Report for
Fishery Resource Grant Program 2006
Grant No. 06-ST-02

Harnessing Consumer Preferences to Create New Markets for North Carolina Seafood

Submitted by Dr. Susan Andreatta

Assisted by Anne Parlier

from

The University of North Carolina at Greensboro
The Department of Anthropology

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Executive Summary:

Commercial fishing communities that were once the sustaining force of coastal North Carolina are facing dramatic cultural, economic and environmental changes that threaten their future. Historically, fishermen,[1] their families and other community members supported a way of life that was based on harvesting from the sea. A fishing industry that included the fishermen and crew, fish house dealers and employees, boat builders, net makers and menders, seafood processors, transporters and others who established local businesses such as bait shops and local grocery stores together created a community that linked residents, visitors and others to the sea, its products and related services.

This fishery marketing project expands upon the work of an existing community group that founded *Carteret Catch*. The goal of this research is to establish if there is an interest among participants in the local fishery industry in alternative ways of marketing fresh local seafood in Carteret County. With the baseline information gathered we are able to recommend how one might go about developing alternative marketing strategies for small-scale commercial fishermen, fish house dealers and the public.

We have several recommendations to assist in developing alternative market strategies to increase the demand for local seafood in Carteret County. A word of caution, however: whatever changes or modifications are made in a marketing strategy, we recommend that they are small and do not keep the fishermen and their family, the fish house dealer or a restaurant

[1] Although there certainly are women who own fishing boats and participate fully in the fishing industry men are in the majority. We will use the masculine "fishermen" in this paper to include both men and women.

owner awake at night. We also encourage all participants to keep records so that they can monitor the effect a particular change might have made in their business plan.

Recommendation 1. - The first recommendation is for using a social marketing approach to develop an alternative marketing plan for the fishing industry. *Recommendation 2.* A second recommendation is for an education campaign. *Recommendation 3.* Our third recommendation is for an advertising campaign that emphasizes the local, wild-caught seafood. *Recommendation 4.* Our fourth recommendation is to create a stronger public awareness and community link to the existing *Carteret Catch* branding program.

We recommend a marketing campaign based upon the social marketing concept—marketing a behavior rather than advertising a commodity and including the concept of community supported fisheries. Creating alternative markets with fishermen and fish house dealers is a way the community can connect directly with the fishing industry. Direct marketing is a way to bring the public closer to the fishermen or fish house dealer and a local product. Direct marketing could include such things as selling *Carteret Catch* seafood at farmers markets, seafood markets, and roadside stands. A new direct marketing strategy we suggest is Community Supported Fisheries (CSFs) where consumers pre-order their seafood from the fishermen or fish house dealers. Through the interview process consumers, fishermen and fish house dealers were supportive of developing alternative approaches marketing local seafood.

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Introduction

Over the last three centuries there have been major economic booms and busts that threaten coastal fishing communities. Historically these fluctuations were attributed to the public's changing demand for a resource as occurred with the decline in the whaling industry with the introduction of new sources of energy for home heating and lighting. In other instances the industry suffered when it was unsafe for fishermen to enter the ocean waters such as during World War II when foreign submarines were located off the shore of the coastal counties. In more recent times pollution and over-fishing have contributed to the loss of bay scallops. In addition, residents of fishing communities have many stories to share about how they have survived adversity from weather in the form of hurricanes; the more memorable winds are remembered by name.

Political and economic forces have affected these communities by regulating what is caught, how much can be caught, how it is caught and when it is caught. We know of few industries where the workers have state imposed regulations on the days and hours a person may work as are found in shrimping.[2] Whether it is from changing consumer demands, government regulating the fishing industry or something else, today's commercial fishing industry is facing challenges that are unprecedented and some might say unsustainable and possibly insurmountable without an infusion of collective helpful assistance. Many North Carolina commercial fishermen struggle to stay in business; others are not able to make a living from fishing as they once did while others have been forced to seek on-land employment. The local fishing industry is facing cultural and economic challenges that threaten the future of commercial fishing, particularly in Carteret County where this research takes place.

In 2006, fisheries specialist Scott Baker of the NC Sea Grant Extension Program UNC-W Center for Marine Science and Barry Nash seafood technology specialist for Center for Marine

[2] For commercial fishermen "it is unlawful to take shrimp by any method from 9:00 P.M. on Friday through 5:00 P.M. on Sunday, except: in the Atlantic Ocean; or with the use of fixed and channel nets, hand seines, shrimp pots and cast nets" (See NCDMF Fisheries Rules for Coastal Waters 2005 pages 1-220 for additional regulations. www.fisheries.net accessed January 24, 2007).

Sciences and Technology, encouraged Susan Andreatta PhD, an applied anthropologist from the University of North Carolina at Greensboro, to apply for this grant from North Carolina Sea Grant to conduct research on marketing opportunities for the Carteret County commercial fishermen. We interviewed fishermen and fish dealers in order to ascertain their level of interest in new marketing programs for seafood[3] in Carteret County. Consumers (defined to include both residents and visitors to the area) also were a major part of the research and were interviewed to understand their seafood consumption patterns. The objectives of this fisheries marketing project were to: 1. profile the seafood preferences and consumption patterns of county residents and visitors; 2. survey the attitudes of fishermen and dealers to determine how amenable they are to direct marketing initiatives; and 3. recommend direct marketing options that will sustain the local fishery industry.

Several questions guided our research and as in the project progressed our list of questions grew. The research questions included: 1. what is the public's interest in eating seafood? Is there an interest in creating a local demand for local wild-caught seafood? 2. Is there an interest in connecting fishermen and fish house dealers with the public? Is the public interested in knowing where their seafood came from? 3. What are the fishermen's and fish house dealers' perception of the local commercial fishing industry? Would alternative niche markets aid in sustaining their economy? There is one question that still looms over this project that cannot be answered by us. "Is there enough local wild-caught seafood available to sustain an increased demand should there be an increase interest in consuming more local seafood from this initiative"? As anthropologists we are not in a position to answer this question, but we recommend that research on this issue be undertaken as well.

This fisheries marketing project, however, expands upon the work of an existing community project known as *Carteret Catch*. *Carteret Catch* is a branding program which was launched in 2005 by a group of hard working concerned citizens in Carteret County. Commercial fishermen, fish distributors, fish researchers, restaurant owners and others came together to assist commercial fishermen in the county in maintaining their livelihood. The committee's objective was to create a branding program that included a logo for seafood caught in Carteret County to promote local seafood and help sustain the livelihood of the commercial fishermen. Therefore,

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[3] Seafood includes shellfish, bivalves and fin-fish. We use fish generically as well unless we specify a particular species. We recognize species differ physically and occupy different habitats.

Carteret Catch represents wild-caught seafood that is landed on the shores of Carteret County by local fishermen. Fortunately for us we were able to discuss the branding program in its early stages of development as part of a new marketing campaign with fishermen, fish dealers, restaurant owners and the public. Equipped with a copy of the *Carteret Catch* logo we embarked on a six month information and data gathering mission. The goal from this research was to establish if there is an interest among participants in the local fishery industry for alternative marketing strategies for local seafood in Carteret County. With the baseline information gathered we can suggest how one might go about developing alternative marketing strategies for small-scale commercial fishermen, fish house dealers and the public.

Methods

A variety of methods were used to obtain data on the fishing industry in Carteret County. Carteret Count is located in the central part of eastern North Carolina, at the southern outer banks. Data were gathered formally using questionnaires. Data were also collected by engaging in participant observation such as going shrimping with local fishermen, listening to stories told by community members and at social gatherings, and observing what is going on in the coastal area. Fishing locally, eating locally and meeting local residents from the fishing community and surrounding area provided insights for us into the current commercial fishing industry.

During the months of May through August we made eleven four-day trips to Carteret county.[4] One additional 3-day trip was made in October to participate in the 29th annual Seafood Festival held in Beaufort, North Carolina to collect additional data, predominantly from consumers.

Location — Fishermen and wholesale fish house dealers were interviewed in fishing villages from Atlantic, Beaufort, Bettie, Cedar Island, Davis, Gloucester, Harkers Island, Marshallberg, Otway, and Sea Level. For consumers (visitors and residents) we were at roadside stands, in local museums (Core Sound and Beaufort Maritime) and the Aquarium. We also interviewed at the annual Seafood Festival in Morehead City.

Sampling - Entities that comprise the local marketing network are fishermen, seafood dealers, restaurant chefs, and consumers (local residents and tourists). We interviewed fifteen fishermen (men and women) and five fish house dealers, two seafood retailers, and visited six

[4] Researchers Andreatta and Parlier reside in Greensboro, NC and had a 5 hour drive (each way) to Carteret County.

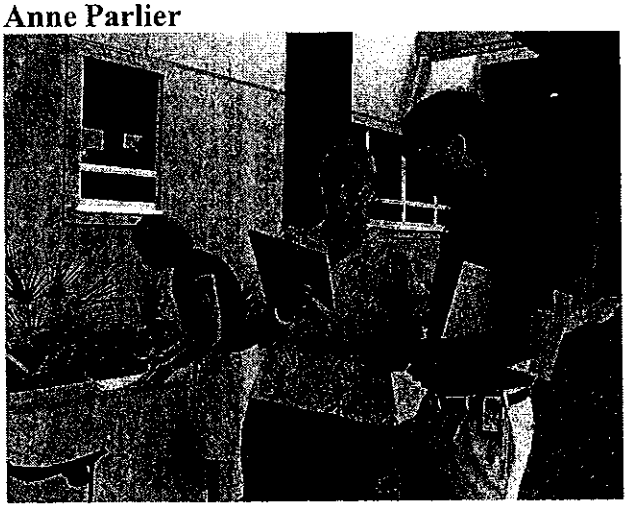
local restaurants. The interviews among the fishermen took anywhere from an hour and a half to two and half hours, depending on how talkative a person was and what else was going on at the time of the interview. Fishermen have stories to tell and some fishermen were better poised to tell their story than others. Outside of the formal interview we were hearing similar information on the commercial fishing industry thus confirming what we had been hearing and seeing throughout the field season. We stopped interviewing fishermen in August, when the stories we were hearing were no longer different.

Fishermen considered for this project were those who fish and sell from their own catch locally. Fishermen were selected based on recommendations from other fishermen, fish house dealers, restaurant chefs, fisheries resource extension personnel. Combining sampling approaches enabled us to use purposive and snowball sampling techniques (Bernard 1995). A semi-structured, open-ended questionnaire was used to obtain data on current marketing practices, time and distance involved in marketing, and openness to new direct marketing practices (Andreatta and Wickliffe 2002). The questionnaire was developed in consultation with fishermen and marine specialists. Questions focused on length of time fishing, number of boats and gear used, species caught, marketing locations and their perceptions of the fishing industry (See Appendix 1 for a copy of the questionnaire used with fishermen).

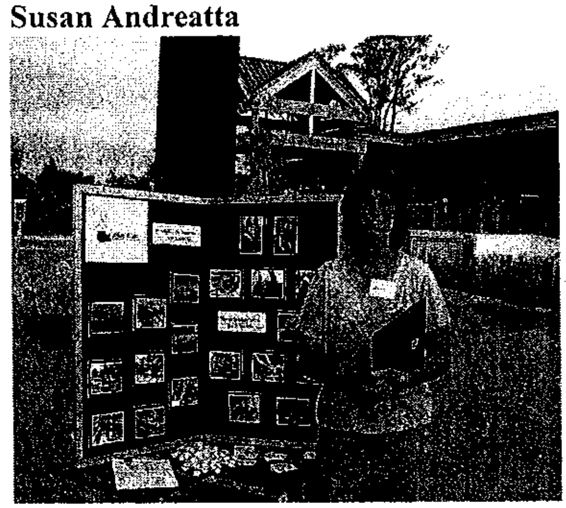
Convenience sampling techniques were used to survey consumers at neutral locations as well as at annual fishing and boating events (Bernard 1995). A total of 295 consumers were sampled from May through October 2006. Consumers are defined as those who live in the area (residents) and those who visit the area (visitors). Data from consumers were collected over a period of several months to ensure seasonal information from tourists and residents was obtained. A semi-structured questionnaire was used to interview consumers on their decision-making procedures for purchasing seafood. This questionnaire was developed in consultation with fishermen, seafood dealers, chefs and fishery specialists. Questions focused on distance traveled to the area, age, family size, length of stay, accommodation style, presence of a kitchen, purchasing preferences, seafood type, quantity, price, interest in cooking seafood, frequency of seafood consumption, and interest in supporting a local fishing industry (See Appendix 2 for a copy of the questionnaire used with consumers). Multiple enumerators were used to assist in data collection.[5]

These combined sampling techniques and survey instruments are useful in identifying consumer seafood preferences and, their buying and cooking habits. In addition, we learned of fishermen's and seafood dealers' interests in developing alternative direct marketing programs for the seafood industry. From the interviewing process and the data obtained we learned of the fishermen's interest in niche marketing and consumers' interest in purchasing local seafood. We anticipate that the survey methods outlined here will be transferable to other coastal areas where communities have an interest in connecting fishermen with the public to sustain their local fishery industry and a unique coastal heritage. Detailed data analyses of fishermen and consumer questionnaires were carried out from November 2006 through February 2007. Below we analyze the data to illustrate what we have learned. We conclude with recommendations for delivery and an alternative niche marketing strategy.

