North Carolina Division of Marine Fisheries

A Social and Economic Analysis of Commercial Fisheries in North Carolina

Albemarle and Pamlico Sounds

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INTRODUCTION

From the Virginia border to the South Carolina line, the coast of North Carolina encompasses a large variety of fisheries. All of the states of the East Coast include barrier islands, but none surround estuaries as large as the two primary sounds hemmed in by the Outer Banks. Shallow and wide, Albemarle and Pamlico Sounds are connected to the Atlantic Ocean by three inlets, and include ecosystems that fluctuate widely in salinity and water temperature. The fishermen that work these waters catch many of the species harvested elsewhere in the state (flounder, shrimp, blue crabs) and some that are not (catfish, white and yellow perch). Regulations on catch are decided by interstate councils such as the Atlantic States Marine Fisheries Commission (ASMFC) and the South Atlantic Fisheries Management Council (SAFMC) as well as the state's own Marine Fisheries Commission (MFC).

Understanding the impacts of these restrictions on the commercial fishing industry as a whole requires knowledge of the social and economic characteristics of the commercial fishermen of the fishing industry. This information is important for the development of state fishery management plans as required by the North Carolina Fisheries Reform Act of 1997.

In 2005, the North Carolina Division of Marine Fisheries (DMF) began the sixth in a series of studies investigating the social and economic characteristics of North Carolina's commercial fisheries by interviewing fishermen and fish dealers. The previous studies were similar analyses of the Albemarle Sound Management Area (Diaby 2000), Pamlico Sound (Diaby 2002), Core Sound (Cheuvront 2002), Beaufort Inlet to the South Carolina Border (Cheuvront 2003), and the Snapper-Grouper Fishery (Cheuvront and Neal 2004).

Study Area

The fishermen in this study all work the area defined by the Outer Banks, from the Virginia border down to (but not including) the Core Sound area. The NC Division of Marine Fisheries' trip ticket program divides this into twelve interconnected water bodies. The boundaries of these water bodies include over twenty counties. In all, these water bodies comprise approximately 1.9 million acres of water or 3,061 square miles. Some of these fishermen work additional water bodies as well (such as the Atlantic Ocean, Core Sound, and Virginian waters) but those activities are not the focus of this report.

Figure 1. Map of study area (NC DMF GIS Program).

Study Objectives

The specific objectives of this study were:

1. To describe the socioeconomic aspects of commercial fisheries in the areas encompassing Albemarle and Pamlico Sounds including demographic characteristics of commercial fishermen and dependence on commercial fishing activities,

2. To collect costs and earnings information from commercial fishermen in order to develop estimates of the costs, earnings, and returns associated with commercial fishing, and

3. To assess commercial fishermen's perceptions of fishery regulations, conflict, and relevant issues including the future of the industry.

METHOD

Recruitment and Participation Rates

In 2005 a list of 1,633 commercial fishing license holders was obtained from the NC DMF license database. Each of the persons or businesses on the list reported at least $1,000 in ex-vessel value of seafood landed from water bodies in the study area during calendar year 2004. Licenses included were the Standard Commercial Fishing License (SCFL), Retired Standard Commercial Fishing License (RSCFL), Land or Sell License, and the Shellfish License for North Carolina Residents without a SCFL. Project-specific interviewers conducted all surveys for the project. Fishermen in the Albemarle Sound area were deliberately oversampled in order to provide information on the state's upcoming catfish and perch fishery management plans.

Survey Instrument

The Socioeconomic Program of the Division's License and Statistics Section has a goal of continually surveying fishermen on a staggered five-year basis. Fishermen representing an area of the coast are usually being surveyed in any given year, with the goal that the area will be surveyed again five years hence for longitudinal purposes. Cheuvront (2002, 2003, 2004) has continually refined the survey to the point that the general format is set, with minor modifications made to reflect each area's specific fisheries and industry. Surveying is primarily done over the phone. Fishermen's answers are recorded on paper and later entered into a tailored Microsoft Access database.

The data collected in the survey included information concerning:

(i) Individual socio-demographics
(ii) Characteristics of the fishing business
(iii) Fishing vessel characteristics and expenses
(iv) Targeted species and gear combinations
(v) Income from fishing
(vi) Financial costs of doing business
(vii) Attitudes regarding fishery management
(viii) User group conflicts
(ix) Perceptions of the fishing industry

Pamlico Sound fishermen were surveyed in the summer of 2005. Albemarle Sound fishermen were surveyed in the summer of 2006.

