

A BUSINESS AND ECONOMIC PROFILE OF SEAFOOD DEALERS IN NORTH CAROLINA

Prepared by

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For the

North Carolina Division of Marine Fisheries

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INTRODUCTION

Marine fishery resources are a major economic driver for many of the coastal communities in North Carolina. These resources support commercial and recreational fisheries that have a significant contribution to the state and local economies. The fisheries support not only the participating fishermen but also accompanying businesses including suppliers, tackle shops, boat manufacturers, restaurants, seafood dealers and more. As money is spent by fishermen, businesses and suppliers, sizable economic impacts are generated.

In 2010, the NCDMF conducted the tenth study in a series examining the economic impact and socioeconomic profile of the commercial fishing industry in North Carolina. This study focused on researching the expenditures and business profiles of seafood dealers. Four regional studies focusing on the commercial fishing sector of North Carolina have included data from seafood dealers, however this is the first attempt to examine seafood dealers on a statewide basis. These previous studies include a regional analysis of seafood dealers in the Albemarle Sound (Diaby, 2000), Pamlico Sound (Diaby, 2002), Core Sound (Cheuvront, 2002), and the Southern Management Districts (Cheuvront, 2003). While these studies looked at the business profiles of seafood dealers, they did not estimate the economic impact of seafood dealers on the North Carolina economy. Past economic contributions of the commercial fishing industry to the economy of North Carolina have been estimated solely based upon commercial catch landings data and associated expenditures of commercial fishermen. Not included in these estimated economic impacts are downstream economic contributions that occur after a commercial fishermen's catch is sold, including the contributions of seafood dealers, restaurants, and transportation services. Additionally, sales of aquaculture products as well as imported seafood sales have not been included in past economic impact estimations.

Seafood dealers from all sections of the North Carolina coast as well as some areas inland were involved in this study to gain a better estimate of seafood business expenditures and economic impacts. The results of this study will be used to gain a more comprehensive knowledge of the commercial fishing industry and markets where North Carolina caught seafood is sold. The information from this study is also important to better understand the outcomes of management actions that effect state commercial fisheries. This includes the effects of restrictions as well as possible benefits from more robust fish and shellfish stocks.

Study Objectives

The specific objectives of this study are:

- 1) To collect data on the fixed and variable costs of North Carolina fish dealers;
- 2) To collect data on expenses incurred from shipping North Carolina seafood;
- 3) To collect quantitative data on the social and economic dependence of coastal businesses on commercially-supplied seafood; and
- 4) To assess the economic impact of commercial seafood catches on the state economy and coastal communities.

Study Area and Population Characteristics

The study area includes the coastal and central regions of North Carolina (see Appendix I). Seafood dealers sell seafood caught both in inshore estuaries as well as near and offshore environments of the Atlantic Ocean. Additional sales include aquaculture products and seafood imported from outside of the state. Cape Hatteras provides a natural divide between water bodies affected by the cool Labrador Current and those warmed by the Gulf Stream, making for a diversified supply of seafood for state dealers. The type of seafood handled varies greatly as many dealers specialize in one or a handful of species, while others sell a wide spectrum of fish and shellfish species.

In 2009, there were 683 licensed dealers in North Carolina. Any person or business holding a dealer license is considered a seafood dealer. The seafood dealers in the state vary greatly in size from small single owner businesses that sell solely to their local community to large dealers that provide seafood to customers on a state, national, and world-wide scale. Businesses considered seafood dealers in North Carolina can include commercial fishermen holding a dealer license, wholesalers, distributors, processors, bait and tackle shops, retail seafood shops, and restaurants. Only businesses possessing a seafood dealer license can purchase seafood directly from licensed commercial fishermen, as all wild caught seafood that is landed in North Carolina is obligated by law to be initially sold through a licensed seafood dealer. The majority of the seafood dealers in the state are small single or family owned businesses (Diaby, 2002, Chevront, 2003). Several commercial fishermen also hold dealer licenses, thereby allowing vertical integration of their business to include the sale and shipment of their product in addition to catching it.