Anne Parlier



Susan Andreatta



Contemporary Challenges for North Carolina's Commercial Fishing Industry

Fishermen face a range of challenges that are converging on the industry simultaneously. The interface among the environment, economics, politics and regulations influence the culture of production of wild-caught seafood in ways that are leading to the decline of local commercial fishing economies and loss of commercial fishermen.

[5] People that assisted Andreatta and Parlier in interviewing some of the consumers include: Kristin Neal, Patrick Wood, Tracy Ferguson, Scott Baker, Barry Nash and Gretchen Martin.

Inherent in commercial fishing are a number of obstacles such as the changing demand for a product, the addition of new regulations and the appearance of hurricanes. As Stick pointed out in 1958 communities have been experiencing such challenges for almost fifty years. He writes,

> The decline in commercial fishing in the Banks area is partly attributable to the rising cost of boats, nets and other equipment without a commensurate rise in the wholesale price of fish. The great increase in tourist business along much of the banks, with attendant demands for employment in construction trades and with increased opportunities for small businesses, have lured away large numbers of fishermen. Most of the fishermen will tell you, however, that the big reason is the scarcity of fish, the virtual disappearance of 'big money – fish' such as shad and the great runs of others species (Stick 1958:240).

Over-fishing and the pollution of the streams and rivers that flow into the sounds are the two main causes for the decline in fish stocks according to Stick (1958). He contends that the public and fishermen together bear the responsibility for the condition of the fishing industry. His observation made half a century ago, is still relevant today.

To place the commercial fishing industry in context some background information is useful. Since 1981 data from the North Carolina Division of Marine Fisheries indicate that fishing has been declining in both total landings and dollar value of seafood. In 1981 commercial fishermen brought in 432 million pounds and in 2005 they brought in 79 million pounds, a decrease of 63% (See Figure 1). In the last five years there has been a 40% decline in the dollar amount for the seafood brought in, going from $108 million in 2000 down to $64 million in 2005. In contrast, demand for seafood in this country has reached record levels (NMFS 2007). In 2004, Americans consumed 16.6 lbs of seafood per person, almost 9% more than in 1999 with a trend that is only forecast to increase (NMFS 2005). The question stands, how are these trends simultaneously occurring in a state that harvested more seafood than any other state in the Southeast US and with a combined catch of over 80 species worth over $64 million dollars in 2005 alone?

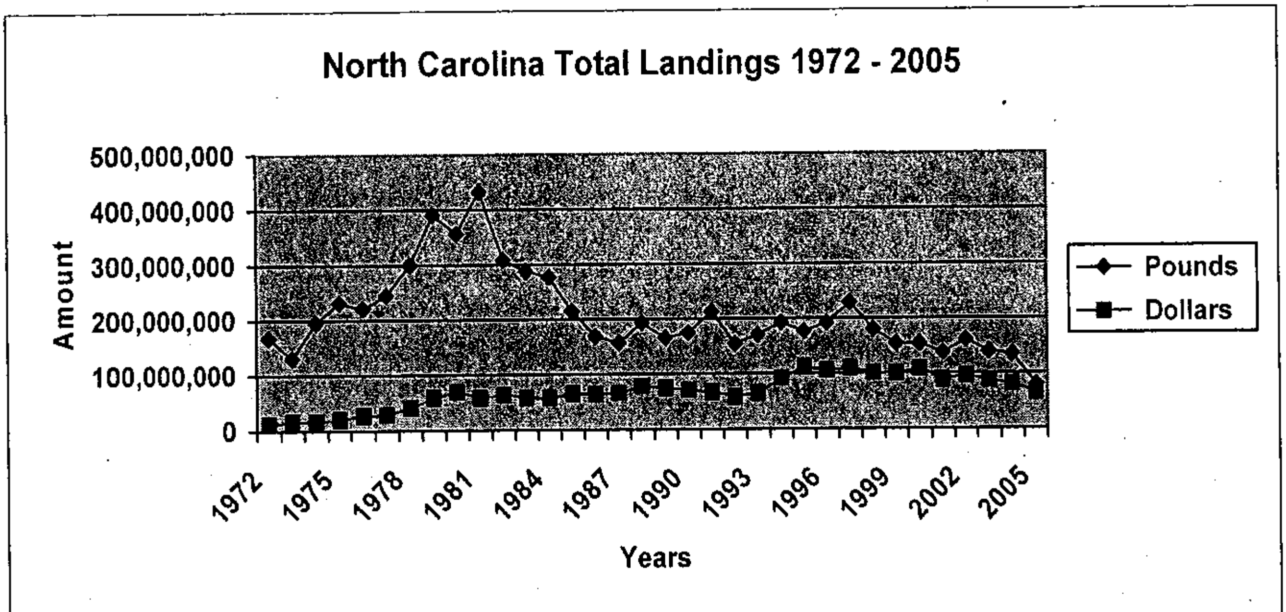


Figure 2. North Carolina Total Landings 1972-2005 (North Carolina Division of Marine Fisheries Commercial Statistics 2007)

Although fishermen and others involved in the fishing industry have a history of confronting numerous challenges concurrently, new obstacles seem to be entering into the playing field. In the days before ice and other means of refrigerating seafood were available, fresh seafood was for the most part available only to local consumers while others had to consume theirs in dried, smoked or pickled form. The consumption radius was only as far as fresh seafood could travel without spoiling and so to have access to fresh seafood the public came to the coast. When technologies became available for longer-term storage, longer travel distances were possible, enabling seafood that was chilled or frozen to travel to more distant markets and be stored longer, changing the nature of who eats seafood and the seafood available to eat.

But because of these technologies local commercial fishermen face foreign competition with foreign products, which are now predominantly farm raised increasingly. Fish farming, again on a global scale, now serves as a means to supply the public's growing interest in consuming seafood. Shrimp are mass produced in shrimp ponds in Asia (Thailand, China, Indonesia, and India) or Latin America (Honduras, Mexico, Venezuela and Ecuador) and easily find their way into the US market. In fact 32% of the shrimp used in the United States is imported (NOAA 2006). The USA was the number one market for Chinese shrimp exports in 2006; China exported 51,153 metric tons of shrimp and shrimp products to the US worth $281 million (Globefish 2007). In addition there are three million Vietnamese participate in the shrimp industry in Vietnam compared to roughly 13,000 U.S. Gulf Coast and southern Atlantic shrimpers (Fritsch 2004:1). Their methods have led to a surge in world shrimp supply, and they now account for nearly 90% of the U.S. market. The growing supply of imported shrimp has led to a decline total value of shrimp landings (shrimp landed with their heads on) (See figure 2).

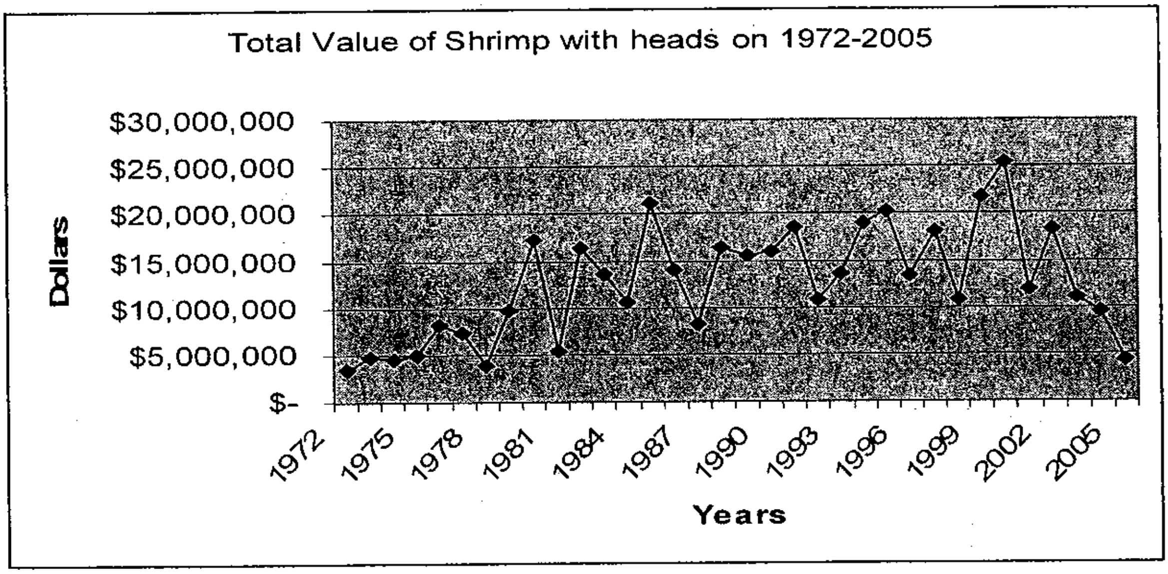


Figure 2: Total value of shrimp landings (shrimp with heads still on) 1972-2005 (North Carolina Division of Marine Fisheries Commercial Statistics 2007)

Globalization is displacing wild-caught shrimp from coastal shores in the United States. The growing supply of imported shrimp has led to a dramatic decline in shrimp prices -- in the U.S., for instance, wholesale prices fell roughly 40% between 1997 and 2002. (Fritsch 2004:2). As recently as 2002, shrimp prices began a steady decline (Figure 3). In some areas prices dropped by as much as 50% (Anderson 2006). Shrimp processing workers in the U.S. suffered job losses and shrimp fisherman lost billions in net profits. Imported farmed fish therefore is in direct competition with local, wild-caught seafood.

The numbers alone are enough to show the huge obstacle fishermen who catch shrimp face in North Carolina. Figure three illustrates a gradual decline in the price per pound of shrimp with heads still on for the past three decades indicate. However, we know that the cost of fuel, equipment and so forth has increased in the past ten years, making it difficult for the fishermen to cover their cost of harvesting wild-caught shrimp from local waters.

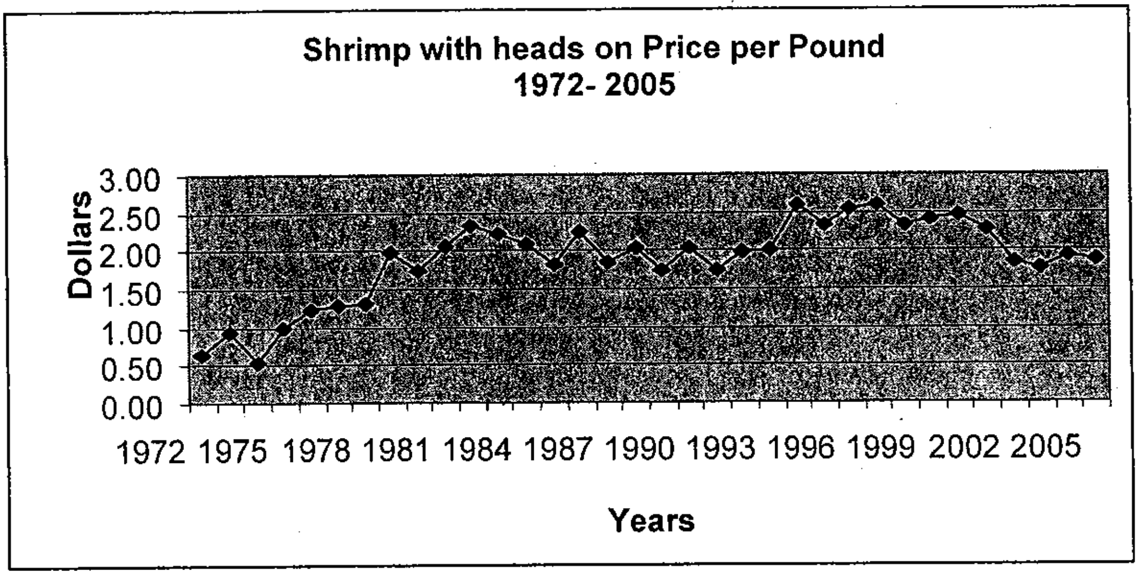


Figure 3. Shrimp with their heads on Price per Pound 1972-2005 (North Carolina Division of Marine Fisheries Commercial Statistics 2007)

Carteret County Commercial Fishing Industry

For a number of reasons this project was conducted in Carteret County, North Carolina. Carteret County was selected as the research site because of number of commercial fishermen in the county; it has the highest number of active fishermen of all of the coastal regions in North Carolina (Bianchi 2003). Carteret County is located in south eastern North Carolina (Figure 4). It has 81 miles of coastal area. The county population is approximately 65,000; however, the coastal villages are not densely populated.

The area in which the majority of commercial fishermen reside in Carteret County is known as "Down East;" a nickname for being located down east of the North River. Down East encompasses the communities of Atlantic, Cedar Island, Davis, Gloucester, Harkers Island, Lola, Marshallberg, Sea Level, Smyrna, Stacy, Straits and Williston. Many commercial fishermen who do not live Down East dock their boats in that area.

