A Social and Economic Profile of Ocean Fishing Piers in North Carolina

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January 2012

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This project was conducted under a grant from the North Carolina Marine Resources Fund and funded through revenues collected from the sale of the North Carolina Coastal Recreational Fishing License. Grant award number 2010-F-001.

ACKNOWLEDGMENTS

I wish to thank all of the pier owners and fishermen who took the time to participate in this study. Thanks to Doug Mumford and Chris Wilson for providing the angling effort estimates as well as all at NCDMF who helped review and finalize the report. A special thanks to Anthony Gubler who worked determinedly conducting angler surveys throughout the coast as well as created the database of angler responses. Finally, I would like to acknowledge the North Carolina Marine Resources Fund for funding this study.

TABLE OF CONTENTS

TABLE OF CONTENTS CONTINUED

INTRODUCTION

Recreational fishing in North Carolina is an important economic driver for coastal economies. Often overlooked, ocean fishing piers are responsible for a sizable part of this economic impact. For decades, ocean fishing piers have served as an integral part of coastal communities and economies in North Carolina. They provide ample opportunities for fishing and recreation to local citizens and serve as an important draw for tourist and other visitors to beach communities. Coast-wide, the businesses operating these fishing piers stimulate considerable economic impacts directly through their operations as well as indirectly in other related businesses such as tackle shops, gas stations, restaurants, hotels, and rental properties.

The oldest North Carolina ocean fishing pier, Kure Beach Pier, was built in 1923 and is still in operation today (Baird 2011). By 1980, there were 36 piers coast-wide, with the majority of the piers being built in the 1950's and 1960's (Baird 2011) (North Carolina Fishing Pier Society 2012). Since the 1980's, the number of ocean piers has steadily decreased, mostly due to storm damage, increases in real-estate values and increasing business costs. In 2011, only 21 piers remained operational (Appendix I). Nevertheless, interest in ocean pier fishing has continued to be very strong, drawing thousands of anglers and tourists to the coast each year.

While most of the anglers in the state must possess a Coastal Recreational Fishing License (CRFL), ocean pier anglers are not required to do so as all ocean piers have purchased a blanket CRFL which covers the licensing requirement for anglers using their pier. The creation of the CRFL in 2007 resulted in increased attention to the economic impact of recreational fishing on the state's economy. The North Carolina Division of Marine Fisheries (NCDMF) conducted a socioeconomic survey of recreational anglers that delivered an initial estimate of the economic impact of CRFL holding saltwater anglers. Individuals who only fish off of ocean piers are exempt from having to purchase CRFLs and were therefore possibly left out of the sampling for this economic impact estimate. Additionally, neither the state of North Carolina nor the National Marine Fisheries Service has specifically assessed the economic impact of ocean fishing piers or completed a socioeconomic profile of ocean fishing pier users. This study intends to provide information to help fill both of these information gaps, thereby providing useful data for future fishery management plans and policy actions.

STUDY OBJECTIVES

The specific objectives of this study are:

1. To collect information on business operation and perceptions of ocean pier operators;

2. To describe the demographic aspects of ocean pier anglers in North Carolina;

3. To collect expenditure information from these anglers to develop estimates of the economic impacts associated with their fishing activities; and

4. To assess perceptions of fishery regulations, conflict, and issues relevant to the future of fisheries management.

METHODS

RECRUITMENT AND PARTICPATION

Pier Anglers

As mentioned, most recreational anglers in North Carolina are required to obtain a license before going fishing. The main exceptions to this requirement include blanket CRFL licenses that are obtained by for-hire vessel or ocean pier business operators to cover all anglers utilizing their businesses as well as license exemptions for anglers under 16. As a result, a sizeable segment of ocean pier anglers are not required to obtain a license and therefore NCDMF may not have contact information for many of these anglers. All prior NCDMF socioeconomic surveys had been conducted using a pool of participants chosen from a license database. In this case, this contact information was not available, therefore it was deemed necessary to take a new approach.

Initially, in the fall of 2010, survey respondents were solicited through a flier handed out to pier anglers that requested the angler take a survey online or reply via pre-paid postage with their contact information. A NCDMF representative would then contact them via telephone to conduct the survey. Due to a very low response rate (approximately 2.5%) as well as concerns about bias in the solicitation method, it was decided that the best approach would be to perform onsite intercept surveys at ocean fishing piers.

Ocean fishing piers are required to obtain an Ocean Pier License ($4/ft) and may elect to obtain the blanket CRFL Pier License ($0.50/ft). In 2011, NCDMF license records indicated that there were 21 ocean pier sites in operation, all of which also had obtained a blanket CRFL Pier License. For sampling purposes, the pier sites were broken down into 3 regions; the Northern Region (Kitty Hawk to Hatteras), the Central Region (Atlantic Beach to Topsail Island) and the Southern Region (Wrightsville Beach to Sunset Beach). Regions and sampling sites within each region were randomly selected and sampled by NCDMF representatives. Sites selected on days of extreme inclement weather were skipped due to safety concerns for the interviewer.

A goal of 400 completed surveys was considered to be a feasible target that balanced the need for an adequate sample size with the increases that are necessary for reducing the confidence intervals of the survey results. Average survey times were between 10 and 15 minutes per survey. Anglers under the age of 18 were not included in the study. NCDMF interviewers completed 421 interviews of ocean pier anglers for the study. This sample size provides confidence intervals of +/- 5% at a 95% confidence level assuming that the pier angler total population is less than the 450,000 licensed saltwater anglers state-wide. A total of 141 intercept surveys were completed in the Northern Region, 158 in the Central Region and 122 in the Southern Region. Most anglers (88%) agreed to be interviewed; however, 52 anglers refused, making for an overall refusal rate of 12% for the angler survey.

Pier Operators

Pier operators were also surveyed for business operation expenses, perceptions and challenges faced in operating an ocean fishing pier. Interviews were conducted on-site with pier operators. All 21 ocean pier sites were contacted throughout coastal North Carolina. At least five attempts were made to reach a pier operator to inquire whether or not they were willing to participate in the survey. If these attempts were unsuccessful, it was considered a "passive refusal". For those that agreed to participate in the study, a meeting time was arranged that was convenient for the operator to take the survey. While the time spent on the surveys varied, each survey took approximately 30 minutes to complete. Of the 21 ocean fishing pier sites, 11 agreed to participate in the survey, six passively refused to participate in the survey, three directly refused to participate in the survey, and one was unavailable to be surveyed due to an early closure resulting from hurricane damage.

SURVEY INSTREUMENT

The ocean pier angler and operator surveys used in this study can be found in Appendix II and III. Data collected from these surveys included questions concerning:

Angler survey:

(i) Socioeconomic and demographic information
(i) Fishing activity
(ii) Angler perceptions
(iii) User group conflicts
(iv) Fishing trip expenditures

Operator survey:

(i) Pier history and ownership structure
(ii) Revenue and expenses
(iii) Employment information
(iv) Business perceptions

Ocean pier anglers were surveyed in June and July of 2011. Pier operators were surveyed throughout the summer and fall of 2011, depending on availability and scheduling. All angler responses were compiled in a Microsoft Excel database. Quantitative operator responses were entered into a Microsoft Excel database while qualitative responses were complied in a Microsoft Word document. The data were analyzed using functions within Microsoft Excel as well as the Statistical Package for the Social Sciences software (SPSS release 12.0, 2003). Final data verification, assigning labels to variables, and additional variable calculations were completed along with all data analyses. The primary analyses in this report consist of frequency and simple univariate statistics.

RESULTS

PIER ANGLERS

Demographics

Demographic information was asked of each angler respondent (Table 1). Anglers interviewed were predominantly white (87%) and male (85%). Ages ranged from 18 to 87 years, with a mean age of 48 years. Most respondents (94%) had at least a high school level education and 39% had completed college. The majority of respondents (61%) had annual household incomes of greater than $50,000 and 23% had annual household incomes greater than $100,000. The most common classification of employment was private business (40%) followed by retired (27%) and government (10%). Respondents that indicated "Other" employment most commonly classified themselves as homemakers or students.

Table 1. Demographic information of survey respondents.

Category	Frequency	Percent	Category	Frequency	Percent
Gender			Residence		
Male	357	85%	North Carolina	266	63%
Female	61	15%	Other	154	37%
Race			Household Income		
White	359	87%	<$15,000	18	5%
Black	30	7%	$15,001 to $30,000	46	13%
Latino	16	4%	$30,001 to $50,000	78	21%
Asian	3	<1%	$50,001 to $75,000	73	20%
Mixed	3	<1%	$75,001 to $100,000	66	18%
Native American	2	<1%	More Than $100,000	83	23%
			Education		
Employment			Less than High School	23	6%
Private Business	164	40%	High School	134	32%
Retired	113	27%	Some College	96	23%
Government	41	10%	College or More	161	39%
Healthcare	29	7%			
Other	23	6%	Age		
Education	14	3%	18 to 29 Years	61	15%
Military	13	3%	30 to 49 Years	148	36%
Unemployed	11	3%	50 to 69 Years	178	43%
Non Profit	6	1%	70 Years or More	29	6%

Almost two thirds (63%) of the survey participants were residents of North Carolina. These respondents represented 64 out of the 100 counties throughout the state. The most common county of residence was Brunswick (11%), followed by Wake (6%), Wayne (6%), Johnston (5%), Dare (5%), and Onslow (4%). These numbers are somewhat different than those found in the CRFL sales report for 2011, where the most common county of residence was Wake, followed by New Hanover, Onslow, Carteret, Brunswick, and Craven. The respondents who were out-of-state residents represented 24 other states and the country of Canada. The most common states of residence for non-residents were Virginia (36%), Ohio (12%), Pennsylvania (12%), West Virginia (6%), Maryland (5%) and Kentucky (4%).

Fishing Activity

Anglers indicated an average of 24 years of saltwater fishing experience. When compared to their age, these anglers had been saltwater fishing an average of 47% percent of their life. Fourteen percent indicated that they fish at least one other region of the North Carolina coast and six percent said that they fished all regions of the coast. The average number of days spent ocean pier fishing per year was 30 and the average time spent fishing each day was 7.7 hours. Despite not being required for fishing on ocean piers, almost two thirds of anglers surveyed (65%) possessed a CRFL. Anglers traveled an average of 242 miles round trip and usually had two other people in their group. A majority (57%) of respondents indicated that the primary purpose of their trip to the coast was to go pier fishing.

June (69%) and July (69%) were the most common months that survey participants indicated that they go fishing off of ocean piers (Figure 1). Other popular months indicated by survey participants were August (50%), September (45%), May (44%) and October (41%). Included in these figures are the 5% of respondents that indicated fishing off of ocean piers year-round.

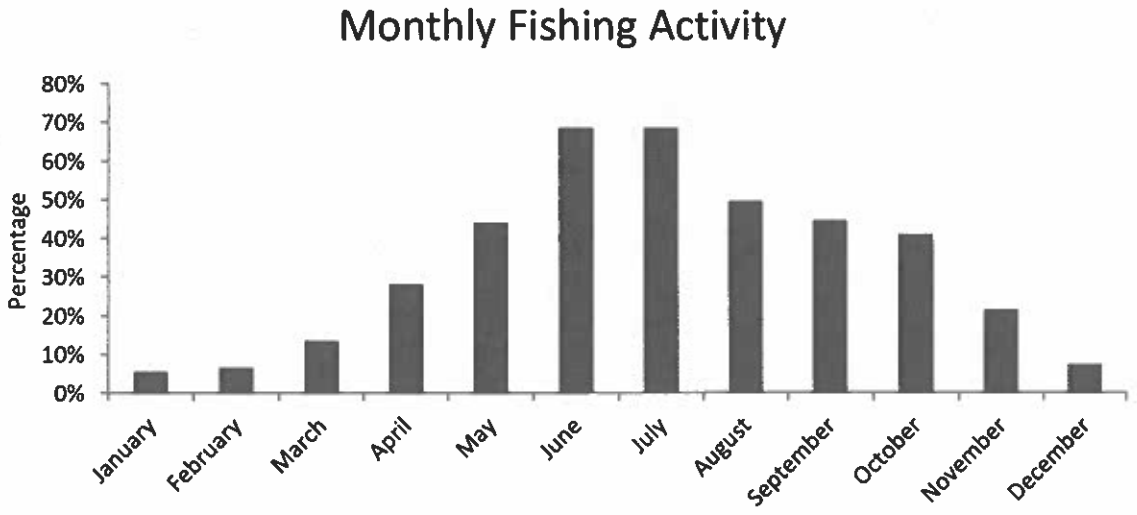

Figure 1. Monthly fishing activity of respondents.

Targeted Species

The species targeted by respondents are listed in Table 2. The most common response was "all species" (47%). Some anglers proceeded to mention specific species after listing "all" while some simply did not have any target species in mind. The most common specific target species mentioned was spot (27%) followed by bluefish (23%), flounder (21%), Spanish mackerel (18%), sea mullet (15%) and Atlantic croaker (11%). Other species commonly mentioned were king mackerel, speckled trout, red drum, cobia, and pompano.

Table 2. Species targeted by respondents.

Species	Percent Targeted	Species (continued)	Percent Targeted
All	47%	Pompano	5%
Spot	27%	Sharks	3%
Bluefish	23%	Black Drum	3%
Flounder	21%	Striped Bass	1%
Spanish Mackerel	18%	Sheepshead	1%
Sea Mullet (Whiting)	15%	Tarpon	1%
Atlantic Croaker	11%	Gray Trout (Weakfish)	1%
King Mackerel	10%	Pigfish	<1%
Speckled Trout	9%	Jack Crevalle	<1%
Red Drum	8%	Triggerfish	<1%
Cobia	5%	Blue Crab	<1%

Perceptions

Anglers were asked to respond to a series of questions designed to elicit their opinions on issues that may affect ocean pier fishing (Table 3). Each participant rated each issue as "not important", "somewhat important", "very important" or "extremely important" in relation to ocean pier fishing. The most important issue that pier anglers felt affect ocean pier fishing was "losing fishing piers", followed by "water quality/pollution" and "finding enough time to go fishing". Least important was "competition with commercial fishermen" and "competition with other recreational fishermen".

Table 3. Issues of concern of angler respondents.

Rank	Issue
1	Losing fishing piers
2	Water quality/pollution
3	Finding enough time to go fishing
4	Overfishing/too few fish
5	Access Issues (lack of piers, parking, limited hours)
6	Fuel prices
7	Rules and regulations
8	Weather
9	Bag/size limits
10	Competition with commercial fishermen
11	Competition with other recreational fishermen

User Group Conflicts

Anglers were also asked if they had had any negative experiences with other user groups while ocean pier fishing within the last year. The overall majority of pier anglers (77%) did not report any negative experiences with other user groups. Most of those that did have a negative experience reported a conflict with other beach users (17%). Most commonly mentioned were surfers being too close to the pier. Eight percent reported a conflict with other recreational anglers and four percent reported a conflict with commercial fishermen. Very few (.02%) reported having a negative experience with state law enforcement officers.

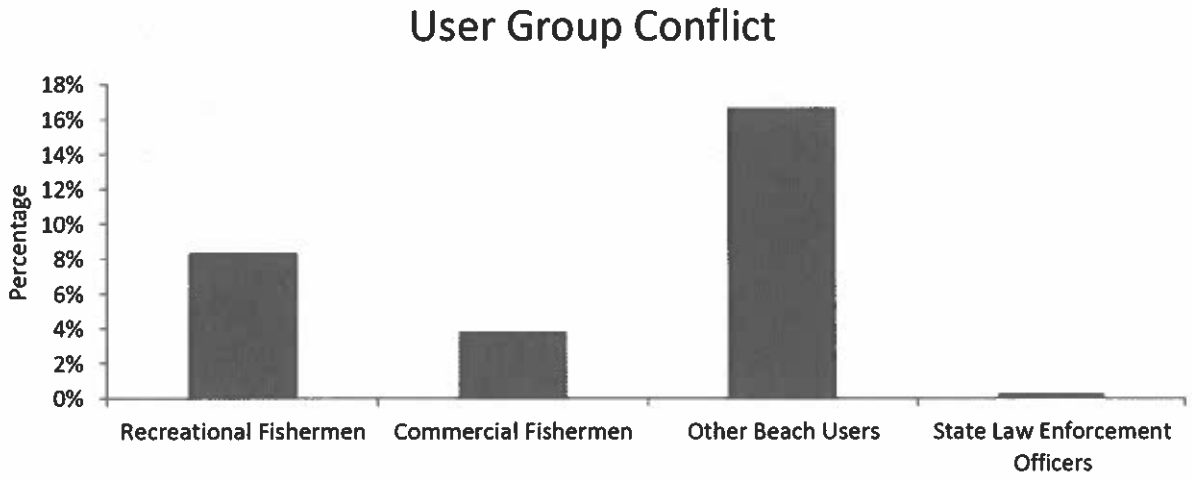

Figure 2. Percentage of respondents reporting conflicts with other user groups and state enforcement officers.

Trip Expenditures

Survey respondents were asked to estimate their per-trip expenditures. Table 4 illustrates the average and median per-trip expenses incurred by ocean pier anglers as well as reported trip expenditures from NCDMF's 2008 survey of CRFL holders (Crosson 2010). Trip expenditures for pier admission and fishing tackle were not obtained in the 2008 survey. Average and median trip expenses for ocean pier anglers were considerably lower for bait, ice, and gasoline. "Other" expenses were also lower for ocean pier anglers on average, and all modes of fishing had a median "other" expense of $0. Most ocean pier anglers did not indicate any other expenses, however the most common "other" expense was fishing equipment rental. Average expenses for groceries and lodging were slightly higher for ocean pier anglers, but median values were the same across all modes. When added together, the average ocean pier fishing trip expense was $117.04 and the median trip expense was $41.15. These values are lower than the average and median expenses of inshore and offshore anglers. On a nominal basis (not adjusted for inflation), the average trip expense was 19% higher for inshore anglers and 80% higher for offshore anglers. Median trip expenditures were 41% higher for inshore anglers and 104% higher for offshore anglers. Ocean pier anglers reported taking the highest number of fishing trips per year on average, however inshore CRFL holders reported a higher median number of fishing trips annually.

Table 4. Average and estimated ocean pier fishing expenditures of respondents (2011) compared to survey of CRFL license holders (2008).

Trip Expenses	Ocean Pier Average (2011)	Median	Inshore Average (2008)	Median	Offshore Average (2008)	Median
Pier admission	$10.62	$10.00	-	-	-	-
Bait	$7.03	$5.00	$12.00	$10.00	$20.00	$10.00
Tackle	$8.74	$5.00	-	-	-	-
Groceries	$22.10	$10.00	$20.00	$10.00	$20.00	$10.00
Ice	$2.05	$1.15	$5.00	$3.00	$8.00	$4.00
Gasoline	$25.98	$10.00	$61.00	$35.00	$123.00	$60.00
Lodging	$40.27	$0	$38.00	$0	$40.00	$0
Other expenses	$0.26	$0	$4.00	$0	$3.00	$0
Trip total	$117.04	$41.15	$139.00	$58.00	$211.00	$84.00
Trips per year	30.39	7	26.8	15	4.6	1

PIER OPERATORS

Business Profile

The ocean piers included in the operator survey had been in operation between 48 and 88 years with an average of 58.8 years. Some piers were open year round, but all were open at least April through November. Most piers were privately owned by a single owner and employed an average of seven part-time and two full-time workers. Part-time employees worked an average of 29 hours per week and full-time employees worked an average of 46 hours per week. The operation of the fishing pier was the primary source of income for the majority of pier operators, however less than half indicated that it was their only source of income. Revenue for the businesses included the sale of bait, tackle, merchandise, food and beverages, video games and entertainment, lodging and campgrounds, parking, and pier admission (annual and daily).