METHODS

Recruitment and Participation Rates

In 2009, a list of 298 seafood dealer license holders was acquired from the NCDMF license and trip ticket data base. This list included seafood dealers with more than \$10,000 in ex-vessel value of seafood sales during the 2008 calendar year. This criterion was added to select seafood dealers with significant seafood sales. Dealers were selected from the list to participate in the survey through a series of mailings. Each participant was sent a letter explaining the study as well as the type of information that would be inquired in the survey. Participants were given the choice to take the survey online through the website surveymonkey.com. [Surveymonkey.com](http://surveymonkey.com) is a website that allows the creation and distribution of online surveys as well as database creation of survey results. Participants were told that if the survey was not taken online, a NCDMF interviewer would contact them to take the survey over the phone. At least 10 attempts were made to reach a dealer before they were considered unable to be located. If seafood dealers did not respond to letters or phone calls, a final attempt was made to initiate contact by the interviewer driving to the physical address listed in the NCDMF database. After all of these steps were taken, a dealer would be listed as “unable to locate”.

To fit within the study budget constraints, 109 of the 298 seafood dealers were contacted to participate. Out of the 109 seafood dealers contacted, 72 seafood dealers agreed to take the survey with 38 completing the survey via the internet and 34 completing the survey by phone. All surveys conducted by phone were administered through an interviewer hired by NCDMF specifically for the study. Responses were then entered into a computer database. This led to an overall response rate of 66%. Out of the remaining 37 seafood dealers contacted, 16 refused to take the survey, 15 were unable to be located, and 6 had sold their business or gone out of business.

Survey Instrument

A copy of the survey used in this study can be found in Appendix II. Data collected from this survey included information concerning:

- (i) Business characteristics and expenditures
- (ii) Major buyers and markets
- (iii) Species sold
- (iv) Current issues and business challenges

Seafood dealers were surveyed from April through June of 2010 and responses were compiled in a Microsoft Excel database. Responses were checked for incomplete or incorrect data and processed for skipped questions. The data was analyzed using functions within Microsoft Excel as well as the Statistical Package for the Social Sciences software (SPSS release 12.0.0, 2003). Final data verification, assigning labels to variables, and additional variable calculations were completed along with all data analyses. The primary analyses in this report consisted of frequency and simple univariate analyses.

RESULTS

Employment

In addition to the business owner, the average seafood dealer in the survey had 3 year-round employees and 6 seasonal employees. Some seafood dealers also indicated that family members would work for the business without a regular wage or salary. Traditionally these family members would often serve as support staff answering telephones, handling finances and paperwork, or other office duties (Cheuvront, 2002). The number of full time employees indicated by the study participants ranged from 0 to 38 individuals and the number of seasonal employees ranged from 0 to 75. The top three months that dealers indicated using seasonal employees were July, August, and September while the three lowest months for seasonal employment were December, January, and February.

Sales

The participating seafood dealers were asked to provide their total gross sales for 2009. Total gross sales ranged from \$7,000 to \$7.2 million dollars. As can be seen in Table 1, 29% of respondents indicated sales of less than \$50,000. Many of these businesses are commercial fishermen who also hold dealer licenses, allowing them to sell their catch to an array of customers. The value for businesses with gross sales of \$50,000 or less is similar to the sales distribution value found for dealers in the Albemarle Sound region (28.8%) but lower than the sales distribution values found for dealers in the Core Sound (45%) and Southern regions (57%). As can also be observed in Table 1, 22% of respondents indicated sales of more than \$1 million. This is similar to the findings for dealers in the Albemarle Sound (26.9%) and Pamlico Sound (24%) regions but much greater than values found for dealers in the Core Sound (11%) and Southern (5%) regions (Diaby, 2000, 2002)(Cheuvront 2002, 2003).