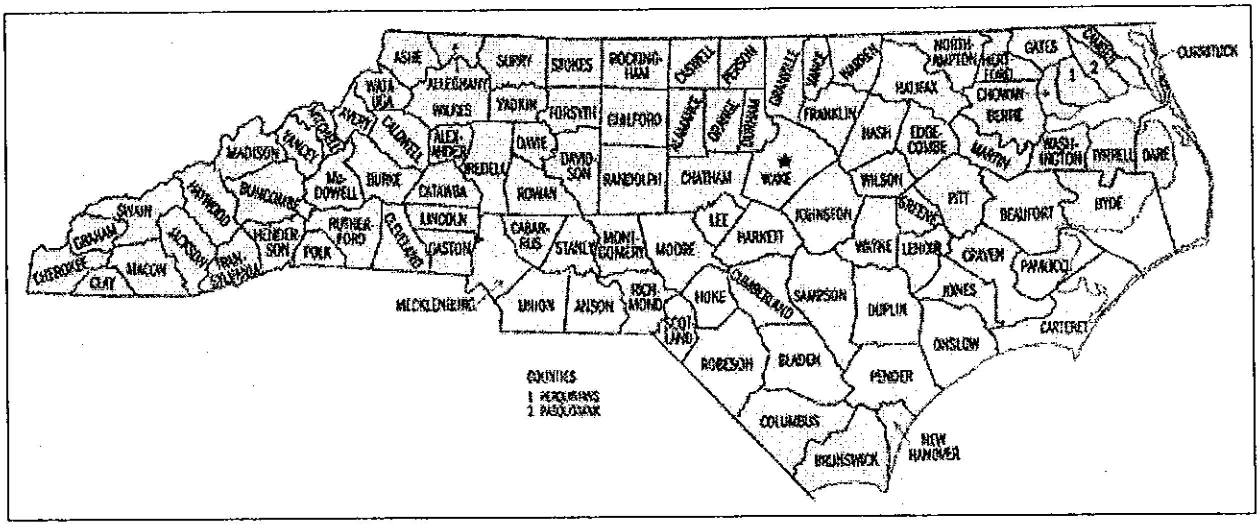


Figure 4. Map of Counties in North Carolina

The lands and waters in and around Carteret County have an interesting history, with the shift of production going from plantations, to sea trade, to the eventual creation of a local fishing industry. The rise of commercial fishing led to a culture in which families and communities depend on the sea for survival. Fishermen have been harvesting from the sea while local fish house dealers were the major distributors for the fish landed in the county.

In the past two decades a number of fish houses were located Down East. Commercial fishermen in North Carolina frequently took their sea harvest to a fish house where a fish dealer took on the responsibility of marketing the fresh product. They served as wholesale venues for the fishermen to come and sell their product. The dealer processed the seafood and took on the responsibility of selling it to local restaurants or exporting it out of the county to other regions. These fish house dealers had a wide network of contacts – they could phone and let merchants know the amount and type of fish arriving. Refrigerated trucks would line up and haul away tons of fresh seafood, caught only hours before. Traditional wholesale markets that receive seafood from Carteret County included Washington, DC, Baltimore, MD and Fulton's Market in NYC.

Fish houses also served as a place where local residents, workers, and fisherman gathered to talk and visit with each other. During the forties and the fifties the fish houses were usually family owned and operated with the fishermen. The ownership of the fish house was usually kept in the family, as it was passed on from one generation to another. The same can be said for the fishermen and their boats. Most fishermen and their extended families worked together to support each other. These ties formed strong bonds creating friendly, family oriented communities for generations.

The fish house served as a focal point for many of these fishing communities and the dealer played an important role in assisting the fishermen. The wholesale fish houses were located along the sounds, enabling the fish laden boats to dock and unload their harvest. Fish houses also have ice machines, coolers, freezers etc. making it easy for the fishermen to leave with ice to chill their catch. Some fish houses also made fuel available. The many services, which often included having mechanics, welders, and painters on hand, made it attractive to have good relationships between the dealer and fishermen. The fishermen wanted a fair price for their catch and the dealers wanted a good catch for their services. Over the years there may have been more than twenty fish houses operating from Beaufort to Cedar Isle. At present there are five in operation with two of them considering closing their doors in the near future.

In Carteret County the number of commercial (active) fishermen is changing. For the most part fishing is on the decline for the county. Over 1000 fishermen have stopped working as active commercial fishermen since 1998 (See Figure 5).

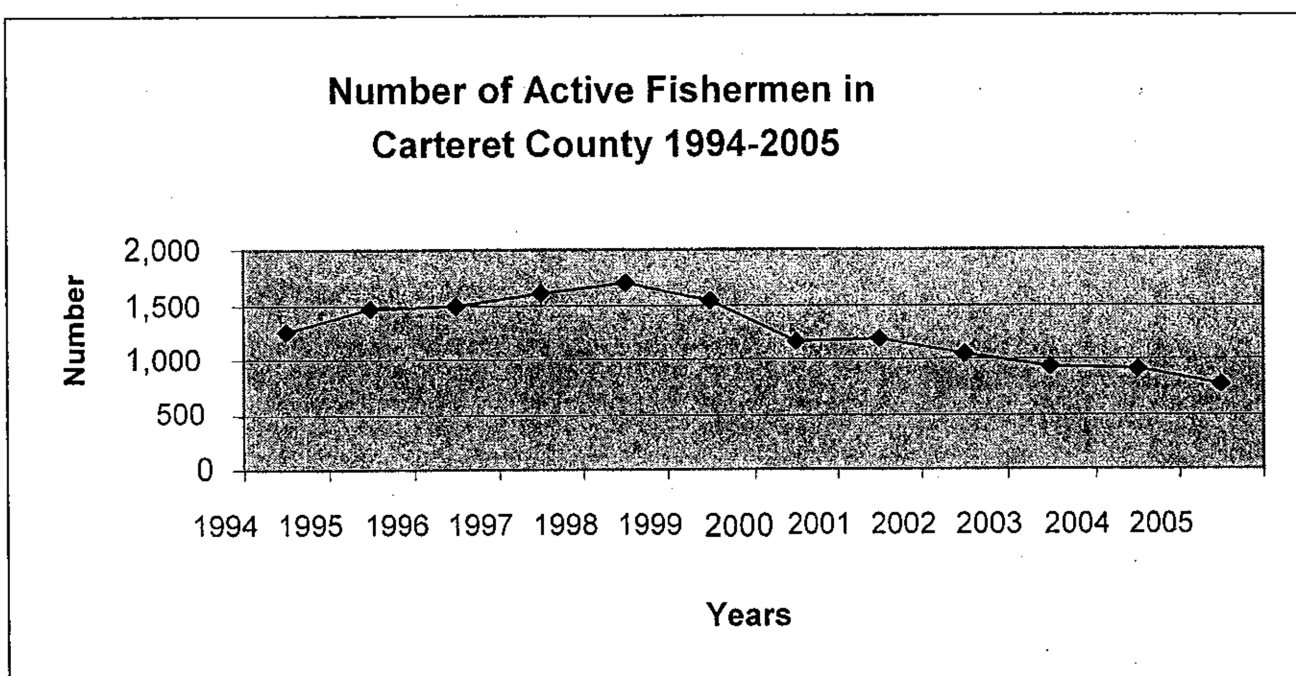


Figure 5. Total Number of Active Fishermen in Carteret County (NMFS 2007)

Without an improved outlook for the local industry, retention of the existing infrastructure is not likely. The continued loss of fishermen and fish houses in addition to others who support the industry such as net menders, boat builders and painters will most likely be the continued pattern for fishing communities. Fishermen and fish house dealers who for a century or more have worked together to make seafood available are on their way to becoming an historical artifact, unless an intervention is put in place to provide support for the fishing industry.

The Need for New Marketing Strategies

It is clear from this brief account of the fishing industry that North Carolina's commercial fishermen and fish house dealers have to develop an alternative marketing strategy to sustain their fisheries and to stay in business. Past marketing strategies have relied heavily on the fish house dealers' and their connections with the wholesale and retail markets often located in bigger cities. Although these dealers will continue to play a role in the fishing industry, they too must modify their marketing strategies to work more closely and in alignment with the small-scale commercial fishermen. However, given that there remain only 4-5 active fish houses, where will the fishermen land their catch with continued loss of these cooling-distribution centers?

One of the new strategies being considered for this project is borrowed directly from the US farming industry that caters to small-scale farmers. United States farmers have been facing similar trends with cheaper imported products, high fuel and labor costs interfering with their traditional way of producing and distributing fruits and vegetables. Farmers are also facing a significant decline in numbers. Less than two percent of the population is involved in some aspect of farming in the United States and frequently wives work off-farm to help meet household and farm expenses.

For nearly two decades, however, small farmers have turned to some creative marketing strategies to bring them closer to local consumers (Andreatta and Wickliffe 2002). Direct marketing, that is, marketing directly to the public and bypassing middlemen, has helped to sustain farmers. Examples of direct marketing strategies include roadside stands, U-picks, farmers markets and Community Supported Agriculture (CSA) arrangements. Farmers have had two decades to develop their marketing skills and have gained a loyal clientele. For example, today there are over 4,385 farmers markets in the United States, an increase of 18% from 2004 (USDA Agricultural Marketing Services 2006). Direct marketing works for small-scale farmers because of their smaller economies of scale. Generally what small farmers have to sell at any one time is on a much smaller scale than larger scale monocrop producers. For example, small-scale farmers may produce on hundred-foot rows over a couple of acres, some times growing as many as 20 or 30 different items on only a few acres. Larger-scale farmers can produce acres of a single commodity making it challenging to sell an available harvest at a farmers market. Large-scale farmers therefore need wholesale markets to receive the volume of their fresh harvest.

A number of small family farms in central North Carolina have either stayed in business or increased their net profits by employing direct-marketing practices such as selling directly to restaurant chef, selling at farmers markets, or establishing CSA arrangements. Diversifying their marketing plans complements the diversity that is found in the field.

Basically the CSA arrangement functions as a buy-in club where consumers or "shareholders" pay the farmer for a share of the harvest in advance, which in turn serves to cover seasonal start-up production costs. The farmer, in return, provides the shareholders with a share of the harvest during the growing season. The arrangement provides financial support to the farmer (and decreases his time "selling") and shareholders receive local, fresh foods that are harvested in season (Andreatta 2000, 2005; Goland 2002; Henderson and van En 1998). These farmers have taken attributes that are detriments to the commodity marketplace (i.e., seasonality, availability, locality and identity of harvester) and positioned them as desirable attributes for local consumers. "Buying locally" and "knowing one's farmer" have been key slogans in developing and maintaining this form of niche marketing for farmers and their supporters.

This fisheries marketing project first looks to examine if direct marketing has the possibility of assisting commercial fishermen and fish house dealers. As in the farming experience, direct marketing within a local seafood industry will require a lot of community and consumer support. It is suggested that the North Carolina fishermen and fish house dealers develop a consumer focused approach to selling their seafood to remain viable in the fishing and seafood industry.

Direct-marketing methods are explored for local seafood sales and aimed at niche markets. Direct markets such as a CSA arrangement modified into a Community Supported Fisheries arrangement (CSF) will connect fishermen directly to their customers, enabling them to meet the clientele's expectations for quality, local seafood. However, a critical aspect of direct marketing is to understand the needs and expectations of a target consumer group in the case of fisheries, local residents and visitors. Therefore, learning more about residents' and tourists' seafood preferences and buying habits will assist the county's fishing industry tailor their business practices. With further knowledge regarding the typical seafood consumer, there is greater potential to promote the local fishing industry to the public.

Data Analysis and Results

Data collected from participants in the local commercial fishery industry were analyzed to establish interest for an alternative marketing strategy for small-scale commercial fishermen and how it might be developed for Carteret County. We were interested in obtaining information from residents as well as visitors to gain an understanding of seafood consumption behavior for the area.

Consumers – We interviewed 295 consumers over a six-month period sampling from the aquarium, two local museums and an annual seafood festival. General demographic information gathered from those we interviewed indicates that the average household size was three, ranging from one to eight household members. The average age of the people interviewed was 51 years; we did not interview anyone under 18 years. Household members ranged from a child less than one year old to 85 years of age. The average distance traveled was 241 miles, ranging from a few blocks from where the interviews were conducted to 3000 miles away. Some visitors traveled further coming from England and Australia and were not incorporated in the distance analysis.

Of those interviewed 27% reside in Carteret County year round (See Table 1). Many of the visitors came for only a day visit traveling from Craven County (7.5%) or Onslow County (6.2%). Others coming from further distances were likely to spend a longer time in the area, anywhere from a long weekend to a two week's stay.