Perceptions and Business Challenges

Ocean pier operators were asked a variety of questions on their perceptions of various aspects of their business. When asked about the most important fish species that inspire anglers to visit their pier, the most commonly mentioned species were spot and sea mullet, followed by bluefish, flounder and king mackerel. Other species mentioned were Spanish mackerel, cobia, pompano, spotted sea trout, red drum, black drum, Atlantic croaker, sharks, tarpon and pinfish. Other than fishing, operators felt that camaraderie, relaxation, affordability, opportunity to be outdoors and a family atmosphere were the reasons that anglers visited their pier. Most operators were confident that their pier would be in operation in 10 years, however this was often accompanied by the caveat of the pier not being destroyed by a hurricane in that timeframe. The majority of pier operators were unsure or did not think that they would be in charge of operating their pier in 10 years. Reasons given for this uncertainty included retirement, lease term expiration and a diminishing business environment.

Operators were asked to respond to a similar series of questions as those asked of anglers, which were designed to elicit their opinions on issues that may affect ocean pier fishing (Table 5). Each participant rated each issue as "not important", "somewhat important", "very important" or "extremely important" in relation to ocean pier fishing. The most important issue that pier operators felt affect pier fishing was "weather", followed by "overfishing/too few fish" and "losing fishing piers". Least important were "access issues" and "bag/size limits". "Weather" was ranked in such high regard, as many pier owners expressed concern over possible reductions in angler attendance and pier structural damage due to hurricanes.

Table 5. Issues of concern of ocean pier operator respondents.

Rank	Issue
1	Weather
2	Overfishing/too few fish
3	Losing fishing piers
4	Fuel prices
5	Water quality/pollution
6	Competition with commercial fishermen
7	Rules and regulations
8	Access Issues (lack of piers, parking, limited hours)
9	Bag/size limits

When operators were asked about important issues and challenges facing their business, answers varied considerably. The most commonly identified challenges involved maintaining the pier. This included general yearly upkeep as well as repairs that may be needed due to hurricane or storm damage. Another commonly expressed challenge was dealing with building permits should they want to expand or rebuild their pier. There was also concern, especially in the northern region, in regards to competition from Jeanette's Pier, which is state-run. Several pier operators in the southern region expressed concern over commercial fishing activities negatively affecting fish populations near their pier. Other challenges mentioned included economic uncertainty, fishing regulations (both over and under restrictive), conflicts with surfers, and the cost of licensing.

The North Carolina Aquarium has plans to operate three ocean piers along the coast. The pier on the Outer Banks, Jeanette's Pier, is currently operational with plans underway to build one pier in Emerald Isle and one pier in Carolina Beach. When pier operators were asked their opinion of these state-run piers, answers varied from supportive to highly opposed. Approximately three quarters of the survey participants relayed a negative opinion of these state-run piers. Those that were in favor indicated that they thought their pier served a different clientele and thought the aquarium piers would encourage the education of children as well as spark interest in fishing. Those that exhibited a negative opinion stated that they felt the competition from state-run piers was unfair due to the state-run piers not requiring a profit to remain open and operational. There was also concern over the perceived excessive cost of rebuilding Jeanette's Pier as well as the perception that the state was not held to the same stringent permitting standard as required of private ocean pier businesses.

Economic Impact

The estimated economic impact of ocean fishing pier trips is shown in Table 6. This figure is based on IMPLAN Version 3 software, which uses an input-output model to estimate how money is spent and re-spent until it leaves the North Carolina economy, thereby estimating a total economic impact. The total economic impact includes direct, indirect and induced effects. In addition to the direct economic impact of angler expenditures, there are indirect and induced impacts that occur as the businesses that the anglers patronize as well as the employees of these businesses spend and re-spend this money in the state economy.

The total estimated economic impact to the state economy of ocean pier fishing trips is approximately $151.7 million. This fishing activity supported 1,746 jobs and led to over $48 million in labor income. According to the model, the industries most affected were lodging, amusement and recreation, food and beverage, gasoline, real estate, sporting goods, wholesale trade and commercial fishing (bait).

This estimate is based on the total number of ocean pier trips taken in 2010 and the average expenditures per fishing trip obtained from the survey. The Marine Recreational Information Program (MRIP) estimates coastal recreational fishing effort throughout the year in North Carolina. According to MRIP data, in 2010 anglers took 1,186,293 ocean pier fishing trips. This led to $138,855,638 in estimated total trip expenditures.

Table 6. Estimated economic impact of ocean pier fishing trips.

Impact Type	Output	Employment	Labor Income	Total Value Added
Direct Impact	$86,622,360	1,225	$26,809,832	$47,034,112
Indirect Impact	$33,252,636	254	$11,166,410	$18,125,568
Induced Impact	$31,831,744	267	$10,061,921	$18,534,976
Total Impact	$151,706,736	1,746	$48,038,164	$83,694,592

DISCUSSION

Study Results and Methodology

The economic impact estimate does not include the sale of many common recreational fishing related durable goods, such as rods, reels, coolers and automobiles. This likely leads to an underestimate of the total economic impact of ocean fishing piers, however many durable goods tend to have multiple uses beyond pier angling and have varying useable life-spans. This makes it difficult to estimate their value on a per trip or even annual basis, therefore these expenses were left out of this impact estimate. Also left out of the estimate were pier operation expenses and revenue, as the sample size of pier operator responses was too small to confidently create a model. While left out, many of these expenses are partially accounted for by revenue generated during angler purchases made at the fishing pier (pier admission, groceries, bait, etc).

There is likely a seasonal bias present in the data due to the months that sampling occurred, although the survey results are in-line with reasonable expectations. The most common months anglers indicated fishing off of ocean piers were June and July followed by August, September, May, and October. MRIP recreational fishing effort data is divided into 2-month blocks or "waves". For 2010, MRIP surveys indicated that the most pier fishing effort occurred in wave 3 (May and June), followed by wave 4 (July and August) and wave 5 (September and October), thereby closely mirroring the results of the pier angler survey. Furthermore, preliminary data provided by the NCDMF Recreational Statistics Program indicates that according to pier admission log books, the most ocean pier fishing trips in 2011 occurred in July followed by June, October, September, August and May. Additionally, the top five species that anglers indicated targeting off of ocean piers were spot, bluefish, flounder, Spanish mackerel and sea mullet. This closely matches the species that pier operators felt were most important to their business, which were spot and sea mullet, followed by bluefish, flounder and king mackerel.

The average trip expenditure estimates based on the survey are also in-line with other recreational fishing economic impact studies that have been conducted in North Carolina. This study indicates that pier fishermen reported overall lower average trip costs ($117) than those reported in an earlier NCDMF study of CFRL license holders fishing inshore ($139) and offshore ($211) (Crosson 2010). Many inshore trips and all offshore trips require additional expenses associated with boating, such as boat fuel and oil, therefore total trip expenditures for these modes would be expected to be higher on average. Additionally, the average trip cost for ocean pier anglers falls between estimates generated for North Carolina shore based anglers reported in a study published by Gentner and Steinback in 2008. Gentner and Steinback (2008) calculated separate trip costs for resident and non-resident anglers. State resident shore based anglers had an average trip cost of $53.99 while non-resident anglers spent an average of $177.89 per trip. Both state resident and non-resident anglers are included in this study of ocean pier anglers, therefore it can be expected that the average trip cost estimates would fall between those identified for residents and non-residents.

Other Economic Impact Estimates

As stated, the economic impact of ocean pier fishing trips is $151.7 million based on the estimated number of ocean pier fishing trips taken in 2010. While there have not been studies conducted specifically estimating the economic impact of fishing piers, the studies previously listed have estimated the economic impact of recreational fishing trips in North Carolina.

Gentner and Steinbeck (2008) reported an overall economic impact of approximately $947.1 million for coastal recreational fishing trips in North Carolina based on the number of trips taken in 2006. Within this estimate, for-hire trips accounted for $115.1 million, private or rental vessel trips accounted for $143.3 million and shore based trips accounted for $688.7 million. When trip and durable impacts were combined, the reported economic impact (output) of coastal recreational fishing in North Carolina was estimated to be $2.5 billion (Gentner and Steinbeck 2008). This compares to the NCDMF study of CRFL holders which reported an estimated total economic impact of coastal recreational fishing trips to be $1.6 billion based on the number of recreational trips taken in 2008 (Crosson 2010).

Perceptions and Angling Activity

When asked about issues that affect ocean pier fishing, pier anglers and operators seemed to agree that overfishing and losing fishing piers were of great concern. This reflects sentiments that were often relayed during interviews of both groups over the loss of several ocean fishing piers throughout the coast. Since the 1980's, North Carolina has lost 42% of its ocean fishing pier sites. Furthermore, anglers tended to exhibit site fidelity to a pier or region, which was often thought of as their "home pier" or "home region". This view of angling behavior was expressed by several pier operators as well as demonstrated in angler survey responses where only 14% of anglers indicated pier fishing outside of the region where they were surveyed. Overfishing was of great concern to both parties, as it was often expressed that recent runs of certain commonly targeted species were not as strong as they had been historically. The most common species mentioned was spot, where anglers often said that both size and quantity have diminished. On the other end of the spectrum, bag limits and size limits were not a major concern of either anglers or operators. This is likely a result of very few restrictive regulations in place for several popularly targeted species such as spot, bluefish, sea mullet and Atlantic croaker.

Comparing Demographics

When compared with the results reported by Crosson (2010), it appears that there are slight differences in demographics of pier anglers and CRLF holders (Table 7). Pier anglers were represented by a higher percentage of females and racial minorities. A higher percentage of ocean pier angler respondents had a high school education or less and the percentage that had a college degree was almost the same. A higher percentage of pier anglers reported household incomes of $50,000 or less while the percentage of anglers with household incomes greater than $100,000 were roughly the same. The average age of respondents was almost the same between studies; however, the respondents of the CRFL holder survey had an average of three more years of fishing experience (Crosson 2010).

The demographics of the pier anglers also varied from the overall demographics of the state of North Carolina (Table 7). Based on a comparison with results from the 2010 U.S. Census conducted by the U.S. Census Bureau, a substantially higher percentage of males were present among pier anglers when compared with the state population. A lower percentage of racial minorities was present in the survey respondents than the state population. A greater percentage of pier anglers had a high school education, however the percent that had some college education and at least a college degree was very similar. Pier anglers tended to be older than the overall state population, however the percentage of respondents under 29 years of age and 70 years or older were similar to that of the state. Pier anglers represented a much lower percentage of households making $15,000 or less and a much higher percentage of households making more than $75,000.

Table 7. Demographic information of ocean pier fishing survey respondents compared to CRFL survey respondents[1] and the general population of North Carolina[2].

Gender	Pier Survey	CRFL Survey	State Population
Male	86%	91%	49%
Female	14%	9%	51%

Education	Pier Survey	CRFL Survey	State Population
Less than High School	9%	-	16%*
High School	32%	28%**	28%*
Some College	22%	32%	21%*
College or More	37%	40%	35%*

Age	Pier Survey	CRFL Survey	State Population
18 to 29 Years	15%	-	14%***
30 to 49 Years	36%	-	30%
50 to 69 Years	43%	-	23%
70 Years or More	6%	-	9%
Median Age	48 years	-	37 years

Race	Pier Survey	CRFL Survey	State Population
White	87%	92%	65%
Black	7%	3%	22%
Latino	4%	1%	8%
Asian	<1%	<1%	2%
Native American	<1%	2%	1%
Mixed	<1%	<1%	2%

Income	Pier Survey	CRFL Survey	State Population
<$15,000	5%	2%	15%
$15,001 to $30,000	-	-	-
$30,001 to $50,000	34%****	30%****	39%*****
$50,001 to $75,000	20%	24%	19%
$75,001 to $100,000	18%	19%	11%
More Than $100,000	23%	25%	16%

*of population 25 years of age and older
**"Less than High School" and "High School" combined
***20 to 29 years of age
****income ranges from $15,001 to $50,000 were combined

The larger representation of higher income households suggests that many pier anglers at times preferred ocean pier fishing even though they may be able to afford other, more traditionally expensive modes of fishing such as using a boat or hiring a fishing guide. While anecdotal and unrecorded in the survey, several anglers did indicate that they enjoy the convenience and family atmosphere that many fishing piers offered. Furthermore, it was noted that ocean piers offer anglers a stable platform from which to fish Atlantic Ocean waters without having to worry about themselves or someone in their party suffering from motion sickness ("sea-sickness"). The representation of higher income households is also a reflection of the high percentage of anglers that had traveled to the coast and were able to afford related expenditures such as motel rooms or vacation rentals and meals at local restaurants. This is reflected in the survey results, as 37% of total respondents were not residents of North Carolina and 66% of total respondents were not residents of coastal counties in North Carolina.

[1] (Crosson 2010)
[2] based on results of the US Census Bureau's 2010 US Census.

CONCLUSIONS

Several ocean pier operators indicated that they are facing or may face significant headwinds in regard to the long-term operation of their businesses. Most felt that they anticipate being able to continue to operate for at least the next decade, however a catastrophic hurricane that severely damages or destroys their pier and the surrounding community may greatly jeopardize their business operations. It was indicated that a more lenient permitting process, even if temporary, would greatly help owners and operators rebuild and expand. Continued preservation and expansion of coastal fish stocks is also vital to the long term sustainability of ocean pier businesses.

The estimated $151.7 million economic impact that can be attributed to ocean fishing piers is a sizable and noteworthy contribution to the state economy of North Carolina. These impacts are largely felt in coastal communities, which is particularly important during a time when other economic engines such as real estate and development have slowed. With the majority of respondents indicating that the sole purpose of their trip to the coast was to go pier fishing, it is clear that these fishing sites represent an important draw to coastal communities and serve as popular sources of recreation for anglers of all ages and backgrounds.

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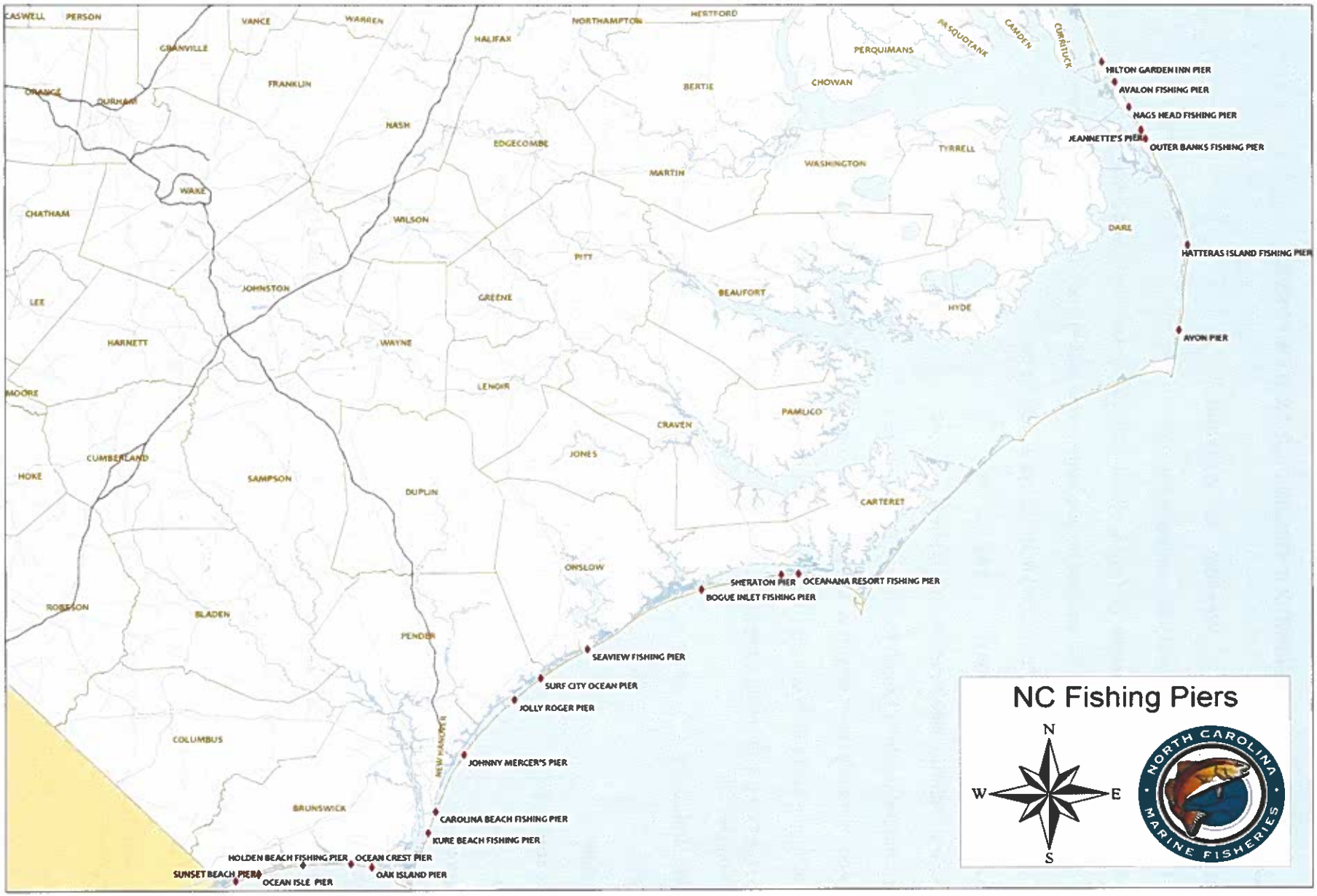
APPENDIX I- NORTH CAROLINA OCEAN FISHING PIER LOCATIONS, 2011 (NCDMF GIS PROGRAM)



APPENDIX II- OCEAN PIER ANGLER SURVEY

Pier Name/Location:

Date: **Weekday or Weekend ?**

1. How many years have you been saltwater fishing?

2. What months do you usually go fishing off of North Carolina ocean fishing piers?

3. Throughout the year, what species do you target while fishing from an ocean fishing pier?

4. What general regions do you fish from NC ocean fishing piers

-North (VA line to Hatteras) **Yes** **No**

-Central (Atlantic Beach to Topsail Island) **Yes** **No**

-South (Wrightsville Beach to Sunset Beach) **Yes** **No**

5. Approximately how many days per year do you go fishing of NC ocean fishing piers?

6. Including yourself, how many people are usually on those fishing trips?

7. Based on the following categories, what is the average cost PER PERSON of a NC ocean fishing pier trip:

Pier admission: Daily: or Annual:

Bait:

Tackle:

Groceries:

Ice:

Gasoline:

Lodging:

Other (Please explain):

8. How many hours do you usually spend fishing on an average NC ocean pier trip:

9. Do you have an NC saltwater fishing license (note: not required for pier fishing)?

10. How far did you travel to fish on a NC ocean pier (in miles)?

11. How long (in hours) did it take you to travel to this fishing pier?

12. Was this trip to the coast primarily for fishing off of a pier? If not, what is the primary purpose?

13. What is your age?

14. Male or Female? **Male** **Female**

15. Ethnic background?

Hispanic/Latino White/Caucasian African-American/Black Asian/Pacific Islander Native American

16. What is the highest level of education that you have completed?

17. Please indicate your household income based on the following categories:

<$15,000

$15,001 to $30,000

$30,001 to $50,000

$50,001 to $75,000

$75,001 to 100,000

>$100,000

18. Which of the following bet describes your primary job based on the following categories?

Government

Military

Non-Profit

Education

Private business or industry

Healthcare

Retired

Unemployed

Other (Please Explain):

19. What state is your primary residence?

20. If North Carolina, in which county do you live?

21. In the last year have you had negative experiences while fishing off of an ocean fishing pier with the following? If "yes" please explain.