RESULTS

After collecting the data, the interviewer keyed the surveys into a Microsoft Access (2000) data entry program which stores and manages 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 was analyzed using the Statistical Package for the Social Sciences (SPSS release 12.0.0 [SPSS, 2003]). Final data verification, assigning labels to variables, and additional variable calculations were completed in SPSS along with all data analyses. The primary analyses in this report consisted of frequency and simple univariate analyses. Further analyses of the entire dataset or subsets of the data is available upon request from the author of this report.

Fishermen

Demographics

The fishermen who work Albemarle and Pamlico Sounds are overwhelmingly male (95%) and white (94%), which is in keeping with fishermen up and down the North Carolina coast. They have been fishing, on average, for 26 years, though one fisherman had only been fishing for a year, and another had been on the water since the late 1930s. Three-quarters are married, and 80% have 2-4 people in their household. They are heavily integrated into their communities, with the average fishermen having lived in his area for almost 40 years. There are a lot of small counties in this rather broad area of the coast, and the surveyed fishermen listed no fewer than 21 separate counties of origin. The most common counties listed were Beaufort, Dare, Currituck, Hyde, and Pamlico counties, but 29% of the respondents were from counties not in those top five.

Table 1. Demographic variables.

	Frequency	Percent		Frequency	Percent
Gender			Annual Household Income		
Male	296	95%	Less than $15,000	27	9%
Female	17	5%	$15,001 - $30,000	96	31%
Racial/Ethnic Background			$30,001 - $50,000	90	29%
White	294	94%	$50,001 - $75,000	48	16%
African-American	12	4%	$75,001 - $100,000	24	8%
Asian-American	3	1%	More than $100,000	11	4%
Hispanic	3	1%	Refuse to Answer	13	4%
Education			County of Residence		
Less than High School	81	26%	Beaufort	61	19%
High School Graduate	144	46%	Dare	59	19%
Some College	69	22%	Currituck	36	11%
College Graduate	19	6%	Hyde	31	10%
Marital Status			Pamlico	22	7%
Married	241	77%	Other	92	29%
Divorced	37	12%	Age		
Widowed	7	2%	Average	52	
Separated	22	7%	Minimum	17	
Never Married	6	2%	Maximum	84	
# of People in Household			Years Fishing		
One	41	13%	Average	26	
Two	141	45%	Minimum	1	
Three	59	19%	Maximum	66	
Four	51	16%	Years in Community		
Five	11	4%	Average	39	
Six	5	2%	Minimum	2	
Seven	2	1%	Maximum	85	

These respondents come from fishing families: the median number of generations of fishermen in their family is three, so a person in the "middle" of this sample had a grandparent who fished. Sixty-four percent had fathers who fished, and nearly as many (58%) had grandparents who fished. Only 38% had children who fished, however.

Fishing accounts for two-thirds of the income of these fishermen on average; for 39% of them, it is the sole source of income. Two-thirds of the respondents consider themselves to be full-time fishermen, though that does not necessarily preclude them from having additional income. Twenty-one percent rely on a pension or social security. Many work in other sectors of the coastal economy, most often in construction (10%), other fisheries-related jobs (8%), government (5%), maintenance (3%), or non-fisheries maritime such as ferries or docks (3%). Median household income was approximately

$40,000, which closely parallels North Carolina's median household income of $40,572 (US Census Bureau 2004).

Three-quarters of the fishermen had a high school education, and 28% have at least some college experience.

Characteristics of the Fishing Business

The fishing businesses in this study do not fit one mold. The Sounds span over half of the North Carolina coast, and some areas have quicker access to the lucrative fisheries of the Atlantic Ocean. The center of "professional" fishing in this area is in Wanchese, but the area produces a variety of different business models.

Timing

Fewer than 30% of the fishermen here worked the water year-round. May through October were the months of highest fishing participation, and December through February were the months with the lowest fishing rates. Table 2 shows the fishing participation by month for the fishermen in this study.

Table 2. Months of Fishing Activity.