Table 1. Length of Stay for Consumers

	Frequency	Percent
Lives here	79	27
1 week	75	25
a day	59	20
A long weekend	35	12
1 month	17	6
2 weeks	16	5
Half a year	8	3
1 night	6	2
Total	295	100.0

For those who are residents of the area (Carteret, Onslow and Craven Counties) the majority owned their own home (57%) be it a house, condo or trailer. Others who were visiting for a short term stay once or twice a year, rented condos, used timeshares, stayed at a family's or friend's home or had rooms in hotels. In two cases the respondents were living on their boat and another had a camper. The majority of residents and visitors (86%) had a kitchen where they stayed. This is an important question to have asked. If people are interested in cooking fresh local seafood, having facilities to cook where they were staying is important data to build into a marketing plan.

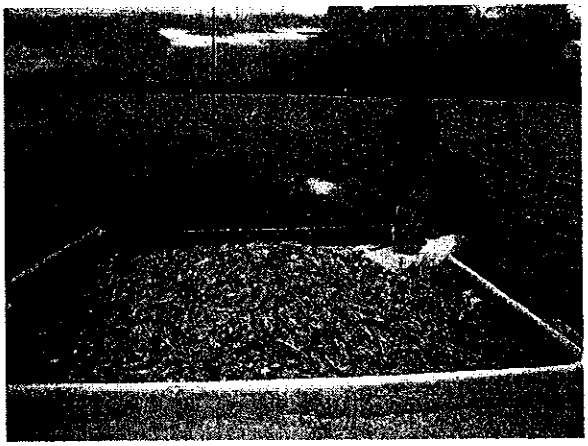
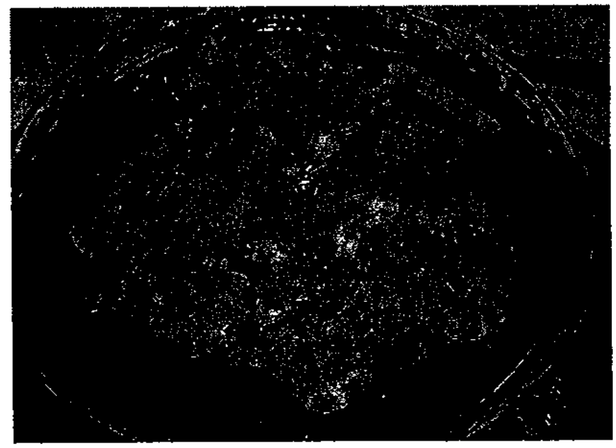
It is interesting to point out that 90% of these consumers interviewed were not making their first visit to coastal Carteret County. The average number of years for being in the area was 20 years, ranging from first timers to residing in the area 80 years. In addition, 65% of those interviewed fish, thus they too have a personal connection to the sea. Therefore, it would seem that understanding the reasons visitors and residents are frequenting and living in the area could be further explored and incorporated into a marketing plan. Those who are familiar with Carteret County, its heritage and local attractions, are also coming to eat seafood, which we will discuss below.

People were asked the question "how would they defined local seafood?" We obtained 24 different responses of which some were more easily grouped together than others. For example, 30% defined local as "caught in the waters of Carteret County and landed by local fishermen. For others that addressed the category of "place," local was thought of in broader terms. Local for these respondents included all fish landed in North Carolina while others were more specific to say "seafood that traveled less than forty-five minutes" or "anything on the side of the road." Others considered local to be where they purchased their seafood, such as at local retail fish markets or at local restaurants they would go out for a meal. Those who did not identify where the fish was landed or purchased chose to describe the quality of the seafood they consumed while in the area. To these respondents local seafood was 'yummy', 'delicious', 'fried', 'fair', 'good,' 'wonderful', or by the fish type – looking for 'local varieties' (i.e., croaker or spot). Some respondents commented on how it "was harder to catch [the fish]" or they want the seafood they consumed not to be farm raised. We also interviewed four people early in their visit to the area who had not eaten out yet and asked us for recommendations for where they could obtain local seafood.

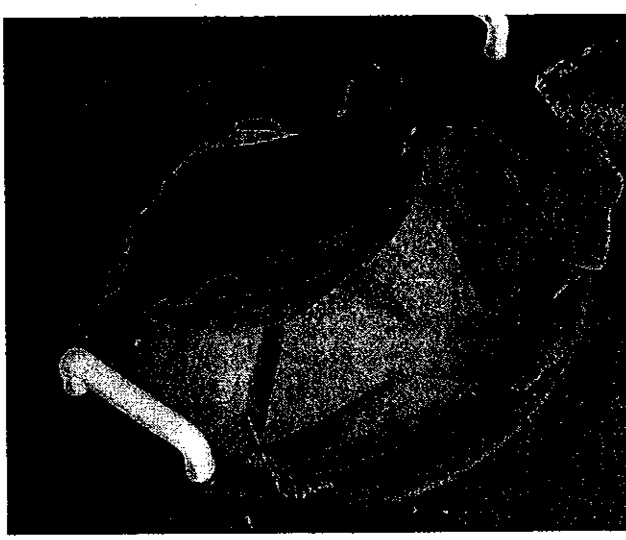
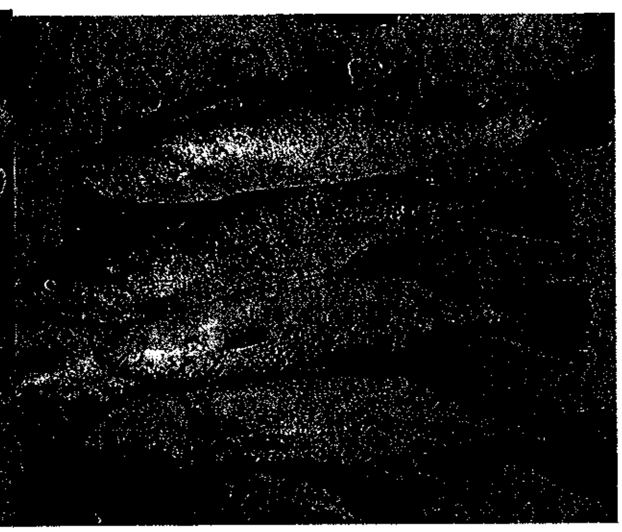
We asked consumers to identify their five favorite seafood items from a list that contained 14 items including fin fish, shell fish and bivalves. (See the consumer questionnaire Appendix 2). Consumers listed a total of 52 different varieties of seafood they enjoyed eating. Shrimp were clearly the favorite, significantly above the others mentioned (See Table 2).

Table 2. Frequency of Top Seafood Consumers like to eat

	Frequency
Shrimp	252
Flounder	162
Scallops	134
Oysters	113
Crab-hardshell	106
Tuna	81
Grouper	66
Crab-softshell	66
Clam	60
Snapper	35
Bluefish	29
Trout	29

A few individuals knew more local varieties and mentioned croaker, mullet, spot and trigger fish as one of their favorite seafood items to eat. There were others who listed halibut and salmon as their favorite fish and they too noted they these were not local species. The list does reflect individuals who knew their deep sea fish and listed black sea bass, mackerel, mahi-mahi, pompano, red drum, swordfish, or wahoo as some of their favorite seafood items to eat. However, for each of these only a few of individuals mentioned any one of these fish. Still others mention catfish and tilapia not knowing these might be farm raised and not wild-caught or local.

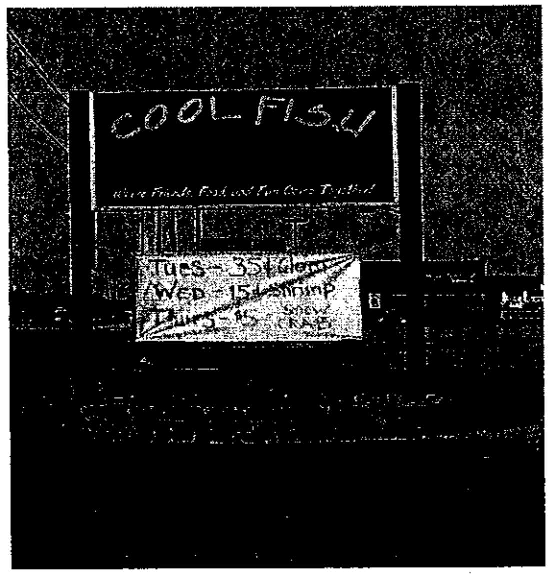
We were interested in where consumers said they went to obtain seafood when given the option of cooking it themselves, eating out or both. Overwhelmingly, they reported they enjoyed eating it and cooking it themselves (71%), while nearly 20 percent said they only eat seafood out, and 9% stated they only cook it themselves. Thus, those who cook seafood at least part of the time (80%) need to purchase their seafood unless they catch it themselves for home consumption.

Given that not everyone was local to the area or permanent residents we were interested in learning how frequently families consumed seafood while they were in the area. We know that people visiting the area who might be vacationing, also come to the area to eat at a restaurant. Whether they are in the area for part of a weekend or for a much longer period of time, table three reports on the number of times consumers will eat or have eaten seafood during their stay. Some consumers (27%) reported they would eat seafood only one time during their stay (Table 3). However, when combining frequencies of those who said they would eat seafood one time, two times, three times, four times and five times during their stay we learn at least 92% will eat seafood at least once during their stay.

Table 3. Number of times eat seafood during stay

	Frequency	Percent
One time	77	27
Two times	76	26
Three times	57	20
Four times	34	12
Five times	26	9
Two times a month	9	3
Not at all	6	2
Every time we come	3	1
Total	288	100
Missing values	7	

Forty-one percent of those interviewed eat seafood in a restaurant at least once during their stay. This was more likely to be the case when there were two people residing or traveling together. Among those visitors arriving and staying only for the day 51% ate at least one seafood meal during their visit. For those visitors staying a week 33% ate one seafood meal out during their stay, while 30% ate at least two seafood meals out. The visitors who are staying for a long weekend stated that they eat at least one seafood meal out during their stay, implying of the possible two lunches and two dinners available during the long weekend, one meal out might be for seafood. An interesting find as well was that 40% of the people who reside in the area eat a seafood meal at a restaurant at least once a week.



Making local catch available for Consumers

When consumers were not eating their seafood out at a restaurant, but cooking it wherever they were staying, we were interested in where they purchased their seafood. Among the consumers interviewed 32% purchase their seafood from a local seafood market (See Table 4). A future study could elicit what the public purchases, in what quantities, the seafood place they frequent and if that place sells local seafood. It would be interesting to know what local retail or wholesale seafood places support local fishermen. Purchasing directly from fishermen and at roadside stands are the second most popular places consumers purchase their seafood (16%).

Table 4. Locations Where Consumers Purchases Seafood

	Percent
Seafood Market	32
Roadside stand	16
Fisherman	16
Grocery store	15
None	11
Fish for it	9
Fish house dealer	1

At any of the above locations, we learned nearly 20% of the respondents were spending between $16.00 and $20.00 each time they are purchasing fresh seafood. However, 26% of the consumers reported they buy in larger quantities, spending any where from $30.00 to over $100 per visit at a roadside stand. In fact, 45% stated they buy extra to freeze for use at later time.

We asked three follow-up questions related to where consumers purchase their seafood (when not at a restaurant). First, we asked them "is their seafood is local?" Consumers claimed to know their seafood. Specifically, 71% stated the seafood they purchased in the area was caught by a local fisherman, 25% claimed they didn't know if it was or not and 4% knew that it wasn't local, especially if they were selecting salmon or something else that they knew were not found in local waters.

Second, we asked "how did they know it is local?" Consumers reported all they do is ask the merchant if it is or not and they tell them (25%). To that same question 18% of the respondents replied similarly saying "I just take the word of the merchant selling it" or "they say [the merchant] it is." There were 17% who say "they knew the fisherman" from whom they purchased their seafood. Other comments indicate a different level of "knowing." For example, some people responded to the question "how do you know the seafood is local?" by stating "we eat only at local restaurants" or "because we are at the beach." In each case, these consumers assumed since they were at the coast of course their seafood would be local. There were others who said they "don't know" as well as 'don't care" if it is or isn't local seafood, while others recognize that only a small percent is local in the area and you need to know where to go to get it.

Lastly, we asked if having local seafood was important to the consumers. We learned that for 84% of those interviewed it was important that the seafood they were eating in the area be local. Fewer commented they did not want their seafood to be farm raised (2%), they wanted to know where it came from (2%), wanted to eat local seafood, for that was one of the attractions for being on the coast (1%). Two individuals were quite emphatic about making sure that they ate local seafood, for they had life-threatening food allergies and were concerned that imported seafood did not carry the same standards and might cause them to have an allergic reaction. From their personalized accounts, we learned they already experienced some unpleasant seafood experiences and were not interested in living through any more.

We asked consumers which restaurants they went out to eat for a seafood meal. Consumers provided the names of 73 restaurants, with no real favorite that stood out among them. The top ten places most frequently mentioned are listed below. Out of 295 respondents 22 consumers listed Sanitary as one of the places they go out for a meal to eat seafood (See Table 5).