Other recreational fishermen? Yes No

Commercial fishermen? Yes No

Other beach users (swimmers, surfers, etc)? Yes No

State officers? Yes No

22. Of the following issues or subjects, please rate the following as extremely important, very important, somewhat important, or not important in relation to ocean pier fishing.

-Finding enough time to go fishing:

extremely important very important somewhat important not important

-Fuel prices:

extremely important very important somewhat important not important

-Overfishing or too few fish:

extremely important very important somewhat important not important

-Water quality or pollution:

extremely important very important somewhat important not important

-Competition with commercial fishermen:

extremely important very important somewhat important not important

-Competition with other recreational fishermen/crowding:

extremely important very important somewhat important not important

-Losing fishing piers:

extremely important very important somewhat important not important

-Keeping up with rules and regulations:

extremely important very important somewhat important not important

-Bag/size limits:

extremely important very important somewhat important not important

-Access issues(not enough piers, parking, limited hours):

extremely important very important somewhat important not important

-Weather:

extremely important very important somewhat important not important

23. Any other comments?

APPENDIX III- OCEAN PIER OPERATOR SURVEY

General Information:

1. Name of fishing pier
2. How many years has your pier been in operation?
3. What months are your pier open for business?
4. Is your pier privately owned by a single owner? If not, what is the ownership structure?

Revenue:

5. What was the gross (pre-tax) revenue for your business in 2010?
6. In 2010, how much of your business revenue (in dollars) came from the following?
    a. Selling fishing tackle:
    b. Selling bait:
    c. Merchandise sales (t-shirts, souvenirs, etc.):
    d. Food and beverage sales:
    e. Video game and entertainment sales:
    f. Other (please explain):
7. Where do you purchase bait?
8. How many day use passes were sold for your pier in 2010? What was their cost?
9. How many annual passes were sold for your pier in 2010? What was their cost?

Expenses:

Employment and Associated Costs:

10. Not including yourself, how many part-time and full-time employees do you have?
    a. Part-time:
    b. Full-time:
11. On average, how many hours per week do they work?
    a. Part-time:
    b. Full-time:
12. What is their average wage? This can be hourly or yearly.

a. Part-time:
b. Full-time:

13. How much would you estimate that your business spent last year on the following?
    a. Benefits (healthcare, retirement, etc):
    b. Other (please explain):

14. Office Operation: How much would you estimate that your business spent last year on the following?

    a. Buying office supplies:

    b. Computer costs:

    c. Accounting costs:

    d. Legal costs:

    e. Other (please explain):

15. Pier Operation: How much would you estimate that your business spent last year on the following?

    a. Utilities (water, electricity, phones):

    b. Loan payments and banking costs:

    c. Lease or rent payments:

    d. Building repair or maintenance:

    e. Property taxes:

    f. Insurance:

    g. License fees:

    h. Other (please explain):

16. Other major expenses? Please explain.

17. Do you receive a "current use" tax break that allows property taxes to be assessed at the current value of the pier business rather than the actual property value (typically a "highest use" tax valuation)?

Perceptions and Background:

18. Is operation of a fishing pier your primary source of income? Your only source of income?

19. What are some important issues facing your business today? What is the biggest challenge to the operation of your business?

20. Do you expect to be operating your pier in 10 years? Do you expect your pier to be in operation in 10 years? Why or why not?

21. What are some of the most important fish species that keep anglers coming to your pier?

22. What are some of the major reasons that fishermen come to your pier?

23. Of the following issues or subjects, please rate the following as extremely important, very important, somewhat important, or not important in relation to ocean pier fishing.

-Fuel prices:

extremely important very important somewhat important not important

-Overfishing or too few fish:

extremely important very important somewhat important not important

-Water quality or pollution:

extremely important very important somewhat important not important

-Competition with commercial fishermen:

extremely important very important somewhat important not important

-Losing fishing piers:

extremely important very important somewhat important not important

-Keeping up with rules and regulations:

extremely important very important somewhat important not important

-Bag/size limits:

extremely important very important somewhat important not important

-Access issues(not enough piers, parking, limited hours):

extremely important very important somewhat important not important

-Weather:

extremely important very important somewhat important not important

24. What are your thoughts on the NC aquarium piers?

25. Other Comments or Concerns:

Economic Impacts and Recreation Value of the North Carolina For-Hire Fishing Fleet

DRAFT FINAL REPORT

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North Carolina Sea Grant Fishery Resource Grant (FRG) Report 07-FEG-05

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ACKNOWLEDGEMENTS

This project involved approximately thirty researchers and field surveyors working all along the North Carolina coast for almost two years. The project investigators would like to thank all the dedicated field surveyors who worked long hours in marinas all along the coast interviewing For-Hire vessel captains and over 1,300 passengers. A special thanks to Sara Mirabilio, NC Sea Grant, who helped coordinate surveyors in Dare County and helped promote and publicize the study among vessel captains. Thanks go to Jess Hawkins, for special help surveying in the Morehead City / Atlantic Beach area. Finding himself without a car, student surveyor Tiago Summacal heroically rode his moped throughout Pender, New Hanover and Brunswick Counties to collect passenger survey data. Yevonne Brannon, Director, Center for Urban Affairs & Community Services, North Carolina State University, did excellent work implementing the telephone survey portion of the study to meet a tight deadline. Many thanks to our industry partner, North Carolina Watermen United, and NCWU officers Rom Whitaker and Britt Shackelford, who had the foresight to recognize the need for up-to-date economic information for their industry and promoted the project to their fellow For-Hire captains. The project could not have been completed without the many For-Hire captains and passengers who took time away from work, family and vacations to complete the surveys necessary for this project. Finally, I thank my department administrative assistant, Ms. Janet McGee, for dedication and patience beyond the call of duty in coordinating the hiring, payroll and reimbursement paperwork associated with employing many far-flung surveyors.

Christopher F. Dumas
February 25, 2009

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The North Carolina for-hire ocean fishery consists of approximately 750 charter boat vessels and head boat vessels operating year-round and targeting a succession of fish species depending on seasonal fish abundances and economic conditions. The objective of this study is to document the economic impacts and recreation benefits of the North Carolina for-hire fishing industry. The data for this study come from two sources, 2007-2008 vessel data from the North Carolina Division of Marine Fisheries (NCDMF), and new survey data collected in 2007-2008 specifically for this study. A field/mail survey of captains produced 158 completed surveys (150 charter boat surveys and 8 head boat surveys). A dockside field survey of passengers produced 1,317 completed surveys, and a telephone follow-up survey of passengers produced 296 additional surveys.

- Of 754 North Carolina for-hire vessels, 27 (3.5 %) are head boats and 727 (96.5 %) are charter boats.

- Coast-wide, about 70,000 for-hire vessel trips (not passenger trips) occur annually, split between about 66,000 charter trips and 3,780 head boat trips.

- Coast-wide, an estimated 431,000 passengers are serviced annually by the North Carolina for-hire fleet. Approximately 303,000 of these passengers take charter trips, and 128,000 take head boat trips.

- The North Carolina for-hire fishery receives approximately $65 million annually in fishing fees paid by passengers, with about $55 million received by charter vessels and $10 million received by head boat vessels. An additional $3.3 million is received in revenue for other items sold to passengers. Tips paid by passengers to crewmembers bring in an additional $5.8 million per year.

- There are an estimated 1,445 for-hire captain and crew jobs in North Carolina.

- In the Northern region of the state (Dare County, Hyde County, and counties surrounding Albemarle Sound), charter captains attributed 70 percent of household income to for-hire fishing, with head boat captains attributing 80 percent. In the remaining Central/Southern coastal region, captains of vessels 0-29 feet in length attributed 37 percent of household income to for-hire fishing, while captains of charter vessels 30-69 feet attributed 54 percent, and captains of head boats 70+ feet in length attributed 100 percent.

- In the Northern region, 45-55% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, 60-85% of charter passengers are from out of state, and almost all 98-100% of charter passengers spend at least one night in a coastal county as part of their visit to the coast. Only about 20% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 80% of head boat passengers are from out of state, and about 95% of head boat passengers in this region spend at least one night in a coastal county as part of their visit.

- In the Central region (Beaufort, Pamlico, Craven, Carteret, Onslow and Pender counties), 95% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, 20-25% of charter passengers are from out of state, and about 20% of charter trips are taken on day visits to the coast (about 80% are overnight visits). About 35-40% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 50-65% of head boat passengers are from out of state, and about 85-95% of head boat passengers in this region spend at least one night in a coastal county as part of their visit.

- In the Southern region (New Hanover and Brunswick counties), 43-53% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, about 45% of charter passengers are from out of state, and about 10% of charter trips are taken on day visits to the coast (about 90% are overnight visits). About 40-60% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 30-50% of head boat passengers are from out of state, and about 60% of head boat passengers in this region spend at least one night in a coastal county as part of their visit.

- For-hire fishing passengers spend about $380.0 million per year, including both on- and off-vessel spending, in coastal North Carolina. With economic multiplier effects, this spending supports about $667.4 million in economic output (sales) along the coast, about 10,200 jobs (including 1,445 for-hire fishing jobs), $261.4 million in wages and salaries, and $49.3 million in local/state sales and excise (such as fuel and cigarette) taxes.

- "Consumer surplus" is the economic value of the fishing experience to the passenger beyond the expenditures necessary to take the trip. On average, consumer surplus for a charter boat trip averages $624 per fisher per trip, and consumer surplus for a head boat trip is $102 per fisher per trip. Multiplying by the estimated annual numbers of charter passengers (303,000) and head boat passenger (128,000) produces estimates of $189 million in charter boat passenger consumer surplus and $13 million in head boat passenger consumer surplus per year.

- The most popular charter boat target species are tuna (22%), wahoo (17%) and dolphin (34%). The most popular head boat target species are snapper (7%) and grouper (6%).

- For primary purpose fishers, one additional billfish per trip (per fisher) is worth over $2000. One additional coastal migratory pelagic fish is worth $55. One additional mackerel is worth $39. An additional snapper-grouper is worth $94.

- The economic models used to estimate consumer surplus value can also be used to conduct economic analysis of some types of policy changes. For a snapper-grouper bag limit change from 15 to 7, fishers lose $77 in consumer surplus value per fisher. Fishers lose $34 from a reduction in the king mackerel bag limit from 3 to 1 fish per trip.

- The survey of for-hire vessel captain/owners asked several questions related to fishing policy, the future of the fishery, and future participation in the fishery. Forty-seven percent of for-hire captain/owners thought that the size of the NC for-hire fleet was "about right" for maintaining healthy fish stocks, and about forty-five percent thought the fleet was "somewhat large" or "much to large" to maintain healthy fish stocks.

- Thirty-five percent of for-hire captain/owners thought that the size of the NC for-hire fleet was "about right" for maintaining a financially healthy for-hire industry in North Carolina, and about

sixty-one percent thought the fleet was "somewhat large" or "much to large" to maintain healthy fish stocks.

- About sixty-two percent of survey respondents either "somewhat support" or "strongly support" a limited vessel entry or permit cap program for the for-hire fishery in North Carolina, and about thirty percent "somewhat oppose" or "strongly oppose" such a program.

- Seventy-six percent of survey respondents support creation of a For-Hire Advisory Committee to the North Carolina Marine Fisheries Commission, and about thirteen percent oppose creation of such a committee; about fifty percent of respondents say that they would be willing to serve on such a committee.

- Slightly more than ninety-five percent of survey respondents said that they plan on remaining in the for-hire industry in the future, two and a half percent said that they did not plan on remaining in the industry, and about three percent were unsure.

INTRODUCTION

The North Carolina for-hire ocean fishery consists of approximately 750 charter boat vessels and head boat vessels operating year-round and targeting a succession of fish species depending on seasonal fish abundances and economic conditions. For-hire vessels charge recreational fisherpersons a fee to take them fishing on half-day or full-day (occasionally overnight) salt water fishing trips, from estuarine waters to 50 miles offshore. The vessels supply expertise and experience in finding and catching salt water sport fish. The vessels also typically supply the fishing rods, reels and bait. Charter boats are generally smaller vessels (less than 70 feet in length), carry six or fewer passengers, and operate on a reservation (charter) basis. Head boats (also known as party boats) are larger (often more than 70 feet in length), carry more passengers (30 or more), and operate on a posted schedule.

Previous Studies of the For-Hire Fishing Industry in North Carolina

Existing studies and current anecdotal evidence indicate that the marine for-hire fishing industry has a large economic impact in coastal North Carolina. The two most detailed, existing studies are a review of the operations and economics of the charter and head boat fleets of the South Atlantic and Eastern Gulf of Mexico regions of the United States (Holland, Fedler and Milon 1999) and a review of marine angler expenditures in the Southeastern United States (Gentner, Price and Steinback 2001).

Holland, Fedler and Milon (1999) contacted charter and head boat operators in North Carolina, South Carolina, Georgia and Florida between May and August 1998. In North Carolina, 40 of 207 charter boat operators and 9 of 18 head boat operators were surveyed either in-person, by mail or by telephone. The survey found that charter boat activity in North Carolina centered on Oregon Inlet, Hatteras, Morehead City and Atlantic Beach (charter activity in New Hanover and Brunswick counties was not mentioned in the study). The average age of a charter operator was 50 years, with 70% being first-generation operators, and about two-thirds ran full-time charter businesses. On average across all operators, about 61% of household income was derived from charter operations. Typical (median) annual household income of charter operators was $45,000. The average charter vessel was 37 feet in length. On average, charter operators had invested $60,608 in purchasing and equipping their boats. On average across the North Carolina charter fleet, 63 half-day trips, 91 full-day trips and 3 overnight trips were made per vessel per year. The average charter fee (per vessel, per trip) for a full-day trip was $701, with half-day trips averaging $292. On average, charter operators received $60,135 in revenue annually, with an average of $46,888 in expenses, of which wages and salaries ($17,928), fuel ($7,575) and maintenance ($4,991) were the largest components. The study found that the North Carolina charter industry supported 554 jobs and $10.7 million in wage and salary income, for a total state-wide impact on business activity of $22 million. Non-residents accounted for the majority of charter and head boat passengers in 1997, implying that a large proportion of the economic impacts of these fishing activities was due to "new money" flowing into the coastal region. Turning to head boat operations, the study identified three areas of head boat activity in the state: Atlantic Beach, Swansboro, and Carolina Beach. Head boat operators averaged 39 years of age with an average of 21 years of experience. All but one were first

generation operators, and all but one were in business full-time. Over half of the head boat operators had household incomes greater than $100,000 per year. On average across the North Carolina and South Carolina head boat fleets (head boats from the two states were pooled for analysis due to the relatively small amount of available head boat data), 162 half-day trips and 69 full-day trips were made per vessel per year. The average head boat fee (per angler, per trip) for a full-day trip was $61, with half-day trips averaging $34. On average, head boat operators had invested $220,000 in purchasing and equipping their boats. Average annual revenues and expenses were not reported, but on average head boat operators spent $33,027 annually on wages and salaries, $15,043 on fuel, $14,545 on engine replacement, and $16,577 on other maintenance. The study found that the North Carolina head boat industry supported 75 jobs and $1.1 million in wage and salary income, for a total state-wide impact on business activity of $3.4 million.

Gentner, Price and Steinback (2001) reported on the results of a 1999 recreational fishing expenditure study conducted in the Southeast region of the United States as an add-on to the National Marine Fisheries Service's Marine Recreational Fisheries Statistics Survey (MRFSS). The study collected data from both charter and headboat anglers but did not report separate results for the two vessel types. Results indicated that an estimated 46,768 days were fished by NC residents aboard charter/head boat vessels in the 1999-2000 season, with an additional 162,329 days fished by non-NC residents, for an estimated total of 209,097 days fished. NC resident anglers spent an average of $173.11 per fishing day on fishing fees, $17.08 per fishing day on food, $38.93 per fishing day on lodging (this low average reflects the zero lodging costs of those taking day trips and those staying overnight with friends/family), $10.21 on car-related transportation expenses, and $1.67 on ice. Non-NC resident anglers spent an average of $88.24 per fishing day on fishing fees, $13.82 per fishing day on food, $16.90 per fishing day on lodging, $8.78 on car-related transportation expenses, and $0.42 on ice. Estimated total expenditures by all NC resident anglers on charter-related fishing trips during 1999-2000 were $71 million, with estimated total expenditures by all non-NC residents contributing an additional $108 million. The study did not report separate results for the charter and head boat components of the fishery, nor did it estimate the economic multiplier effects of charter and head boat activity, nor the value of the recreation experience to the anglers themselves (consumer surplus value), all of which are important for the purposes of fishery and coastal management.

A recent National Research Council review[1] of MRFSS data concluded that data related to social and economic impacts of for-hire fishing activity were inadequate: "The qualities of social, economic, and other human dimensions data have been compromised for many of the same reasons that the biological data have been compromised. The human dimensions data have been further compromised by simply being added onto the biological data collection efforts that have different sampling requirements and survey design needs." The MRFSS data are limited to the interviewed trip, sample coverage for charter trips is limited, and headboat data don't exist (for NC). Indeed, NCDMF recently listed the collection of recreational social and economic data among the top priorities of their draft strategic plan. (http://www.ncfisheries.net/mfc/advisor/ MFC04_06.html)

Two recent studies of coastal recreational fishing in North Carolina have not been fully successful in quantifying the impacts of the charter/headboat fishery. Although a recent study of recreational fishing along the Atlantic Intracoastal Waterway by Herstine, Dumas and Whitehead (2008) was successful in estimating the economic impacts of private recreational fishing and the potential economic impacts of reduced dredging along the waterway, the study did not receive enough cooperation from the charter/headboat industry to generate sufficient data for a detailed analysis

[1] Available: http://www.st.nmfs.gov/st1/recreational/Review_Recreational_Survey_Methods/nrc.html

of the charter/headboat sector. For example, the study collected charter/headboat information for Dare and New Hanover counties only and did not collect any information in Hyde, Carteret, Onslow, Pender or Brunswick counties. A second study by then North Carolina Division of Marine Fisheries (NCDMF) (Doug Mumford, personal communication) of the for-hire fleet has been collecting information on number of trips, fishing method, and target species, but this information is not sufficient to complete recreational value and economic impact analyses.

The Purpose of this Study

The objective of the present study is to document the economic impacts and recreation benefits of the for-hire charter/headboat industry in the coastal region of North Carolina. The two major, prior studies (Holland, Fedler and Milon 1999; Gentner, Price and Steinback 2001) of this industry are based on data now more than ten years old, and they do not provide much detail on differences in industry activity in different areas within the state. The present study will update statistics on the North Carolina charter and head boat fleets and will provide regional detail on fishing activity and economic impacts. The study will provide detailed economic data on the for-hire fishery to complement available information on private recreational boaters and the commercial fishery. Many related businesses (hotels, restaurants, marinas, tackle shops, boat yards, boat building, etc.) are directly affected by purchases made by for-hire vessels and their passengers. The for-hire fishery also supports commercial fisheries and commercial fish houses through substantial bait purchases. In addition, the industry is thought to be important for tourism development, as a large percentage of for-hire passengers are believed to come from out of state.

The project consists of two parts: data collection and data analysis. The data for this study come from two sources, existing data from the North Carolina Division of Marine Fisheries, and new survey data collected for the study. The new data collected for the study were obtained using three separate surveys: (1) a field/mail survey of charter boat and head-boat captains; (2) a field survey of charter and head-boat passengers to obtain information about their current fishing trip; and, (3) a follow-up telephone survey of the charter and headboat passengers to obtain detailed information on fishing activities over the remaining fishing season (activities in addition to the trip intercepted by the field survey). A timeline of project milestones is presented below.

