A Social and Economic Analysis of Commercial Fisheries of Core Sound, North Carolina

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Introduction

North Carolina's coastal fishery resources are a source of economic and social importance to many coastal communities. The harvest of these resources may be creating a demand that may be difficult to maintain without harming the long-term viability of certain species. In responses to decreased fisheries resources, the North Carolina Marine Fisheries Commission (MFC), National Marine Fisheries Service (NMFS), the Atlantic States Marine Fisheries Commission (ASMFC), and the South Atlantic Fisheries Management Council (SAFMC) have recommended rules and placed restrictions on fishing activities to promote recovery of the resources. There are currently restrictions on blue crab, flounders, shrimp, mullet, oysters, hard clams, and many others, enforced primarily by the North Carolina Division of Marine Fisheries (NC DMF) throughout the coastal waters of North Carolina, including Core Sound.

Understanding the impacts of these restrictions on individual commercial fishermen, as well as on the commercial fishing industry as a whole, requires knowledge of the social and economic aspects of the fishing industry. This information is important for the development of state fishery management plans directed toward species, gears, areas, or any combination of species, gears, and areas under the North Carolina Fisheries Reform Act of 1997. This type of information is becoming available through initiatives such as the one that funded this series of studies.

In July of 2001, the North Carolina Division of Marine Fisheries began a third one-year study investigating the social and economic characteristics of the Core Sound commercial fisheries by interviewing fishermen and seafood dealers. The previous two projects were similar analyses of the Albemarle Sound Management Area and the Pamlico Sound Area (Diaby, 2000; manuscript).

Study Objectives

The specific objectives of the Core Sound study were:

1. To describe the socioeconomic aspects of commercial fisheries in the Core Sound area. Descriptions include demographic characteristics of commercial fishermen, dependence on commercial fishing, employment opportunities, fishing activities, and seafood dealer businesses;
2. To collect costs and earnings information from commercial fishermen and seafood dealers and develop estimates of the costs, earnings, and returns associated with commercial fishing; and
3. To assess commercial fishermen's perceptions of fishery regulations and identify problems facing the seafood dealers.

Core Sound Area

This study focused on the fishermen and seafood dealers who work in the Core Sound area (Figure 1.). The definition for Core Sound was based on the water bodies covered by the NC DMF trip ticket program's water body use of the name in effect during the period of the study. The trip ticket water body Core Sound includes not just Core Sound proper, but also Back Sound, Jarrett Bay, Nelson Bay, The Straits between Harker's Island and the mainland, East Thorofare Bay and Cedar Island Bay. Back Sound runs from Beaufort Inlet east along the estuarine side of Shackleford Banks to Barden Inlet. Core Sound then runs northeasterly from Barden Inlet to old Swash Inlet at Portsmouth Island. All of the boundaries of this water body lie within Carteret County between the mainland on the north and west, and Shackleford and Core banks on the south and east. In all, these water bodies comprise approximately 72,000 acres of water and comprises about 37 linear miles of coastline from Beaufort Inlet to Swash Inlet.

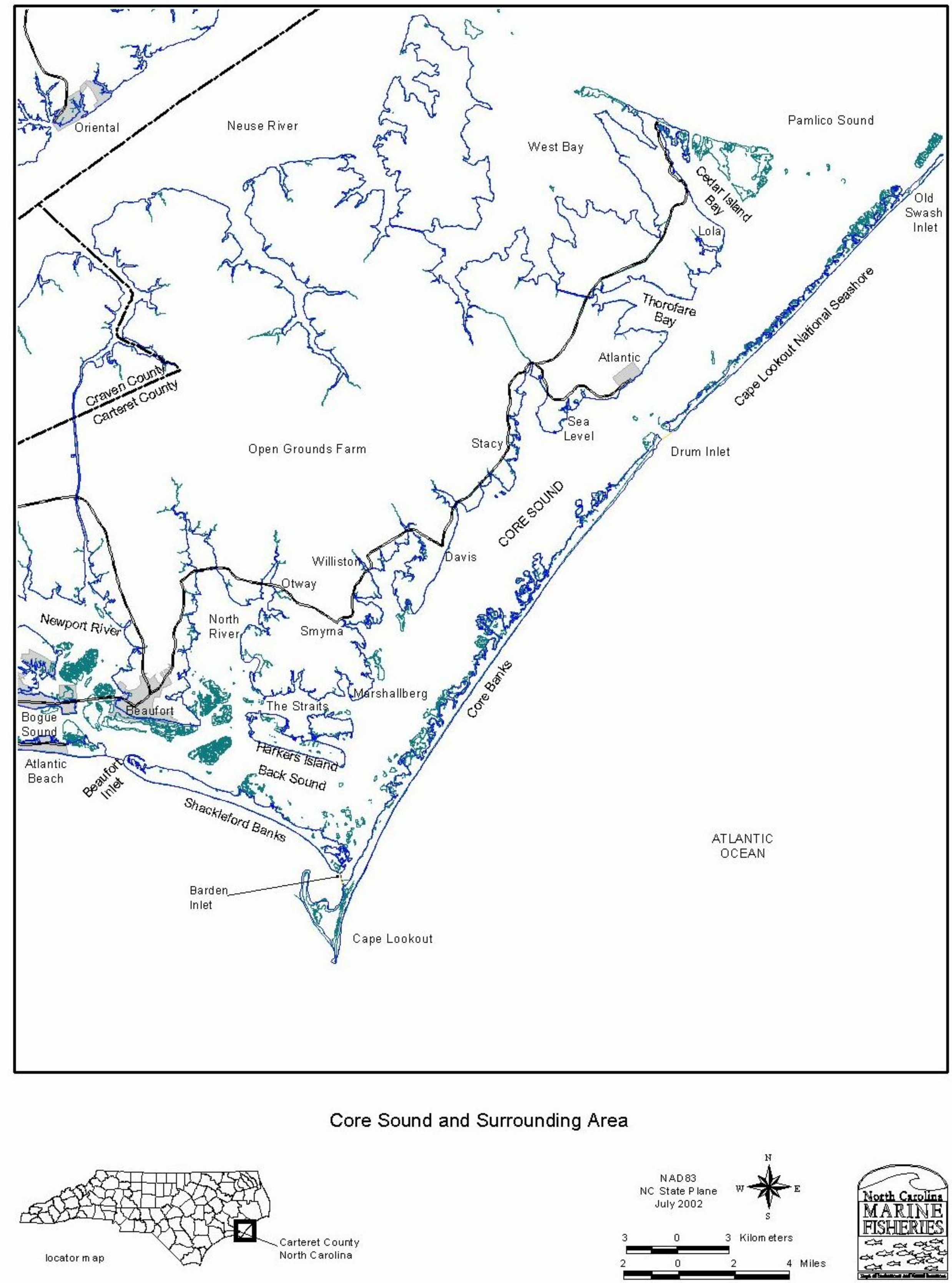

Figure 1. Core Sound Area

Method

Recruitment and Participation Rates

In the summer of 2001, a list of 395 commercial fishing license holders with contact information was obtained from the NC DMF license database. Each of the persons or businesses on the list reported at least $1,000 ex-vessel value in seafood landed from Core Sound and its tributaries during 2000. Licenses included were the Standard Commercial Fishing License (SCFL), Retired Standard Commercial Fishing License (RSCFL), License to Land or Sell, and the Shellfish License without a SCFL. A list of 80 licensed seafood dealers who purchased seafood caught in Core Sound valued at least $1,000 in 2000 was also obtained at the same time.