Table 5. Restaurants Consumers Most Frequently Mentioned

Restaurant Mentioned	Frequency
Sanitary	22
Clawsons	11
Net House	10
Spouters Inn	10
Beaufort Grocery	10
Crab Shack	10
Bitstro by the Sea	8
Jordans	8
Water Marker	8
Red Lobster	6
Katherine's	6
Channel Marker	6
Frost	6

Consumers were asked if they were at a restaurant if they had a choice between a $21.00 local seafood entrée and a $15.00 imported seafood entrée which would they select. We learned that 83% responded they would prefer to pay for the $21.00 local entrée, while 8.7 % stated they would pay for the less expensive imported fish, and nearly the same percentage, 8.3% said it really depends on the fish, how it was prepared and what they were in the mood to eat for before they committed to paying more for a local seafood entrée.

Towards the end of the survey we asked consumers "if they were interested in eating more local seafood" (yes or no)? If yes, would it be for taste, personal health, supporting the local environment, support the local economy or something else? We had them rank (1-4 with one being their first choice) their reasons for eating more local seafood. From this sequence of questions we learned that 89% were interested in eating more local seafood. The main reason consumers wanted to eat more local seafood was for "taste" (31%), followed by supporting a local economy(30%), personal health and supporting the local environment tied at 15%. The remaining reasons mentioned for wanting to eat more local were all less than 1%.

We asked consumers whether they would still come to the area if there were no local fishermen and 76% said they would while 6% said they would not. However, 4% noted if there were no local fishermen it would definitely change the area and 2% were unsure if they would come back. Again, we followed up with a question asking what the public could do to support local fishermen and 66% said "buy their seafood." Others stated "eating at places that support local fishermen (8.0%). The remaining responses such as "talk to politicians", "talk to friends about it", "keep the waters clean" were less than five percent.

We asked a question on *Carteret Catch*, specifically if people knew what it was or had ever seen the logo and knew what it was all about? The majority of people (80%) we spoke to did not know anything about *Carteret Catch*. This was important information to learn because the logo had been launched in 2005 and it had been used at a previous seafood festival. Yet few knew about it. Therefore, to better market the branding program, increased efforts are needed to make sure consumers and others know about its existence and how it will work into supporting local seafood industry.

Consumers were asked if they were interested in a seafood delivery program. We described it as an arrangement where fresh local seafood is made available and/or delivered to the consumer. Among those we spoke with 23% responded that they were interested in a seafood delivery program. Although it is a low percentage, it is a good one with which to begin, for it suggests that 76 persons were interesting in participating in something of its kind. In subsequent years there could be greater demand for such programs based upon a successful beginning. Thus, we are comfortable with this percentage and believe it is a good number with which to be planning for alternative niche marketing strategies.

Fishermen in Carteret County We gathered information from fishermen who we met fishing during the summer of 2006. Although we spoke with a limited number of fishermen, we sampled from along the coastline of Carteret County, interviewing fishermen who were experienced in harvesting multiple species. Most of the fishermen we interviewed had experience in harvesting clams, crabs, fin fish, and shrimp.[6] Through the interview process, we covered fish harvested, gear used, number of boats and boat size. The average age of fishermen from our sample was 45, ranging from 22 to 60. Nearly 100% of the fishermen were introduced

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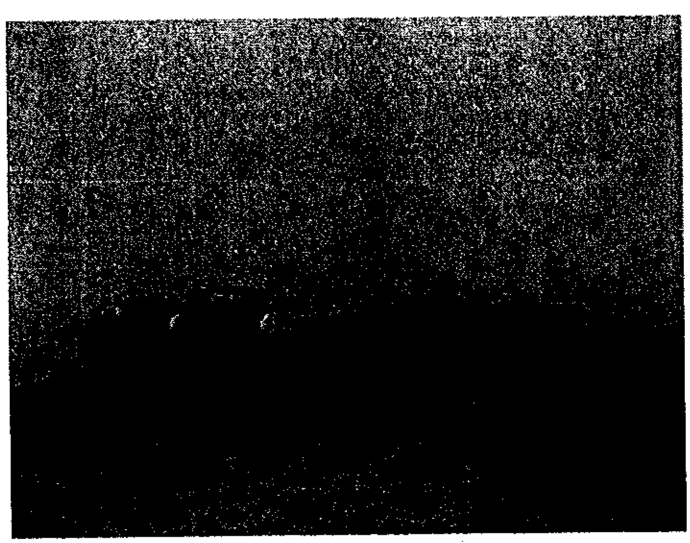
[6]We referred to shellfish, bivalves and fin-fish collectively as fish, fully realizing they are different physically, and occupy different habitats.

to fishing as young children. In fact, most had their fishing license by the time they were 10-12 years of age. Consequently they have been fishing nearly all their lives, averaging 35 years in the fishing industry. Most of them were descendants in some way of the original settlers and fishermen of the area from 300 years earlier – and they see that heritage as important.
Many of the fishermen stated, "fishing and the sea is in their blood"; it is how they want to spend their time. One fisherman shared a story of when he and his wife had taken a little vacation and decided to go to the mountains for a week. They didn't last the week. They were back home and he was back on the water by the fourth day

Fishing for multiple species keeps fishermen in the water year round. Even during the winter months they are able to fish or hunt ducks. The flexibility of their boat riggings with many types of gear provides them with flexibility in what they are able to catch (hunt), keeping the fishermen providing for their families year round.

We happened to be conducting our interviews with the fishermen when shrimp were in season. Fishermen, however, were told on several occasions not to bring shrimp to the fish houses because dealers could not sell them. With fewer fishermen shrimping less shrimp was being landed and not worth contacting the "breader" to come to the area to purchase the shrimp at 95 cents per pound for 31-40 count of shrimp. With less volume of seafood available even the fish house dealers were scaling back on management costs, such as turning off freezers and operating smaller cooling units.



A rather empty cooler in a fish house

Less product to sell, lower prices, high fuel costs and increased availability of imported seafood are collectively creating a Catch 22 for fishermen and fish house dealers. Fishermen commented that the first hundred pounds went to the boat to pay for the fuel used to operate their boat. They had become more calculating in how they fished, taking into account how long they were out at sea, how much they were bringing in and of what type of fish they brought in for sale. They were calculating quantity and variety needed to cover the cost of the fuel used. When nights were slow we often heard them say they "hoped the next one would be better." Sometimes staying out at sea does not pay because of the cost of fuel and low price per pound of what might be brought in. Any business person recognizes one can run a business for only so long on savings or credit.

The rising cost of fishing (fuel and maintenance) with the lower price paid per pound for fresh local seafood in favor of lower-priced imported processed seafood is putting fishermen out of business. It is not that they cannot fish or that there are no fish; rather from the fishermen's and fish dealers' perspectives few distributors and restaurants are willing to pay for the local product. We find this hard to imagine when 31-40 count fresh shrimp were selling for $1.50 per pound by August; it had been as high as $3.00 in July.

Fishermen Direct Marketing Fresh Local Shrimp Available

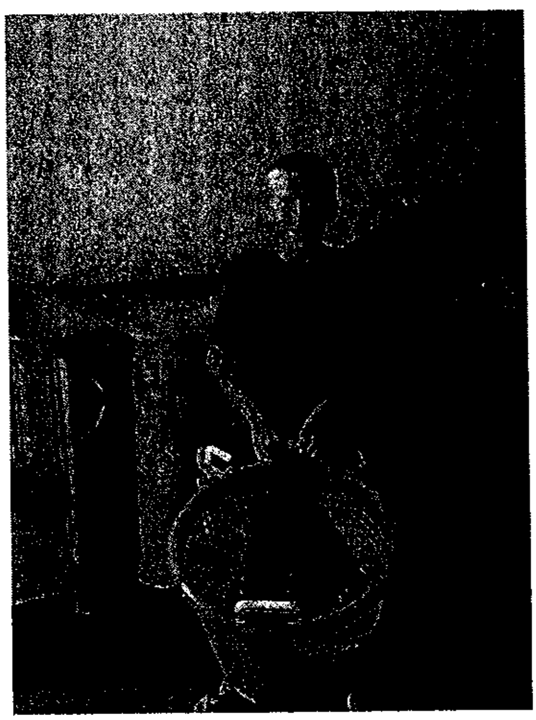
We have learned from some restaurants "they can't always get the fresh local seafood even if they pay in cash and not on credit." Some simply will not buy local shrimp because they say it is too expensive to process. "It costs too much to dehead, shell, devein" they say. We mention shrimp here because it was the most sought after by consumers at local restaurants. However, what consumers do not realize is that most of the shrimp available in local restaurants is farm-raised imported shrimp.[7]

After each interview we asked if the fisherman would recommend another person for us to speak with about the fishing industry. We also asked how many people in their area were fishing full-time. In most cases we would get a name or two of someone they might fish with to help us continue with our interviews. However, few fishermen could think of five people that were fishing full-time. The fishermen recognized that their numbers are dwindling, and not necessarily because of poor health or an aging population, but rather the high cost of fuel to operate their boats and the low cost paid per pound for the local catch and the competing imports. What become very clear in our interviews is that fewer fishermen were "making it" as fishermen. All the fishermen we interviewed knew fishermen who had taken a land job and were wondering how long it would be before they would be forced into taking one as well. However, there were some very creative fishermen trying to figure out ways in which they could modify their fishing and marketing practices. In fact, a number of the fishermen we interviewed signed up for a membership to *Carteret Catch.*

CarteretCatch
Select NC Seafood from the Fishermen of Carteret County

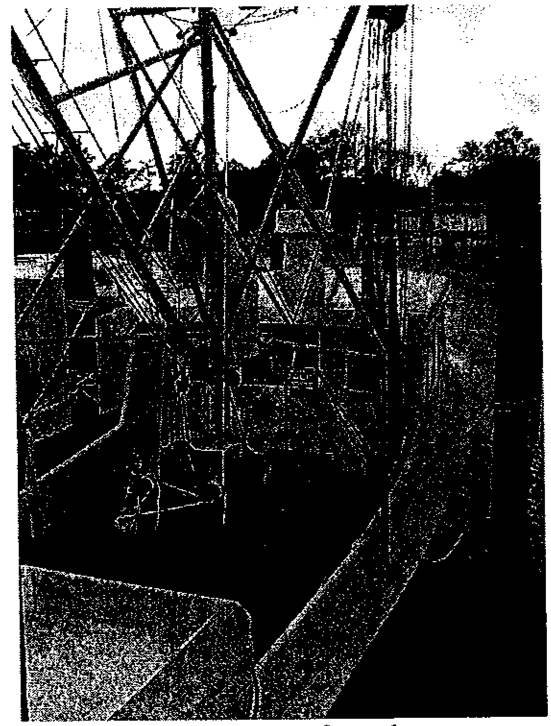
[7] At the annual Seafood Festival held in October, while the green tail shrimp were running, only 4 booths used the Carteret Catch Flag indicating a local product sold at that booth. The remaining 100 booths selling seafood did not identify the country of origin of their product. However, the previous year 14 booths flew the flag. This festival was originally designed to honor local fishermen and promote local seafood.

When the fishermen were asked the question "do they see themselves fishing in five years?" we heard varying answers. We learned from fishermen of all ages that being a full-time fisherman and raising a family is a financial struggle, forcing many of them in the last couple of years to leave the industry. Older fishermen, sixty and over, who have been fishing all of their lives are less encouraging of their own children and grandchild to get into the industry. In fact, one fisherman stated "I got a grandson, he's crazy over it. I hope he don't follow it." When we asked the fishermen if they see themselves fishing five years from now we got a mixed response. Typically we heard "I don't think it'll be here." "It [the fishing industry] won't be, they [fishermen] can't raise a family on it." However, we see time spent introducing young people to fishing. One young man told us "well, I was encouraged not to do it but at the same time I was taken and shown how to do it." In general not many saw themselves fishing full-time if they were depending on it as a livelihood.



We observed a number of boats in the community harbors for sale. All of the fishermen who had children or grandchildren were discouraging them from looking at fishing as a way to raise a family or make a living.

Boat for sale



Boat for sale

Fishermen see the industry changing and becoming something to do part-time while working at another place of employment such as on a dredge, a ferry or a land job. All the fishermen lamented the fact that the industry was changing right before their eyes. It was harder to sell fresh wild-caught seafood locally and get a "good" price per pound to make it worth their while to take their boats out to sea, invest in poles and nets.[8] Curiously it is this very product, fresh wild-caught seafood that commands high prices at inland seafood venues, where their fish may have been previously frozen (See Appendix 3 for table on Seafood prices).

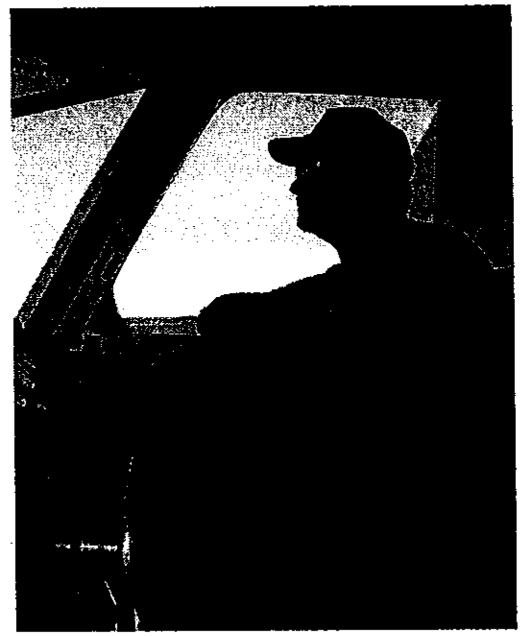
Where the fishermen we interviewed remained hopeful is that they thought they could be the survivors in the industry. Should the industry turn around for the better they would be there to harvest and sell their fish. Others were getting out because they could no longer afford to support their families and maintain their boats, leaving behind a smaller group of fishermen that might be the ones to supply the local communities with wild-caught seafood.