Table 1. Reported 2009 Annual Gross Sales of Participant Seafood Dealers

Gross Sales	Frequency	Percent
\$50,000 or less	21	29%
\$50,001 to \$100,000	7	10%
\$100,001 to \$200,000	8	11%
\$200,001 to \$500,000	6	8%
\$500,001 to \$1,000,000	7	10%
\$1,000,001 to \$2,000,000	8	11%
\$2,000,001 to \$5,000,000	6	8%
More than \$5,000,000	2	3%
Total	65	
Missing	7	10%
Grand Total	72	100%

Species Sold

Seafood dealers were asked to list the most important species of fish or shellfish for their business. The results can be seen in Table 2 below. While some dealers specialize in one species, many depend on several species; therefore, the responses do not sum up to 72 as many seafood dealers mentioned more than one species that are vital to the success of their business.

Table 2. Most Important Fish and Shellfish Species to Seafood Dealers' Businesses

Species	Frequency	Percent
Shrimp	25	21%
Flounder	24	20%
Blue Crab	16	13%
Oysters	10	8%
Groupers	5	4%
Tuna	5	4%
Clams	4	3%
Scallops	4	3%
Spot	3	3%
Sea Mullet	3	3%
Spotted Sea Trout	3	3%
Black Sea Bass	2	2%
White Perch	2	2%
Vermillion Snapper	2	2%
Spanish Mackerel	2	2%
Other	10	8%

Shrimp, flounder, blue crabs, and oysters were the most common species mentioned. This was followed by a wide array of species with much less frequency. The "other" species category included swordfish, dogfish, black drum, catfish, triggerfish, cobia, weakfish, striped bass, tilefish, and king mackerel.

Operating Expenses

Operating expenses broken down by standardized categories were provided by the study participants. The summarized results for the expenditures can be seen in Table 3 below. Both mean and median values are included in the table. Median values are much lower than mean values as a result of the large variation in the size of the businesses participating as well as the business structure. Purchasing a product is the largest average expenditure. More than half of the mean business expenses are put towards purchasing seafood, the majority of which was bought from North Carolina commercial fishermen. After the purchase of seafood, paying employee wages, transportation and shipment of seafood, loans and banking costs, and shipping containers are the most significant business expenditures. Overall, approximately 80% of expenditures can be attributed to variable costs, whereas 20% are due to fixed costs.

Table 3. Mean and Median Values by Category for Seafood Dealer Business Expenditures

Business Expenses	Average	Median
Purchases From Other NC Fishermen	\$322,692	\$34,000
Purchases From Other NC Seafood Dealers	\$103,555	\$1,044
Purchases of Seafood From Out of State	\$72,909	\$0
Wages and Payroll	\$69,481	\$8,500
Transportation and Shipping	\$30,881	\$2,950
Mortgage, Loan, or Banking Cost	\$29,212	\$763
Shipping Containers	\$26,275	\$1,500
Building Repair and Maintenance	\$13,385	\$3,900
Insurance	\$11,816	\$3,011
Non-seafood Products Sold	\$11,649	\$0
Electricity	\$11,504	\$3,752
Spoilage	\$6,900	\$2,000
Rent	\$6,587	\$0
Telephone	\$2,944	\$1,200
Office Supplies	\$1,952	\$800
Water	\$1,152	\$0
Other	\$12,969	\$700
Total	\$731,153	\$159,350

Median values were significantly lower than the mean values across all expenditures. An interesting outcome is that the median expenditures on out-of-state seafood, non-seafood products, rent, and water were zero dollars. This is likely a reflection of the business structure of commercial fishermen that sell their own catch directly to customers without the “middle man” of a traditional fish house or processor. This subset of seafood dealers sells their own catch, thereby having no need to purchase seafood from out of state. Also, these fishermen often do not have an office, therefore, they do not need to make business expenditures on rent, water, and non-seafood products to sell.

Economic Impact

Using economic data provided by the federal government and numerous economic studies, IMPLAN economic modeling software creates an input-output model to estimate how money is spent and re-spent until it leaves the North Carolina economy, thereby generating a total economic impact. Total economic impact includes direct, indirect, and induced effects. In addition to the direct economic impact of dealer sales, there are indirect and induced effects that occur. These indirect and induced effects take place in response to the operation of the seafood dealer. Indirect effects occur through the expenditures of the suppliers to the seafood dealer (commercial fishermen, transportation service companies, utility companies, etc.). Induced effects occur as a result of money spent by the employees of both the seafood dealer and the suppliers (wages spent on utility payments, gasoline, rent, etc.). For example, a dealer creates a *direct* economic impact by selling 1,000 pounds of shrimp that he or she bought from a local shrimp boat captain. A portion of these sales goes towards paying the shrimp boat