All the surveys for both the commercial fishermen and the seafood dealers were conducted by two full-time, temporary interviewers hired specifically for the project.

Fishermen. The commercial fishing licensees were initially contacted either by telephone or in person between October 1, 2001 and February 3, 2002. It was discovered that two of the licensees were deceased. Two were not included because one fisherman claimed not to have fished at all in Core Sound or its tributaries in 2000. The second claimed he no longer fished and his son was using his license. On searching the data, it was determined that the son had previously been interviewed based on his own license.

Four additional licenses on the list were found to be multiple licenses owned by other licensees that had not been detected prior to beginning the study. The reason they were not detected is that the licenses were held in different names. For example, a person may have had separate licenses in his individual name and in his business' name.

A total of 66 license holders could not be contacted at all to determine whether they wanted to participate. Reasons they were not contacted included:

1) No response to telephone or written messages repeatedly left at the residence.

2) The interviewer was told the person was not ever home by someone else at the residence.
3) The interviewer was given incorrect forwarding contact information by another person.
4) The interviewer was told not to call back by someone other than the fisherman.
5) The residential telephone line was disconnected.
6) The respondent was in the hospital during the time of study.
7) The respondent was incarcerated during the time of study.

There were 321 fishermen who were contacted either by telephone or in person and were eligible to participate in the study. Of these, 36 (11%) refused to participate. Another 26 (8%) were classified as "passive refusers" because they never told us they did not want to participate, but for various reasons data were not collected from them. These reasons included:

1) Repeatedly telling the interviewer that he was "Too busy right now. Try back later."
2) Failure to keep appointments for interview.
3) Physically hid when the interviewer showed up to do the survey.
4) Kept putting off making an appointment.

Surveys were completed for 259 (81%) of the fishermen who were contacted and determined to be eligible to participate.

<u>Seafood dealers</u>. In late November 2001, surveys were mailed to each of the 80 licensed seafood dealers. As of January 2002, only 19 had been returned. Interviewers began to call those who had not returned the surveys. The dealers were asked to fill out the survey and mail it back. If necessary, a new survey was mailed. In addition, the dealers were given an option to do the survey over the telephone.

We were unable to locate two dealers. Nine dealer licensees were found to be multiple names of dealers located at separate addresses. Of the 69 separate dealers eligible to participate, 10 (14%) refused to participate. Completed surveys were obtained from 59 (86%) of the eligible dealers.

Survey Instruments

As was previously stated, this survey project was the third in a series of three area surveys covering North Carolina's northern sounds. The goal in designing the surveys for this project was to make the data compatible with the data collected from the earlier projects, wherever possible.

Fishermen. A copy of the survey used to collect data from the fishermen is in Appendix A. These surveys were physically filled out by the interviewers based on the respondents' answers given in person. If for some reason the interview could not be conducted in person, the interview was conducted by telephone.

The data collected in the survey included information concerning:

(a) Individual socio-demographics
(b) Characteristics of their fishing business
(c) Fishing vessel characteristics and expenses
(d) Targeted species and gear combinations
(e) Income from fishing
(f) Financial costs of doing business
(g) Attitudes regarding fishery management
(h) User group conflicts
(i) Perceptions of the fishing industry

Seafood dealers. A copy of the survey used to collect data from the seafood dealers is in Appendix B. These surveys were physically filled out by the respondents and returned by mail, or by the interviewers based on the respondents' answers given over the telephone.

The data collected in the survey included information concerning:

(a) Business characteristics
(b) Major species sold
(c) Operating expenses
(d) Markets
(e) Current issues important to seafood businesses

Results

After collecting the data, the interviewers keyed the surveys into a Microsoft Access (1997) program designed to store the data. The program checked for “out of range” responses, processed question skips where appropriate, and allowed the interviewer to record notes and comments about the interview. The data were double-keyed by other project personnel, except for the original interviewer’s notes and comments. The data were analyzed using SPSS release 11.0.0 (SPSS, 2001). This version of SPSS has the ability to directly read Access files through open database connectivity (ODBC). Final data verification, assigning labels to variables and additional variable calculations were completed in SPSS along with all data analyses.

Photo Credit: North Carolina Collection, University of North Carolina Library at Chapel Hill

Fishermen

There were concerns from the previous surveys (Diaby, 2000; manuscript) as to whether the fishermen completely understood the questions, particularly the economic ones, or if some fishermen were being evasive in their answers when asked questions regarding income and the costs associated with doing business. The motivation for this apprehension came from the results of the Albemarle Sound project where the majority of small and medium sized vessel fishermen reported a loss of income (Diaby, 2000).

Additionally, there were reports by fishermen that they were concerned the information they gave could be used against them, in spite of confidentiality assurances from the interviewer. In one instance, for example, a fisherman only consented to participating in the survey as long as he could audio record the interview in his home.

This survey tried to determine whether the economic questions were answered in a consistent and logical manner. To achieve this, the income questions were asked in terms of percentage of household income that is derived from fishing activities, total income from fishing, and then later in the survey, total household income. The data from these three questions were analyzed separately to determine economic understanding.

The reason why the answers were not consistent for a handful of respondents cannot be derived from the analysis. In some cases, it clearly is lack of economic understanding. Those whose responses were not numerically consistent tended to have a lower level of education. In some cases, however, it is quite probable that the respondent tried to willingly mislead the interviewer. Because the number of those who responded inconsistently was low (n=6), it was decided not to remove them from the analysis. In most instances, their responses were not outside the realm of possibility. Instead of making a judgment call on who was being truthful or didn't understand, the decision was made to keep them in the analysis. This decision was made because the impact of untruthful statements would be minimal when aggregated in the analysis with the other respondents. In addition, it was not clear if the inconsistent economic responses were indicative of inconsistency throughout the entire survey.

<u>Statistical Analyses</u>. The data were analyzed using SPSS (2001) frequencies, descriptive, one-way Analysis of Variance (ANOVA) and other bivariate procedures.

Individual socio-demographics. The average fisherman who responded to the survey is a 48-year-old white male who has been fishing for 25 years (see Table 1). The youngest fisherman interviewed was 18, and the oldest was 84. Only six respondents were women (2.3%). Only one respondent was African-American and two were Hispanic. All the rest of the respondents (98.8%) were white. The average fisherman in this survey lives in Carteret County and has lived in his community for 32 years, but some respondents lived in their community for as little as one year and as long as 84 years. They live in households with a range of 1 to 6 people (including themselves), and averaged 2.68 people. The average fisherman is married and is a high school graduate with no college education.

Table 1. Socio-demographic variables.

Sex	Frequency	Percent
Male	253	97.68
Female	6	2.32
Total	259	100.00

Racial/Ethnic Background	Frequency	Percent
White	256	98.84
Black	1	0.39
Hispanic	2	0.77
Total	259	100.00

Education	Frequency	Percent
< High School	90	34.75
HS Grad	97	37.45
Some College	54	20.85
College Grad	18	6.95
Total	259	100.00

Marital Status	Frequency	Percent
Married	199	76.83
Divorced	27	10.42
Widowed	4	1.54
Never Married	2	0.77
Separated	27	10.42
Total	259	100.00

# People in Household	Frequency	Percent
1	28	10.81
2	110	42.47
3	58	22.39
4	46	17.76
5	10	3.86
6	6	2.32
Missing	1	0.39
Total	259	100.00

County of Residence	Frequency	Percent
Carteret	242	93.44
Pamlico	2	0.77
Craven	5	1.93
Onslow	2	0.77
Other	8	3.09
Total	259	100.00

	Mean	Std. Dev.
Age	48.07	13.91
Years Fishing	25.37	14.09
Years in Community	32.24	20.58

Characteristics of fishing businesses. The majority of fishermen (143 of 259) interviewed said they fish all year long (55%). Table 2 indicates the number and percentage of fishermen who fish in a given month, but not year around.

