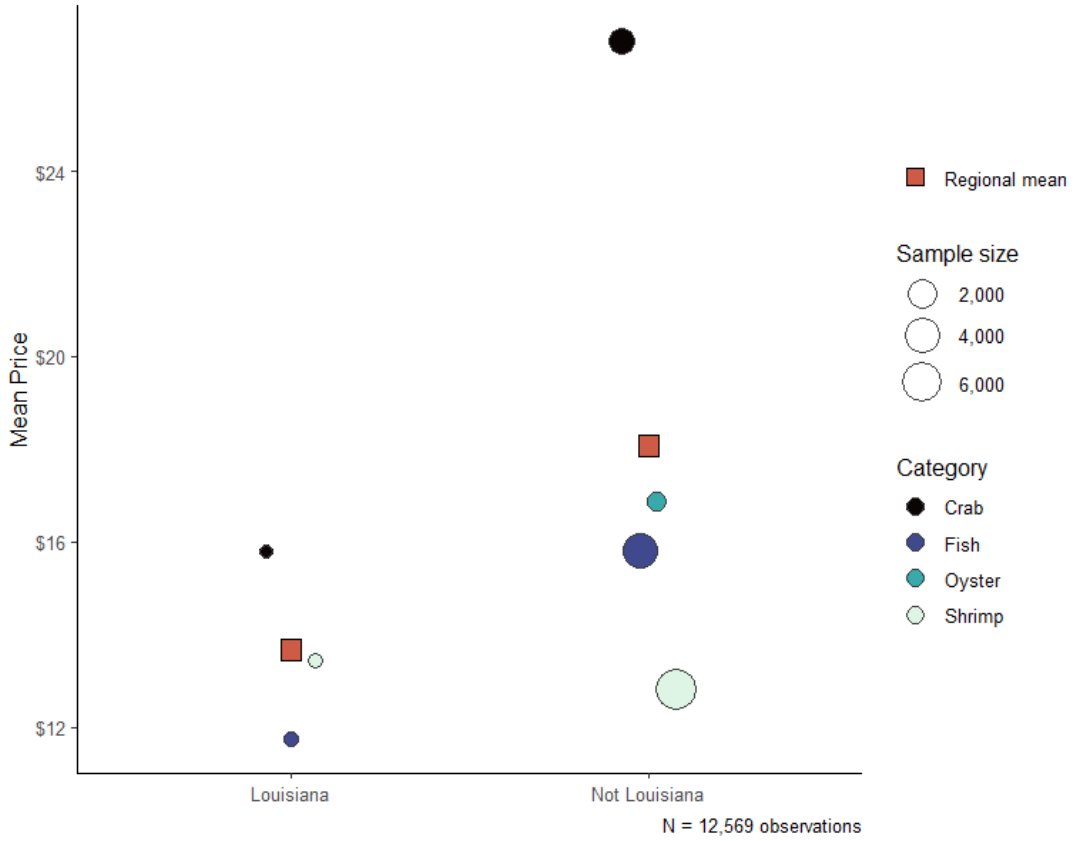



Source: Blanco Center, Yelp

## Grocery Stores

The grocery store seafood dataset contains over 12,000 items from 30 different cities. Fish and crab are more expensive at non-Louisiana grocery stores – selling for $4 per pound and $11 per pound more, respectively. Shrimp is slightly more expensive at Louisiana grocery stores, though the difference is marginal. Finally, the dataset was too small to measure oysters sold at Louisiana grocery stores – possibly an indicator that most local oysters are sold fresh at restaurants. The regional mean shows a $4.50 price premium when selling seafood outside Louisiana grocery stores. These findings indicate a potential opportunity in targeting non-Louisiana grocery stores to improve margins. This contrasts with the restaurant analysis that found Louisiana menus to price seafood above non-Louisiana restaurant menus.

**Figure 17.** Seafood Grocery Store Pricing (Louisiana vs. Not Louisiana)




Source: MealMe, Blanco Center

Similar to the restaurant data, we provide additional information on grocery stores in the appendix. For a comprehensive list of cities in our sample and their 10th, median, and 90th percentile grocery store seafood prices, please review *Appendix B: Grocery Store Prices by City*.

# Conclusions and Recommendations

## Conclusions

Our research identified several challenges confronting the Louisiana seafood industry as well as possible modes of success for long-term viability. The analysis of interviews and seafood data illustrate how different issues impact Louisiana's fishing industry while offering insights into potential strategies to target new markets.

Key findings include:

- When seafood products are marketed as commodities (e.g., "shrimp" or "oysters"), they compete with global supply and gain market share only by lowering price.
    - Wild caught, domestic products may have a competitive advantage when compared to farmed domestic products and imports, which can rely on inequitable labor, lower sanitation standards for cultivation facilities, and use of antibiotics.