Month	Number (n=313)	Percent
January	140	45%
February	165	53%
March	224	71%
April	262	83%
May	277	88%
June	281	89%
July	281	89%
August	288	92%
September	284	90%
October	272	87%
November	238	76%
December	172	55%

Fishing Vessels and Business Expenses

Almost all of the fishermen (97%) owned boats, with 52% owning just one boat, 34% owning two boats, and the remaining 11% owning three or more. Vessels were classified according to size. Thirty-two percent of the vessels were classified as small (less than 19 ft. in length), 60% were medium (between 19 and 38 ft. in length), and 8% were large (over 38 ft. in length). Table 3 shows a summary of vessel characteristics based on vessel size. Value includes gear used on that boat.

Table 3. Summary characteristics by vessel size.

	Small (n=156)	Medium (n=292)	Large (n=39)
Avg. Length (in feet)	16.3	23.8	58.3
Avg. Crew Size	1.3	1.5	2.7
Avg. Years Owned	12	10	14.7
Avg. Value	$9,861	$30,117	$96,667

Just as the value of a boat rises with size, so does the expense of running it. The larger boats haul in larger catches per trip, but also incur much larger expenses. Table 4 illustrates the estimated per-trip and annual operating expenses incurred by boat owning-fishermen in the Albemarle/Pamlico area. Figures include both the average and the median (that of the "middle" fishermen) estimates. Note that the mean is larger than the median by several orders of magnitude; the presence of large ships in the survey raises mean expenditures considerably.

Table 4. Mean and median estimated boat expenditures.

Trip Expenses:	Average	Median
Fuel	$197.15	$35.00
Bait	$66.12	$50.00
Groceries	$16.10	$3.00
Ice	$18.17	$0.00
Other Expenses	$11.20	$3.00
Total/Trip:	$308.74	$91.00
Annual Expenses:	Average	Median
Capt/Crew (not self)	$9,111	$0
Pay to Relatives	$955	$0
Insurance	$822	$0
Licenses & Permits	$463	$250
Startup (2001 only)	$213	$0
Loan Payments	$1,069	$0
New Gear	$5,403	$3,000
Repairs	$3,479	$0
Docking Fees	$387	$0
Other Expenses	$328	$0
Total/Annum:	$22,230	$3,250

Seventy-four (23%) of the fishermen reported using some sort of share system during the past year. Before dividing up the profits from the catch, almost all (86%) deduct the price of fuel from the trip. Thirty-one percent deduct the cost of ice, and 62% the price of any groceries. Half deduct the cost of bait. After these deductions, the net profits were divided between the captain, crew, and boat (the last being a common way to provide for the long-term maintenance of a fisherman's most capital-intensive gear). The most common division of shares went to the captain/crew/boat as a 25/25/50 split.

Albemarle/Pamlico Sound fishermen target a variety of species, most commonly (and most lucratively) blue crabs. Blue crabs are the state's most valued seafood commodity, bringing in over $30M in annual landings statewide, although recent years have seen a precipitous decline. A majority of the landings of blue crabs in North Carolina occur in the study area (North Carolina Blue Crab Fishery Management Plan, 2004). Over two thirds of these fishermen in this report pot or trawl for blue crabs. Over 10% also collect peeler crabs at certain times of the year.

Table 5. Targeted Species and Gear Types Used.

Species	Respondents who target	Gears*	Percent Using Gear to Target
Crabs			
Hard	70%	Crab Pot	94%
Peeler	11%	Peeler Pot	20%
Soft shell	6%	Crab Trawl	6%
Flounders	44%		
		Gill Net	89%
		Pound Net	9%
White Perch	17%		
		Gill Net	87%
		Pound Net	13%
Striped and White Mullet	16%		
		Gill Net	100%
Shrimp	16%		
		Shrimp Trawl	90%
		Skimmer Trawl	10%
Shad	12%		
		Gill Net	100%
Spot	11%		
		Gill Net	100%
		Haul Seine	6%
Catfish	10%		
		Gill Net	73%
		Pound Net	26%
		Trotline	10%
Croaker	10%		
		Gill Net	97%

* Only major gears are listed here. Individual fishermen may use more than one gear to target the same species.

A substantial portion (44%) of the fishermen also target flounder, another of the state's most popular commercial fisheries. Most use gill nets, with a small portion (9%) collecting flounder in traditional pound nets in the areas' numerous tributaries. White perch are caught primarily in the brackish waters of Albemarle Sound and the surrounding area, again mostly with gill nets, as are catfish (although some of these use trotlines as well). Five of the fishermen also catch yellow perch, either with fyke nets or pound nets. Only 16% of the fishermen in this survey trawled for shrimp compared to 35% of those surveyed in the southern areas of the state.