[8] Last year the cost of stakes and nets to set up for to pound net for flounder was several thousand dollars. With the increase in hurricanes fishermen were saying it was not worth the expense to set their nets for the fall, especially with no guarantee they would catch anything to make back their investment. .

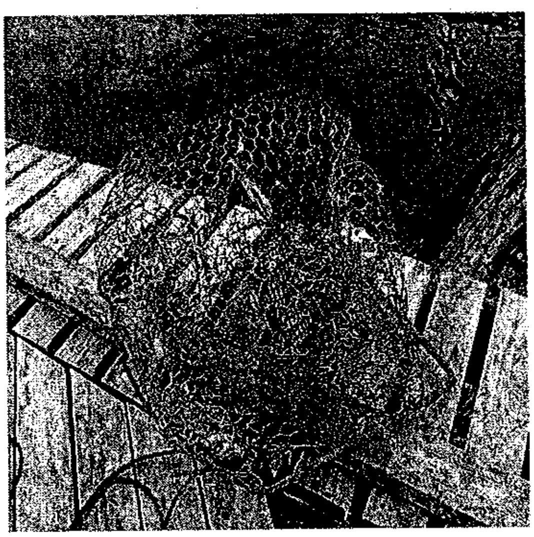
An outsider might see that those fishermen are "hanging in there" by becoming more efficient with their cost of operation. Downsizing in boat size or in number of boats to maintain is making it possible for some commercial fishermen to keep fishing for a living. Small boats might have a better chance of making it in the industry, for they use less fuel. Most of the fishermen we spoke to had boats no larger than 42 feet and skiffs as small as 19 feet. Also depending on the fishery no crew might be needed for the harvest, enabling them to keep more of the money earned within the family.

Fishing Boats at the Harkers Island Harbor (2006)

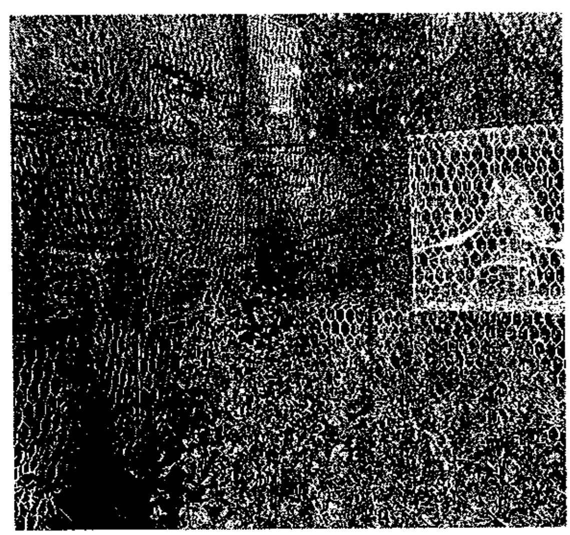
Commercial fishermen are modifying seasonally what is being caught. They know what they can fish, what they like to fish, what they are good at landing. For example, one fishermen told with us he has his boats rigged up for multiple species. He can go out for sea bass, but he can have his crab pots on deck and a gill net on a reel. If the weather is too bad for being out at sea he can come into the Sound and gill net. This makes him more efficient with his time and fuel consumption.



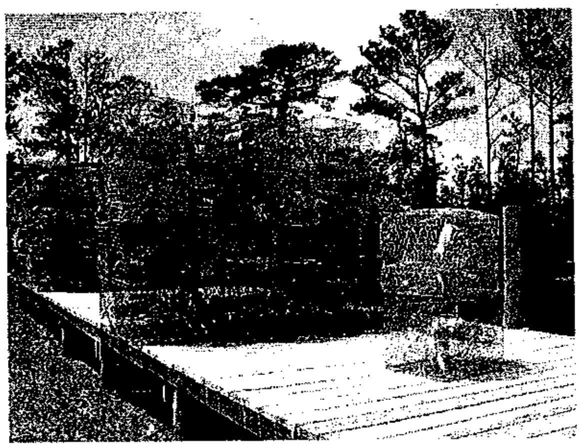
As fishermen have said time and again, "the days of scrapping are over" referring to when the fishermen would wander about looking for fish. Instead, fishermen are calculating fuel costs, time, type of fish caught and amount, and gear use. Some fishermen struggle with shark attacks and others with turtles squashing their crab pots. Fishermen respond with continued maintenance of their nets while others have left their pots on land, discontinuing their quest for crab.



Crush crab pot

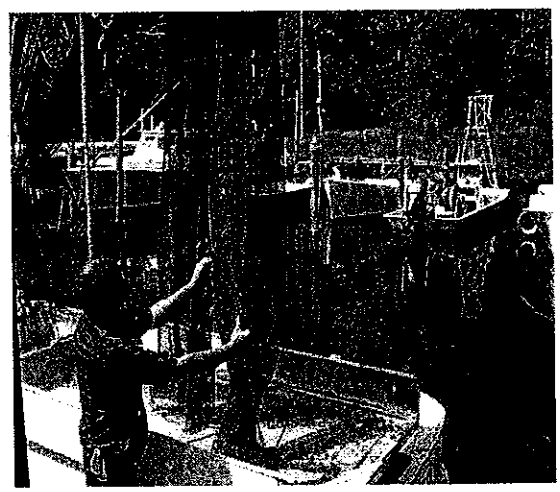


Overgrown crab pots



Crab Pots Stacked on Harbor Dock

Protection from Sharks



Nets bitten from Shark Attack

Fishermen express an understanding that their resources – the water and the fish. They comment how it does not really belong to them nor to anyone. For example, one fisherman expressed admiration for a large red drum he had seen stating that the red drum had lived nearly 50 years and escaped many nets to become so large. He said he did not want to kill such a fish and did not. Another fishermen said that he was taught as a child that the founding fathers held the water in trust for the public and that no one owns any of it. This is a concept he said new waterfront land owners do not seem to share with the long time residents.

Hope for better next time was a pat answer to the question – what do you do if the income from the trip doesn't cover the cost. Fishermen have learned that one trip may not do well but the next one probably will. But because of the increased costs and decreased sales and, in some cases, decreased catches-- the next time and even the time after that has not offered better.

Recommendations

The goal for this fisheries marketing project is to increase the demand for local seafood and we have a number of recommendations to assist in developing alternative market strategies for the fishing industry in Carteret County. A word of caution, however: whatever changes or modifications are made in a marketing strategy, we recommend that they are small and do not keep the fishermen and their family, the fish house dealer or a restaurant owner awake at night. We also encourage all participants to keep records so that they can monitor the effect a particular change might have made in their business plan. For example, we obviously need to know if a higher income was generated from the modification, but if there was there greater time investment involved in the marketing strategy we must ask whether that time involvement was worthwhile. Keeping records will help inform those involved know if their modification(s) made a difference. In addition, knowledge of successful modifications may help others in the community or help neighboring coastal areas that are facing similar challenges.

Recommendation 1. - The first recommendation is for using a social marketing approach to develop an alternative marketing plan for the fishing industry. Social marketing incorporates a behavioral change on the part of the participants in the marketing strategy.[9] The behavior change we are seeking is to have consumers purchase local seafood when it is in season and purchase it on a regular basis, especially when in coastal areas. However, to be able to purchase seasonal local seafood, it must be available at local restaurants and retail outlets where seafood is sold. A key and subtle point underlying this behavior change is that consumers do not often know what seafood is local and the seasonality of seafood to determine when it could/should be local. In addition, the chances are that what is available for them to purchase at a number of coastal venues is not local seafood. In the case of shrimp, crabs, scallops and a number of other fish varieties a careful eye is needed, for many varieties are farmed and imported from Asia and South America, although some might be farmed in the United States; farmed fish and shellfish are not "wild-caught." This leads us to a second recommendation.

[9] See Kotler and Zaltman 1971; Kotler, Roberto and Lee 2002; Landers et al 2006 for further readings on social marketing.

Recommendation 2. A second recommendation is for an education campaign. There are number of things to be promoted in an educational campaign such as the cultural and economic role the fishing industry has had in contributing to the development of the county as well as the role fishing industry continues and currently plays. Educating on the heritage of the fishing industry highlighting family legacies that have been sustained for over three hundred years could be an appropriate beginning for such a campaign. As consumers told us, they come to the coastal area to recreate with or on the water as well as consume seafood. Nearly 100% eat some seafood while they visit even if it is if for only a day. Whether they be beach bathers or recreational boat users many want to eat seafood while in the area. Promoting locally caught seems like a win-win scenario.

Educating on the history of the area and the role fishermen have played is an important point of departure. However, what is generally missing in this debate is the conflict commercial fishermen are embroiled in with recreational water users who sometimes fish. These two groups share a common resource. One uses the resource as a way of life – fishing for an income to support a family and community and the other uses the resource to recreate as a passtime, as part of a vacation. No doubt there is big business in maintaining the receational water users' boats and other equipment. A host of regulations are in place controlling the use of the shared space and water resources. However, what is clear is the number of recreational water users is increasing while the number of commercial fishermen is decreasing. This is an important fact, for it is linked to having sufficient fresh local seafood available at local venues. It would seem the public may have an interest in knowing where their seafood comes from since many are driving over 200 hundred miles to eat local seafood and not aware that they are not getting it.

The Carteret Catch Booth at the Seafood Festival 2006 Teaching how to peal shrimp

Educating the public on the seasonality of seafood is critical for the public to become aware when certain species are available. Much like the public may know local tomatoes or watermelon are not available in January, the public could become more attuned to when fresh (not previously frozen) local shrimp or flounder are in season. In addition, learning what is a local fish species such croaker, trigger fish, or mullet and not halibut or salmon could also put "fresh catch" on the map. Restaurants and retail outlets could make a point of serving a "fresh local catch and advertise on their menus "a real catch of the day" caught by an artisan fisherman. They might want to even personalize it, perhaps naming the fishermen who caught the fresh being served on a particular evening. Overall, the public as well as those who sell seafood could work more closely in tandem to help promote seasonal local wild-caught seafood.

Libby from Bistro by the Sea teaching how to sear tuna at the Seafood Festival 2006

There is a lot that the public, be they residents or tourist, may not know about the fishing industry. The media could be a good tool to use in communicating this information. Editors of local newspapers and magazines could regularly publish articles and stories on the history of fishing industry in the county as well as more distant counties in North Carolina. Local television such as cable TV. could do more interviews and documentaries on this history and how important it was in forming the culture of the people in the area, leading up to contemporary times and the current state of affairs. Radio spots could also be utilized in increasing this awareness as well. National Public Radio is always interested in educational programs, and the preservation of important culture. "Blogging" and other new media outlets could help to bring fisherman and non-fisherman from differing cultures together. This leads us to our third recommendation, that of advertising.

Recommendation 3. Our third recommendation is for an advertising campaign that emphasizes the local, wild-caught seafood. Restaurant owners who purchase directly from fishermen or from wholesale or retail outlets that purchase directly from local fishermen should advertise fresh, wild-caught local seafood. They could create a niche market for the local seafood they serve. However, to begin to get consumers to ask for local seafood, or for restaurants to provide and sell local seafood, fishermen and fish house dealers need to know they can sell local seafood. It would seem that a combined educational and advertising campaign would work well together to inform the public on the locations where local seafood is available for purchase as well as the particular types of seafood that is available.

Ease of access and convenience are important attributes to a successful marketing campaign for most consumers. Many consumers are used to one-stop shopping i.e., the big supermarkets where they can purchase all of their dry goods, fresh produce, meats, fish and articles of clothing and tires all in one place. We question public awareness of local seafood retail outlets that sell local seafood. Does the public (visitors or residents) know about the fish houses and which ones might sell fresh seafood off the boat directly to them? Combining an education campaign with advertising opportunities would facilitate getting the public closer to "knowing their fishermen."

Developing a website is one way to make this information available and advertising can take place. The more helpful links on a particular website that get the public to a location to purchase fresh, local seafood the better. For example, a website that lists all the local restaurants that support the local fishing industry by purchasing local seafood for their menu could be created with addresses, phone number and a sample menu per restaurant. A link that lists the retail outlets that sell fresh local seafood could be created that includes the catch of the day, addresses and phone numbers. Fish houses that would like to sell retail as well as wholesale could be listed on such a page. Again, similar information should be made available – noting the "catch of the day" to highlight seasonality and what is brought in on a daily basis, and the address and phone number where it be can bought. Lastly, all fishermen who have a dealer's license should also be listed on a link of the webpage with the appropriate contact information i.e., phone number and address where they sell their fresh catch. Fishermen might even inform the public of the fish house or restaurant where they directly market their catch, providing support to both the fish house dealers and local restaurants.