Fishermen who fish Core Sound see it as their primary fishing location. On average, they fish 69% of the time in Core Sound. Other water bodies fished by these fishermen, in order of preference were Back Sound, Pamlico Sound, North River, Neuse River, Atlantic Ocean, Newport River, and Bogue Sound. Fifteen- percent (39) fishermen also have licenses to sell seafood.

Table 2. Number and percentage of fishermen who fish in a given month, but do not fish year around.

Month	Number (N=116)	Percent
January	6	5%
February	9	8%
March	37	32%
April	62	53%
May	86	74%
June	97	84%
July	97	84%
August	95	82%
September	96	83%
October	91	78%
November	61	53%
December	28	24%

There are three types of ownership for fishing businesses: sole proprietorship, partnership, or corporation. A large majority of fishermen work as sole proprietor businesses (92%). Nearly 7% work in partnerships and 1.5% are part of a corporation.

Fishing vessel characteristics and business expenses. Approximately 6% of the fishermen interviewed did not use a fishing vessel. These were primarily clammers. Most fishermen (56%) owned only one fishing vessel. Another 29% own two vessels. Seven percent owned three vessels. The remaining 2% owned four or more vessels.

Vessels were classified according to size. Vessels less than 19 ft in length were classified as being "small." Vessels between 19 and 38 ft in length were classified as being "medium." Vessels over 38 ft in length were classified as being "large." Twenty-nine percent of the vessels were small, 60% were medium, and 11% were large. Small vessels average market value was $6,595, medium vessels average value was $19,415, and large vessels on average, were valued at $44,222. A summary of characteristics by vessel size appears in Table 3.

Table 3. Summary of characteristics by vessel size.

	Small (n=74)	Medium (n=145)	Large (n=27)
Length (in feet)	17.08	26.06	42.44
Crew Size	2.13	2.12	2.18
Years Owned	8.82	10.71	14.22
Value	$6,595	$19,415	$44,222
Average Trip Expenses:			
Bait	$3	$18	$0
Groceries	$2	$10	$22
Ice	$0	$2	$8
Other Expenses	$2	$1	$0
Total Average/Trip:	$8	$31	$30
Annual Expenses:			
Capt/Crew (not self)	$502	$1,983	$7,852
Insurance	$7	$44	$22
Licenses & Permits	$202	$341	$460
New Gear	$683	$2,486	$2,319
Other Expenses	$289	$287	$207
Pay to Relatives	$6,903	$10,404	$10,852
Repairs	$949	$3,217	$6,817
Startup (2000 only)	$47	$12	$0
Loan Payments	$101	$383	$1,141
Taxes	$8	$20	$61
Total Average/Annum:	$9,691	$19,177	$29,731

The data from the vessel characteristics were analyzed further to determine statistical differences based on vessel size. Many of the differences were not surprising. The market value of a vessel is greatly related to its length ($F_{(2,242)} = 23.375$, $p < 0.001$). Medium and large sized vessel owners spent significantly more on new equipment on average than did small vessel owners ($F_{(2,242)} = 4.654$, $p = 0.01$). Large vessel owners spent significantly more to pay a captain and crew members than did small and medium vessel owners ($F_{(2,242)} = 10.062$, $p < 0.001$). Large vessel owners were likely to pay more to family members who crewed for them ($F_{(2,242)} = 3.227$, $p = 0.041$). The amount paid for repairs was significantly related to the size of the vessel. The larger the vessel, the more was paid in repairs ($F_{(2,242)} = 15.986$, $p < 0.001$). While the differences between the groups were not statistically significant, it bears noting that there were no start ups of large vessels in 2000. The majority of startups were smaller vessels. Owners of large and medium vessels owned them significantly longer than owners of smaller vessels ($F_{(2,242)} = 5.184$, $p = 0.006$).

Many fishing businesses use a share system to pay their crews. Vessels with at least two crewmembers used a share system 71% of the time. All vessels that used a share system and bought bait for the trip deducted the cost of the bait before calculating shares. The costs associated with groceries and fuel/oil were deducted by 95% of the vessel owners prior to calculating shares. Of those who used ice, 80% deducted the cost of the ice prior to calculating shares.

Targeted species and gear combinations. Fishermen were asked specifically about their use of crab pots, trawls, long haul seines, pound nets, and gill nets. They also provided information about gears other than those listed that they used in their fishing business. Comments were sought on certain gears and species combinations. Table 4 shows a list of the gears used by Core Sound fishermen, the percentage of total fishing income derived from using that gear, and the species they targeted with the gear.

Not all fishermen in Core Sound used one of these primary gears. Additionally, many fishermen used gears that were not specifically mentioned in the survey. All fishermen were given an opportunity to name gears other than those specifically mentioned on the survey. Table 5 shows the other gears used and their frequency of use by all Core Sound commercial fishermen. Table 6 shows the species that were targeted using these other gears. Due to the nature of the questionnaire, it is not possible to match these other species to the specific gears.

Table 4. Gear, average percent income and targeted species of Core Sound fishermen.

Gear	% Users	% Income	Targeted Species	Targeting Species*
Crab Pot	17%	71%	Blue Crabs	100%
Trawl	33%	64%	Shrimp	85%
			Crabs	13%
			Clam	6%
			Spot/Trout	1%
Long Haul Seine	2%	54%	Spot	100%
Pound Net	7%	42%	Flounders	100%
			Bluefish	6%
Gill Net	36%	46%	Croaker	1%
			Flounders	40%
			Mullet	46%
			Shad	2%
			Spot	21%
			Trout	2%

* May not add up to 100% because some fishemen target more than one species with the same gear.

Table 5. Other gears used by Core Sound fishermen.

Gear	% Used	Frequency
By Hand/Foot	8%	20
Other Nets	7%	19
Rakes & Tongs	35%	90
Other Pots	3%	9
Scallop Scoop	2%	4
Gigs	3%	9
Mechanical	3%	9

Table 6. Species targeted by other gear users in the Core Sound.

Species	% Targeted	Frequency
Clams	65%	114
Oysters	6%	10
Crabs	9%	16
Scallops	3%	5
Mullets	9%	16
Spotted seatrout	4%	7
Flounders	4%	7
Other Species	7%	12

Income from fishing. Fishing provided a significant source of income for the vast majority of fishermen interviewed. Table 7 shows categories of self-reported individual income earned by Core Sound fishermen in 2000. Approximately 7% (n=18) of the respondents refused to answer questions about how much money they made as fishermen. Additionally, the findings of this study are contrary to the similar study done with Albemarle Sound area fishermen where the majority of fishermen claimed to have lost money on their fishing operations (Diaby, 2000). Only 5% of Core Sound fishermen stated that they did not make any money or lost money from fishing in 2000. However, 92% of all fishermen interviewed claimed to have made no more than $30,000 in 2000 from fishing.