Income

Few of the fishermen in this study earn large amounts of money from commercial fishing; less than 11% reported earning over $30K from their fishing business in the 2004. Fishing incomes are reported in Table 6 below.

Table 6. Reported Income from Commercial Fishing.

		Frequency	Percent
	$0 or lost money	44	14%
	$1 - $5,000	61	20%
	$5,001 - $15,000	78	25%
	$15,001 - $30,000	90	29%
	> $30,000	35	11%
	Total	308	100%
	Refused	6	
Grand Total		314	

Table 7 is a contingency table showing the relationship between income from fishing and total household income. A few fishermen did not answer the household income questions. Of those that did, seven fishermen earned no money from fishing in 2004 and had household incomes below $15,000. Household income and fishing income are positively correlated, as might be expected; however the correlation is weak (although it is statistically significant).

Table 7. Household and Fishing Income Matrix.

		Household income						
		<= $15,000	$15,001 - $30,000	$30,001 - $50,000	$50,001 - $75,000	$75,001 - $100,000	> $100,000	Total
Income from fishing	$0 or lost money	7	13	10	3	6	1	40
	$1 - $5,000	10	14	17	9	8	1	59
	$5,001 - $15,000	8	32	18	11	3	2	74
	$15,001 - $30,000	2	35	32	12	4	2	87
	> $30,000		1	13	13	3	5	35
	Total Respondents	27	95	90	48	24	11	295

Macroeconomics

Fishing in the Albemarle and Pamlico Sounds is no longer as lucrative as it once was. The impacts of declining catch and (for some species) declining ex-vessel prices have caused a dramatic drop in poundage and income over the past decade (see Figure 2).

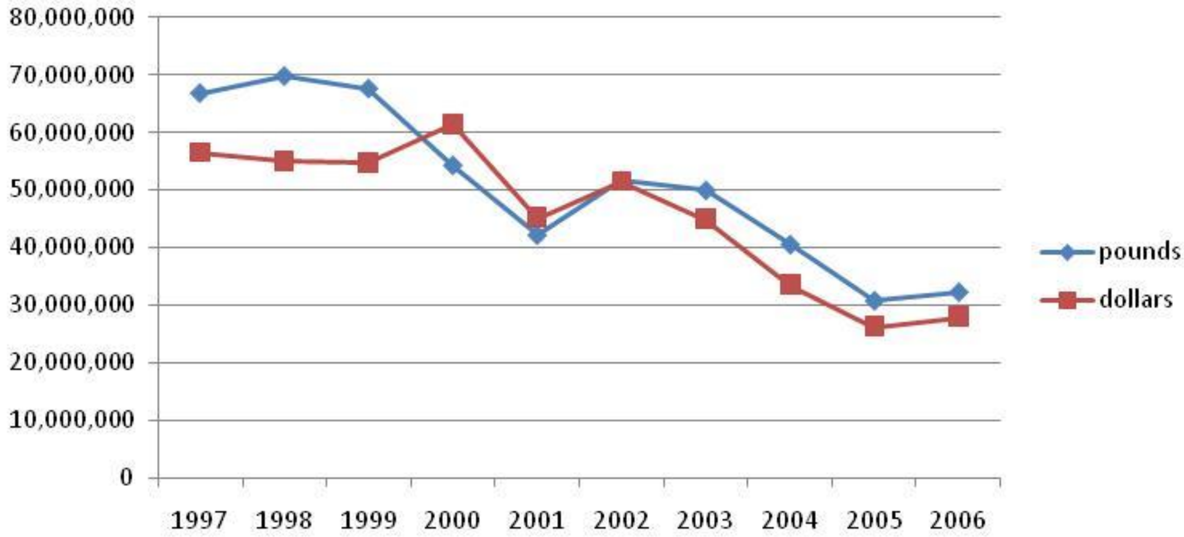


Figure 2. Landings and Value in Study Area.

This is largely due to the impact of declining blue crab catches as seen in Figure 3. There is no consensus as to the biological cause of these declines, although the large rainfall events from Hurricane Floyd in 1999 may have contributed to recruitment issues (Blue Crab FMP 2004).