Project Timeline

- April 10, 2007 – Sea Grant approves project.
- July 19, 2007 – Funding arrives at UNCW.
- July 2007 – Surveying begins. First passenger surveys received.
- Sept. 2007 – First Captain survey received.
- November 2008 – On-site passenger surveying ends.
- November 13 – December 2, 2008 – Telephone passenger survey implemented.
- December 2008 – Last captain survey received.
- April 2009 -- Report completed.

The survey data were analyzed using standard methods of natural resource economics, as described in the Methods section of this report. The results of the study will document the economic impacts of the North Carolina for-hire fishing fleet for state and local governments and the citizens of the state. The study will identify the numbers and types of for-hire fishery vessels,

vessel characteristics, fishing seasons, numbers of vessel trips, numbers of passengers and their characteristics, passenger fees paid, vessel costs and expenditures, off-vessel passenger expenditures, and economic impacts of vessel and passenger expenditures.

It is anticipated that the results of the study will support the fisheries management work of the NC Division of Marine Fisheries. The information will assist local Tourism and Visitors' Bureaus in attracting additional tourists and recreationists to NC. The results will also help state environmental agencies document the economic importance of maintaining the coastal water quality necessary to sustain fisheries. Finally, the information should help federal and state governments assess the importance of maintaining navigable intracoastal waterways and inlets.

The study investigators are: Dr. Chris Dumas, a natural resource economist at UNC-Wilmington who has experience estimating the economic impacts of commercial and recreational fisheries; Dr. John Whitehead and Dr. Craig Landry, professors of economics at Appalachian State University and East Carolina University, respectively, who have expertise in estimating the value of fishing to anglers (consumer surplus value) based on survey data; ; and Dr. Jim Herstine, a professor of park and recreation management at UNC-Wilmington, who has experience in field survey implementation on the North Carolina coast. Mr. Rom Whitaker, president of North Carolina Watermen United, helped to initiate the study and to promote the study to For-Hire captains all along the coast.

STUDY METHODOLOGY

Data Collection

Existing NCDMF Data

The North Carolina Division of Marine Fisheries maintains a list of For-Hire and Blanket For-Hire Fishery permitted vessels by port and vessel length (NCDMF 2008). This NCDMF for-hire vessel permit list was used to identify the numbers of for-hire vessels by vessel length operating from various ports along the North Carolina Coast. The NCDMF database listed 794 active For-Hire and For-Hire Blanket Permits for 2007-2008. Of these, North Carolina residents accounted for 754 permits, Virginia residents 20 permits, South Carolina 14, Maryland 5, and New York 1. Of the 754 North Carolina resident permits, 4 had ambiguous locations, leaving 750 North Carolina resident permits. Of these 750 permitted North Carolina for-hire vessels, 27 operated as head boats, with the remaining vessels operating as charters. A few more than half of the charters (397 vessels) were smaller vessels less than thirty feet in length.

New Survey Data Collected for This Study

The study collected data using three surveys implemented between July 2007 and December 2008. First, a captain survey (see Appendix 1 for survey instrument) was sent by mail to all for-hire captains either (i) holding NOAA/NMFS Open-Access Permits for Dolphin/Wahoo, Pelagic Fish, or Snapper/Grouper, (ii) identified by field surveyors interviewing passengers at marinas, (iii) listed

on regional charter/headboat fishing web sites (e.g., www.time4fishing.com), or (iv) identified by a web site search for individual NC charter and headboat web sites. Second, surveyors interviewed for-hire passengers (see Appendix 2 for survey instrument) at dockside at the end of for-hire fishing trips to obtain detailed information about those trips. Field surveyors approached passengers at the end of a fishing trip and interviewed them (while fish were being cleaned) at marinas and fishing centers from Dare County, NC, to Brunswick County, NC. Third, a follow-up telephone survey (see Appendix 3 for survey instrument) was conducted of passengers to collect information on all for-hire trips taken that season and the geographic distribution of trips (phone survey implemented by the North Carolina State University Telephone Survey Center). Pre-tests of the captain and passenger surveys were conducted in May 2007, and survey questions and wording were edited to improve clarity and relevance.

The study obtained 158 usable captain surveys (150 charter boat surveys and 8 head boat surveys). The dockside field survey of passengers produced 1,317 usable surveys, and the telephone follow-up survey of passengers produced 296 completed surveys.

The Economic Impacts of For Hire Fishing Activity

Study survey results on the number of vessel trips per vessel by geographic region, vessel length class, and trip type (full-day, half-day, and overnight fishing trips) were used to estimate the number of trips made by vessels participating in the for-hire fishery. Additional survey data were used to calculate the numbers of captains and crew employed, vessel costs, and fees paid by passengers. Data from the passenger survey were used to estimate off-vessel expenditures by passengers in the local area on lodging, restaurants, other food and beverage, fuel, retail shopping, etc. The percentage of passengers stating that for-hire fishing was the primary purpose of their trip to the coast and the percentages of out-of-state passengers were also determined.

An economic input-output model (see Miller and Blair 1985 for additional information on input-output models) was to estimate the economic multiplier effects of the direct trip expenditures by vessels and their passengers, both on- and off-vessel. (To produce conservative estimates of economic impacts, additional off-vessel expenditures by non-fishing travelling companions are not attributed to the fishing trip and are not considered in the analysis.) Input-output models track the flow of dollars between and among businesses, consumers, workers, and government agencies in a study region. IMPLAN software (MIG 2005; 2006 IMPLAN database) was used to estimate the multiplier effects. IMPLAN is a widely-used software program and county-level database used by business, the government, and academics to estimate economic multiplier effects. Multiplier effects track the "trickle down" effects of direct impact expenditures on the regional economy. Multiplier effects are composed of two components: (i) the indirect impact component, and (ii) the induced impact component. The indirect impact component measures the economic ripple effects of direct expenditures on industries that supply/service the directly-impacted industries. The induced impact component measures household spending feedback effects which are changes in household spending by the employees and owners of the businesses affected by the direct and indirect impacts. Together, the indirect and induced impacts are often called economic multiplier effects. The term total economic impact refers to the total of the direct, indirect and induced impact components. The input-output models provide estimates of total (that is, including multiplier effects) sales (also known as economic output or business activity), employment, wages and salaries, and sales and excise taxes supported by the passengers' direct trip expenditures. Additional analysis was also carried out to estimate the federal and state income taxes, payroll

taxes, and vessel property taxes paid by for-hire fisherpersons. Dollar-valued results are presented in inflation-adjusted year 2008 dollars (GDP deflator used for inflation adjustment, USBEA 2008).

Recreation Benefit Value -- Economic Value of the Recreation Experience

The concept of **"consumer surplus"** is the basis for the theoretical definition of the economic value of the recreation experience and characteristics of that experience (such as number and species of fish caught) *to the recreationist.* Consumer surplus measures the value of the recreation experience *to the recreationist.* (In contrast, the out-of-pocket expenditures of the recreationist on fishing trip fees, lodging, fuel, restaurant meals, etc., measure the economic impacts of the fishing trip *on the local economy*. These economic impacts are discussed in other sections of this report.) Consumer surplus is the difference between what the consumer is willing (and able) to pay and the market price or cost of the product. Consumer surplus is also called **net willingness-to-pay (WTP)** since it measures willingness-to-pay net of the costs. In the case of marine recreational fishing, if the angler is willing to pay $100 for a fishing trip and the out-of-pocket expenditures are $25 then the consumer surplus is $75.

Estimation of WTP from demand curve equations is relatively straightforward if market data exist to estimate the demand curve equations. Without market data, a number of methodologies have been developed to estimate WTP for environmental, and other, non-market goods. The "travel cost method" is an approach that is most often used to estimate the benefits of outdoor recreation. The travel cost method begins with the insight that the major cost of outdoor recreation is the travel and time costs incurred to get to the recreation site. Since individuals reside at varying distances from the recreation site, the variation in distance and the number of trips taken are used to estimate a demand curve for the recreation site. The demand curve can then be used to derive the WTP associated with using the site. With data on appropriate demand curve shift variables (i.e., independent variables such as catch rates and the numbers and types of substitute fishing sites available), the economic benefits (i.e., changes in WTP) associated with changes in the shift variables (e.g., changes in catch rates) can be derived.

In this report, a variety of statistical models are used to estimate the consumer surplus (WTP) of fisherpersons for for-hire fishing trips, WTP for particular fishing sites, and WTP for various fish catch rates and fish species. Two sets of data are used, on on-site (dockside) survey of for-hire passengers and a telephone follow-up survey of for-hire passengers. The statistical models and datasets used to derive estimates of consumer surplus / WTP values are detailed in the Results section of this report and in Appendix 5.

RESULTS

Numbers and Geographic Distribution of NC For-Hire Fishing Vessels

The North Carolina Division of Marine Fisheries (NCDMF 2008) provided data on the numbers of for-hire fishing vessels, their locations, and vessel lengths in feet. These data are used to extrapolate results from the sample surveys to the full population of for-hire vessels statewide. The NCDMF fishing permit records show that a total of 794 "for-hire" and "blanket for-hire" permits were effective between 07/01/2007 and 06/30/2008. North Carolina residents accounted for 754 permits, with Virginia residents 20 permits, South Carolina 14, Maryland 5, and New York 1.

The 754 vessels permitted to North Carolina residents had a mean length of 34.49 feet with a minimum length of 14 feet and a maximum length of 85 feet. Of the 754 vessels, 371 (49%) are less than 30 feet in length, 234 (31%) are from 30 to 49 feet in length, 140 (19%) are 50 to 69 feet in length, and 9 (1%) are 70 or more feet in length. For analysis purposes the vessels were partitioned into three vessel length categories: less than 30 feet, 30 to 69 feet, and 70 feet or more. The statewide distribution of vessel lengths by vessel length category is shown in **Table 1**. Of the 754 vessels, 371 (49%) are less than 30 feet in length, 374 (50%) are from 30 to 69 feet in length, and 9 (1%) are 70 feet or more in length.

The distribution of vessel lengths by geographic region is also presented in **Table 1**. Based on general differences in site access and fishing options, the for-hire fishery was aggregated into two, broad geographic regions, a Northern Region consisting of Dare County, Hyde County, and the counties surrounding Albemarle Sound, and a Central/Southern region consisting of Beaufort County, Pamlico County, Carteret County, and all coastal counties southward. (**Table 2** presents the distribution of vessels and vessel lengths at the county and sub-county level.) The Central/Southern region has more than twice as many vessels under 30 feet in length in comparison to the Northern region. The two regions have similar numbers of vessels between 30 and 69 feet in length, but the Northern region has almost fifty percent more of the larger vessels between 50 and 69 feet in length (not shown). The state's very large head boats (greater than 70 feet in length) are based exclusively in the Central/Southern region.

The NCDMF vessel length data set did not indicate whether each vessel was a charter boat or a head boat. Based on data collected during the captain and passenger field surveys conducted as part of this study, and based on additional information collected via a search of internet web sites, a list of 27 head boats believed to be operating in North Carolina in 2007-2008 was developed. This head boat list is presented in **Table 3**. (These head boat vessels are included in the 754 total for-hire vessels permitted to NC residents shown in Tables 1 and 2.) The numbers of head boat vessels by length and region are presented in **Table 4**.

An estimate of the number of charter vessels in each region by vessel length category is obtained by subtracting the numbers of head boat vessels in each region by vessel length (Table 4) from the total number of for-hire vessels in each region by vessel length (Table 1). The numbers of charter boat vessels by length and region are presented in **Table 5**.

Sample Coverage

The distribution of returned *head boat* captain surveys by geographic region and vessel length category is presented in **Table 6**. The distribution of head boat surveys can be compared with the actual distribution of head boat vessels (based on NCDMF permit data) by comparing Tables 6 and 4. Several completed head boat surveys were received in every head boat category with active vessels except vessel length category 30-69 feet in the Central/Southern region. For this vessel length category only, results from Northern region vessels are used as approximations of results for Central/Southern region vessels. The distribution of returned *charter boat* captain surveys by geographic region and vessel length category is presented in **Table 7**. The distribution of charter boat surveys can be compared with the actual distribution of charter vessels (based on NCDMF permit data) by comparing Tables 7 and 5. From 8 to 71 completed surveys were obtained for each combination of region and vessel length.

Captain, Crew, and Vessel Characteristics

Estimates of captain, crew, and vessel characteristics for the North Carolina for-hire fishery were derived from a survey of for-hire vessel captains. North Carolina for-hire captains completed a total of 154 charter boat surveys and 8 head boat surveys. At the time of the survey, there were 727 charter boats and 27 head boats with permits to operate in North Carolina. As can be seen from the geographic distribution of completed captain surveys by zip code of captain residency presented in **Figure 1**, completed captain surveys were obtained from all regions of the North Carolina coast. For the purpose of analyzing the captain survey data to obtain average captain, crew, and vessel characteristics, the fishery was aggregated into two geographic regions, a Northern Region consisting of Dare County, Hyde County, and the counties surrounding Albemarle Sound, and a Central/Southern region consisting of Beaufort County, Pamlico County, Carteret County, and all coastal counties southward.

Captain Characteristics

Of the statewide captain survey respondents, 86.4 percent were captain/owners of their vessels, 1.2 percent were owners who hired others to captain their vessels, 9.3 percent were paid captains who operated vessels owned by corporations, and 3.1 percent were captains who operated vessels owned by private owners. Fifty-three percent of captain survey respondents were born in North Carolina, and forty-seven percent were born in other states. Ninety-nine percent of surveyed captains were male. In terms of race, 98 percent were Caucasian/white, 1 percent were Hispanic, and 1 percent were Native American (none was African American).

Data on selected captain characteristics are provided by geographic region, vessel type, and vessel length category in **Tables 8-19**. Captain/owner age was similar across regions, averaging 46-50 years. Years of fishing experience and years of U.S. Coast Guard licensing varied across regions, with captains in the Northern region averaging 15-17 years of experience and licensing for all vessel types and lengths, while captains in the Central/Southern region operating vessels 0-29 feet in length averaged 9 years of experience, with those operating vessels 30-69 feet averaging 13

years of experience, and those operating large head boats 70 or more feet in length averaging 30 years of experience.

The percentage of captain/owner household income attributed to for-hire fishing activities varies by region and vessel type. In the Northern region, charter captains attributed 70 percent of household income to for-hire fishing, and with head boat captains attributing 80 percent. In the Central/Southern region, captains of vessels 0-29 feet in length attributed 37 percent of household income to for-hire fishing, while captains of charter vessels 30-69 feet attributed 54 percent, with captains of head boats 70+ feet in length attributing 100 percent.

Crew Characteristics

Data on selected crew characteristics are provided by geographic region, vessel type, and vessel length category in **Tables 8-19**. The numbers of full-time and part-time crew per vessel varied by region, vessel type, and vessel length. In the Northern region, charter vessels 0-29 feet in length reported no full-time crew, and 13 percent of these vessels reported employing one part-time crewmember. Almost all charter vessels 30-69 feet in length employed one or two full-time crew members, and a few reported 1-3 part-time crew. Head boats 30-69 feet in length reported 1-2 full time crew members and 0-2 part-time crew. In the Central/Southern region, 12 percent of charter vessels 0-29 feet in length reported one full-time crewmember, and about 30 percent of these vessels reported at least one part-time crew member. About half of charter vessels 30-69 feet in length reported a full-time crew member (a few vessels had 2 or 3), and almost all reported 1-4 part-time crew members. The large (70+ feet in length) headboats in the Central/Southern region reported an average of 3.5 full-time crew members and 4.5 part-time crew. These head boat crew numbers do not include additional office/administration staff employed by these relatively large head boat businesses.

Captain and Crew Jobs

Assuming one captain per vessel, and multiplying numbers of vessels by average numbers of full-time and part-time crewmembers per vessel, the distribution of for-hire captain and crew jobs by county and sub-county port was obtained and presented in **Table 20**. There are an estimated 1,445 for-hire captain and crew jobs in North Carolina.

Vessel Characteristics and Overhead (Fixed) Costs

Data on vessel characteristics by region, vessel type, and vessel length category are presented in **Table 4, Table 5 and Tables 8-19**. Of 754 North Carolina for-hire vessels, 27 (3.5 %) are head boats and 727 (96.5 %) are charter boats. Of the charter boats, 371 (51 %) are 0-29 feet in length and 356 (49 %) are 30-69 feet in length. Of the head boats, 18 (67 %) are between 30 and 69 feet in length, and 9 (33 %) are 70 or more feet in length.

Charter boats 0-29 feet in length average 200-260 horsepower, while charter boats 30-69 feet in length average 840-920 horsepower. Head boats 30-69 feet in length average 940 horsepower, while head boats 70+ feet in length average 1425 horsepower.

Charter boats 0-29 feet in length average $36,000-$44,000 current (depreciated) market value, while charter boats 30-69 feet in length average $250,000-$339,000 current value. Head boats 30-69 feet in length average $265,000 current value, while head boats 70+ feet in length average $700,000 current value.

The average number of days hired per year varied substantially across regions for charter vessels, with vessels in the Northern region hired more days per year, on average. In the Northern region, charter vessels 0-29 feet in length were hired an average of 161 days/year, while vessels 30-69 feet in length were hired an average of 122 days/year. In the Central/Southern region, charter vessels 0-29 feet in length were hired an average of 58 days/year, while vessels 30-69 feet in length were hired an average of 84 days/year. Head boat vessels in the North were hired an average of 138 days/year, while head boats in the Central/Southern region were hired an average of 160 days/year.

Data on vessel overhead (fixed) costs are presented by region, vessel type, and vessel length category in **Tables 8-19**. Monthly overhead costs include: dockage fees, vessel loan payment (if any), vessel insurance, business telephone charges, and other monthly fixed costs (typically electricity charges not included in dockage fees). Yearly overhead costs include: fishing permit and license fees, fishing supplies (rods, reels, etc., not included in trip costs), electronics costs, engine repair costs, boat yard expenses (other than engine), other maintenance costs, association fees, accounting/bookeeping fees, legal expenses, advertising/promotion costs, and miscellaneous other yearly overhead costs.

Trip (variable) costs are described in a later section of this report.

Vessel Trips

The estimated numbers of for-hire vessels by vessel type (charter boat and head boat) by vessel length category and by county and port are multiplied by the average number of trips per vessel per month by season (May-Oct, Nov-Apr) and by trip type (f=full-day trip, h=half-day trip, o=overnight trip), and the product is then multiplied by six months per season, to estimate the total number of NC for-hire fishery vessel trips per season by county/port, vessel type, vessel length, season and trip type. **Table 21** presents annual vessel trips by county/port, vessel type and vessel length category summed over seasons and trip type. About 70,000 for-hire trips occur annually, split between about 66,000 charter trips and 3,780 head boat trips. **Tables 22-23** present annual vessel trips disaggregated by season, county/port, vessel type and vessel length category. Of the 70,000 annual trips, about 56,000 occur in the peak (May-Oct.) season, and 14,000 occur in the off-peak Nov.-Apr.) season. **Tables 24-25** present annual vessel trips disaggregated by season, county/port, vessel type and trip type. Year-round, of the 66,000 charter trips, about 39,000 are full-day trips, 26,800 are half-day trips, and about 200 are overnight fishing trips. Of the 3,780 head boat trips, about 2,350 are full-day trips, 1,350 are half-day trips, and 80 are overnight trips.