Table 7. Individual income from fishing by Core Sound fishermen

		Frequency	Percent
	$0 or lost money	11	5%
	$1 - $5,000	71	29%
	$5,001 - $15,000	63	26%
	$15,001 - $30,000	78	32%
	> $30,000	18	8%
	Total	241	100%
	Refused	18	
Total		259	

The majority of households where there is a commercial fishermen have additional sources of income. Table 8 shows total household income for commercial fishermen from the Core Sound. Just over 10% (n=27) of respondents refused to answer the question about total annual household income. Of those who did answer, 16% lived in households with less than $15,000 total annual income and 15% lived in households with more than $50,000 in total income.

Table 8. Total household income for Core Sound fishermen

		Frequency	Percent
	< $15,001	38	16%
	$15,001 - $30,000	86	37%
	$30,001 - $50,000	74	32%
	$50,001 - $75,000	27	12%
	> $75,000	7	3%
	Total	232	100%
	Refused	27	
Total		259	

It is important to note that many fishermen hold valid commercial fishing licenses, but do not report landings as part of the NC DMF trip ticket program. These persons were "grandfathered" under the old licensing system prior to 1997. They are eligible to sell their catch, but for whatever reason, they do not do so. Additionally, many part time fishermen were not interviewed because one of the study inclusion criteria was that they must have had at least $1,000 in landings reported to NC DMF from trip tickets in 2000. However, six fishermen who had at least $1,000 in landings reported to NC DMF on trip tickets claimed that they had no household income from fishing.

As shown in Table 9, just under half of all Core Sound fishermen earn 100% of their individual income from fishing. Another 15% earn between 50 and 99% percent of their total individual income from fishing. About 35% earn less than half of their income from fishing. About a third of the households where these fishermen live, derive 100% of their income from fishing. Another 25% earn between 50 and 99% of their household income from fishing. These results indicate that, while many fishing households do not rely entirely on fishing income, fishing is still the major source of household income.

Table 9. Percentage of household and individual income levels derived from fishing by Core Sound fishermen.

	Household income		Individual Income	
	Frequency	Percent	Frequency	Percent
0%	6	2	6	2
1 to 10%	42	16	44	17
11 to 25%	12	5	14	5
26 to 50%	50	19	33	13
51 to 75%	37	14	17	7
76 to 99%	27	11	20	8
100%	83	32	125	48
Total	257	100	259	100
Missing	2			
Total	259		259	

Table 10 shows the number of fishermen in the survey who used specific gears and the average percent of their total individual fishing income based on using that gear. It is clear from the table that the average Core Sound fisherman uses more than one gear. Crab pots and trawls for crabs, shrimp, and clams were used most often.

Table 10. Mean percent of individual income from fishing derived using specific gears

	N	Mean %	Standard Deviation
Crab Pots	45	70.69	32.61
Gill Nets	94	45.79	32.24
Long Haul Seines	5	54.00	28.59
Pound Nets	16	42.31	31.35
Trawls	86	63.65	30.00
Other Gears	188	56.82	36.19

Important issues facing the fishing industry. Interviewees were presented with a list of 20 issues that they might think were the most important issues facing commercial fishermen today. Each was asked to choose three from the list. Once three had been chosen, they were asked to choose the one of the three they thought was the single most important issue. Seventeen of the 20 initial items were selected by at least one fisherman as the most important issue facing them. Table 11 presents a summary of those issues fishermen thought were the most important.

The most prevalent issue facing these fishermen was low prices for seafood (23%). This was closely followed by a feeling that there are too many federal regulations and state rules (22%). Some fishermen said their biggest issue is keeping up with proclamations and changes in rules (10%). On average, the Director of the NC DMF issues about 200 proclamations per year. About half of these proclamations specifically affect shellfishermen through openings and closings of temporarily closed polluted areas. Most other proclamations open and close seasons for specific species, temporary gear restrictions, etc. An additional 10% of fishermen were primarily concerned with overfishing.

Table 11. Most important issues facing fishing industry

		Frequency	Percent
	Low prices for seafood	55	23
	Too many federal & state regs	53	22
	Keeping up w/Procs & Rules	25	10
	Overfishing	24	10
	Enviromental Regulation	16	7
	Can't predict future for business	14	6
	Closed Areas	14	6
	Gear Restrictions	10	4
	Outside Competition	8	3
	Local Competition	5	2
	Seasonal Closures	4	2
	Bag Limits	4	2
	Restrictive Quotas	4	2
	Weather	3	1
	Paperwork	2	1
	Initial start up costs	1	0
	Cost of doing business	1	0
	Total	243	100
	Did not provide an answer	16	
Total		259	

Furthermore, fishermen were asked specifically to state how often they had negative experiences in the past year with federal regulations and state rules. Table 12 shows a summary of their responses. Over half of the respondents (53%) indicated that they had not had any negative experiences with federal regulations, while 26% indicated they had no negative experiences with state rules. At the other extreme, 19% indicated they had negative experiences daily with federal regulations and 26% felt the same way about state regulations. Eighteen percent and 28%, respectively, had either one or two negative experiences with federal or state restrictions within the past year.

The majority of negative experiences with federal regulations involved compliance with the Endangered Species Act, particularly dissatisfaction with the required use of turtle excluder devices and overall protection of turtles, which they saw as being far too restrictive. Some of the fishermen also fished in Pamlico Sound and took this survey as an opportunity to voice dissatisfaction with the gill net restrictions for flounder in place there. Some flounder fishermen also complained of difficulty of obtaining federal flounder permits. Some fishermen also expressed dissatisfaction with red drum restrictions.

Table 12. Frequency of negative experiences with state rules and federal regulations during 2000.

	Neg. Experiences with Federal Regs.		Neg. Experiences with State Rules	
	Frequency	Percent	Frequency	Percent
No Negative Experiences	136	53	68	26
1	39	15	54	21
2	8	3	19	7
3 - 5	4	2	18	7
6 - 50	16	6	18	7
51 - 364	7	3	14	5
Negative Experiences Every Day	48	19	66	26
Total	258	100	257	100

There was a greater variety in the number of complaints received about state rules. Many of them involved fishermen who were complaining about what they saw as unfair advantages given to other fishermen who use other kinds of gears. For example, crab trawlers complained about crab pots getting in their way. Shellfishermen complained about trawlers destroying the bottom. Complaints were received about the Marine Patrol who were seen as being “overly picky” or simply “out there to harass us guys just trying to make a living.” Some fishermen used the survey as an opportunity to complain about tickets they had received for in violation of a rule. A very few fishermen said the NC DMF was not being restrictive enough, complaining that “overall, there is too much gear in the water.” Several people who participated in the survey expressed the frustrations saying that they felt NC DMF only collected information from them to use against them. Some said that they participated in the survey because they felt that they would be harassed by NC DMF if they did not. These comments were made in spite of the fact that all survey participants were notified before beginning the survey that participation was voluntary and confidential.

User group conflicts. The fishermen were also given an opportunity to state the frequency with which they had negative experiences with other commercial fishermen and with recreational anglers. These results are shown in Table 13. Most fishermen reported not having negative experiences with other commercial fishermen (71%) or with recreational anglers (74%). Of those who reported negative experiences, most reported fewer than six. Only a small percentage reported they had negative experiences daily.

Table 13. Frequency of negative experiences with other commercial fishermen or with recreational anglers during 2000.