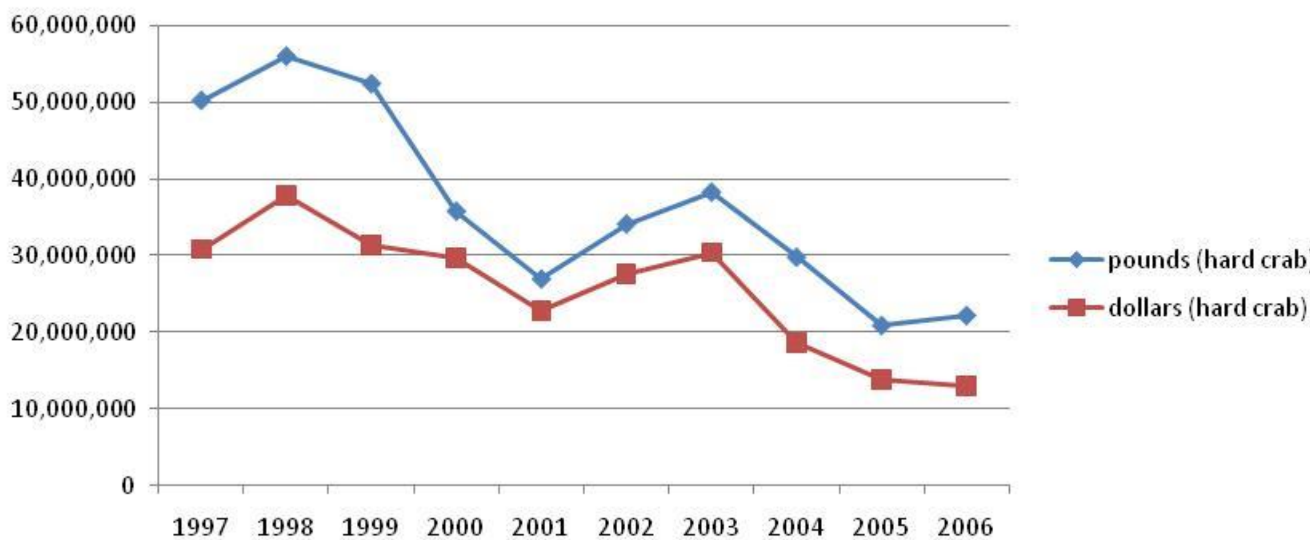


Figure 3. Blue Crab Landings and Value in Study Area.

Perceptions

Fishermen were asked a variety of questions designed to elicit their opinions on the business of commercial fishing, particularly regarding the challenges fishermen face today. Commercial catches and commercial license sales have declined over the past decade, as shown previously. Every fisherman ranked a variety of different issues on a ten-point scale by "how important [he or she] consider each of these issues to [his or her] fishing business." The results are shown in Table 8.\

Table 8. List of issues of concern to fishermen.

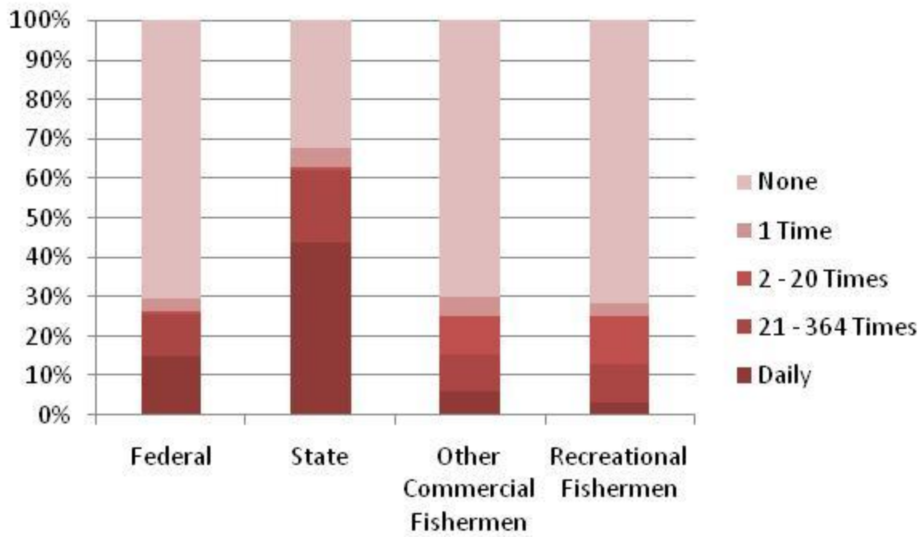
Rank	Issue
1	Imported seafood
2	Low prices for seafood
3	State Regulations
4	Too difficult to keep up with proclamations or changes in rules
5	Weather
6	The costs of doing business (business taxes, licenses, etc.)
7	Gear Restrictions
8	Quotas are too restrictive
9	Bag limits are too restrictive
10	Seasonal closures are too restrictive
11	Too much environmental regulation
12	Too many areas off limits to fishing
13	Overfishing
14	Inability to predict the future for your fishing business
15	Outside competition
16	Required record keeping or other paperwork
17	Size Limits
18	Federal Regulations
19	Too much local competition
20	Inability to obtain financing for repair/replacement of equipment
21	Problems with your crew or other labor problems
22	Respect for commercial fishermen
23	Initial start up costs