Trip Characteristics -- Trip Types, Passengers, Fees, Wages, Tips, and Trip (Variable) Costs

Tables 26-33 present information on vessel characteristics per vessel trip by region, season, vessel type, vessel length, and trip type. Vessel trip characteristics include:

- Average number of passengers per trip per vessel
- Average for-hire fishing fees paid per passenger per trip
- Average other vessel income (T-shirt sales, etc.) received per vessel per trip
- Average fuel/oil cost per vessel per trip
- Average hired captain wage per trip (most vessels do not have hired captains; average is across vessels with hired captains and vessels without hired captains)
- Average wages paid per crew mate per trip
- Average tips received per crew mate per trip (tips paid by passengers)
- Average vessel cost of bait per trip (vessels supply bait to passengers)
- Average cost of ice per trip (used to cool catch)
- Average cost of food per trip (sold to passengers)
- Average cost of other items (cost of T-shirts sold, etc.)
- Average return to vessel owner per trip (before overhead and taxes)

Numbers of Passengers

Estimates of vessel trips per year (Tables 21-25) and average numbers of passengers per trip (Tables 26-33) are used to estimate the number of paying passengers taking for-hire trips in coastal North Carolina. Coast-wide, an estimated 431,000 passengers are serviced annually by the North Carolina for-hire fleet **(Table 34)**. Approximately 303,000 of these passengers take charter trips, and 128,000 take head boat trips.

For-Hire Fishery Revenue

For-hire vessel owners, captains and crew receive income from for-hire fishing activities in three ways: fishing fees paid by passengers **(Table 35)**, sales of other items (T-shirts, food and drink, etc.) to passengers **(Table 36)**, and tips paid by passengers directly to crew members **(Table 37)**. The North Carolina for-hire fishery receives approximately $65 million annually in fishing fees paid by passengers, with about $55 million received by charter vessels and $10 million received by head boat vessels. An additional $3.3 million is received in revenue for other items sold to passengers. Tips paid by passengers to crewmembers bring in an additional $5.8 million per year.

Vessel Value and Vessel Property Taxes Paid

All charter vessels in the North Carolina for-hire fleet together have a current (depreciated) value of approximately $120 million, and all head boat vessels together have a current value of approximately $10.2 million **(Table 38)**. Charter vessel owners paid over $500,000 in property taxes on their vessels to local governments in 2008, and head boat owners paid over $45,000 in vessel property taxes.

For-Hire Fishery Income and Taxes Paid

For-Hire Fishery Income is equal to revenues from passenger fees, on-vessel clothing, food and beverage sales, and tips minus vessel expenses **(Table 39)**. Income is composed of wages paid to captains and crew, tips received by the crew from passengers, and returns to vessel owners. Most for-hire vessel captains own their vessels, but some are hired ("paid") captains. Paid captains receive about $1.2 million in wages annually. For-hire crews receive about $5.3 million per year in wages and an additional $5.7 million in tips. Vessel owners, many of whom are also the captains of their vessels, receive an estimated $13.3 million in returns per year. In total, for-hire captains, crew an owners receive about $26 million in income per year from for-hire fishing activities. If it is assumed that, on average, 5.5% of this income is saved, 20% is paid in Federal income tax, 7% is paid in state income tax, 15.3% is paid in payroll (FICA) tax, and about 2.5% is paid in property taxes on residences (assuming half the for-hire captains and crews own homes with an average value of $250,000), then for-hire fishing in North Carolina supports **(Table 39)**:

- $5.1 million in federal income tax
- $1.8 million in state income tax
- $3.9 million in federal/state FICA tax
- $286 thousand in local property tax on residences
- $576 thousand in local property tax on vessels

For-Hire Fishery Net Disposable Income and Economic Impacts of Household Spending

For the purposes of this analysis, total net disposable income is defined as for-hire fishery income minus estimated savings and taxes. The total net disposable income of North Carolina for-hire fishery captains, crews and owners *directly supported by for-hire fishing activity* (these households may have additional income from other sources) is approximately $12.5 million per year **(Table 39)**. This income is spent by for-hire households on various goods and services in the local community. When economic multiplier effects are included, this spending supports an estimated $17 million in sales, $3.6 million in wages and salaries, 119 jobs, and $762 thousand in sales and excise (for example, gasoline and cigarette taxes) in coastal North Carolina communities **(Table 40)**.

Non-Labor Vessel Expenditures and Economic Impacts

Non-labor vessel expenditures include everything purchased by for-hire captains, crews and vessel owners to maintain and operate for-hire fishing vessels, excluding the wages, salaries and returns to the captains, crew and owners themselves. Non-labor vessel expenditures include (1) overhead/fixed costs, such as dockage fees, boat loan payments and insurance, fishing permit and license fees, and vessel repair and maintenance costs, and (2) trip/variable costs, such as fuel, bait, and ice costs. Estimated direct non-labor vessel expenditures by charter and head boats are presented by county in **Tables 41-55**. Including economic multiplier effects, these expenditures support sales in coastal economies equal to the estimates shown in the "Total Output Impact" column of Tables 41-55. The employment, wages and salaries (in addition to the wages and salaries of the for-hire fishermen), and local/state sales and excise taxes supported by these expenditures are provided in the other columns of Tables 41-55.

Table 56 presents aggregate, coast-wide estimates of non-labor vessel expenditures and economic impacts of North Carolina for-hire fishing activities. Charter vessels spend an estimated $43.5 million per year on non-labor items, and head boats spend an additional $5.3 million per year. Including economic multiplier effects, these for-hire expenditures support an estimated $85 million in sales in coastal North Carolina communities, $30 million in wages and salaries, a little over 1,000 jobs, and over $6 million in local/state sales and excise taxes.

For-Hire Passenger Characteristics

The on-site (dockside) survey of North Carolina for-hire passengers provides information on the characteristics of charter and head boat passengers. **Tables 57-62** provide summary information on for-hire passenger characteristics by region, vessel type, and vessel length.

In the Northern region (Dare County, Hyde County, and counties surrounding Albemarle Sound), 45-55% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, 60-85% of charter passengers are from out of state, and almost all 98-100% of charter passengers spend at least one night in a coastal county as part of their visit to the coast. Only about 20% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 80% of head boat passengers are from out of state, and about 95% of head boat passengers in this region spend at least one night in a coastal county as part of their visit. Additional survey results on the number of passengers per vessel, fishing fees and tips paid by passengers, and other on-vessel (food and beverages, suntan lotion, etc.) and off-vessel (lodging, fuel, restaurant meals, groceries, other retail shopping, etc.) expenditures are also provided in Tables 57-62.

In the Central region (Beaufort, Pamlico, Craven, Carteret, Onslow and Pender counties), 95% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, 20-25% of charter passengers are from out of state, and about 20% of charter trips are taken on day visits to the coast (about 80% are overnight visits). About 35-40% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 50-65% of head boat passengers are from out of state, and about 85-95% of head boat passengers in this region spend at least one night in a coastal county as part of their visit. Additional survey results on

the number of passengers per vessel, fishing fees and tips paid by passengers, and other on-vessel (food and beverages, suntan lotion, etc.) and off-vessel (lodging, fuel, restaurant meals, groceries, other retail shopping, etc.) expenditures are also provided in Tables 57-62.

In the Southern region (New Hanover and Brunswick counties), 43-53% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, about 45% of charter passengers are from out of state, and about 10% of charter trips are taken on day visits to the coast (about 90% are overnight visits). About 40-60% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 30-50% of head boat passengers are from out of state, and about 60% of head boat passengers in this region spend at least one night in a coastal county as part of their visit. Additional survey results on the number of passengers per vessel, fishing fees and tips paid by passengers, and other on-vessel (food and beverages, suntan lotion, etc.) and off-vessel (lodging, fuel, restaurant meals, groceries, other retail shopping, etc.) expenditures are also provided in Tables 57-62.

Off-Vessel Passenger Expenditures and Economic Impacts

The off-vessel expenditures by all passengers are summed and presented by region, vessel type, and for the coast as a whole in **Table 63**. These off-vessel expenditures measure the additional money spent by for-hire passengers during their fishing trip *beyond* fishing fees, tips and any on-board purchases. Coast-wide, direct off-vessel expenditures amount to $318 million per year. These off-vessel expenditures support business sales, employment, wages and salaries and local/state sales and excise taxes. **Tables 64-66** present the total economic impacts (including multiplier effects) of off-vessel expenditures by geographic region and economic sector. Coast-wide, off-vessel expenditures support about $552 million in business sales along the coast, supporting 7,677 jobs, $200 million in wages and salaries, and $42.5 million in local/state sales and excise taxes.

Summary of Economic Impacts of the North Carolina For-Hire Fishing Industry

Table 67 presents a summary of the economic impacts of the North Carolina For-Hire Fishing industry. Direct spending by for-hire fishing passengers drives the economic impacts of the industry. As shown in **Figure 2**, direct passenger spending occurs both on-vessel and off-vessel.

Direct on-vessel spending includes fishing fees and other on-vessel expenditures (for example, T-shirts, food and beverages, etc.) paid to vessel captain/owners amounting to $74.6 million per year. This direct on-vessel spending can be partitioned into vessel overhead/fixed costs (for example, dockage and insurance) and trip/variable costs (for example, fuel and bait), together amounting to $48.9 million per year, and wages, tips and returns received by for-hire captain/owners and crew, amounting to $25.7 million per year. The expenditures by vessel owners on overhead/fixed and trip/variable costs support sales by other businesses in the coastal area, contributing to economic multiplier effects amounting to an additional $36.3 million in sales annually in the coastal economy. For-hire captains and crew take home their wages, tips and returns, pay taxes, save some of the after-tax income, and spend the rest. These expenditures by for-hire households contribute to additional economic multiplier effects supporting an additional $4.7 million per year in coastal economy sales.

Direct off-vessel spending includes passenger expenditures on lodging, fuel, restaurant meals, food and beverages purchased at grocery and convenience stores, retail shopping and entertainment, etc. Direct off-vessel spending by for-hire passengers amounts to $305.4 million per year. This off-vessel spending supports sales, employment, wages and salaries, and sales and excise taxes in the broader economy of the coastal region through economic multiplier effects. For example, $246.3 million in additional sales in the coastal region is supported by the economic multiplier effects of the off-vessel expenditures.

Coast-wide, for-hire fishing passengers spend about $380.0 million per year, including both on- and off-vessel spending, in coastal North Carolina. With economic multiplier effects, this spending supports about $667.4 million in economic output (sales) along the coast, about 10,200 jobs (including 1,445 for-hire fishing jobs), $261.4 million in wages and salaries, and $49.3 million in local/state sales and excise (such as fuel and cigarette) taxes.

Attitudes of For-Hire Captain/Owners Concerning Selected Fisheries Policies and the Future of the Industry

The survey of for-hire vessel captain/owners asked several questions related to fishing policy, the future of the fishery, and future participation in the fishery.

Forty-seven percent of for-hire captain/owners thought that the size of the NC for-hire fleet was "about right" for maintaining healthy fish stocks **(Figure 3)**. About five percent thought the fleet was "somewhat small" or "much to small," and about forty-five percent thought the fleet was "somewhat large" or "much to large" to maintain healthy fish stocks.

Thirty-five percent of for-hire captain/owners thought that the size of the NC for-hire fleet was "about right" for maintaining a financially healthy for-hire industry in North Carolina **(Figure 4)**. About two percent thought the fleet was "somewhat small" or "much to small," and about sixty-one percent thought the fleet was "somewhat large" or "much to large" to maintain healthy fish stocks.

About sixty-two percent of survey respondents either "somewhat support" or "strongly support" a limited vessel entry or permit cap program for the for-hire fishery in North Carolina. About thirty percent "somewhat oppose" or "strongly oppose" such a program, and about seven percent have no preference **(Figure 5)**.

About seventy-six percent of survey respondents support creation of a For-Hire Advisory Committee to the North Carolina Marine Fisheries Commission, about thirteen percent oppose creation of such a committee, and about nine percent have no preference **(Figure 6)**. About fifty percent of respondents say that they would be willing to serve on such a committee, twenty-six percent would not be willing to serve, and twenty-three percent are not sure whether they would be willing to serve **(Figure 7)**.

Slightly more than ninety-five percent of survey respondents said that they plan on remaining in the for-hire industry in the future, two and a half percent said that they did not plan on remaining in the industry, and about three percent were unsure **(Figure 8)**.

The captain/owner survey also asked a number of "open-ended" questions concerning captain/owner attitudes about coastal development, their personal business condition, the business condition of the for-hire fleet, the future of the industry, and suggestions for better management. The questions were:

- "If I were not a Charter/Headboat captain, I would likely be doing . . ."
- "How would you describe your Charter/Headboat business?"
- "If you could change anything about the NC Charter/Headboat business, what would it be?"
- "How is coastal development influencing your Charter/Headboat business?"
- "What do you think the future holds for NC Charter/Headboat business?"
- "What specific recommendations would you make to change the Charter/Headboat industry in North Carolina?"

Perhaps not surprisingly, the captain/owner answers to these questions were varied and colorful. They are listed in their entirety by question in **Appendix 4**.

Recreation Benefit Value of For-Hire Fishing

Recreation benefit value is the net value of the recreation experience to the recreationist. As discussed in the Methods section of this report, economists call recreation benefit value "consumer surplus" value or "net willingness to pay" (WTP). In this report, a variety of statistical models are used to estimate (1) the consumer surplus value (WTP) of fisherpersons for for-hire fishing trips, (2) WTP for particular fishing port areas, and (3) WTP for various fish catch rates and fish species. Two sets of data are used, an on-site (dockside) survey of for-hire passengers and a telephone follow-up survey of for-hire passengers. (Additional details on the statistical models used to derive WTP estimates are provided in **Appendix 5**.)

Charter/Headboat Demand Model Based on Passenger On-site Survey Data

Data Summary

After deleting observations with missing values on key variables, we consider a sample of 1204 fishers who take charter and headboat fishing trips. Based on empirical analysis and knowledge of the North Carolina recreational fishery, we consider fifteen fishing alternatives. Dimensions of choice are federal waters (more than 3 miles from the shore) vs. state waters (i.e., offshore and inshore trips), charter vs. headboat trips, location and whether fishing is the primary or secondary purpose of the trip. Interviews occurred at 14 locations which were grouped into five aggregate sites. For the purpose of this analysis the sites are labeled as Roanoke Island (Manteo and Wanchese based trips), Outer Banks (Oregon Inlet, Hatteras and Ocracoke), Central Coast (Morehead City, Atlantic Beach and Topsail Island), New Hanover County (Wrightsville Beach and Carolina Beach) and Brunswick County (Oak Island, Ocean Isle, Southport, Calabash).

Five hundred ninety seven (49.6%) of the fishers state that fishing is their primary purpose for taking a for-hire trip to the North Carolina coast **(Table 68)**. Six hundred and seven (51.4%) of the fishers state that fishing is a secondary purpose. Twenty percent of all charter and headboat trips originate at the Roanoke Island site, 29% originate on the Outer Banks, 7% originate on the Central

Coast, 31% originate in New Hanover County and 14% originate in Brunswick County. Eighty-four percent of all trips are charter trips while 17% are headboat trips. Seventy-one percent of all charter trips have a federal waters (3 miles or more from the coast) destination.

Several decisions that led to the fisher alternatives in Table 68 deserve comment. First, Oregon Inlet origination trips and Roanoke Island trips both reach the Atlantic Ocean via Oregon Inlet and are logically the same type of trips. However, preliminary economic analyses with this grouping led to an inconsistent demand model. In other words, based upon our empirical analysis Oregon Inlet trips are closer substitutes to Outer Banks trips than Roanoke Island trips. In the same way, econometric analysis indicates that grouping Topsail Island trips in the same aggregate site as New Hanover County trips is inappropriate. Second, there are too few headboat trips to differentiate between federal and state waters so these trips are aggregated by origin site.

Fisherperson characteristics sorted by purpose and fishing mode are presented in **Table 69**. Individual charter fees are about four and five times greater for charter boat fishers relative to headboat fishers (variable name is FEE). Most fishers are male (MALE) with an average age of forty years (AGE). Average household income (INCOME) is between $72 thousand and $76 thousand except for primary headboat fishers with income of $79 thousand. The average number of charter boat fishers is about five while the average number of headboat fishers is 43 for primary fishers and 27 for secondary fishers. Primary purpose fishers spend an average of 3 nights away from home (NIGHTS) on their fishing trip while secondary purpose fishers spend 6 to 7 nights away from home. Very few fishers take day trips (DAYTRIP) where they return home on the same day they leave home. Primary and secondary purpose charter boat fishers took 3 and 2 charter boat trips (CB_TRIPS) during the past year, respectively. Headboat fishers took an average of 2 headboat trips (HB_TRIPS) during the past year. Few charter boat fishers took headboat trips and few headboat fishers took charter boat trips.

Charter boat fishers specifically target an average of one fish species **(Table 70)**. The most popular primary purpose charter boat target species are tuna (22%), wahoo (17%) and dolphin (34%). The most popular secondary purpose charter boat species are billfish and tuna (13% each), Spanish mackerel (20%), and dolphin (34%). Only 25% and 50% of primary and secondary purpose headboat fishers target species. The most popular headboat trip target species for primary purpose fishers are snapper (7%) and grouper (6%). The most popular headboat trip target species for secondary purpose fishers are bluefish (13%), grouper (8%), dolphin (7%) and snapper (5%).

Demand Model

We estimate nested logit recreation demand models for primary and secondary purpose fishers (see Appendix for the empirical model). We specify the fisher choice in two stages. First, fishers choose amongst three mode/waters combinations: offshore charter, inshore charter and offshore or inshore headboat trip. Then, fishers choose one of five aggregate recreation sites. These choices depend on the cost and benefits of the choices. Costs include travel costs and individual charter/headboat fees. Trip benefits are catch rates. We also include site specific constants to capture any other site specific costs or benefits.

Travel distances and time between each survey respondent's home zip code and the zip code of the most frequented fishing site are calculated using the ZIPFIP correction for "great circle" distances. Travel time is calculated by dividing round trip distance by 50 miles per hour. The cost per mile used is $0.37, the national average automobile driving cost including only variable costs and no fixed costs as reported by the American Automobile Association (AAA). Thirty-three percent of the

wage rate is used to value leisure time for each respondent. The round-trip travel cost is $p_{ij} = (c \times d_{ij}) + (\theta w_i \times \lfloor d_{ij} / mph \rfloor)$ where c is cost per mile, d is round trip distance, θ is the fraction of the wage rate, w, mph is miles per hour, i is the subscript for individual i = 1, ..., 1024 and j is the subscript for sites j = 1, ..., 5. We top-code each of the travel cost variables at the 90th percentile to reduce the influence of outliers.

The benefits of the trip are measured as the average self-reported catch and keep rates of one specie (billfish) and species groups at each site for each mode. The species groups are mackerel (king and Spanish), coastal migratory pelagic (tuna, dolphin, wahoo), snapper-grouper and other species (e.g., cobia, striper, red drum, bluefish).

The average sum of the travel cost and charter fee over all primary purpose fishers and alternatives (n = 8955) is $630 **(Table 71)**. Only trip cost varies across fishers. The other variables reflect characteristics of the choice alternatives and are equal for each fisher to the site/mode specific mean for each of the alternatives. The average charter fee is $253. We top-code each of the charter fee variables at the 99th percentile to reduce the influence of outliers. The average catch rates are 0.02 for billfish caught and kept per trip, 2 coastal migratory pelagic fish per trip, 1 mackerel per trip, 1 snapper-grouper per trip, and 4 other fish per trip.

Primary purpose fishers are less likely to choose an alternative as the trip cost and fee rises and more likely to choose a site with greater billfish, coastal migratory pelagic, mackerel and snapper-grouper catch (Table 71). Other fish caught does not influence primary purpose fishers. Primary purpose fishers are more like to visit Outer Banks, Central Coast and New Hanover sites relative to Roanoke Island and Brunswick County sites. The coefficient on the inclusive value is between zero and one which indicates the mode-waters/site nesting structure is appropriate. Other nesting structures were attempted but each alternative led to poor statistical fit.