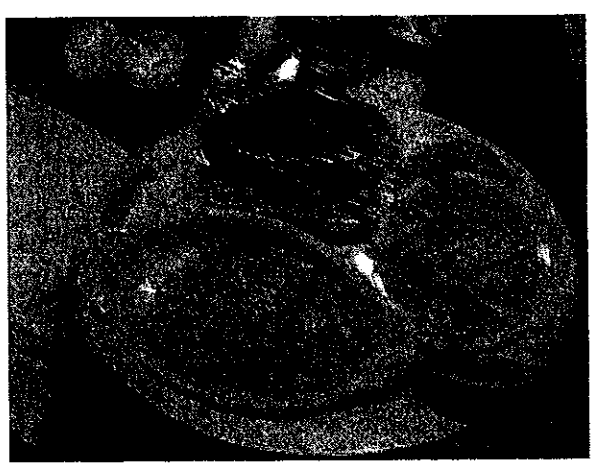
We recommend a webmaster be employed to control this information. Putting up new information daily would help to maintain a current list of what and where local seafood is available and reflects seasonality and menu changes. Fishermen and fish dealers could phone into the webmaster or restaurant chefs to let them know what and how much of certain seafood items they have available as they are approaching the docks. Restaurants that want to feature a specialty dish for an evening can see what is available and modify their menu for that night. It is more work initially for everyone, but in the end we hope that increased awareness and support for local seafood helps to sustain the fishing industry.

Although the webpage might reach more residents, at present we do not know if residents if select a restaurant from the webpage or phonebook or word of mouth or past experiences. However, we need to point out the obvious and remember that people who are visiting the area are not generally traveling with computers. There is some technology, such as blackberries®, that allows people to search the webpage while they are on vacation or visiting the area. However, this will not be the norm for the average "vacationer". One needs to think about other ways to make this information available that is not web driven.

Developing a local seafood guide might be helpful. A seafood guide could be produced on newsprint paper and contain similar information to that mentioned above. A seafood guide might not be updated on a daily basis, but it could list the participating fish house dealers who sell wholesale and retail, seafood retail outlets, restaurants and fishermen who sell local seafood. For the seafood guide to be assembled ads could be sold to help cover or offset the cost of production. This seafood guide could be left at supermarkets, coffee shops, condo rentals, real estate agencies, libraries, churches, schools and any other place that the community would welcome making the information available. This leads us into another recommendation.

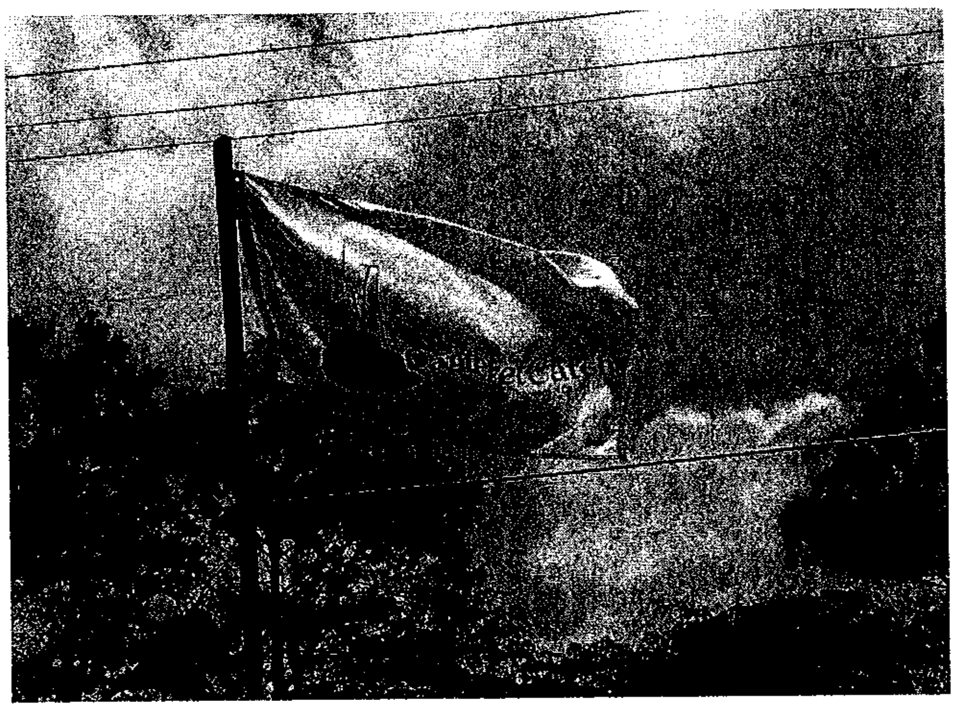
Recommendation 4. Our fourth recommendation is to create a stronger public awareness and community link to the existing *Carteret Catch* branding program. *Carteret Catch* is a trademark for wild-caught seafood brought a shore by fishermen from Carteret County. A trademark logo is available on a cloth flag and a decal for fishermen, fish house dealers restaurant owners and other direct marketers (who have their fisheries dealer's license) who want to be a 'member' of *Carteret Catch*.[10] Essentially fishermen, fish house dealers, seafood retail outlet owners and restaurant owners pay a membership fee to use this logo advertising that the seafood available is landed in Carteret County by a local fisherman. However, for this branding program to be a success, residents and visitors to Carteret County must to know what *Carteret Catch* is and must know where to find the local seafood branded with this logo.

Members of the *Carteret Catch* committee were successful getting the logo trademarked for local wild-caught seafood. However, this logo needs increased visibility in the county and beyond. Residents and visitors to the area need to know what the logo represents and where participants supporting local seafood are located. Recall that only 19% of the consumers interviewed knew anything about *Carteret Catch*. Investing in local advertising such as the use of billboards, local ads in papers and fliers could help with logo recognition. Developing other promotional items such as using the trademarked logo on brochures and magnets could be expanded to educate the public on the local fishing industry and the local heritage that was instrumental in developing these coastal water communities. The logo could be placed in food advertisements and on restaurant menus. Ideally, the *Carteret Catch* branding program will help the public to identify which fish houses, seafood retailers and restaurants are serving local seafood. It is important to remember that the public plays a role in sustaining local fisheries by the seafood they purchases. The more the public "demands" the product we hope the more places it will be available.



[10] See carteretcatch.org for further details on how to sign up to become a member of *Carteret Catch*.

To expand the *Carteret Catch* branding program we recommend that restaurant owners be contacted in person to introduce them to *Carteret Catch* and ask for their support in buying local seafood. This past year's research provided insight about the seafood preferences and buying habits of local residents and tourists. Thus, obtaining support of local restaurants in their purchase of locally landed seafood will help the county's fishing industry, as well as assist restaurant owners in tailoring their business practices to better meet consumer demand for fresh local seafood. Someone, therefore, must also sell the idea to restaurants and fish retailers of the importance of linking the local seafood to the visitors—and that it is something sought by the visitors and residents.



Therefore, we recommend a marketing campaign based upon the social marketing concept—marketing a behavior rather than advertising a commodity and including the concept of community supported fisheries. Fishermen notorious for being individualists, but they are teaming up when they see the benefits. Identifying alternative ways to market and developing particular market niches is the way some fishermen are already pursuing. However, there are some that cannot think beyond the way it has always been. They are the ones who are retiring or working at land jobs or "suffering" as they put it. Others are eager to try anything new to market their product and have already begun to step out of the status quo. Lastly some have joined *Carteret Catch.* Those who have joined see *Carteret Catch* as a way to advertise fresh, local seafood---but also to advertise that not everyone sells fresh, local seafood—thus highlighting the lack of connection to the coast of Carteret County.

Implementing Recommendations through Direct Marketing

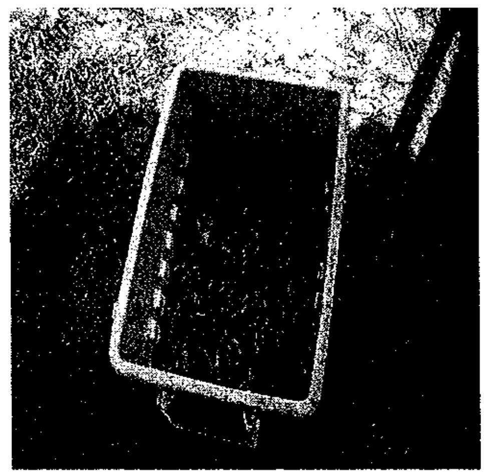
One of the lessons learned from this initial research is that to assist commercial fishermen to continue their way of life and all those involved in the fishing industry, greater community awareness and support must be generated. If local seafood is to find its way into stores, seafood markets, roadside stands and restaurants, fishermen must provide it, someone must distribute it to the various venues where it is sold, and consumers must demand it with their dollars. How might this be accomplished in a fishing industry that is predominantly supported by a declining number of small-scale commercial fishermen?

Creating alternative markets with fishermen and fish house dealers is a way the community can connect directly with the fishing industry. A way to implement some of the above recommendations is through direct marketing. Direct marketing is a way to bring the public closer to the fishermen or fish house dealer and a local product. Direct marketing could include such things as selling *Carteret Catch* seafood at farmers markets, seafood markets, and roadside stands. A new direct marketing strategy we suggest is Community Supported Fisheries (CSFs).

Community Supportive Fisheries is a new marketing strategy borrowed from small-scale farmers who rely on a niche market using community supported agriculture arrangements. Community Supported Agriculture (CSA) arrangements assist farmers by diversifying their business plan; it might be one of several marketing outlets for a farmer. Modifying a CSA arrangement with a fisherman's catch is the community supported fisheries (CSF) is a means to connect fishermen directly to their customers and enable them to better meet the clientele's expectations for seafood variety and quality. A critical aspect of direct marketing used in a CSF is to understand the needs of local residents and tourists and the expectations consumers have for a given product.

Consumer responses to our questionnaires throughout the project provided us with information on their favorite seafood, length of stay in Carteret County, willingness to cook seafood, frequency of seafood consumption and the names of restaurants they frequent during their stay. This information is vital for developing CSF arrangements. In addition, we have generated a list of consumers who are interested in supporting the local fishing industry and who would like to buy directly from local commercial fishermen.

Consumers, dealers and fishermen provided us with suggestions for how CSFs would best suit them. The following is a description of the various ways in which a CSF arrangements might operate. Some visitors who were renting accommodations for a week's stay were interested in obtaining fresh local shrimp and other fish when they arrived. For example, when they arrived at the location to pick up their keys for the rented accommodation they were interested in being supplied with a small cooler of fresh catch (not frozen but ready to use that day or the next).



Depending on the amount requested, small styrofoam coolers or bait buckets could be used to provide the newly arrived visitors with their pre-ordered and pre-paid seafood. Visitors who are making arrangements for a condominium rental could also select to have fresh seafood awaiting them. Seafood could be paid for when they pre pay for their accommodation.

Similarly, others who were interested in supporting local fishermen commented they wanted to look at a selection of seafood first and then purchase their fresh catch. This group was interested in a map with directions as to where they could go to select their fresh seafood. Lastly, there were some visitors who traveled a few hours to get to the coast and wanted to take some fresh seafood back with them. These visitors expressed an interested in taking a cooler of fresh fish or shrimp back with them. One person commented "a cooler of local fresh seafood would be better than a t-shirt or salt water taffy." This last group could also pre-pay for seafood and have it delivered to then when they were checking out.

Residents may want a different form of a CSF arrangement. They may want to purchase fresh seafood on a weekly basis from a fishermen or fish house dealer, much like a member of a traditional CSA works – the prepaid arrangement. If this arrangement could be worked out between a fishermen and a community resident, the resident would become a member of the fisherman's CSF arrangement by prepaying for a specified amount and/or type of fish for a specified amount of time. The prepayment is the resident's contribution to investing in "their" fisherman, enabling the fisherman to make repairs on his boat or gear without dipping into savings or going into debt. Fishermen fish seasonally as well as catch a variety of species during the year. This CSF arrangement between fishermen and members could work similarly to a CSA where variety of fish species could be provided on a seasonal basis.

Interested fishermen on their own or fishermen joined with fish house dealers may want to consider collaborating together in creating their buy-in club. There should be a way to identify which fishermen are participating and how the public can get in touch with them. The website and the seafood guide book mentioned above are two ways in which this information is available. Fliers and ads in the paper were mentioned by some of the fishermen as a way for the public to learn of this new niche market and also serve as a way for the consumer to get in touch with a participating fishermen. At the end of the day, consumers will want to know what fishermen are involved and what the fresh catch is available, in what quantities, for how much and can it be picked up or delivered?