Imported seafood has challenged the economic competitiveness of the North Carolina fishermen, and the fishermen in this survey acknowledged it by ranking it (and the related issue of low prices) at the top of the list. Regulations followed, always an issue of importance with commercial fishermen. With the effects of recent hurricanes like Floyd and Isabel perhaps fresh in their minds, weather ranked fifth.

User Group Conflicts

The fishermen were also asked about conflicts with regulations and with other user groups. None of the top ten species targeted by this group is regulated through the regional councils, so it is unsurprising that federal regulations are not a source of contention with most of the fishermen here, as seen in Figure 4. The complaints they did have were mostly about the cost of federal permits and the presence of quotas for federally managed species like flounder and dogfish.

Figure 4. Frequency of conflict experiences in the past year.



State regulations, on the other hand, are of considerable more tension. These fishermen must work with efforts by the DMF and the MFC to regulate catch and ensure a sustainable harvest. More than half of the fishermen reported at least one conflict with state regulations in the previous year. Frequent complaints include a perceived arrogance of Marine Patrol officers, the changing flounder size limits, and the five-fish catch limits on striped bass.

Few of the fishermen reported conflicts with other commercial fishermen or with recreational users. Three-quarters of the commercial fishermen reported no or a single incident in each of these categories during the previous year. The most common disputes between commercial fishermen involved pots--either accusations of stealing pots, or hauling pots up (presumably accidentally) with a trawl. Recreational fishermen were lambasted for running over pots and nets and accusing commercial fishermen of "taking all the fish."

Respondents were asked whether they expected to still be commercial fishing ten years later. Fifty-three percent believed that they would, which is lower than the 59% of fishermen in the 2003 Southern District survey and 68% of fishermen in the 2002 Core Sound study who affirmed they still would be fishing in a decade.

DISCUSSION

The fishermen in this survey were in most ways comparable to those surveyed by Cheuvront (2002, 2003). They had been fishing for an average length of 26 years, around the same length as those in the Core Sound (25) and Southern District (24) surveys. Both fishing and household incomes were about 30% higher than among the Southern District fishermen, but identical to those in the Core Sound area. The same percentage (60-65%) of respondents in all three surveys considered themselves to be full-time commercial fishermen.

The species they target, however, are quite different. As outlined above, the biggest fishery in this area (both in terms of participation and revenue generated) is crabbing. Nearly three-quarters of the fishermen surveyed here pursue crabs at least part of the time, in comparison to less than a fifth in the other two areas. The immense shallows of the northern sounds are ideal crab habitat, and absolutely dwarf the amount of available space for pots in the southern half of the state, so this should be looked upon as a rational response to the area's geography. Roughly fifty of the crabbers in this survey pursued no other species. They also pursue species not generally seen elsewhere in significant levels like perch and catfish.

Albemarle and Pamlico Sound fishermen tend to value their smaller boats and gear at higher levels than other fishermen, probably reflecting the costs for the numerous crab pots upon which their livelihood depends. Crew and trip costs are about the same as in other areas.

Imported seafood have depressed the prices of many North Carolina maritime staples in recent years, and the fishermen in this survey felt that the interrelated issues of pricing and imports were the most challenging problem facing them today. This differs from the fishermen in the more crowded Southern District Study area, who cited regulations and overfishing as their biggest concerns.

CONCLUSION

Fishermen in the Albemarle and Pamlico Sounds are under considerable pressure from economic factors such as development and low seafood prices, but at the time of this study they appear to be holding their ground. Household incomes are of a level comparable to other rural North Carolina households, and fishing incomes are nearly identical to those in previous surveys. Unfortunately, the pressures brought on by imported seafood are not likely to diminish in the near future. Additional issues like rising fuel costs and the loss of working waterfronts were not discussed in this survey but will be incorporated into future questionnaires.