captain as well as the dealer’s overhead and employee wages. An *indirect* effect occurs when the shrimp boat captain uses a portion of the payment for the sold shrimp to pay his crew as well as purchases goods or services such as gas, insurance, and boat repairs. The crew and seafood dealer employees use a portion of their wages towards their own personal expenditures. This is an *induced* effect. These effects occur over and over again as money is spent and re-spent in the state economy.

The economic impact of seafood dealers on the North Carolina economy for 2009 was calculated using IMPLAN economic modeling software. Due to large variations in reported expenditures, median values from dealers reporting expenditures were used to estimate the economic input (costs) of seafood dealers. The median profit margin² was used to estimate the proprietary income (profit). These inputs were utilized in IMPLAN to generate an estimate for the economic impact of seafood dealers (Table 4).

Table 4. Estimated Economic Impact of North Carolina Seafood Dealers (2009)

Impact Type	Total Value Added	Output
Direct Effect	\$67,903,317	\$150,429,963
Indirect Effect	\$18,054,085	\$32,813,626
Induced Effect	\$41,403,891	\$71,773,578
Total Effect	\$127,361,293	\$255,017,167

The estimated economic impact of seafood dealers in North Carolina for 2009 is approximately \$255 million. According to the model, the economic sectors most affected by seafood dealer sales were commercial fishing, wholesale trade businesses, real estate establishments, food and beverage services, health practitioners, insurance carriers, electric power generation and distribution, private colleges and trade schools, and banking. Input-output models examine all inputs that went into the production of a product, or “upstream” inputs. The model does not include “downstream” economic impacts that occur after the initial sale. This includes any sale or resale of a product as it reaches the final user. In this case, downstream impacts from sales beyond the primary dealers to their customers are not included in the economic impact estimate. This can include sales of seafood by in-state and out-of-state secondary seafood dealers and processors, distributors, restaurants, and grocery stores that do not possess a North Carolina seafood dealer license.

² Profit margin was calculated by subtracting the total revenue (TR) from the total cost (TC) then dividing by the total revenue. Profit margin= (TR-TC)/TR.

Markets

Seafood dealers indicated that approximately 72% of their seafood is sold to North Carolina buyers, as can be observed in Figure 2 below. These buyers included restaurants, other in-state seafood dealers, and retail customers. This is slightly less than the previous value found of 85% for in-state sales of dealers in the Southern region, similar to the values found for in-state sales of dealers in the Albemarle and Pamlico Sound regions (74% respectively), and greater than the value for in-state seafood sales for dealers in the Core Sound region (55%) (Diaby, 2000, 2002) (Cheuvront, 2002, 2003).