	Neg. Experiences with Other Fishermen		Neg. Experiences with Rec. Anglers	
	Frequency	Percent	Frequency	Percent
No Negative Experiences	183	71	191	74
1	22	9	19	7
2	16	6	18	7
3 - 5	13	5	12	5
6 - 50	13	5	13	5
51 - 364	1	0	1	0
Negative Experiences Every Day	10	4	3	1
Total	258	100	257	100
No Response	1		2	
Total	259		259	

Many comments by those who had negative experiences with other commercial fishermen were strongly related to competition for fishing grounds. There were complaints about being cut off by other boats that wanted to get to a particular fishing area before they did. Some complained about other fishermen who set up nets too close to their own. Others complained about how fishermen who use other fishing methods or target other species exploit the resources. For example, crab potters complained about trawler fishermen who tear up their pots and harm the bottom. There were quite a few complaints about stolen gear, or in the case of crab potters, complaints that people cut their buoys free.

The majority of negative experiences with recreational anglers centered on their perception that the anglers get mad when they are around. They said the anglers claim commercial fishermen “take all the fish.” Some crab potters suspected that recreational anglers steal from their pots. Others complained that recreational boats destroyed their fishing gear by running over nets and buoy lines.

Community support. As was shown in Table 1, 93% of Core Sound fishermen live in Carteret County. Carteret County's commercial fishermen live primarily in smaller communities known historically for commercial fishing. Nine percent of the fishermen from Carteret County lived in either Morehead City or Beaufort, the two largest communities in the county. The majority of the rest live in communities with fewer than 1,000 residents. The communities north and east of Beaufort have predominantly been commercial fishing communities. Seventy-seven percent of all the respondents to the survey live in one of these "Down East" communities (see Figure 1.).

All fishermen were asked to rate how important fishing was historically and economically to their community. They were also asked to rate "how much they felt fishermen are respected in their community", and "how much their community supports commercial fishermen." All ratings were made on a scale of 1 to 10, with 1 being, "no support at all" to 10 being "extremely supportive."

On average, fishermen felt that fishing was very important historically (mean = 9.31) and economically (mean = 8.49) to their community. Many also felt that fishermen were respected in their community (mean = 7.96)' and that their community supports commercial fishermen (mean = 8.16).

Fishermen were asked to state ways that their community supported commercial fishing activities. Specifically mentioned ways that communities supported fishing included boom truck parades, "blessing of the fleet" ceremonies, watermen association meetings, and pig pickin' barbecues.

Future Optimism. The fishermen were asked questions to assess their optimism about a future in commercial fishing. They were asked to use a 1 to 10 scale to rate how hard they have to work now to land the same amount of their targeted species compared to a few years ago. The average rating of 7.90 given by these fishermen indicated the felt they had to work much harder now for the same amount of product than they did just a few years ago.

When asked directly how optimistic they were about their future as commercial fishermen, most were slightly pessimistic. The average rating was 4.42 on a 10-point scale, where 5 was neither optimistic nor pessimistic.

The fishermen were asked whether they felt they would be fishing 10 years from now. Fully two-thirds of them felt they would be. Those who thought they would not be fishing 10 years from now were asked why they thought that way. Some said they would be retiring from fishing in the next 10 years. Quite a few felt that they would not be able to make enough money from commercial fishing to support their families in the future. Some felt that they will be "regulated out" of fishing. There was a certain amount of despair for some fishermen, "I don't know nothing else, but it [the future] doesn't look good."

Seafood Dealers

Businesses in North Carolina that deal in seafood products traditionally are highly individualistic. They consist mostly of many small family owned businesses long connected to the seafood industry, active fishermen, or members of their extended families. Most dockside buyers have a clientele of commercial fishermen with whom they do business. Many of these smaller establishments are extremely flexible and may operate only seasonally in accordance with the fishermen's normal cycle of fishing activities.

Statistical analyses. The data were analyzed using SPSS (2001) frequencies, descriptive, one-way ANOVA and other bivariate procedures.

Business characteristics. Seafood dealers were asked to describe the kinds of business activities in which they participated. Table 14 is a summary of those activities. The percentages do not add up to 100% because many seafood dealers could be classified into more than one of the categories.

Table 14. Seafood dealer business activities (n = 59)

Activity	Percent
Fish house/dockside buyer	36%
Fisherman with a dealer license	48%
Distributor/wholesaler	29%
Processor	5%
Importer/exporter	5%
Broker	7%
Restaurant	9%
Retail seafood market	17%
Supermarket	0%

Nearly half of the dealers who responded were also commercial fishermen themselves. Over a third of them buy seafood directly from commercial fishermen. Seventeen percent sold seafood directly to the public as retailers.

Survey respondents were asked to describe how their business was organized. Seventy-one percent said their businesses were sole proprietorships, 25% were owned by corporations, and the remaining 4% of businesses were described as being partnerships.

The current owners of the businesses, on average, had been in business for over 16 years. The range was from less than a year to 65 years in operation. Over 70% of the businesses were under the ownership of the founder. Those businesses not currently owned by the founder had been in operation over 21 years prior to the current owner with a range of 3 to 54 years of previous ownership.

Ten percent of the businesses had no fixed location aside from the home of the business owner. A large majority of the businesses had only one location. The most locations for any single business was four. Virtually all of the businesses were located in Carteret, Onslow, Craven, or Pamlico counties. None had locations outside of North Carolina.

These businesses owned between 0 and 7 vessels, but on average, they owned only one vessel. Additionally, they had between 0 and 28 vessels under contract to fish for them. On average, they had one vessel under contract.

The average seafood business had 5 full-time, and 3 part-time, employees. Few had any unpaid employees such as family members who did not work for a salary. On average, one of those employees was a support staff person who usually worked answering the telephones, handling finances, or ran an office.

About 70% of the employees of these companies were male and 30% were female. About 3% of the workers were migrant laborers, all from Latin America. Less than 1% of all employees were Asian. Just over 5% were African-American and about 4% were Latinos. The remaining employees were non-Hispanic Caucasians.

Income. Seafood dealers were asked to indicate their total gross sales for 2000. Table 15 indicates that 45% of businesses had gross sales of less than $50,000. Many of these businesses were owned by commercial fishermen who also have a seafood dealer's license. Larger, full-time seafood businesses tended to have between $200,000 and $1 million in gross sales. Few businesses had over $1 million in gross sales.

Table 15. Gross sales by Core Sound seafood dealers in 2000

		Frequency	Percent	Cumulative Percent
	Under $50,000	25	45	45
	$50,000 to $100,000	5	9	54
	$100,000 to $200,000	3	5	59
	$200,000 to $500,000	10	18	77
	$500,000 to $1 million	6	11	88
	$1 million to $2 million	4	7	95
	$2 million to $5 million	3	5	100
	Total	56	100	
	Missing	3		
Total		59		

Gross sales were further investigated by type of business (Table 16). The results of an ANOVA test determined that there was a significant difference between business types and the amount of gross sales ($F_{(2,53)} = 10.266$, $p < 0.001$). Further analysis using a Tukey HSD Post Hoc test determined that corporations have significantly higher gross sales than do sole proprietorships or partnerships. There were no significant differences between sole ownerships and partnerships in terms of gross sales in 2000.

Table 16. Gross sales by type of business ownership in 2000.