- A surplus of imported seafood has also led to competition for cold storage, which reduces flexibility for producers and wholesalers to navigate the marketplace and target higher priced opportunities, further suppressing price margins for domestic seafood.
- Potential solutions could be a tax on imported seafood products, market segmentation by selling to restaurants willing to pay a price-premium for domestic catches, and advertising in key markets about the differences of domestic vs imported products.

- Growing market share for premium products will require enhancing the image of Louisiana seafood, namely through a focus on quality and creating recognized, differentiated products.
  - There is a need for coordinated advocacy work to reduce regulations or restrictions in other states that present barriers for Louisiana products. This advocacy should also focus on streamlining the process and requirements for selling to other states.
- Louisiana fisheries labor force has declined markedly over time (commercial licenses down 38% since 2001 and the labor force appears to comprise a much older workforce now.
  - Higher wages may draw younger workers into this field. There may also be opportunities to engage workers from diverse backgrounds into the field.
- Federal regulations have made the industry more difficult for domestic fishermen, while incentives and breaks would help with margins, storage, and competition with importers.
- Seafood branding and education is paramount to improving perceptions and demand for local seafood.
  - Regulations in certain states have limited availability of Gulf oysters to part of the calendar year, which may have resulted in negative perceptions about product quality even during times of the year when the product can be sold.
  - Conversely, foreign seafood lacks federal regulations, yet the public is not educated on the tactics used in foreign aquaculture.
- Differences in average prices by city provide a measure of the overall level of demand within a market relative to supply. However, the greater variability in pricing across cities among high-end restaurants suggests that targeted marketing strategies focused on specific restaurants or market clusters may open the largest opportunities for premium pricing.

## Recommendations

- Target expansion of seafood distribution in cities with higher-priced seafood menus and grocery stores or specialty locations.
  - Cities with easy transportation access to Louisiana should be especially high on the list for expansion and growing new markets.
  - Opportunities to target specific market segments (kosher and halal markets create a strong demand for certain products but require different supply chain processing) may provide opportunities for expansion within existing market areas.
- Improve branding techniques to improve marketability of Gulf seafood.
  - Unique branding to differentiate Gulf products from imported may have dividends in terms of price.
  - More targeted strategies for individual fishers may also be productive with specific locations, or areas of catch used to develop narrative and marketing around a product. Working with restaurants or grocers to market the water-to-table supply

line of seafood products may ensure that commercial fishers benefit from premium pricing.
    - Individual distributers and seafood vendors will have limited amounts of funding for marketing and lobbying. A concerted effort to collectively address broad misconceptions of Gulf seafood may be a worthwhile opportunity for collective marketing. This may include addressing regulations in select states that impose burdens on Gulf producers and distributors that are different than those the regulations imposed on producers or distributors of seafood from other areas.
    - Seafood certification programs can bolster marketing strategies that emphasize the identity of the seafood's origin and allow restaurants or grocery stores to place a premium price on individual seafood items.
- Secure funding through a combination of private and public sources to support the fishing industry as it works to address regulatory, disaster recovery, or small business needs. The supply side of the industry may need additional support in order to keep small businesses viable.
    - Funding from NOAA may aid domestic fishermen in meeting regulatory standards in a more efficient manner.
    - Aid from the Small Business Administration or the appropriate Small Business Development Center may help during recovery from natural disasters. Individuals in the fishing industry may not be aware of these opportunities for support and advocacy groups can assist in increasing awareness.
- Improve opportunities for younger, more diverse, and non-traditional people to join the fishing industry. One example may be better awareness of grants such as one offered by the Louisiana Department of Wildlife and Fisheries (Boat and Fishing Access Grants) that may make entry into the industry more appealing and financially viable.
- Further research is still needed into the wild-caught/farmed seafood market segmentation, foreign imported/locally-caught, and high-end restaurant preferences to better understand consumer behavior.