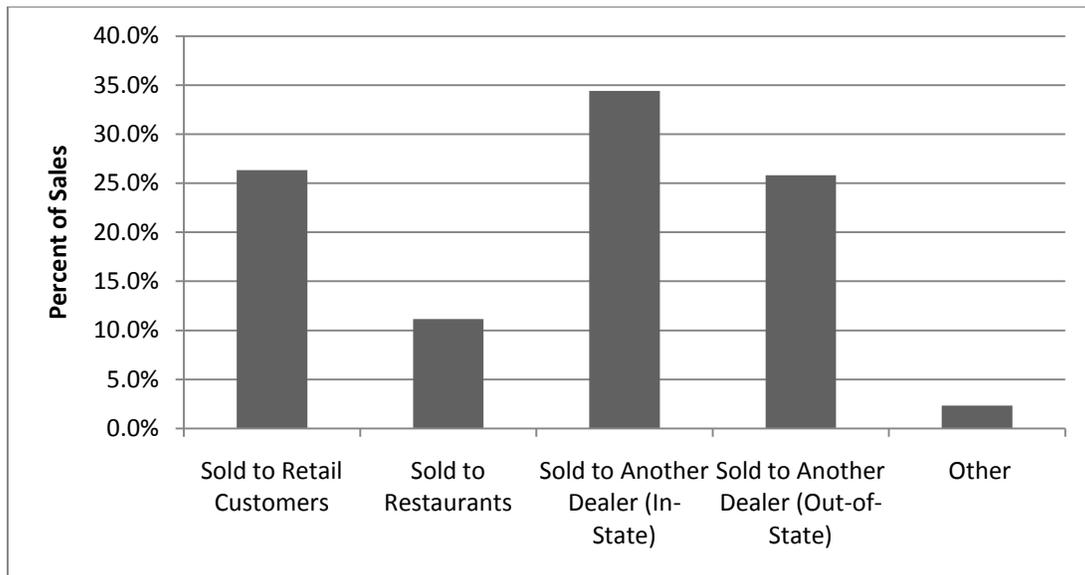


Figure 1. Markets for Seafood Landed in North Carolina

While the majority of dealer sales take place with in-state customers, some out-of-state markets can have a major effect on North Carolina seafood sales. The striped mullet fishery exhibits a greater price per pound for striped mullet in the fall due to a demand for mullet roe in Taiwan. Recent slowdowns in the Taiwanese economy as well as aquaculture operations have led to a decrease in the price that North Carolina striped mullet fishermen receive for their catch. Another example of the influence that out-of-state markets can have on North Carolina seafood sales can be seen in the blue crab fishery. Blue Crab population abundance in the Chesapeake Bay region can play a major role in the value of landings for North Carolina blue crab fishermen. In general, the price moves inversely to the production of the Chesapeake fishery, as buyers in this region are willing to pay less for North Carolina caught blue crabs if there is an abundance of locally caught crabs. It has been observed in years of high landings of blue crabs in the Chesapeake Bay that the price received for blue crabs in North Carolina falls, sometimes to the point where crabbers discontinue fishing, thereby decreasing the overall landings in North Carolina.

Perceptions

Respondents were asked to list the biggest challenge that their seafood business faces. The responses are summarized below in Table 5 by ranking the issues based on the frequency which they were indicated. The responses were summarized and grouped into categories. Many of the indicated issues can be linked as a cause or result of another issue such as “Regulations and Closures” are related to “Lack of Adequate Seafood Supply” and “Declining Fish and Shellfish Stocks” or “Low Price for Product” can be linked to “Imported Seafood Competition”.

Table 5. Rank of Most Significant Business Challenges for Participant Seafood Dealers

Rank	Issue
1	Regulations and Closures
2	Lack of Adequate Seafood Supply
3	Imported Seafood Competition
4	Low Price for Product
5	Fuel and Transportation Costs
6	Poor Economy
7	Collecting Revenue from Buyers
8	Competition With Other Dealers
9	Declining Fish and Shellfish Stocks
10	Environmental Groups

Challenges related to fishing regulations and closures were the most common issue mentioned by surveyed seafood dealers. Dealers expressed frustration with both state and federal regulations that create fishing closures or limit catch. Lack of adequate supply of local seafood was another challenge that was commonly indicated by survey participants. As mentioned earlier, the lack of local seafood supplied can be attributed to regulations and closures and related declines in fish and shellfish stocks that the regulations are designed to protect. This also may be related to the long-term trend of decreasing participation in North Carolina commercial fisheries.

The third most commonly mentioned business challenge was competition from imported seafood. This is a concern that is often shared both by seafood dealers as well as commercial fishermen. Seafood imported from foreign countries is often much cheaper than domestically caught seafood due to lax regulations, foreign government subsidies and lower production costs. Seafood imports in the United States rose approximately 33% from 1,763,536 tons in 1999 to 2,341,242 tons in 2009. Imported shrimp, which directly compete with locally caught shrimp, rose approximately 65% from 331,707 tons in 1999 to 548,539 tons in 2009 (US Department of Commerce, 1999, 2009). There have recently been several issues brought forth over the lower quality and health concerns of imported seafood. This has let dealers and fishermen tout the better quality and safety of locally caught seafood and led to the creation of local seafood promoting organizations such as Carteret and Brunswick Catch.