			Type of business			Combined for all types of businesses
			Sole ownership	Corporation	Partnership	
Gross sales in 2000	Under $50,000	Count	22	2	1	25
		% within Type of business	55.0%	14.3%	50.0%	44.6%
	$50,000 to $100,000	Count	4		1	5
		% within Type of business	10.0%		50.0%	8.9%
	$100,000 to $200,000	Count	3			3
		% within Type of business	7.5%			5.4%
	$200,000 to $500,000	Count	6	4		10
		% within Type of business	15.0%	28.6%		17.9%
	$500,000 to $1 million	Count	2	4		6
		% within Type of business	5.0%	28.6%		10.7%
	$1 million to $2 million	Count	3	1		4
		% within Type of business	7.5%	7.1%		7.1%
	$2 million to $5 million	Count		3		3
		% within Type of business		21.4%		5.4%
Total		Count	40	14	2	56
		% within Type of business	100.0%	100.0%	100.0%	100.0%

Major species sold. Dealers were asked to estimate what percent of their total year 2000 sales by species. Table 17 shows these estimates. The total of the estimates does not add up to 100% because dealers typically do not deal in all of the species. The numbers in the table are best understood in terms of those that sell a particular species and the percent of their total sales contributed by this species. The category of “Other Species” included primarily other finfish species such as black sea bass, bluefish, herring, black drum, eels, groupers, and snappers. Some retail outlets also sold seafood harvested from locations outside North Carolina, such as salmon and tuna. Three dealers interviewed sold only minnows as bait primarily for the use of recreational anglers.

Table 17. Estimated percent of sales by species for Core Sound seafood dealers, 2000.

	Minimum % of Sales	Maximum % of Sales	Mean %	Standard Deviation
Hard crabs	0	100	14.59	25.47
Soft crabs	0	100	16.14	30.83
Hard clams	0	100	14.08	31.67
Oysters	0	100	7.67	21.65
Scallop	0	20	0.95	3.43
Shrimp	0	100	17.68	26.52
Menhaden	0	95	3.07	14.79
Mullet	0	50	2.39	7.40
Red drum	0	5	0.29	0.89
Spot	0	20	1.71	4.38
Spotted seatrout	0	15	0.62	2.34
Weakfish	0	20	1.14	3.41
Other Species	0	100	10.22	26.10

Operating expenses. Operating expenses for any given business vary based on the size and type of business. Table 18 shows percentage of total revenues that are accounted for by various annual operating expenses. Since the number of businesses that incurred each of these expenses is different for each category, the total percentages do not add up to 100%.

Table 18. Business expenses as a percent of total revenue in 2000.

	N	Minimum	Maximum	Mean
Equipment	28	1	60	15%
Insurance	23	1	15	6%
Labor	43	1	80	21%
Loans	11	1	75	11%
Other	7	1	25	15%
Packaging	19	1	15	7%
Product	47	5	100	54%
Taxes	46	1	15	5%
Transportation	31	1	20	8%
Utilities	47	1	50	9%

The greatest expense incurred was for buying seafood product, an average of 54% of annual operating expenses. Labor costs at 21% were the next largest expenditure. Equipment and other expenses each accounted for 15% of operating expenses. Respondents who said they had other expenses were asked to state what those expenses were. Their responses could be place largely into two broad categories: maintenance of vessels and physical plants, and sales commissions.

Markets. The majority of Core Sound seafood dealers sell primarily to in state markets (55%). On average, the dealers export less than two percent of their product overseas. The remaining product is sold out of state. These percentages vary based on the type of product being sold. Table 19 shows markets for Core Sound seafood by type of product. The majority of most Core Sound seafood products remain in North Carolina. However, at least a third of the products are sold to out-of-state markets. On average, very few Core Sound dealers export their product outside the United States. Only one dealer of any type product exported more than 10% of his total annual production.

Table 19. Markets for various Core Sound seafood products (%).

	In state	Out of state	Foreign Exports
Blue crabs (n=37)	58%	42%	0%
Minimum	0%	0%	0%
Maximum	100%	100%	0%
Shellfish (n=24)*	50%	45%	1%
Minimum	0%	0%	0%
Maximum	100%	100%	10%
Shrimp (n=30)	66%	33%	1%
Minimum	0%	0%	0%
Maximum	100%	100%	10%
Menhaden (n=4)	60%	40%	0%
Minimum	10%	2%	0%
Maximum	98%	90%	0%
Other Finfish (n=22)	64%	33%	3%
Minimum	0%	0%	0%
Maximum	100%	95%	50%

* Does not add up to 100% due to combining species.

Current issues. Respondents were asked to rate issues in terms of their importance to their business on a scale of 1 to 10. A value of 1 means that the issue is “not at all important” to 10 meaning that the issue is “extremely important” to their businesses. Table 20 shows a summary of the issues and their average ratings.

Table 20. Current issues important to Core Sound seafood dealers.

	N	Mean
Changing markets	55	4.33
Competition	57	3.30
Financing issues	56	4.38
Foreign competition	56	5.54
Gov't. regulations	57	8.14
HACCP	54	4.89
Labor	55	3.07
Lease moratorium	55	4.49
Marketing	57	4.30
Production problems	54	3.31
Record keeping	57	6.89
Supply of seafood	55	6.55
Transportation	56	3.11
Weather	57	7.51

The most important issue to Core Sound seafood dealers was government regulations. The next most significant issue was weather followed by record keeping requirements and insuring a steady supply of seafood at an affordable price. The least important issues were labor, transportation, domestic competition, and production problems.

Discussion

This study showed that participation rates for a survey of this type can be quite high. Because this study sought to ask about fishing activities from the previous year, some people who were in the industry in that year no longer were at the time of the data collection. Once these individuals and businesses were removed from the study cohort, the participation rates were quite high. What is not clear is whether the recruitment or interview methods used for this study were responsible for the high participation rates. Further studies need to be done to determine if other methods for recruitment and interviewing will provide similar participation rates.

Core Sound commercial fishermen are a diverse and resourceful group. In order to make a living, they target multiple species and use multiple gears. While the majority of them work full-time and fish all year long, very few earn enough in income to support their families on fishing alone. Quite often the spouse works outside of fishing and brings in a larger percent of the total household income.

The fishermen were not likely to report conflicts with other fishermen or with recreational anglers. Those that do, tended to complain about conflicts arising from stolen gear or competition for fishing sites. Some commercial fishermen feel that anglers dislike them because they are seen as “taking all the fish.”

Most of the fishermen lived in small, rural communities in the eastern part of Carteret County. They tended to feel that commercial fishing was important economically and historically in their community. They felt respected within their own communities.

Fishermen were most concerned with what they felt were low prices received for their products. Many fishermen were most concerned about federal and state rules that limit how they are allowed to fish. Additionally, shellfishermen (primarily) tended to have issues with keeping up with proclamations.

Seafood dealers who sell Core Sound products are a very diverse group. Nearly half also have commercial fishing licenses. Their businesses run the gamut from fish houses and processors to restaurants and retail seafood markets. Businesses that were sole proprietorships or partnerships tended to have lower gross sales, while corporations were larger, had more employees, and higher gross sales. At least 50% of all Core Sound seafood remains within North Carolina. Very little is exported to foreign countries. The remaining seafood is sent to markets in other states. The greatest concerns of seafood dealers were dealing with governmental regulations and weather affecting harvest ability.

Overall, the Core Sound seafood industry is viable; however, fishermen and dealers are having to work harder to continue their way of life. Difficulties come in trying to balance their desire to be economically viable while competing with increasing numbers of other users desiring the same resources.

Research Limitations

This study had several limitations. Although they had been assured their participation was voluntary, at least some commented that they felt they needed to participate because if they did not, they would be harassed by NC DMF. Many fishermen and seafood dealers are wary of NC DMF because the Division is seen as a rule maker that causes them to make less money. The Division also enforces the rules it makes and some fishermen and dealers prefer not to interact with Division employees for fear of being found in violation. As long as the Division has this dual role of rule maker and rule enforcer, it will always be difficult for research projects such as this one to gain the trust of all fishermen and seafood dealers.