The heavy reliance on a single species (crab) by so many of the fishermen in this area, means significant numbers of fishermen are exposed to a downturn in that fishery. Declining blue crab catches undoubtedly removed some of the less successful harvesters from the survey pool. Future surveys will attempt to interview former fishermen as well to obtain a broader picture.

The fishermen surveyed here are concerned about that future and what it will bring for themselves, their families, and their communities. North Carolina fishermen have always been a resilient group, accepting the whims of nature and the cycles of the fishing industry. As the North Carolina coast continues to develop, it remains to be seen how well they will weather future storms, both natural and economic.

REFERENCES

Cheuvront, Brian (2002). A Social and Economic Analysis of Commercial Fisheries of Core Sound, 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. NA87FG0367-3.

Cheuvront, Brian (2003). A Social and Economic Analysis of Commercial Fisheries in North Carolina: Beaufort Inlet to the South Carolina State Line. NC Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC. A Report for the NC Technical Assistance to the South Atlantic Fisheries Management Council, Task 5: NEPA Related Activities, Contract No. SA-03-03-NC.

Cheuvront, Brian (2004) and Mary Neal. A Social and Economic Analysis of Snapper Grouper Complex Fisheries in North Carolina South of Cape Hatteras. NC Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC. A Report for the NC Technical Assistance to the South Atlantic Fisheries Management Council, Task 5: NEPA Related Activities, Contract No. SA-03-03-NC.

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 (2002). 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.

NC Department of Commerce (2003). County Profiles – Economic Development Information Services. http://cmedis.commerce.state.nc.us/countyprofiles/.

NC DMF (2004). North Carolina Fishery Management Plan for Blue Crab, NC Department of Environment and Natural Resources, Division of Marine Fisheries, Morehead City, NC

Microsoft Access (2000). Microsoft Corporation, Redmond, WA.

Pearson NCS (2003). Sample Size and Confidence Interval Estimator. http://www.pearsonncs.com/research-notes/sample-calc.htm.

SPSS (Statistical Package for the Social Sciences), release 12.0.0. SPSS, Inc., Chicago, IL. 39

US Census Bureau (2004). State and County Quick Facts. http://quickfacts.census.gov/qfd/states/37000.html

Appendix: Pamlico/Albemarle Fisherman Survey

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

2. 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? _________

3. What are the main species you land & gears you use each month?

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

4. Have you ever changed the species you target because of changes in regulations?

☐ No ☐ Yes →

If "*Yes*", record any comments ______________________________________

____

____

FISHERY PARTICIPATION

5. What is the ownership type that best describes your fishing operation?
   - ☐ Sole Owner
   - ☐ Partnership
   - ☐ Corporation

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

Fill this out starting with the vessel used most often.

CFVR	Years Owned	Market Value (incl. all gear)	Length	Crew Size*	Operator Status**
					1 2 3
					1 2 3
					1 2 3
					~~1 2 3~~

* Include the captain (Minimum crew size for every vessel is 1.)
** 1. Captain/Owner 2. Hired Captain 3. Other

____

~~7. What percent of your fishing income did you earn from fishing in the ocean? ____%~~

8. Do you consider yourself to be a full time fisherman?

☐ No ☐ Yes

~~*If the answer to question #7 above is anything other than 100%, ask the following question:*~~

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

_____ % (0 – 100%)

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

____

OPERATING EXPENSES

11. Please provide the average operating expense for **an average inshore Pamlico/Albemarle area fishing trip in 2003** (for the vessel you use the most). Round off your answers to the nearest dollar.

Expense categories	**Amount**
Fuel and oil	
Ice	
Groceries	
Bait	
Other	

12. Do you use a share system to pay the crew and captain of the vessel you use the most when you are fishing in the Pamlico/Albemarle areas?

 No → How do you pay the captain and crew? ___________________________
(Skip to Question 13)

 Yes → Which of the following expenses were subtracted from your gross revenues before calculating the crew and captain's shares?

	Deducted	Not Deducted	N/A
Fuel and oil	1	2	99
Bait	1	2	99
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: _______ %

13. Total annual expenditures for 2003 for the vessel used the most when you are fishing in the Pamlico/Albemarle areas.

Expense Category	*Amount*
Labor - Capt. & crew (not in your household)	
Payments to people in your household	
Licenses, Permits, Leases	
Start up (only 2002)	
Vessel loan payments	
Vessel/Gear Repairs	
Docking fees	
New Gear/Equipment	
Insurance	
Other Professional Expenditures/Fees	

41. Where do you keep the boat you use most often when you are fishing in the Pamlico/Albemarle areas?

- ☐ Don’t use a boat in the Pamlico/Albemarle areas
- ☐ At my home
- ☐ A rented slip
- ☐ A slip not at my home, but I don’t pay rent (e.g. at a fish house)
- ☐ Other place

14. I’m going to read some numbers. When I reach a number **equal to or higher than** 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.