# Appendix A: Restaurant Prices by City

**Appendix A Table.** Seafood Restaurant Prices (Quantiles)

| City | State | 10th | Median | 90th |
|---|---|---|---|---|
| Atlanta | GA | $8.80 | $16.50 | $26.52 |
| Austin | TX | $8.80 | $16.80 | $24.20 |
| Baltimore | MD | $8.40 | $14.30 | $24.20 |
| Baton Rouge | LA | $8.71 | $16.00 | $27.50 |
| Birmingham | AL | $7.70 | $13.20 | $21.80 |
| Boston | MA | $8.80 | $16.50 | $26.70 |
| Charlotte | NC | $8.50 | $15.40 | $23.10 |
| Chicago | IL | $8.30 | $15.40 | $25.19 |
| Dallas | TX | $8.50 | $15.80 | $26.20 |
| Denver | CO | $8.50 | $16.50 | $23.70 |
| Detroit | MI | $8.70 | $15.45 | $26.25 |
| Houston | TX | $8.10 | $15.40 | $25.30 |
| Jacksonville | FL | $8.00 | $15.40 | $23.70 |
| Kansas City | MO | $8.80 | $16.10 | $23.00 |
| Lafayette | LA | $8.50 | $17.00 | $26.70 |
| Los Angeles | CA | $8.80 | $17.00 | $25.50 |
| Memphis | TN | $7.70 | $14.60 | $24.20 |
| Miami | FL | $9.00 | $17.50 | $27.90 |
| Minneapolis | MN | $8.78 | $17.00 | $26.00 |
| Nashville | TN | $8.00 | $14.30 | $22.90 |
| New Orleans | LA | $8.00 | $15.40 | $25.50 |
| Newport | RI | $7.60 | $14.30 | $22.00 |
| Oklahoma City | OK | $8.00 | $15.20 | $22.00 |
| Orlando | FL | $8.62 | $15.80 | $24.20 |
| Philadelphia | PA | $7.70 | $13.20 | $23.00 |
| Phoenix | AZ | $7.70 | $14.90 | $22.60 |
| Portland | ME | $8.80 | $16.40 | $25.85 |
| Portland | OR | $7.70 | $16.10 | $23.00 |
| Salt Lake City | UT | $8.00 | $15.40 | $22.00 |
| San Antonio | TX | $8.50 | $15.40 | $23.03 |
| San Diego | CA | $7.60 | $15.40 | $24.20 |
| San Francisco | CA | $8.80 | $16.00 | $24.20 |
| Seattle | WA | $8.80 | $17.60 | $26.70 |
| Shreveport | LA | $8.80 | $15.40 | $26.10 |
| St. Louis | MO | $7.70 | $15.00 | $25.50 |
| Tampa | FL | $8.30 | $15.40 | $23.40 |
| Virginia Beach | VA | $7.30 | $14.30 | $24.20 |

Source: MealMe, Blanco Center, Yelp

# Appendix B: Grocery Store Prices by City

**Appendix B Table.** Seafood Grocery Prices (Quantiles)

| City | State | 10th | Median | 90th |
|---|---|---|---|---|
| Atlanta | GA | $6.02 | $13.29 | $34.95 |
| Austin | TX | $5.89 | $11.16 | $25.93 |
| Baltimore | MD | $7.06 | $14.42 | $33.46 |
| Boston | MA | $8.83 | $13.78 | $34.39 |
| Charlotte | NC | $5.03 | $11.79 | $28.99 |
| Chicago | IL | $5.91 | $10.99 | $21.01 |
| Dallas | TX | $6.39 | $12.10 | $36.78 |
| Denver | CO | $5.99 | $9.75 | $30.25 |
| Detroit | MI | $5.21 | $12.39 | $46.72 |
| Houston | TX | $6.99 | $11.49 | $31.95 |
| Jacksonville | FL | $6.49 | $12.20 | $24.83 |
| Kansas City | MO | $7.14 | $9.53 | $18.51 |
| Los Angeles | CA | $4.99 | $9.99 | $28.43 |
| Memphis | TN | $7.69 | $9.89 | $15.51 |
| Miami | FL | $6.64 | $13.31 | $26.58 |
| Minneapolis | MN | $6.94 | $13.96 | $28.78 |
| Nashville | TN | $7.74 | $12.79 | $33.94 |
| New Orleans | LA | $6.74 | $11.82 | $21.25 |
| Orlando | FL | $7.18 | $12.79 | $27.69 |
| Philadelphia | PA | $6.39 | $12.34 | $34.58 |
| Phoenix | AZ | $4.60 | $9.20 | $26.65 |
| Portland | OR | $6.29 | $11.49 | $31.20 |
| Salt Lake City | UT | $5.87 | $9.99 | $17.14 |
| San Antonio | TX | $4.69 | $10.29 | $25.04 |
| San Diego | CA | $5.80 | $11.49 | $24.48 |
| San Francisco | CA | $8.09 | $13.79 | $38.99 |
| Seattle | WA | $6.39 | $12.12 | $26.65 |
| St. Louis | MO | $6.52 | $10.99 | $15.06 |
| Tampa | FL | $6.53 | $12.96 | $22.16 |
| Virginia Beach | VA | $7.40 | $8.77 | $14.29 |

Source: MealMe, Blanco Center, Yelp

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