The average sum of the travel cost over all secondary purpose fishers and alternatives (n = 9105) is $527 **(Table 72)**. The average charter fee and catch rates are the same as in the primary purpose model. Secondary purpose fishers are less likely to choose an alternative as the trip cost increases and as the charter fee increases. Fishers are more likely to choose an alternative with greater billfish, coastal migratory pelagic, mackerel and snapper-grouper catch. Other fish caught does not influence secondary purpose fishers. Secondary purpose fishers are less likely to visit Central Coast, New Hanover County and Brunswick County sites relative to Roanoke Island and Outer Banks. (The coefficient on the inclusive value is between zero and one which indicating the mode-waters/site nesting structure is appropriate. Other nesting structures were attempted but each alternative led to poor statistical fit.)

The major difference between the primary purpose and secondary purpose models is the influence of travel cost and charter fees on choices. A likelihood ratio test indicates that primary purpose fishers are influenced equally by travel cost and fees. Secondary purpose fishers are influenced more by fees than trip costs so each variable enters the model separately. The split sample modeling approach is appropriate according to a likelihood ratio test.

The economic value per fish per trip (i.e., willingness-to-pay to catch and keep one more fish) **(Table 73)** is estimated according to equation (7) in Appendix 5. While primary and secondary purpose fishers exhibit significantly different behavior with regards to cost, once costs are weighted for primary purpose fishers the value of catch is not statistically different across groups. For primary purpose fishers, one additional billfish per trip (per fisher) is worth over $2000 for

primary purpose fishers and $1800 for secondary purpose fishers. One additional coastal migratory pelagic fish is worth $55 and $65 for primary purpose and second purpose fishers, respectively. One additional mackerel is worth $39 for both types of fishers. An additional snapper-grouper is worth between $94 and $61, respectively.

The economic value for access to each site per trip (i.e., willingness-to-pay to avoid loss of the site) **(Table 74)** is estimated according to equation (8) in the Appendix 5. For primary purpose fishers, every offshore charter trip site is worth $5 or more per trip. This indicates that fishers receive additional recreation value from using their favorite sites, and fishers lose value if forced to fish from their next-best, substitute sites. The Outer Banks offshore charter trip site is the most valuable at $27. New Hanover offshore and inshore charter trips are worth $11 and $10, respectively. The most valuable headboat trip sites for primary purpose fishers are New Hanover and Brunswick Counties. These values measure the loss in recreation benefit value per trip *assuming that other for-hire fishing sites are available in North Carolina and that for-hire fishers would be able to use these sites as substitutes. If substitute sites are not available, losses are larger.*

For secondary purpose fishers, every offshore charter trip site is worth $5 or more per trip except those from the Central Coast. The Outer Banks offshore charter trip site is the most valuable at $17 with the Roanoke Island site worth $11. The New Hanover County inshore charter trip site is worth $17 to secondary purpose fishers. The most valuable headboat trip sites for secondary purpose fishers are Roanoke Island and Brunswick County. Again, these values measure the loss in recreation benefit value per trip *assuming that other for-hire fishing sites are available in North Carolina and that for-hire fishers would be able to use these sites as substitutes. If substitute sites are not available, losses are larger.*

For-Hire Passenger Follow-Up Phone Survey Data: All Modes Demand Model

This model investigates the substitution behavior of fisherpersons across five fishing "modes:" charter boat, head boat, private boat, pier and beach fishing.

Data Summary

The phone survey data contains data on 296 fishers who completed the survey. Of these, 278 provided enough information to estimate recreation demand models. Phone survey respondents are more likely to have been on a trip with the primary purpose of fishing when intercepted and are more avid in terms of the number of annual trips as reported on the intercept survey. Sixty percent of phone survey respondents were on a primary fishing trip while only 46% of non-respondents (n = 926) were on a primary purpose trip. Phone survey respondents took an average of four charter and headboat trips during the past 12 months while non-respondents took an average of 3 trips. We constructed weights with the trips and purpose variables so that the phone survey sub-sample reflects the avidity of the onsite sample. Eighty-eight percent of the phone sample is male and 96% are white. The average age is 46 and average income is $76 thousand. To maintain consistency with the "stated preference" analysis that follows we discard fishers who do not plan to take charter trips during the 12 months following the phone survey. We adjust the weights for this subsample so that the sum of the weights is equal to the n = 244 sample size.

Respondents are asked about the number of marine recreational fishing trips taken during the past 12 months with five modes of fishing (charter boat, headboat, private boat, pier and beach) and eight coastal counties **(Table 75)**. The average number of trips across all modes is 7.55. The average number of charter boat trips is 1.93, headboat trips is 0.11, private boat trips is 1.64, pier

trips is 0.84 and beach fishing trips is 3.04. The average number of fishing trips across mode and county are presented in Table 75. Dare County beach (1.68) and charter (1.52) trips are the most common in the sample. A few respondents reported a large number of fishing trips. In order to estimate to reduce the influence of outliers we top-code each mode/county trip variable at 30.

Demand Model

We estimate a nested logit statistical model with these data. The two-level nesting structure begins with fishers choosing among the five fishing modes and then among the eight county locations. After excluding the mode-site combinations from Table 75 that were not chosen, there are 34 alternatives in the model. Since we have no measures of mode-site quality we include mode specific constants for charter boat and headboat fishing. Travel costs for each fisher to each site are constructed in the same way as those for the onsite data demand model. Another cost variable is equal to $360 for the average charter fee, $87 for the average headboat fee, $10 for gas and oil costs for a private boat trip and $10 for the pier fishing fee.

The mode-site selection nested logit model is presented in **Table 76**. Since each fisher is included in the model with multiple trips, the covariance matrix for the logit models are adjusted for data clustering to achieve robust standard errors. Also, all models are weighted for avidity relative to the onsite sample. Respondents are less likely to choose an alternative as the travel cost (denoted "TC" in Table 76) and additional cost (denoted "COST" in table) rises. The additional cost variable is an order of magnitude larger than the travel cost coefficient suggesting that angers view these impacts differently. Fishers are more likely to choose the charter and headboat trip alternatives, holding constant fishing costs. These results are not statistically different from the same model with all of the phone survey fishers (n = 278).

In order to examine determinants of the number of fishing trips we present the results of a trip frequency model (see appendix) in **Table 77**. Variables included as potential determinants are the inclusive value (i.e., price index), sex, race, age and income. Results indicate that trips rise with the inclusive value (i.e., declines with travel cost increases). Older fishers take more trips. Fishers with more income take more trips. We use these results to simulate the effects of the loss of the charter and headboat fleet on the overall number of trips in the policy analysis below.

Policy Analysis

In **Table 78** we use the results from the nested logit model to estimate the recreation benefits of the charter boat and headboat fishing modes. In other words, we estimate a fisherperson's consumer surplus (WTP) for the opportunity to take a for-hire fishing trip at *any* of the sites across all six counties in the analysis. We find that the consumer surplus (WTP) for the charter boat mode is $624 per fisher per trip. The consumer surplus (WTP) for the headboat alternative is $102 per fisher per trip. These numbers measure the net recreation benefit value to the fisherperson of being able to take charter and head boat trips vs. other types of fishing trips. This is the amount of recreation benefit value of charter and head boat trips that is *beyond* the value provided by the other types of marine fishing trips available in coastal North Carolina. If charter and head boat trips were not available (say, due to fishing regulations or inlet closures), these numbers measure the reduction in recreation benefit per fisherperson of being forced to fish in a less desirable mode (private boat fishing, pier fishing, or beach fishing).

Multiplying by the estimated annual numbers of charter passengers (303,000) and head boat passenger (128,000) produces estimates of $189 million in charter boat passenger consumer surplus and $13 million in head boat passenger consumer surplus per year.

When investigating the effects of changes in other variables on fishing alternative choices, the nested logit model reallocates trips to other alternatives in the model. For example, in the baseline scenario, 26% of the fisher trips are charter boat trips, 2% are headboat trips, 21% are private boat trips, 12% are pier trips and 40% are beach trips **(Table 79)**. Without the charter boat mode (i.e., if charter fishing were suddenly not an option for fishers), headboat trips increase from 2% to 6%, private boat trips increase to 27%, pier trips increase to 18% and beach trips increase to 49%. On the other hand, without the headboat mode (i.e., if head boat fishing were suddenly not an option for fishers), charter boat trips increase from to 27%, private boat trips stay constant, pier trips increase to 14% and beach trips fall to 38%.

While the nested logit model is useful for understanding the alternative fishing patterns that might develop if some fishing modes became unavailable, the analysis is limited by holding constant the overall number of trips. In contrast, we use the trip frequency model results to simulate the effects of the hypothetical loss of charter or head boat fishing opportunities on the overall number of trips per fisher. With current charter and head boat fishing opportunities (the baseline scenario) the trip frequency model predicts that fishers take an average of 6.62 coastal NC fishing trips per year across all fishing modes **(these results not shown in a table)**. The trip frequency model predicts that without the charter fishing mode among the alternatives, the average number of coastal NC fishing trips falls from 6.62 to 5.05 per fisher per year. Without the headboat mode, average fisher trips fall from 6.62 to 6.58 per fisher per year.

Phone Survey Data: Revealed Preference-Stated Preference Demand Model

Respondents were asked several hypothetical questions. The resulting data is known as "stated preference" data. Stated preference data can be combined with "revealed preference" data, the type of data used in the previous two sections, to assess behavior beyond the range of historical experience. For example, we ask fishers how their trips might change with reductions in bag limits. Stated preference data are necessary to help develop estimates of the benefits and costs of alternative, future fishery policies.

We asked respondents hypothetical questions about charter and other fishing trips that they expect to take during the next 12 months (SP0), trips during the next 12 months with either a $50 or $100 increase in the charter fee (SP1), trips during the next 12 months with a decrease in the snapper-grouper bag limit (SP2) and trips during the next 12 months with a decrease in the king mackerel bag limit (SP3).

In **Table 80** we summarize the responses to these questions. During the past 12 months respondents took 1.71 charter boat trips and almost 5 other fishing trips. Respondents state that they will take 1.99 charter trips during the next 12 months and 2.09 other trips. During the next 12 months with higher charter fees, respondents state that they will take fewer charter trips and more of other types of fishing trips. Charter trips also decrease with lower bag limits.

We use these data to estimate a model of fishing mode-participation choice. The outcome (dependent) variable is whether the respondent took a charter trip, a non-charter fishing trip or did not take a trip. The "no trip" option is constructed as the difference between 30 trip choice occasions and the sum of charter and non-charter fishing trips. Non-charter trips are top-coded at

the 95th percentile of trips to reduce the influence of outliers and so that the model can be reliably estimated.

The independent variables are travel cost, charter fees, the hypothetical increase in charter fees, and snapper-grouper and king mackerel bag limits. Travel costs are constructed as the weighted average travel cost across sites: $tc_{im} = \left(\sum_{j=1}^{J} tc_{ijm} x_{ijm} \right) / x_{ijm}$, where J is the number of sites, m is the mode, m = 1, 2 and all other variables are defined as above. The charter fishing mode fee is set at $360 and enter separately. A headboat fee of $87 is added to the travel cost for non-charter headboat trips. The higher charter fee is equal to $50 or $100, depending on which survey version the fisher was read, in the SP1 and SP3 scenarios and zero otherwise. The snapper-grouper bag limit is equal to 15 in the RP, SP0, SP1 and SP3 scenarios and equal to 7 in the SP2 scenario. The king mackerel bag limit is equal to 1 in the SP3 scenario and 3 otherwise. Bag limits are equal to zero for non-charter fishing modes.

The estimated fishing mode/participation model parameters are presented in **Table 81**. The model is weighted for avidity relative to the onsite sample and the covariance matrix is adjusted for data clustering to achieve robust standard errors. A statistical likelihood ratio test indicates that the coefficients on the travel cost and charter fee variables can be constrained equal (TCFEE). The costs of fishing have a negative effect on fishing mode choice. Bag limits have a positive effect on fishing mode choice.

Willingness-to-pay estimates to avoid the bag limit changes are presented in **Table 82**. Fishers are willing to pay almost $10 per trip to avoid each fish reduction in the snapper-grouper bag limit. For the stated preference scenario of a bag change from 15 to 7, fishers are willing to pay $77 per trip to avoid the change. Fishers are willing to pay $17 per trip to avoid each fish reduction in the king mackerel bag limit and $34 to avoid the scenario of a 3 fish limit reduction to 1 fish per trip.

We also simulate the impacts of (1) a 25% increase in the cost per fishing trip, (2) zero snapper-grouper bag limits, and (3) zero king mackerel bag limits, on the number of trips per mode and participation **(Table 83)**. In the baseline situation, 7% of fisher trip opportunities are charter trips, 19% are non-charter trips and 75% are non-fishing days. With a 25% increase in the cost of a charter fishing trip, 3% of fisher trip opportunities are charter trips, 19% are non-charter trips and 77% are non-fishing days (numbers do not add to 100% due to rounding). With a zero snapper-grouper bag limit, 4% of fisher trip opportunities are charter trips, 19% are non-charter trips and 77% are non-fishing days. With a zero king mackerel bag limit, 6% of fisher trip opportunities are charter trips, 19% are non-charter trips and 76% are non-fishing days.

CONCLUSIONS

The North Carolina for-hire ocean fishery consists of approximately 750 charter boat vessels and head boat vessels operating year-round and targeting a succession of fish species depending on seasonal fish abundances and economic conditions. The objective of this study is to document the economic impacts and recreation benefits of the North Carolina for-hire fishing industry. The data for this study come from two sources, 2007-2008 vessel data from the North Carolina Division of Marine Fisheries (NCDMF), and new survey data collected in 2007-2008 specifically for this study. The new data collected for this study were obtained using three surveys: (1) a field/mail-back survey of charter boat and head-boat captains; (2) a field survey of charter and head-boat passengers to obtain information about their current fishing trip; and, (3) a follow-up telephone survey of the charter and headboat passengers to obtain detailed information on fishing activities over the remaining fishing season (activities in addition to the trip intercepted by the field survey). The survey data are analyzed using standard methods of natural resource economics.

The NCDMF database for 2007-2008 listed 794 active For-Hire and For-Hire Blanket Permits. Of these, North Carolina residents accounted for 754 permits, Virginia residents 20 permits, South Carolina 14, Maryland 5, and New York 1. Of the 754 North Carolina resident permits, 4 had ambiguous locations, leaving 750 North Carolina resident permits. Of these 750 permitted North Carolina for-hire vessels, 27 operated as head boats, with the remaining vessels operating as charters.

The present study obtained 158 completed captain surveys (150 charter boat surveys and 8 head boat surveys). The dockside field survey of passengers produced 1,317 completed surveys, and the telephone follow-up survey of passengers produced 296 completed surveys.

The fishery was aggregated into two geographic regions, a Northern Region consisting of Dare County, Hyde County, and the counties surrounding Albemarle Sound, and a Central/Southern region consisting of Beaufort County, Pamlico County, Carteret County, and all coastal counties southward. The Central/Southern region has more than twice as many vessels under 30 feet in length in comparison to the Northern region. The two regions have similar numbers of vessels between 30 and 69 feet in length, but the Northern region has almost fifty percent more of the larger vessels between 50 and 69 feet in length (not shown). The state's very large head boats (greater than 70 feet in length) are based exclusively in the Central/Southern region.

Of 754 North Carolina for-hire vessels, 27 (3.5 %) are head boats and 727 (96.5 %) are charter boats. Of the charter boats, 371 (51 %) are 0-29 feet in length and 356 (49 %) are 30-69 feet in length. Of the head boats, 18 (67 %) are between 30 and 69 feet in length, and 9 (33 %) are 70 or more feet in length. Charter boats 0-29 feet in length average 200-260 horsepower, while charter boats 30-69 feet in length average 840-920 horsepower. Head boats 30-69 feet in length average 940 horsepower, while head boats 70+ feet in length average 1425 horsepower. Charter boats 0-29 feet in length average $36,000-$44,000 current (depreciated) market value, while charter boats 30-69 feet in length average $250,000-$339,000 current value. Head boats 30-69 feet in length average $265,000 current value, while head boats 70+ feet in length average $700,000

current value. Detailed information on the number of days vessels were hired per year, vessel overhead (fixed) costs, and vessel trip (variable) costs are presented in tables by region and vessel type at the end of this report.

All charter vessels in the North Carolina for-hire fleet together have a current (depreciated) value of approximately $120 million, and all head boat vessels together have a current value of approximately $10.2 million. Charter vessel owners paid over $500,000 in property taxes on their vessels to local governments in 2008, and head boat owners paid over $45,000 in vessel property taxes.

Coast-wide, about 70,000 for-hire vessel trips (not passenger trips) occur annually, split between about 66,000 charter trips and 3,780 head boat trips. Of the 70,000 annual trips, about 56,000 occur in the peak (May-Oct.) season, and 14,000 occur in the off-peak (Nov.-Apr.) season. Year-round, of the 66,000 charter trips, about 39,000 are full-day trips, 26,800 are half-day trips, and about 200 are overnight fishing trips. Of the 3,780 head boat trips, about 2,350 are full-day trips, 1,350 are half-day trips, and 80 are overnight trips.

Coast-wide, an estimated 431,000 passengers are serviced annually by the North Carolina for-hire fleet. Approximately 303,000 of these passengers take charter trips, and 128,000 take head boat trips.

The North Carolina for-hire fishery receives approximately $65 million annually in fishing fees paid by passengers, with about $55 million received by charter vessels and $10 million received by head boat vessels. An additional $3.3 million is received in revenue for other items sold to passengers. Tips paid by passengers to crewmembers bring in an additional $5.8 million per year.

In total after expenses, for-hire captains, owners and crew receive about $26 million in income per year from for-hire fishing activities. From this income, for-hire captains, owners and crew together pay annually an estimated $5.1 million in federal income tax, $1.8 million in state income tax, $3.9 million in federal/state FICA tax, $286 thousand in local property tax on residences, $576 thousand in local property tax on their vessels. After taxes and savings, spending by for-hire households supports an estimated $17 million in sales, $3.6 million in wages and salaries, 119 jobs, and $762 thousand in sales and excise (for example, gasoline and cigarette taxes) in coastal North Carolina communities.

Charter vessels spend an estimated $43.5 million per year on non-labor items (such as fuel, bait, engine repairs, dockage fees, etc.), and head boats spend an additional $5.3 million per year. Including economic multiplier effects, these for-hire expenditures support an estimated $85 million in sales in coastal North Carolina communities, $30 million in wages and salaries, a little over 1,000 jobs, and over $6 million in local/state sales and excise taxes.

There are an estimated 1,445 for-hire captain and crew jobs in North Carolina. Of the statewide captain survey respondents, 86.4 percent were captain/owners of their vessels, 1.2 percent were owners who hired others to captain their vessels, 9.3 percent were paid captains who operated vessels owned by corporations, and 3.1 percent were captains who operated vessels owned by private owners. Fifty-three percent of captain survey respondents were born in North Carolina, and forty-seven percent were born in other states. Captain/owner age was similar across regions, averaging 46-50 years. Years of fishing experience and years of U.S. Coast Guard licensing varied across regions, with captains in the Northern region averaging 15-17 years of experience and licensing for all vessel types and lengths, while captains in the Central/Southern region operating

vessels 0-29 feet in length averaged 9 years of experience, with those operating vessels 30-69 feet averaging 13 years of experience, and those operating large head boats 70 or more feet in length averaging 30 years of experience. The percentage of captain/owner household income attributed to for-hire fishing activities varies by region and vessel type. In the Northern region, charter captains attributed 70 percent of household income to for-hire fishing, and with head boat captains attributing 80 percent. In the Central/Southern region, captains of vessels 0-29 feet in length attributed 37 percent of household income to for-hire fishing, while captains of charter vessels 30-69 feet attributed 54 percent, with captains of head boats 70+ feet in length attributing 100 percent.