Trends

In the commercial fishing industry in North Carolina, there has been a trend of decreasing participation seen in both seafood dealers and commercial fishermen. The number of dealers has shown an overall decrease between 1999 and 2009 of 10% (Figure 3). Between 1999 and 2009, the number of licensed seafood dealers in North Carolina dropped from 760 dealers to 683 dealers. The number of dealers reporting landings worth more than \$10,000 dollars saw a more drastic drop of 22% falling from 381 dealers in 1999 to 298 dealers in 2009.

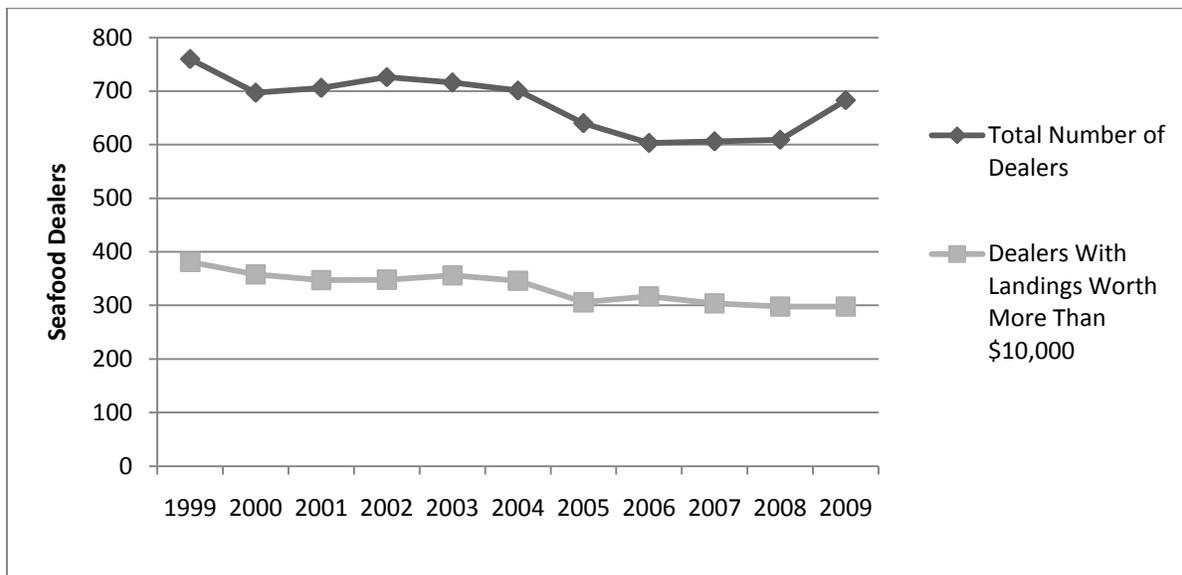


Figure 2. Total Number of North Carolina Seafood Dealers and Seafood Dealers Reporting Landings Worth More Than \$10,000 from 1999 to 2009. (NCDMF Trip Ticket Program)

DISCUSSION

North Carolina seafood dealers are a diverse group that handle a wide array of seafood species. The businesses range greatly in size from commercial fishermen with seafood dealer licenses and one-person operations to larger companies that employ seventy or more people and handle seafood worth millions of dollars each year. The majority of seafood dealers however, are small business owners. Most sales occur within North Carolina, but out-of-state markets do play an important role in sales of some dealers.

There is an observed declining trend in the number of large seafood dealers in North Carolina, with a 22% decrease from 1999 to 2009. Many survey participants indicated that the seafood business is becoming increasingly difficult with profits shrinking from a lack of locally caught seafood as well as cheap imports. Garrity-Blake and Nash relayed similar findings in their study examining fish houses in North Carolina. They reported a 33% decrease in fish houses from 2000 to 2006. While many issues were discussed, the main reason indicated for the decline was competition from increasing amounts of imported seafood combined with increasing operation costs (Garrity-Blake and Nash, 2007).