While this study had high participation rates for fishermen who were contacted and eligible to participate, we were unable to contact quite of few fishermen (18%) and dealers (14%). It is unknown whether these fishermen and dealers were similar to those interviewed, or if they are different from those interviewed.

Future Research

The completion of this study and the two before it suggest additional research:

1. Studies need to be conducted similar to these three that will assess social and economic issues for commercial fishermen in other parts of North Carolina.

2. These studies need to be repeated every several years to update the data and to measure changes over time.

3. In depth analyses need to be undertaken to determine the social and economic impacts of fisheries management on fishermen and fishing communities.

References

Diaby, Souleymane (2000). An Economic Analysis of Commercial Fisheries in the Albemarle Sound Management Area, North Carolina. NC Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC. Atlantic Coastal Fisheries Cooperative Management Act, National Oceanic and Atmospheric Administration Award No. NA87FG0367-1.

Diaby, Souleymane (manuscript). An Economic Analysis of Commercial Fisheries in the Pamlico Sound Area, North Carolina. NC Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC. Atlantic Coastal Fisheries Cooperative Management Act, National Oceanic and Atmospheric Administration Award No. NA87FG0367-2.

Microsoft Access (1997). Microsoft Corporation, Redmond, WA.

SPSS (Statistical Package for the Social Sciences), release 11.0.0, 2001. SPSS, Inc., Chicago, IL.

Appendix A

CORE SOUND FISHERMEN SURVEY

1. How many years have you been a commercial fisherman? _____

2. What percentage of your total household income is derived from any aspect of the fishing industry?

   ______ % (range 0 – 100%)

3. Besides a commercial fishing license, do you also hold a dealer's license?

   ☐ No ☐ Yes

   (If *"Yes",* tell the fisherman that these initial questions only relate to the part of their business related to fishing.)

4. Compare yourself to other fishermen using a scale of 1 to 10. With 1 being "not at all successful as a commercial fisherman" to 10 being "no one has more success than I do", how successful do you think you are?

   ____

<u>COMMERCIAL FISHING</u>

I'm going to read some numbers. When I reach a number that is **<u>equal to or higher than</u>** the amount you personally earned last year just from fishing, tell me to stop. Include only profit, that is, after you paid all expenses associated with your fishing business.

5. Read these numbers:

Read these numbers	Mark here
$0	1. $0 or lost money
$5,000	2. $1 - $5,000
$15,000	3. $5,001 - $15,000
$30,000	4. $15,001 - $30,000
$50,000	6. $30,001 - $50,000
$75,000	7. $50,001 - $75,000
$100,000	8. $75,001 - $100,000
More than $100,000	9. > $100,000
	99. Refused

6. What percentage of your total individual income do you earn from commercial fishing (*that is, sale of fish taken with commercial fishing gear)*?

   _____ % (range 0 – 100%)

If the answer above is anything other than 100%, ask the following question:

7. What other kinds of work do you do to earn income other than commercial fishing?

   ____

8. In a typical year, what months do you fish?

☐ I fish all year long

Or check all that are appropriate:

☐ January	☐ May	☐ September
☐ February	☐ June	☐ October
☐ March	☐ July	☐ November
☐ April	☐ August	☐ December

<u>FISHERY PARTICIPATION</u>

9. What is the ownership type that best describes your fishing operation?

☐ Sole Owner
☐ Partnership
☐ Corporation

10. How many vessels do you own that are registered for use in your fishing operation?

How many vessels? ____

	Years Owned	Market Value (incl. all gear)	Length	Crew Size*	Operator Status**
Vessel #1					1 2 3
Vessel #2					1 2 3
Vessel #3					1 2 3
Vessel #4					1 2 3

* Include the captain

** 1. Captain/Owner 2. Hired Captain 3. Other ___________________________

If more than one boat is owned, say the following:

For the rest of the questions in this section I want you to answer in terms of all the fishing boats you own.

11. What percent of your fishing activities occur in

Core Sound and tributaries	_____
North River	_____
Back Sound	_____
Pamlico Sound	_____
Neuse River	_____
Newport River	_____
Bogue Sound	_____
Ocean waters	_____
Other waters	_____
Total	100%

12. Which gears did you use in 2000 in Core Sound?

13. What species did you target in 2000 in Core Sound?

	Targeted Species	Percent of total commercial fishing income in 2000
Crab Pot		%
Trawl		%
Long Haul Seine		%
Pound Net		%
Gill Net		%
Other Gears*		%
		Total 100 %

List other Gears used: ____

OPERATING EXPENSES

14. Please provide the average operating expense for a **typical fishing trip in 2000** (for each vessel). Round off your answers to the nearest dollar.

Expense category	**Vessel 1**	**Vessel 2**	**Vessel 3**	**Vessel 4**	**Avg.**
Fuel and oil					
Ice					
Groceries					
Bait					
Other ___________					

If the vessel(s) has/have a crew, ask Question 15, else skip to Question 16.

15. Do you use a share system to pay the crew and captain of your vessel(s)?

 No → How do you pay the captain and crew? ____________________
(Skip to Question 16)
 Yes → Which of the following expenses were subtracted from your gross revenues before calculating the crew and captain's shares?
(Circle one number for each item below.)

	Deducted	Not Deducted	N/A
Fuel and oil	1	2	
Bait	1	2	
Ice	1	2	99
Groceries	1	2	99
Other	1	2	99

Describe other ____

What percentage of the net share (gross total revenues minus the expenses indicated above) goes to

Boat share: _______ %

Captain's share: _______ %

Crew's share: _______ %

16. Please provide your total expenditures for 2000 for each of the following categories:

Expense Category	**Vessel #1**	**Vessel #2**	**Vessel #3**	**Vessel #4**
Labor - Capt. & crew (not in your household)				
Payments to people in your household				
Licenses & Permits				
Start up (only 2000)				
Vessel loan payments				
Vessel/Gear Repairs				
Taxes assoc. w/vessel				
New Gear/Equipment				
Insurance				
Other Professional Expenditures/Fees				

DEMOGRAPHIC QUESTIONS

17. How old are you? ________

18. (*Don't ask, just mark*) ☐ Male ☐ Female

19. What do you consider to be your ethnic background?
    - ☐ Hispanic/Latino (all races)
    - ☐ Asian-Pacific Islander
    - ☐ White/Caucasian
    - ☐ Native American
    - ☐ African-American/Black

20. What was the highest grade you completed in school?
    - ☐ Less than high school diploma
    - ☐ Some college/technical school
    - ☐ High school diploma
    - ☐ College diploma (or more)

21. What is your marital status?
    - ☐ Currently married
    - ☐ Widowed
    - ☐ Separated
    - ☐ Divorced
    - ☐ Never married

22. How many people live in your household? (include respondent, people such as students away at school, someone in the hospital, or currently away on business or vacation, etc., but not someone whose main place of residence is somewhere else.)

    ____

23. Of the people who live in your household, how many of them work at least part time in some aspect of the fishing industry? (Do not include the fisherman)

    ____

24. I'm going to read some numbers. When I reach a number that is **equal to or higher than** your total household income last year before taxes, tell me to stop.