As is the case with farmers who have CSAs, people who are part of these kinds of buying club are called "members" or "shareholders." These shareholders or members see it as part of their social or ecological responsibility to buy into a farm, which allows them to support <u>their</u> farmer. They see themselves as supporters and are willing to pay extra and in advance to get good quality fresh produce on a weekly basis. Many of these farm members (shareholders) pay in January or February for produce they will pick up in starting May and lasting for a period of 10-20 weeks depending on the CSA arrangement. Members learn to eat in season and are given a share of the harvest on a weekly basis. These members realize they will be getting certain quantities of the items enough for a two to three meals of fresh vegetables each week. It is not design to give people sufficient to freeze for the winter months ahead.

All this is said to point out that future community supported fisheries members are not necessarily looking for cheap seafood. Members, shareholders, consumers are looking for good, quality fresh seafood for a fair price <u>and</u> want to be supporters of commercial fishermen much like they might have been supporters of the small-scale farmers. A pre-paid weekly delivery program of fresh seafood is better suited for someone who resides in the area or on a long-term stay. Communication up front can be provided in the form of an informal brochure that describes the philosophy of a fisherman's CSF, what a shareholder could expect from their fresh catch and a way to get to know their fisherman.

A CSF delivery program should cover the basic costs. For example, a fee for the delivery itself and the price of a cooler should also be added on to the cost. The goal is to move more fresh local seafood to the public, to get them hooked so that the public tastes the difference and demands fresh local seafood each time they are in the area.[11] It is appropriate to charge sufficiently in order to cover the cost of this distribution system and service of fresh-caught delivered right to the consumer.[12]

The start-up for CSF arrangements may include more time investment for the fishermen or fish house dealer – time in promoting the niche market and getting the product to the public. What has worked for community supporting agricultural arrangements is for farmers to have a drop-off site and a time when they will be there for pick-up and the shareholders come to them, which allows the farmer to avoid driving everywhere. In other cases farmers bring their CSA boxes or bags to a farmers market. The public sees the bags of fresh produce which serves as free advertising for the farmer for future CSA members. Most farmers who bring their CSA bags to a farmers market also have extra produce to sell adding to their farm income.

An ideal arrangement for community support fishery arrangements might be for the pick up to be at fish houses or seafood markets. The consumer could come and pick-up their pre-paid cooler and possibly purchase extra seafood while at the location because of what else might be available. In addition, the coolers or seafood might be stored at the fish house or seafood market. Consumers, however, could also bring with them their own coolers when they come to pick up their pre-ordered seafood. If a consumer knew a seafood market was only going to have 200 pounds of shrimp on a particular day, and they still had a five-hour drive before they were able to get to the coast wouldn't it be nice for them if they could pre-order and pre-pay to have their shrimp set aside to be picked up upon their arrival?

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[11] In land fresh frozen shrimp was selling between $8.99 – 17.99 a pound during the summer months when fresh unfrozen shrimp was selling between $1.50-$3.00 depending on count per pound respectively.
[12] A number of supermarkets charge $5.00 to gather and box someone's groceries for them so all the have to do is drive up and pick them (Lowes and Harris Teeter).

From the questionnaires administered during the summer of 2006 we know there is interest in the CSF arrangement. Our advice however is to start small to work out the kinks as with any new niche marketing strategy and let the word of the CSF successes travel. Consumers/shareholders and fishermen will have expectations for how this niche market is going to work. For consumers it will be receiving a quality product. Adding recipes or something personal to the cooler that personalizes the experience such as a picture of the fishermen, the boat or the catch, or a note about the past week's fishing experiences makes a CSF unique for the consumer – it is art of the coastal experience. Farmers provide this personal touch with their CSA arrangements such as a weekly or monthly farm newsletter complete with seasonal recipes. These little touches help to make a connection between the producer and consumer. More information on the personalizing a CSA can be found in Henderson and van En "Sharing the Harvest" (1998).

Should community supported fishery arrangements take off, we would encourage the hiring of a driver to deliver the coolers to the various destinations. A logo on a vehicle with contact information about joining a CSF would provide free advertising. Clearly CSFs are for visitors and residents who want to support the local fishing community. There is a lot to be gained from alternative markets and niche marketing. Each approach needs to be tailored to the fishermen and his or her family; in other words they will individualized and specialized in what fish is available and how many members they want to support weekly during a season. However, visitors and residents will want to be able to contact a fisherman (or source) in advance of their visit as to what they want.

CSF arrangement will emerge and it will take on various configurations depending on the linkages established. Consumers had ideas for a farmers market in the area where both fresh local produce and fresh local seafood could be sold. If one were to be developed this could be a potential drop-off site for CSFs. Many permutations on a CSF can emerge with several fishermen coming together to supply a buying club or condominium rental with fresh seafood on a regular basis. The idea is to increase the sale of local seafood and for consumers to know where their fish comes from.

A few of the fishermen, women, fish house dealers interviewed in 2006.

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Appendix 1 Fishermen's Questionnaire

Code No. _____Name_______________________________Date___________ location_______________
Sex___Age____ Family size____Adults #____Children #__________grandchildren # ______

Commercial Fishing Culture/History
How long have you been a commercial fisherman? ________

Do you own your own boat? Y or N Are you a crew member on any other boat(s) Y or N when?

Do you have a dealer's license? Y or N (which fish ___________________________)

What other kinds of work do you do to earn an income than commercial fishing? _______________

Has your family also been involved in fishing? Yor N #_____yrs *(parents, grandparents)*

How does your spouse help you?

How do your children help you?

Do you hire non-family members for a crew? Y or N How many?____ Seasonally______

(Of the people who work in your household, how many of them work at least part time in something other than the fishing industry? ___ In what capacity?)

No. of Boats	Crew Size	Boat size	Years in Use
1.			
2.			
3.			
4.			
5.			
6.			

What do you catch? *(Seasonality of fishing – multiple harvests)*

What do you catch?	Month beginning catch How long fish for? - length of season	Gear Used
1.		
2.		
3.		
4.		
5.		
6.		
7.		

Comments on fishing industry:

Marketing fresh Seafood
Where do you sell your seafood? Fish house ______________ Dealer_____________ Other_______

Do you have a long standing relationship with any of the above? Y or N How is it maintained?

How does that arrangement work *(dealer: price, fuel/ice fees docking space other)*

Has there been a time when you could not sell your catch? Y or N What do you do if you can't sell?

What do you do if the price per pound doesn't cover the cost of the trip? *(Do you still sell?)*

Marketing Alternatives
Do you think selling directly to the public is a good idea? Y or N If yes, continue below

Would you or a family member be interested in selling your catch at a farmers market? *(probe time, # fish)*
Would you or a family member be interested selling through a Community Supported Fishery arrangement (CSF)?

If you had the market would it be worth it to you to get a dealer's license?

Where else might you sell to the public? ______________________________________

Challenges
Are you familiar with the local seafood Carteret Catch branding program? Y or N

Would you be interested in participating in the program? Y or N

What would you expect from the Carteret Catch local seafood program?

What problems could you see in participating in the local seafood program (Carteret Catch)?

Do you see yourself fishing commercially in the next 5 years? Y or N Why?

Do you see any of your children commercially fishing in the next 5 years? Y or N why?

What ideas do you have that would help local fishermen make a living from fishing?

Could you give us the name of another fisherman to contact _______________ tel #_____________

If we need to may we contact you again? Y or N

What would be the best way to get in touch with you?

Name__________________________________
Address____
Telephone number ____________________Email ______________________________

Thank you for your assistance in completing this survey. Susan Andreatta and Anne Parlier

Appendix 2 Consumer's Survey

Code No. ___ Date____________ location____

Family size____ age/sex 1___ age/sex 2___ age/sex 3___ age/sex4 ___ age/sex 5___age/sex6___

Visiting Area

How far have you traveled to come to the coast? ___(miles) where from___________ County_________

What is the purpose of their visit?*(Check 1 box)*_live here__visiting__fishing__beach__boating __other _
How long have you come to stay?_______
Is it your first time to the area? Y or N If yes, why did you choose this area? ____________________
How many years have you been coming to this area? *(visitor or resident)* __________*(number of generations coming to the area)*?____ Annually, how frequently do you make this trip? ____times a year
Is there a kitchen where you stay? Y or N (rent or own// home, apartment, other ____________)
Do you fish? Y or N How much of what you catch do you eat? ______________________

How would you define local seafood? ____

Seafood Consumption (1-5, please rank with 1 being your first preference)
What is your favorite seafood? __bluefish __clam __crab-hardshell __ crab-softshell __flounder
__grouper __oysters __mackerel __scallops __shrimp __snapper ___spot ___trigger __tuna ___other___

Visiting/Resident

Do you: 1. cook seafood 2.eat seafood out or 3. both cook and eat it out?

How many times may you eat seafood during your stay? ____

If you cook seafood where do you purchase your seafood? *(please rank preferences 1-3 with 1 being the first choice)*__grocery store __ seafood market__ roadside stand __fisherman __ other ______

When you purchase seafood about how much money do you think you spend?
__$1.00 - $5.00 __$6.00 - $10.00 __$11.00-$15.00 __$16.00-$20.00 __$21.00-$25.00 __other $___

Is the seafood local? (__ I don't know __yes __no) How do you know that it is local?______________

Is it important to you that your seafood be local? Y or N Why?

Do you buy extra to freeze? Y or N

How many times a week do you eat seafood out? ______

Where do you generally go out to eat seafood?

For your entrée (main dish) if you had your choice of a $15.00 imported seafood meal or a $21.00 fresh local seafood meal which would you choose?

Are you interested in eating more local seafood Y or N *(please rank preferences 1-4 with 1 being the first choice)* **If yes,** is it for ___taste ___ personal health ___supporting the environment ___ supporting local economy ___other ______

Support for Local Fishing Industry

If there were no local commercial fishermen, would you still visit the area?
How might you support the local commercial fishermen?

Do you know about the local seafood Carteret Catch branding program?

While in the area would you be interested in a local seafood delivery program? Yes or No

If yes, may we contact you about a future program? Y or N What would be the best way to get in touch with you? Name________________________________
Address____________________________________
Telephone number ______________________Email ______________________________
Thank you for your assistance in completing this survey. Susan Andreatta and Anne Parlier

Appendix 3. Seafood Sold in Grocery Stores in North Carolina as of December 2006

	Food Lion	Harris Teeter	Lowes Foods
Flounder wild-caught		10.99	
Flounder "Fresh"			9.99
Flounder Fresh Whole			7.99
Grouper U.S.		12.99	
Grouper wild-caught		16.99	
Snapper Indonesia Previously Frozen		11.99	
Snapper, Red, "Fresh" Fillets			14.99
Shrimp wild-caught 10/15 Prev Frozen		17.99	
Shrimp US wild-caught Head On 13/17		12.99	
Shrimp Argentine 21/25 Previously Frozen		11.99	
Shrimp Thai 21/30		12.99	
Shrimp Carolina 20/30 Previously Frozen		12.99	
Shrimp China 26/30			6.99
Shrimp Thai 31/40		9.99	
Shrimp 41/50	7.99		
Shrimp Thai 51/60		8.99	

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Appendix 5. Dissemination of Project Results

Andreatta, Susan

2007 Session Abstract:Coastal fisheries in the United States: Developments and Challenges. Organized for the Society for Applied Anthropology Andreatta and Paolisso are co-chairs of panel. Tampa, Florida. March 27 – April 1.

2007 "Developing Alternative Markets for Traditional Small Scale Commercial Fishermen." Paper presented at the Society for Applied Anthropology. Tampa, Florida. March 27–April 1.

2007 Panel abstract: "The Political Ecology of Carteret Catch: An Applied Anthropological Perspective of Fishermen's Efforts to Sustain their Industry in North Carolina." Organized for the Southern Anthropological Society Annual Meeting. Oxford, Mississippi. February 15-19.

2006 Commercial Fishing in Carteret County, NC: What the Public Needs to Know. Presentation given at the First Presbyterian Adult Issues Class. January 21.

2006 "Net Gains." *Our State*. January Pp. 86-90.

Andreatta, Susan and Anne Parlier

2007 "Participatory Action Research Among the Fishing Community of Carteret County, North Carolina". Presented at the Southern Anthropological Society Annual Meeting. Oxford, Mississippi. February 15-19, 2007.

Parlier, Anne

2006 "Commerical Fishing in Carteret County." Presentation given at The Monthly Book Club. Greensboro, NC October.

Parlier, Anne, and Susan Andreatta

2007 "Endangered Fishermen: How Long will Shrimping Last in Carteret County, North Carolina? Paper presented at the Society for Applied Anthropology Tampa, Florida. March 27 – April 1.

2007 "How Far did this fish travel?: A Political Ecology Perspective on Local Fish Consumption in Carteret County" Presented at the Southern Anthropological Society Annual Meeting. Oxford, Mississippi. February 15-19, 2007.

Parris, Michael

2007 "The History and culture of Carteret County Shrimpers." Presented at the Southern Anthropological Society Annual Meeting. Oxford, Mississippi. February 15-19, 2007.

Wood, Patrick

2007 "Policy, Issues and Concerns of Carteret County Shrimp Harvesters." Presented at the Southern Anthropological Society Annual Meeting. Oxford, Mississippi. February 15-19, 2007.