Turning to the characteristics of for-hire passengers, most fishers are male with an average age of forty years. Average household income is between $72 thousand and $76 thousand except for primary headboat fishers with income of $79 thousand. Fishers who say that for-hire fishing was the primary purpose for their trip to the coast spend an average of 3 nights away from home on their trip to the coast while secondary purpose fishers spend 6 to 7 nights at the coast. Very few fishers take "day trips" where they return home on the same day they leave home. Few charter boat fishers took headboat trips and few headboat fishers took charter boat trips.

In the Northern region of the state, 45-55% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, 60-85% of charter passengers are from out of state, and almost all 98-100% of charter passengers spend at least one night in a coastal county as part of their visit to the coast. Only about 20% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 80% of head boat passengers are from out of state, and about 95% of head boat passengers in this region spend at least one night in a coastal county as part of their visit.

In the Central region (Beaufort, Pamlico, Craven, Carteret, Onslow and Pender counties), 95% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, 20-25% of charter passengers are from out of state, and about 20% of charter trips are taken on day visits to the coast (about 80% are overnight visits). About 35-40% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 50-65% of head boat passengers are from out of state, and about 85-95% of head boat passengers in this region spend at least one night in a coastal county as part of their visit.

In the Southern region (New Hanover and Brunswick counties), 43-53% of charter boat passengers say that for-hire fishing was the primary reason for their visit to the NC coast, about 45% of charter passengers are from out of state, and about 10% of charter trips are taken on day visits to the coast (about 90% are overnight visits). About 40-60% of head boat passengers report that for-hire fishing was their primary reason for visiting the NC coast, about 30-50% of head boat passengers are from out of state, and about 60% of head boat passengers in this region spend at least one night in a coastal county as part of their visit.

For-hire passengers make significant off-vessel expenditures during their visits to the coast. Off-vessel expenditures measure the additional money spent by for-hire passengers during their fishing trip *beyond* the fishing fees and tips paid to the for-hire fishing vessels. Coast-wide, direct off-vessel expenditures amount to $318 million per year. Coast-wide, off-vessel expenditures support about $552 million (including economic multiplier effects) in business sales along the coast, supporting 7,677 jobs, $200 million in wages and salaries, and $42.5 million in local/state sales and excise taxes.

In summary, for-hire fishing passengers spend about $380.0 million per year, including both on- and off-vessel spending, in coastal North Carolina. With economic multiplier effects, this spending supports about $667.4 million in economic output (sales) along the coast, about 10,200 jobs (including 1,445 for-hire fishing jobs), $261.4 million in wages and salaries, and $49.3 million in local/state sales and excise (such as fuel and cigarette) taxes.

In addition to the economic impacts of for-hire passengers' expenditures on the coastal economy, passengers also receive consumer surplus value from the fishing experience. Consumer surplus is the economic value of the fishing experience to the passenger beyond the expenditures necessary to take the trip. Consumer surplus value was estimated using data from the on-site and telephone follow-up surveys of for-hire passengers. **On average, consumer surplus for a charter boat trip averages $624 per fisher per trip, and consumer surplus for a head boat trip is $102 per fisher per trip. Multiplying by the estimated annual numbers of charter passengers (303,000) and head boat passenger (128,000) produces estimates of $189 million in charter boat passenger consumer surplus and $13 million in head boat passenger consumer surplus per year.**

For primary purpose fishers, all charter trip ports/locations are worth $5 or more per trip. That is, if a fisher person were not able to fish from his most-preferred location (say, due to inlet closure, shoaling, etc.) but was instead forced to fish from his next-best substitute location, the value of the fishing experience to him would be reduced by $5 or more. This indicates that fishing sites are not perfect substitutes for one another; fishers prefer some sites more than others and obtain higher value from fishing at preferred sites. The Outer Banks offshore charter trip site is the most valuable at $27. New Hanover offshore and inshore charter trips are worth $11 and $10, respectively. The most valuable headboat trip sites for primary purpose fishers are New Hanover and Brunswick Counties. For secondary purpose fishers, all offshore charter trip sites are worth $5 or more per trip except those from the Central Coast. The Outer Banks offshore charter trip site is the most valuable at $17 with the Roanoke Island site worth $11. The New Hanover County inshore charter trip site is worth $17 to secondary purpose fishers. The most valuable headboat trip sites for secondary purpose fishers are Roanoke Island and Brunswick County.

Telephone follow-up survey respondents were asked about the number of marine recreational fishing trips taken during the past 12 months with 5 modes of fishing (charter boat, headboat, private boat, pier and beach) and eight coastal counties. The average number of trips across all modes is 7.55. The average number of charter boat trips is 1.93, headboat trips is 0.11, private boat trips is 1.64, pier trips is 0.84 and beach fishing trips is 3.04.

Charter boat fishers specifically target an average of one fish species. The most popular primary purpose charter boat target species are tuna (22%), wahoo (17%) and dolphin (34%). The most popular secondary purpose charter boat species are billfish and tuna (13% each), Spanish mackerel (20%), and dolphin (34%). Only 25% and 50% of primary and secondary purpose headboat fishers target species. The most popular headboat trip target species for primary purpose fishers are snapper (7%) and grouper (6%). The most popular headboat trip target species for secondary purpose fishers are bluefish (13%), grouper (8%), dolphin (7%) and snapper (5%).

For primary purpose fishers, one additional billfish per trip (per fisher) is worth over $2000 for primary purpose fishers and $1800 for secondary purpose fishers. One additional coastal migratory pelagic fish is worth $55 and $65 for primary purpose and second purpose fishers, respectively. One additional mackerel is worth $39 for both types of fishers. An additional snapper-grouper is worth between $94 and $61, respectively.

The economic models used to estimate consumer surplus value can also be used to conduct economic analysis of some types of policy changes. For example, the passenger survey data and consumer surplus models were used to estimate the impacts of changes in bag limit regulations on fishers' consumer surplus. Fishers lose almost $10 per trip in consumer surplus for a one fish reduction in the snapper-grouper bag limit. For the scenario of a bag limit change from 15 to 7, fishers lose $77 in consumer surplus value per fisher (consumer surplus value per fish changes somewhat for each additional fish). Fishers lose $17in consumer surplus from a one fish reduction in the king mackerel bag limit and $34 from a reduction in the bag limit from 3 to 1 fish per trip.

The effect of a zero bag limit on snapper-grouper catch on the number of fishing trips is also investigated. In the baseline, 7% of fisher trip opportunities are charter trips, 19% are non-charter trips and 75% are non-fishing days. With a zero snapper-grouper bag limit, 4% of fisher trip opportunities are charter trips, 19% are non-charter trips and 77% are non-fishing days. With a zero king mackerel bag limit, 6% of fisher trip opportunities are charter trips, 19% are non-charter trips and 76% are non-fishing days.

The survey of for-hire vessel captain/owners asked several questions related to fishing policy, the future of the fishery, and future participation in the fishery. Forty-seven percent of for-hire captain/owners thought that the size of the NC for-hire fleet was "about right" for maintaining healthy fish stocks, and about forty-five percent thought the fleet was "somewhat large" or "much to large" to maintain healthy fish stocks. Thirty-five percent of for-hire captain/owners thought that the size of the NC for-hire fleet was "about right" for maintaining a financially healthy for-hire industry in North Carolina, and about sixty-one percent thought the fleet was "somewhat large" or "much to large" to maintain healthy fish stocks. About sixty-two percent of survey respondents either "somewhat support" or "strongly support" a limited vessel entry or permit cap program for the for-hire fishery in North Carolina, and about thirty percent "somewhat oppose" or "strongly oppose" such a program. Seventy-six percent of survey respondents support creation of a For-Hire Advisory Committee to the North Carolina Marine Fisheries Commission, and about thirteen percent oppose creation of such a committee; about fifty percent of respondents say that they would be willing to serve on such a committee. Slightly more than ninety-five percent of survey respondents said that they plan on remaining in the for-hire industry in the future, two and a half percent said that they did not plan on remaining in the industry, and about three percent were unsure.

It is anticipated that the results of this study will support the fisheries management work of the North Carolina Division of Marine Fisheries. The information should also assist coastal North Carolina communities in assessing and planning for recreational fishing and tourism. The results will help state environmental agencies to document the economic importance of maintaining the coastal water quality necessary to sustain fisheries. Finally, the information should help federal and state governments assess the importance of maintaining navigable intracoastal waterways and ocean inlets.

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TABLES

Table 1. The Distribution of North Carolina For-Hire Vessels by Geographic Region and Vessel Length.

(Source: NCDMF 2008.)

	Vessel Length Category (ft)			
Region	00-29'	30-69'	70'+	Total
Northern	94	190	0	284
Central/Southern	273	184	9	466
(non-coastal)	4	0	0	4
Total	371 (49%)	374 (50%)	9 (1%)	754 (100%)

Table 2. The Geographic Distribution of For-Hire Vessels by County and Vessel Length.

(Source: NCDMF 2008.)

County	Vessel Length Category (ft)			
	00-29'	30-69'	70'+	TOTAL
Currituck	1	1	0	2
Camden	0	1	0	1
Pasquotank	1	2	0	3
Chowan	3	0	0	3
Tyrrell	2	0	0	2
Dare--Manteo/Wanchese/Oregon Inlet	48	118	0	166
Dare--Hatteras	26	64	0	90
Hyde (Ocracoke)	13	4	0	17
Beaufort	8	0	0	8
Pamlico	15	1	0	16
Craven	4	1	0	5
Carteret--Morehead City & Atlantic Bch	73	85	5	163
Carteret--Bogue Inlet	8	4	0	12
Onslow--Bogue Inlet	11	7	0	18
Onslow--New River Inlet	7	1	0	8
Pender	28	8	0	36
New Hanover--Wilmington/Wrightsville Bch	43	18	0	61
New Hanover--Carolina Beach	29	18	1	48
Brunswick	47	41	3	91
Cabarrus (non-coastal county)	2	0	0	2
Granville (non-coastal county)	1	0	0	1
Surry (non-coastal county)	1	0	0	1
TOTAL	371	374	9	754

Table 3. Headboats Operating from NC ports, 2007-2008.

(Source: Sea Grant FRG survey, web site search.)

	Vessel Name	Region	Port	Marina/Dock	Vessel Length in feet	Notes
1	Stormy Petrel II	Northern	Hatteras	Hatteras Landing Marina	61	
2	Captain Clam	Northern	Hatteras	Oden's Dock	65/68	Conflicting data on length.
3	Miss Hatteras	Northern	Hatteras	Oden's Dock	70-75	Conflicting data on length.
4	Country Girl	Northern	Manteo	Pirates Cove Marina	57	
5	Crystal Dawn	Northern	Manteo	Pirates Cove Marina	65	
6	Miss Oregon Inlet	Northern	Manteo	Oregon Inlet Fishing Center	65	
7	Miss Bodie Island	Northern	Nags Head	Nags Head	40	
8	Miss Ocracoke	Northern	Ocracoke	Gun_Barrel Point Marina	55	
9	Rosanne	Northern	Wanchese	Thicket Lump Marina	40	
10	Miss Broad Creek	Northern	Wanchese	Broad Creek Marina	61	
11	Capt. Stacey IV	Central	Atlantic Beach	Atlantic Beach	83	
12	Carolina Princess	Central	Morehead	Morehead	95	
13	Continental Shelf	Central	Morehead	Morehead	100	
14	Nancy Lee III	Central	Swansboro	Nancy Lee Fishing Center	45	
15	Nancy Lee V	Central	Swansboro	Nancy Lee Fishing Center	52	
16	Miss Calabash	Southern	Calabash	Nance Street	40	
17	Party Time	Southern	Calabash	Hurricane Fleet (River Road)	40	
18	Cyclone	Southern	Calabash	Hurricane Fleet (River Road)	45	
19	Navigator	Southern	Calabash	Nance Street	65	
20	Juel II	Southern	Calabash	Hurricane Fleet (River Road)	77	
21	Hurricane II	Southern	Calabash	Hurricane Fleet (River Road)	90	
22	Super Voyager	Southern	Calabash	Calabash	90	
23	Winner Queen	Southern	Carolina Beach	Carolina Beach	75	
24	Winner Queen II	Southern	Carolina Beach	Carolina Beach	75	
25	Bluewater Princess	Southern	Oak Island	Oak Island	60	
26	Captain Hook	Southern	Sneads Ferry	Paradise Landing Marina	??	Couldn't contact; out of operation?
27	Starship	Southern	Southport	Yacht Basin Drive	70	
28	Vonda Kay	Southern	Topsail Beach	Topsail Beach	72/59	Conflicting data on length.

Table 4. The Distribution of Head Boat Vessels by Region and Vessel Length.

(Source: NCDMF 2008.)

	Vessel Length Category (ft)			
Region	00-29'	30-69'	70'+	Total
Northern	0	10	0	10
Central/Southern	0	8	9	17
(non-coastal)	0	0	0	0
Total	0	18	9	27

1) Head boat "Captain Hook" of Snead Ferry excluded due to insufficient information.
2) Assumes head boat "Miss Hatteras" in Northern Region is less than 70' in length, because no vessel 70'+ in the Northern region had an active for-hire permit from NCDMF in 2007-2008.

Table 5. The Distribution of Charter Vessels by Region and Vessel Length.

(Source: NCDMF 2008.)

	Vessel Length Category (ft)			
Region	00-29'	30-69'	70'+	Total
Northern	94	180	0	274
Central/Southern	273	176	0	449
(non-coastal)	4	0	0	4
Total	371	356	0	727

Table 6. The Distribution of Returned Head Boat Captain Surveys by Region and Vessel Length.

	Vessel Length Category (ft)			
Region	00-29'	30-69'	70'+	Total
Northern	0	6	0	6 (of 10)
Central/Southern	0	0	2	2 (of 17)
(non-coastal)	0	0	0	0 (of 0)
Total	0	6 (of 18)	2 of (9)	8 (of 27)

Numbers in parentheses are actual numbers of vessels based on NCDMF permit data 2007-2008.

Table 7. The Distribution of Returned Charter Boat Captain Surveys by Region and Vessel Length.

	Vessel Length Category (ft)			
Region	00-29'	30-69'	70'+	Total
Northern	8	71	0	79 (of 274)
Central/Southern	34	41	0	75 (of 449)
(non-coastal)	0	0	0	0 (of 4)
Total	42 (of 371)	112 (of 356)	0 (of 0)	154 (of 727)

Numbers in parentheses are actual numbers of vessels based on NCDMF permit data 2007-2008.

Table 8. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Northern
Vessel Type=Charter Boat
Vessel Length Category (ft)=00-29

Variable	N	Mean	Std Dev	Minimum	Median	Maximum
Captain/Owner Age	8	46.88	11.66	34	44.5	71
Years Fishing Experience	8	16	10.94	8	10	40
Years Licensed by USCG	7	15.43	12.16	5	10	39
% Household Income For-Hire	8	0.7	0.25	0.4	0.63	1
Vessel Length (ft)	8	25.5	2.2	22	26.5	28
Vessel Power (hp)	8	215	75.59	115	212.5	315
Vessel Market Value (used) ($)	8	36500	14000	19000	36500	60000
Full-Time Crewmembers	8	0	0	0	0	0
Part-Time Crewmembers	8	0.13	0.35	0	0	1
Days Hired / Yr	8	161.25	57.62	90	160	250
Dock/Slip Fees ($/Month)	7	245.24	143.92	100	200	550
Vessel Loan Payment ($/Month)	7	142.86	243.98	0	0	500
Vessel Insurance ($/Month)	7	211.43	241.78	55	125	750
Telephone Costs ($/Month)	7	67.71	27.66	20	69	100
Other Fixed Costs ($/Month)	7	52.43	111.99	0	0	300
NC Recr Perm/Lic Fees ($/Yr)	7	333.57	132.18	250	250	550
Non-NC Recr Perm/Lic Fee ($/Yr)	7	36.43	89.94	0	0	240
Federal Recr Perm/Lic Fee ($/Yr)	7	15.71	20.9	0	0	50
Fishing Supplies ($/Yr)	7	5564.29	6633.55	250	4500	20000
Electronics Costs ($/Yr)	7	357.14	350.51	0	300	1000
Engine Repair Costs ($/Yr)	7	2050	1333.85	300	1500	4000
Boat Yard Expenses ($/Yr)	7	357.14	734.52	0	0	2000
Other Vessel Maint. ($/Yr)	7	1128.57	499.05	400	1000	2000
Fishing Assoc/Prof Fees ($/Yr)	7	100	95.74	0	100	250
Accounting Fees ($/Yr)	7	463.57	260.28	175	425	1000
Legal Expenses ($/Yr)	7	71.43	188.98	0	0	500
Advertising/Promotion ($/Yr)	7	950	939.41	0	500	2000
Other Fixed Costs ($/Yr)	7	47.14	124.73	0	0	330

N = number of surveys providing information on this item.

Table 9. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Northern
Vessel Type=Charter Boat
Vessel Length Category (ft)=30-69

Variable	N	Mean	Std Dev	Minimum	Median	Maximum
Captain/Owner Age	71	49	10.55	21	48	75
Years Fishing Experience	71	16.19	10.66	0.33	14	43
Years Licensed by USCG	70	17.7	9.68	3	17.5	41
% Household Income For-Hire	70	0.72	0.25	0.2	0.75	1
Vessel Length (ft)	71	47.96	8.41	30	50	65
Vessel Power (hp)	71	920.21	466.06	250	840	3300
Vessel Market Value (used) ($)	70	338577.9	238629.9	450	300000	1200000
Full-Time Crewmembers	71	0.9	0.42	0	1	2
Part-Time Crewmembers	71	0.2	0.5	0	0	3
Days Hired / Yr	71	121.76	44.82	45	120	230
Dock/Slip Fees ($/Month)	70	354.6	509.99	0	250	4000
Vessel Loan Payment ($/Month)	70	1082.6	1250.27	0	775	6000
Vessel Insurance ($/Month)	70	645.8	935.05	0	500	6000
Telephone Costs ($/Month)	70	116.49	65.24	0	100	300
Other Fixed Costs ($/Month)	70	51.43	170.35	0	0	900
NC Recr Perm/Lic Fees ($/Yr)	70	452.91	338.52	0	300	1900
Non-NC Recr Perm/Lic Fee ($/Yr)	70	66.44	136.45	0	0	580
Federal Recr Perm/Lic Fee ($/Yr)	70	191.86	191.03	0	150	1000
Fishing Supplies ($/Yr)	70	3579.46	2742.03	0	3000	15000
Electronics Costs ($/Yr)	70	1065	1149.36	0	650	5000
Engine Repair Costs ($/Yr)	70	5278.33	7870.96	0	3000	60000
Boat Yard Expenses ($/Yr)	70	2919.66	4050.09	0	1900	20000
Other Vessel Maint. ($/Yr)	70	3104.76	6393.12	0	2000	50000
Fishing Assoc/Prof Fees ($/Yr)	70	321.64	215.99	0	250	1000
Accounting Fees ($/Yr)	70	907.64	1252.38	0	625	8400
Legal Expenses ($/Yr)	70	116.29	265.28	0	0	1500
Advertising/Promotion ($/Yr)	70	3208.19	6205.82	0	1450	45000
Other Fixed Costs ($/Yr)	70	275	850.48	0	0	4250

N = number of surveys providing information on this item.

Table 10. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Northern
Vessel Type=Charter Boat
Vessel Length Category (ft)=70+

No vessels of this type and length currently operate in this region (NCDMF 2008).