Read these numbers:		Mark here:	
	$15,000		1. ≤ $15,000
	$30,000		2. $15,001 - $30,000
	$50,000		3. $30,001 - $50,000
	$75,000		4. $50,001 - $75,000
	$100,000		5. $75,001 - $100,000
	More than $100,000		6. > $100,000
			99. Refused

25. What is the name of the community/town/city where you live? ____________

26. Which county is that in? _________________________

27. How many years have you lived in this community? ____

EXPERIENCES & ATTITUDES ABOUT FISHERY MANAGEMENT

28. Do you think you will be a commercial fisherman ten years from now?
☐ Yes ☐ No (why? ____________________________)

Use a scale of 1 to 10, with 1 being "not at all" to 10 being "extremely" and tell me how much you agree or disagree with each of the following statements.

29. I am optimistic about my future ability to make a living in fishing. _____

30. Commercial fishing is important economically in my community. _____

31. Commercial fishing has an important role in the history of my community. _____

32. Commercial fishermen are respected in my community. _____

33. My community actively supports commercial fishing with activities like memorials to fishermen lost at sea or a "blessing of the fleet", etc. _____

Other community support activities ______________________________________

____

34. I have to work harder now to land the same number of *my targeted species* than I did a few years ago. (If you think there is no difference, your answer should be 5.) _____

In the last year, how many times have you had negative experiences:

35. with other commercial fishermen _____ # x's (explain, ______________)

36. with recreational fishermen _____ # x's (explain, ______________)

37. involving federal regulations _____ # x's (explain, ______________)

38. involving state regulations _____ # x's (explain, ______________)

Which three of the following do you think are the most important issues facing you as commercial fisherman? *Indicate the most important one by circling it.*

39. ☐ Overfishing
40. ☐ Too much local competition
41. ☐ Outside competition
42. ☐ Too much environmental regulation
43. ☐ Too difficult to keep up with proclamations or changes in rules
44. ☐ Gear Restrictions
45. ☐ Too many areas off limits to fishing
46. ☐ Seasonal closures are too restrictive
47. ☐ Bag limits are too restrictive
48. ☐ Quotas are too restrictive
49. ☐ Too many federal & state regulations, overall
50. ☐ Low prices for seafood
51. ☐ Initial start up costs
52. ☐ Inability to obtain financing for repair/replacement of equipment
53. ☐ The costs of doing business (business taxes, licenses, etc.)
54. ☐ Required record keeping or other paperwork
55. ☐ Problems with your crew or other labor problems
56. ☐ Respect for commercial fishermen
57. ☐ Weather
58. ☐ Inability to predict the future for your fishing business

59. Once again, use a scale of 1 to 10. This time the scale ranges from 1 meaning “not at all likely” to 10 meaning “extremely likely”. If a young person came to you and said they were interested in becoming a commercial fisherman, how likely is it that you would recommend pursuing a career in fishing?

_____

Appendix B

CORE SOUND SEAFOOD DEALER SURVEY

The North Carolina Division of Marine Fisheries is conducting an economic survey of seafood dealers in the Core Sound area. The purpose of the survey is to document the economic and social importance of North Carolina's seafood industry and for determining fisheries management options.

Your completed survey is one important source of information for documenting the economic importance of your industry. All responses will be kept strictly confidential and will be reported only after they are combined with the responses of other seafood dealers. After the data are combined there will be no way to identify information that came specifically from you.

The survey is voluntary, but we urge you to participate. We need your answers to provide a complete picture of the importance of your industry in North Carolina. Dealers such as yourself who have a vital stake in the fisheries management decisions being made can provide the information necessary to evaluate the economic effects of different options on the commercial fishing industry. Please note that the person who fills out this survey does not have to be the owner. Any person employed by the business who is knowledgeable overall about the economic aspects of the business may fill it out.

Please return your completed survey within two weeks using the enclosed postage-paid envelope. Should you have any questions or comments, please contact Brian Cheuvront at 252-726-7021, ext. 603 at the Division of Marine Fisheries in Morehead City.

Thank you again for participating.

1. How would you describe this seafood business? (check all that are appropriate)
   - ☐ Fish house/dockside buyer
   - ☐ Fisherman with a dealer license
   - ☐ Distributor/Wholesaler (incl. packing & freezing)
   - ☐ Processor ☐ Restaurant
   - ☐ Importer/Exporter ☐ Retail seafood market
   - ☐ Broker ☐ Supermarket

2. What is the ownership type that best describes this seafood business?
   ☐ Sole ownership ☐ Corporation ☐ Partnership

3. How many years have the present owners had this business? _________

4. How many years did this business exist prior to the present ownership? _______

5. How many separate locations does this business have? _________

6. Of those locations, how many are in Carteret, Onslow, Craven or Pamlico counties? _______

7. How many locations are outside NC? ____

8. How many fishing vessels are directly owned by this business? ________

9. How many fishing vessels work under contract exclusively for this business? _______

10. How many are support staff (manager, secretary, etc.) employees are there? ______

11. How many paid full time employees does this business have? _______ (not support staff)

12. How many paid part time employees does this business have? ________ (not support staff)

13. How many unpaid employees (e.g. family members) does this business have? ____

14. Of all of the people who work full or part time for this business in any capacity, what percent are in each of the following categories?

White or Caucasian	_________%	African-American	_________%
Asian/Pacific Islander	_________%	Native American	_________%
Hispanic/Latino	_________%		

15. What percentage of your employees are: Men ____% Women _______%

16. What percentage of your employees are migrant workers? _____%

17. Rate each of the following issues on a scale of 1 to 10 with 1 being not at all important to 10 being extremely important current issues for your seafood business:

___	Core Sound Shellfish Lease Moratorium	___	Financing issues
___	Government regulations	___	Supply of seafood
___	Record keeping requirements	___	Marketing
___	Keeping up with Hazard Analysis Critical Control Point (HACCP) requirements	___	Labor problems

___ Competition from other dealers

___ Production problems

___ Competition from imported seafood

___ Transportation/delivery problems

___ Weather

___ Changing markets

___ Other (Explain ____)

Please indicate the amount of your seafood dealer business' gross total sales in 2000.

1. ☐ Under $50,000
2. ☐ $50,000 - $100,000
3. ☐ $100,000 - $200,000
4. ☐ $200,000 - $500,000
5. ☐ $500,000 - $1 million
6. ☐ $1 million - $2 million
7. ☐ $2 million - $5 million
8. ☐ More than $5 million

18. Indicate the percent of your total sales for each species group below:

Species	**% of 2000 total sales**
Hard Clams	%
Blue Crabs, Hard	%
Blue Crabs, Soft	%
Flounder	%
Gray trout/weakfish	%
Atlantic Menhaden	%
Mullet	%
Scallop, Bay	%
Spotted Seatrout	%
Shrimp	%
Spot	%
Oysters	%
Other species	%
Total	**100** %

19. Please indicate your primary markets by the percentage of your total sales in 2000:

1. In-state markets (restaurants, retail, stores, other dealers, etc.) ___%
2. Out of state markets (US only) ___%
3. Export (Japan, Europe, etc.) ___%

Total 100%

20. Please provide some information about your annual operating expenses for the following items in 2000. Expenses should be provided as a percent of total revenues.

		Percent
1.	Raw products (fish, crabs, etc.)	_______%
2.	Labor (employee salaries/benefits)	_______%
3.	Utilities/Telephone	_______%
4.	Transportation/shipping	_______%
5.	Packing material	_______%
6.	Equipment	_______%
7.	Loan payments	_______%
8.	Insurance	_______%
9.	Taxes & License fees	_______%
10.	Other costs (______________________________)	_______%
	Total	100 %