While there is a decreasing trend in the number of dealers in North Carolina, there was an observed increase in the number of dealers from 2008 to 2009. This increase was also seen in the number of commercial fishermen participating in North Carolina fisheries from 2008 to 2009. The increase in the number of dealers may be a reflection of more commercial fishermen who possess dealer licenses entering the fisheries. The increased participation might be attributed to the economic slowdown that was seen throughout the United States starting in 2008. Fishermen and dealers may be coming from other industries that saw more significant slowdowns such as building and construction.

The estimated economic impact of seafood dealers for 2009 was \$255 million. An input-output model examines the economic impact of a business as well as its suppliers, so this estimate includes the impact of the primary seafood dealers as well as commercial fishermen in North Carolina. The estimated economic impact of commercial fishermen based on ex-vessel value of landings in North Carolina in 2009 was \$143 million (NCDMF, 2010). This leaves an economic impact beyond that of commercial fishing landings of \$112 million. NOAA National Marine Fisheries Service estimated the economic impact of North Carolina primary seafood dealers and processors to be \$122 million in 2008 (NOAA, 2010). While these estimates are somewhat similar, with less than a 10% variation, the differences may be attributed to several factors including varying methodology as well as larger landings of locally caught seafood in North Carolina in 2008 than in 2009.

CONCLUSION

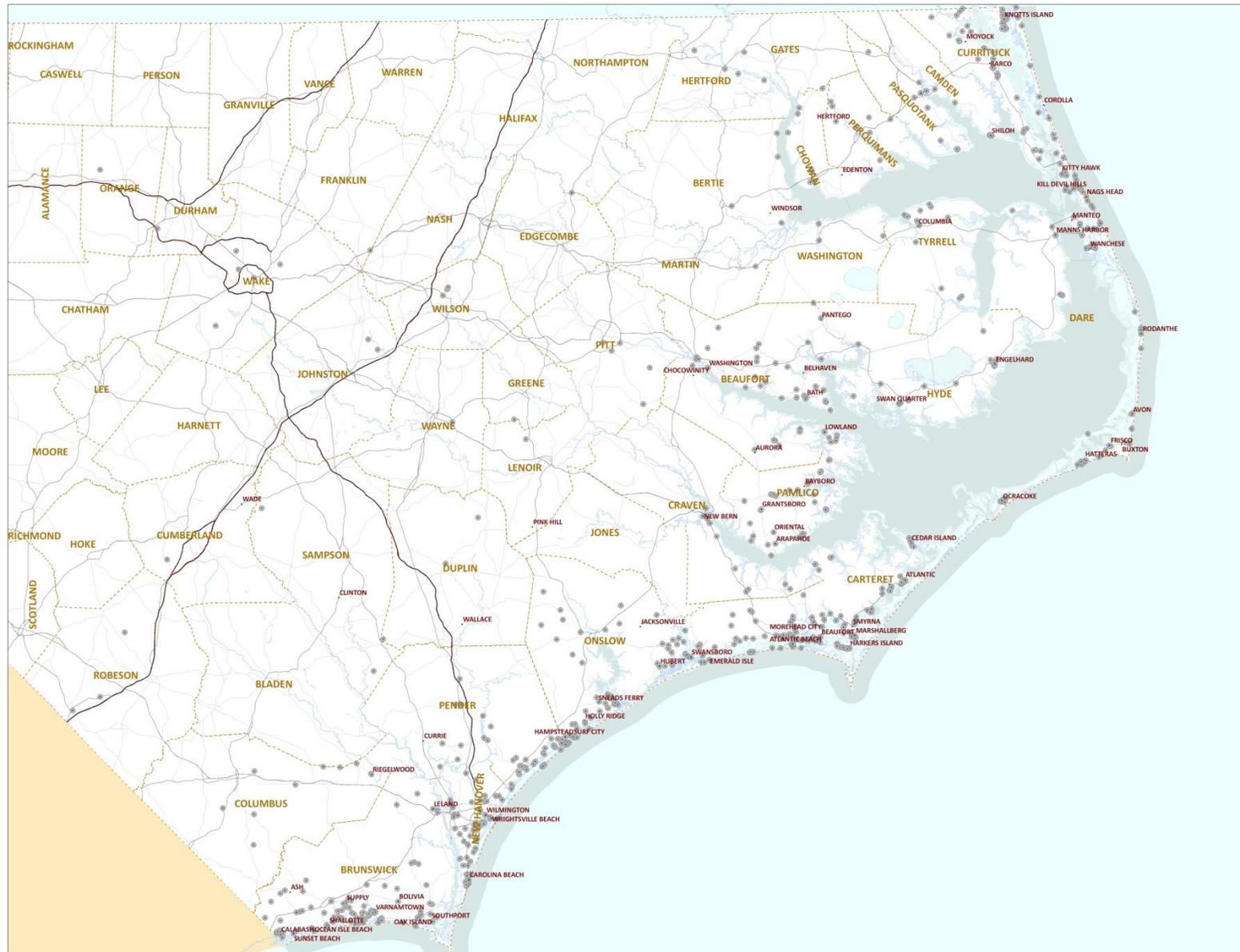
The \$255 million economic impact that can be attributed to seafood dealers in North Carolina is a considerable contribution to the North Carolina coastal and state economies. This economic impact is especially important considering the recent economic slowdown as well as the limited sources of employment and income found in the coastal regions of North Carolina. While future data may reveal a more decisive trend, the recent increase in the number of seafood dealers from 2008 to 2009 suggests that the sale of locally caught seafood provides additional revenue for workers facing decreased income and employment in other industries.