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	5. $30,001 - $50,000	
$75,000	6. $50,001 - $75,000	
$100,000	7. $75,001 - $100,000	
More than $100,000	8. > $100,000	
	99. Refused	

Demographic QuestionS

15. How old are you? ________

16. (*Don’t ask, just mark*) ☐ Male ☐ Female

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

18. 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)

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

20. 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.)

____

21. How many people do you financially support that don’t live in your household? ____ (e.g. your parents, students away at college, children who live with a different parent)

22. Of the people who now 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)

____

23. Which of the following people in your extended family work or worked in commercial fishing?

____ No one

____ Parents

____ Grandparents (How many? _______)

____ Children (How many? _______)

____ Siblings (How many? _______)

____ Aunts or Uncles (How many? _______)

____ First Cousins (How many? _______)

24. How many generations back have there been fishermen in your family? _______

25. I'm going to read some numbers. When I reach a number **equal to or higher than** the amount of the total income of everyone who lives in your household, tell me to stop.

If they give an actual dollar amount, write it here: _____________

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

26. What is the name of the community/town/city where you live? _________________

27. Which county is that in? _________________________

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

OPINIONS ABOUT COMMERCIAL FISHING

29. Do you think you will be a commercial fisherman 10 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.

30. I believe I will be able to make a living in fishing in the future. _____

31. Commercial fishing is important <u>economically</u> in my community.

_____

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

33. Commercial fishermen are respected in my community.

_____

34. My community actively supports commercial fishing with activities like seafood festivals, memorials to fishermen lost at sea, a “blessing of the fleet”, etc.

_____

Other community support activities ____

____

35. I have to work harder now to land the same amount of fish than I did a few years ago. (If you think there is no difference, your answer should be 5.)

_____

36. Do you have a dealer’s license?

☐ No ☐ Yes

37. Do you have a relationship with a specific dealer or are you independent?

☐ Is a dealer and he sells his own catch

☐ Independent (sells to whomever he wishes)

☐ Relationship with a specific dealer or dealers

If the fisherman has a relationship with a specific dealer, ask the following questions:

38. Does the dealer provide you with docking space?

☐ No ☐ Yes

39. Will the dealer give you an advance for bait or other necessities?

☐ No ☐ Yes

40. Does the dealer provide you with credit or loans?

☐ No ☐ Yes

42. Are you a member of any fisherman’s organizations?

□ No □ Yes → which ones? ____

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

43. with other commercial fishermen ______ (explain, ______________)
x's

44. with recreational fishermen ______ (explain, ______________)
x's

45. involving federal regulations ______ (explain, ______________)
x's

46. involving state regulations ______ (explain, ______________)
x's

Use the scale of 1 to 10 and tell me how important you consider each of these issues to your fishing business. 1 means "it's not important or doesn't affect me" and 10 means "it's extremely important or it affects my business a great deal".

47. ______ **Overfishing**

48. ______ **Local competition**

49. ______ **Outside competition**

50. ______ **Environmental regulation**

51. ______ **Keeping up with proclamations or changes in rules**

52. ______ **Gear Restrictions**

53. ______ **Areas off limits to fishing**

54. ______ **Seasonal/area closures**

55. ______ **Bag limits**

56. ______ **Size limits**

57. ______ **Quotas**

58. ______ **Federal regulations**

59. ______ **State regulations**

60. ______ **Seafood prices**

61. ______ **Imported seafood**

62. ______ **Initial start up costs**

63. ______ **Obtaining financing for repair/replacement of equipment**

64. ______ **The costs of doing business (business taxes, licenses, etc.)**

65. ______ **Record keeping or other paperwork**

66. ______ **Crew or other labor issues**

67. ______ **Respect for commercial fishermen**

68. _____ **Weather**

69. _____ **Predicting the future for your fishing business**

70. Use a scale of 1 to 10 again. 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 wanted to be a commercial fisherman, how likely is it that you would recommend being a fisherman?

_____