Overall, dealers indicated that they are facing significant headwinds in the long-term operation of their businesses. The top three challenges that were mentioned include state and federal government regulations, difficulties in obtaining an adequate supply of seafood, and competition from imported seafood. As a group, dealers are dedicated to their businesses and determined to overcome shifts in the seafood industry. With improvements in fish and shellfish stocks as well as increased marketing emphasizing the values of locally caught seafood, seafood dealers can continue to be a significant addition to the North Carolina coastal economy and provide a premium product to customers well into the future.

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APPENDIX I: NORTH CAROLINA SEAFOOD DEALER DISTRIBUTION, 2009 (NCDMF GIS Program)



APPENDIX II: 2010 SEAFOOD DEALER SURVEY

1. Introduction

* 1. Please enter your last name.

* 2. Please enter the identification number on the letter you received.

id#:

3. Please provide your email address:

4. What town is this business located in?

2. background questions

5. What would you consider to be the most important fish or shellfish for your business?

6. What would you consider to be the single biggest challenge to your dealer business at this time?

7. NOT including yourself, how many year-round employees did you have last year?

8. NOT including yourself, how many seasonal employees did you have last year?

9. What months did you use seasonal employees?

	January	February	March	April	May	June	July	August	September	October	November	December
Month	<input type="checkbox"/>											

3. Expenses

10. In DOLLAR terms (not pounds), what percentage of your sales last year were...

% sold directly to customers from my shop

% sold to restaurants

% sold to another dealer (in-state)

% shipped to an out-of-state dealer

% other

11. How much would you estimate that your dealer business spent last year on...

\$ spent on purchases from NC fishermen

\$ spent on purchases from other NC fish dealers

\$ spent on purchases of fish from out of state

\$ spent on electricity

\$ spent on water bills

\$ spent on telephones (including business cell phones)

\$ spent on building repair and other maintenance costs

\$ spent on insurance (including health)

\$ spent on office supplies, computers etc

\$ spent on rent (if you do not own the property where the business operates)

\$ spent on business mortgage, loan payments or other banking costs

\$ spent on wages and payroll

\$ spent on shipping containers

\$ spent on transportation costs

\$ spent on non-seafood products that you sell (seasonings, cookbooks, etc) in this business

\$ spent on other costs

12. How much are your property taxes where the business operates?

13. What was the total dollar value of your sales last year?

14. How much (in dollar terms) did you lose to spoilage of the product?

4. Thank you!

The North Carolina Division of Marine Fisheries is expanding its data collection on the commercial fishing industry, and your willingness to take this survey is appreciated.

Sincerely,

Scott Crosson, Ph.D.
Socioeconomics Program Manager

15. Please add any comments you have on the structure or substance of this survey.