Table 11. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Northern
Vessel Type=Headboat
Vessel Length Category (ft)=0-29

No vessels of this type and length currently operate in this region (NCDMF 2008).

Table 12. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Northern
Vessel Type=Headboat
Vessel Length Category (ft)=30-69

Variable	N	Mean	Std Dev	Minimum	Median	Maximum
Captain/Owner Age	6	48.83	14.66	25	53.5	62
Years Fishing Experience	6	17.1	13.12	5	13.75	39
Years Licensed by USCG	6	16.51	13.56	5.5	11.79	39
% Household Income For-Hire	6	0.81	0.22	0.5	0.88	1
Vessel Length (ft)	6	54.67	11.83	40	58.5	66
Vessel Power (hp)	6	937.5	612.29	230	785	1750
Vessel Market Value (used) ($)	6	265000	271661.6	40000	150000	700000
Full-Time Crewmembers	6	1.5	0.55	1	1.5	2
Part-Time Crewmembers	6	0.83	0.75	0	1	2
Days Hired / Yr	6	137.5	40.96	80	142.5	180
Dock/Slip Fees ($/Month)	6	108.33	201.04	0	0	500
Vessel Loan Payment ($/Month)	6	771.67	793.99	0	615	2000
Vessel Insurance ($/Month)	6	904.17	471.55	275	816.5	1650
Telephone Costs ($/Month)	6	91.67	41.55	30	110	125
Other Fixed Costs ($/Month)	6	800	1959.59	0	0	4800
NC Recr Perm/Lic Fees ($/Yr)	6	600	485.8	250	400	1500
Non-NC Recr Perm/Lic Fee ($/Yr)	6	91.67	224.54	0	0	550
Federal Recr Perm/Lic Fee ($/Yr)	6	591.67	410.39	200	425	1200
Fishing Supplies ($/Yr)	6	1950	1137.98	200	2250	3000
Electronics Costs ($/Yr)	6	950	1508.31	0	500	4000
Engine Repair Costs ($/Yr)	6	16633.33	34523.42	300	3500	87000
Boat Yard Expenses ($/Yr)	6	1383.33	1296.79	0	1400	3000
Other Vessel Maint. ($/Yr)	6	4208.33	3370.52	250	4000	10000
Fishing Assoc/Prof Fees ($/Yr)	6	133.33	121.11	0	150	300
Accounting Fees ($/Yr)	6	3783.33	5600.15	0	1850	15000
Legal Expenses ($/Yr)	6	616.67	945.34	0	350	2500
Advertising/Promotion ($/Yr)	6	11000	10672.39	500	9000	30000
Other Fixed Costs ($/Yr)	6	2166.67	3710.35	0	0	9000

N = number of surveys providing information on this item.

Table 13. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Northern
Vessel Type=Headboat
Vessel Length Category (ft)=70+

No vessels of this type and length currently operate in this region (NCDMF 2008).

Table 14. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Central/Southern
Vessel Type=Charter Boat
Vessel Length Category (ft)=00-29

Variable	N	Mean	Std Dev	Minimum	Median	Maximum
Captain/Owner Age	34	46.09	13.71	25	45.5	72
Years Fishing Experience	34	8.68	7.7	1.58	6	33.17
Years Licensed by USCG	34	8.89	7.19	0.08	6.13	33.17
% Household Income For-Hire	31	0.37	0.31	0	0.25	1
Vessel Length (ft)	34	24.47	2.97	18	24.5	29
Vessel Power (hp)	34	255.44	123.35	90	225	520
Vessel Market Value (used) ($)	34	44073.53	30998.08	10000	36500	160000
Full-Time Crewmembers	34	0.12	0.33	0	0	1
Part-Time Crewmembers	34	0.35	0.65	0	0	2
Days Hired / Yr	34	57.65	50.04	5	38	200
Dock/Slip Fees ($/Month)	34	102.79	154.09	0	0	535
Vessel Loan Payment ($/Month)	34	291.09	350.23	0	203	1300
Vessel Insurance ($/Month)	34	297.21	1103.18	0	100	6533
Telephone Costs ($/Month)	34	50.47	44.79	0	42.5	150
Other Fixed Costs ($/Month)	34	105.82	277.67	0	0	1000
NC Recr Perm/Lic Fees ($/Yr)	34	276.68	120.54	0	258	600
Non-NC Recr Perm/Lic Fee ($/Yr)	34	10.65	46.4	0	0	267
Federal Recr Perm/Lic Fee ($/Yr)	34	130.12	137.53	0	97.5	600
Fishing Supplies ($/Yr)	34	1895	1888.25	0	1140	10000
Electronics Costs ($/Yr)	34	390.44	509.68	0	225	2000
Engine Repair Costs ($/Yr)	34	1138.97	1139.32	150	625	4000
Boat Yard Expenses ($/Yr)	34	266.18	875.48	0	0	5000
Other Vessel Maint. ($/Yr)	34	546.47	540.96	0	425	2000
Fishing Assoc/Prof Fees ($/Yr)	34	73.68	144.52	0	0	800
Accounting Fees ($/Yr)	34	293.38	310.2	0	250	1300
Legal Expenses ($/Yr)	34	35.44	99.67	0	0	500
Advertising/Promotion ($/Yr)	34	1145.59	1380.85	0	610	5000
Other Fixed Costs ($/Yr)	34	29.62	110.04	0	0	600

N = number of surveys providing information on this item.

Table 15. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Central/Southern
Vessel Type=Charter Boat
Vessel Length Category (ft)=30-69

Variable	N	Mean	Std Dev	Minimum	Median	Maximum
Captain/Owner Age	41	50.44	13.2	23	54	75
Years Fishing Experience	41	12.54	9.19	1.08	10	49
Years Licensed by USCG	41	13.58	9.74	0	12	49
% Household Income For-Hire	41	0.54	0.33	0.01	0.5	1
Vessel Length (ft)	41	41.02	9.5	30	36	61
Vessel Power (hp)	41	839.39	515.09	250	700	2700
Vessel Market Value (used) ($)	40	250225	256848.2	45000	150000	1250000
Full-Time Crewmembers	41	0.54	0.67	0	0	3
Part-Time Crewmembers	41	0.9	0.83	0	1	4
Days Hired / Yr	41	83.88	53.07	2	80	220
Dock/Slip Fees ($/Month)	39	288.26	188.16	0	300	900
Vessel Loan Payment ($/Month)	39	638.87	1713.16	0	0	10000
Vessel Insurance ($/Month)	39	344.08	331.62	0	299	2000
Telephone Costs ($/Month)	39	87.62	82.06	0	75	400
Other Fixed Costs ($/Month)	39	74.72	146.58	0	0	700
NC Recr Perm/Lic Fees ($/Yr)	39	318.1	142.32	125	250	750
Non-NC Recr Perm/Lic Fee ($/Yr)	39	51.13	97.5	0	0	375
Federal Recr Perm/Lic Fee ($/Yr)	39	161.82	148.1	0	100	600
Fishing Supplies ($/Yr)	39	2470.51	2392	100	1200	8500
Electronics Costs ($/Yr)	39	789.74	806.81	0	500	3000
Engine Repair Costs ($/Yr)	39	2675.64	2741.49	0	2000	12000
Boat Yard Expenses ($/Yr)	39	1564.1	1987.26	0	1000	10000
Other Vessel Maint. ($/Yr)	39	1835.64	2084.53	0	1000	7500
Fishing Assoc/Prof Fees ($/Yr)	39	146.59	145.5	0	100	550
Accounting Fees ($/Yr)	39	760.64	1341.21	0	300	6000
Legal Expenses ($/Yr)	39	320.51	745.58	0	0	3500
Advertising/Promotion ($/Yr)	39	3015.69	6255.2	0	1200	35000
Other Fixed Costs ($/Yr)	39	64.88	225.59	0	0	1000

N = number of surveys providing information on this item.

Table 16. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Central/Southern
Vessel Type=Charter Boat
Vessel Length Category (ft)=70+

No vessels of this type and length currently operate in this region (NCDMF 2008).

Table 17. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Central/Southern
Vessel Type=Headboat
Vessel Length Category (ft)=0-29

No vessels of this type and length currently operate in this region (NCDMF 2008).

Table 18. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Central/Southern
Vessel Type=Headboat
Vessel Length Category (ft)=30-69

Although vessels of this type and length operate in this region, no completed surveys were received from these vessels.

Table 19. Vessel Characteristics by Region, Vessel Type and Vessel Length.

Geographic Region=Central/Southern
Vessel Type=Headboat
Vessel Length Category (ft)=70+

Variable	N	Mean	Std Dev	Minimum	Median	Maximum
Captain/Owner Age	2	50.5	26.16	32	50.5	69
Years Fishing Experience	2	29.29	32.11	6.58	29.29	52
Years Licensed by USCG	2	30.08	35.24	5.17	30.08	55
% Household Income For-Hire	2	1	0	1	1	1
Vessel Length (ft)	2	85	0	85	85	85
Vessel Power (hp)	2	1425	247.49	1250	1425	1600
Vessel Market Value (used) ($)	2	700000	282842.7	500000	700000	900000
Full-Time Crewmembers	2	3.5	0.71	3	3.5	4
Part-Time Crewmembers	2	4.5	0.71	4	4.5	5
Days Hired / Yr	2	160	56.57	120	160	200
Dock/Slip Fees ($/Month)	2	1175	1166.73	350	1175	2000
Vessel Loan Payment ($/Month)	2	2506	3544.02	0	2506	5012
Vessel Insurance ($/Month)	2	750	1060.66	0	750	1500
Telephone Costs ($/Month)	2	556.5	712.06	53	556.5	1060
Other Fixed Costs ($/Month)	2	25	35.36	0	25	50
NC Recr Perm/Lic Fees ($/Yr)	2	712	299.81	500	712	924
Non-NC Recr Perm/Lic Fee ($/Yr)	2	462	653.37	0	462	924
Federal Recr Perm/Lic Fee ($/Yr)	2	462	653.37	0	462	924
Fishing Supplies ($/Yr)	2	26380	9022.68	20000	26380	32760
Electronics Costs ($/Yr)	2	1600	565.69	1200	1600	2000
Engine Repair Costs ($/Yr)	2	56700	32951.18	33400	56700	80000
Boat Yard Expenses ($/Yr)	2	0	0	0	0	0
Other Vessel Maint. ($/Yr)	2	5600	6222.54	1200	5600	10000
Fishing Assoc/Prof Fees ($/Yr)	2	0	0	0	0	0
Accounting Fees ($/Yr)	2	5500	7778.17	0	5500	11000
Legal Expenses ($/Yr)	2	5500	7778.17	0	5500	11000
Advertising/Promotion ($/Yr)	2	850	1202.08	0	850	1700
Other Fixed Costs ($/Yr)	2	10507.5	14859.85	0	10507.5	21015

N = number of surveys providing information on this item.

Table 20. For-Hire Fishery Captain and Crew Jobs

County	Charter Boat Captain & Crew	Head Boat Captain & Crew	Total For-Hire Captain & Crew
Currituck	3	0	3
Camden	2	0	2
Pasquotank	5	0	5
Chowan	3	0	3
Tyrrell	2	0	2
Dare--Manteo/Wanchese/Oregon Inlet	289	20	309
Dare--Hatteras	157	10	167
Hyde (Ocracoke)	21	3	24
Beaufort	12	0	12
Pamlico	24	0	24
Craven	8	0	8
Carteret--Morehead City & Atlantic Bch	320	27	347
Carteret--Bogue Inlet	17	7	23
Onslow--Bogue Inlet	33	0	33
Onslow--New River Inlet	13	0	13
Pender	58	3	62
New Hanover--Wilmington/Wrightsville Bch	107	0	107
New Hanover--Carolina Beach	84	12	96
Brunswick	154	47	201
Totals	1315	130	1445

Includes vessel captain/owners. Includes both full-time and part-time crew.

Table 21. Vessel Trips, Annual

(includes full-day, half-day and overnight trips; includes all seasons).

	Charter Boat Vessels Vessel Length (feet)			Head Boat Vessels Vessel Length (feet)			
County--Port	00-29	30-69	70+	00-29	30-69	70+	Totals
Currituck	161	116	0	0	0	0	276
Camden	0	116	0	0	0	0	116
Pasquotank	161	231	0	0	0	0	392
Chowan	482	0	0	0	0	0	482
Tyrrell	321	0	0	0	0	0	321
Dare--Manteo/Wanchese/Oregon Inlet	7710	12963	0	0	846	0	21519
Dare--Hatteras	4176	7060	0	0	423	0	11659
Hyde (Ocracoke)	2088	347	0	0	141	0	2576
Beaufort	449	0	0	0	0	0	449
Pamlico	842	84	0	0	0	0	926
Craven	224	84	0	0	0	0	308
Carteret--Morehead City & Atlantic Bch	4095	7313	0	0	0	470	11878
Carteret--Bogue Inlet	449	168	0	0	282	0	899
Onslow--Bogue Inlet	617	588	0	0	0	0	1206
Onslow--New River Inlet	393	84	0	0	0	0	477
Pender	1571	588	0	0	141	0	2300
New Hanover--Wilmington/Wrightsville Bch	2412	1513	0	0	0	0	3925
New Hanover--Carolina Beach	1627	1429	0	0	124	157	3336
Brunswick	2637	2942	0	0	743	470	6791
Totals	30414	35628	0	0	2700	1096	69837

Table 22. Vessel Trips, May-Oct Season, by Vessel Type and Vessel Length

(includes full-day, half-day and overnight trips; includes all seasons)

	Charter Boat Vessels Vessel Length (feet)			Head Boat Vessels Vessel Length (feet)			
County--Port	00-29	30-69	70+	00-29	30-69	70+	Totals
Currituck	138	91	0	0	0	0	228
Camden	0	91	0	0	0	0	91
Pasquotank	138	181	0	0	0	0	319
Chowan	413	0	0	0	0	0	413
Tyrrell	276	0	0	0	0	0	276
Dare--Manteo/Wanchese/Oregon Inlet	6612	10161	0	0	743	0	17516
Dare--Hatteras	3582	5534	0	0	372	0	9487
Hyde (Ocracoke)	1791	272	0	0	124	0	2187
Beaufort	353	0	0	0	0	0	353
Pamlico	662	65	0	0	0	0	727
Craven	177	65	0	0	0	0	241
Carteret--Morehead City & Atlantic Bch	3224	5622	0	0	0	341	9186
Carteret--Bogue Inlet	353	129	0	0	248	0	730
Onslow--Bogue Inlet	486	452	0	0	0	0	938
Onslow--New River Inlet	309	65	0	0	0	0	374
Pender	1236	452	0	0	124	0	1813
New Hanover--Wilmington/Wrightsville Bch	1899	1163	0	0	0	0	3062
New Hanover--Carolina Beach	1281	1099	0	0	124	114	2617
Brunswick	2076	2262	0	0	743	341	5421
Totals	25005	27703	0	0	2477	795	55979

Table 23. Vessel Trips, Nov-Apr Season, by Vessel Type and Vessel Length

(includes full-day, half-day and overnight trips)

	Charter Boat Vessels Vessel Length (feet)			Head Boat Vessels Vessel Length (feet)			
County--Port	00-29	30-69	70+	00-29	30-69	70+	Totals
Currituck	23	25	0	0	0	0	48
Camden	0	25	0	0	0	0	25
Pasquotank	23	50	0	0	0	0	73
Chowan	69	0	0	0	0	0	69
Tyrrell	46	0	0	0	0	0	46
Dare--Manteo/Wanchese/Oregon Inlet	1097	2802	0	0	103	0	4002
Dare--Hatteras	594	1526	0	0	51	0	2172
Hyde (Ocracoke)	297	75	0	0	17	0	389
Beaufort	96	0	0	0	0	0	96
Pamlico	179	19	0	0	0	0	199
Craven	48	19	0	0	0	0	67
Carteret--Morehead City & Atlantic Bch	872	1691	0	0	0	129	2692
Carteret--Bogue Inlet	96	39	0	0	34	0	169
Onslow--Bogue Inlet	131	136	0	0	0	0	267
Onslow--New River Inlet	84	19	0	0	0	0	103
Pender	334	136	0	0	17	0	488
New Hanover--Wilmington/Wrightsville Bch	513	350	0	0	0	0	863
New Hanover--Carolina Beach	346	330	0	0	0	43	720
Brunswick	561	680	0	0	0	129	1371
Totals	5408	7925	0	0	223	301	13858

Table 24. Vessel Trips, May-Oct Season, by Vessel Type and Trip Type

(includes all vessel lengths)

	Charter Boat Vessels Trip Type			Head Boat Vessels Trip Type			
County--Port	f	h	o	f	h	o	Totals
Currituck	105	123	0	0	0	0	228
Camden	72	18	0	0	0	0	91
Pasquotank	177	142	0	0	0	0	319
Chowan	99	315	0	0	0	0	413
Tyrrell	66	210	0	0	0	0	276
Dare--Manteo/Wanchese/Oregon Inlet	9649	7104	20	413	330	0	17516
Dare--Hatteras	5251	3854	11	206	165	0	9487
Hyde (Ocracoke)	644	1419	1	69	55	0	2187
Beaufort	145	208	0	0	0	0	353
Pamlico	317	409	1	0	0	0	727
Craven	118	123	1	0	0	0	241
Carteret--Morehead City & Atlantic Bch	5280	3514	52	251	69	21	9186
Carteret--Bogue Inlet	236	245	1	138	110	0	730
Onslow--Bogue Inlet	518	416	4	0	0	0	938
Onslow--New River Inlet	172	201	1	0	0	0	374
Pender	826	859	4	69	55	0	1813
New Hanover--Wilmington/Wrightsville Bch	1598	1453	11	0	0	0	3062
New Hanover--Carolina Beach	1299	1070	10	152	78	7	2617
Brunswick	2443	1873	21	663	399	21	5421
Totals	29013	23557	138	1961	1261	49	55979

Table 25. Vessel Trips, Nov-Apr Season, by Vessel Type and Trip Type

(includes all vessel lengths)

	Charter Boat Vessels Trip Type			Head Boat Vessels Trip Type			
County--Port	f	h	o	f	h	o	Totals
Currituck	36	12	0	0	0	0	48
Camden	23	3	0	0	0	0	25
Pasquotank	58	15	0	0	0	0	73
Chowan	40	29	0	0	0	0	69
Tyrrell	27	19	0	0	0	0	46
Dare--Manteo/Wanchese/Oregon Inlet	3156	743	0	66	37	0	4002
Dare--Hatteras	1717	403	0	33	19	0	2172
Hyde (Ocracoke)	240	132	0	11	6	0	389
Beaufort	49	47	0	0	0	0	96
Pamlico	110	89	0	0	0	0	199
Craven	42	25	0	0	0	0	67
Carteret--Morehead City & Atlantic Bch	1987	540	37	105	12	12	2692
Carteret--Bogue Inlet	84	49	1	22	12	0	169
Onslow--Bogue Inlet	191	73	3	0	0	0	267
Onslow--New River Inlet	61	42	0	0	0	0	103
Pender	295	172	3	11	6	0	488
New Hanover--Wilmington/Wrightsville Bch	582	274	8	0	0	0	863
New Hanover--Carolina Beach	478	191	7	35	4	4	720
Brunswick	907	320	15	105	12	12	1371
Totals	10082	3177	74	388	108	28	13858

Table 26. Trip Characteristics, Northern Region, Charter Boats, May-Oct Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69	30-69	30-69	70+	70+	70+
		Trip Type			Trip Type			Trip Type	
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	2.96	3.71	NT	5.71	5.89	5.6	NT	NT	NT
Fee/Passenger/Trip ($)	171.87	104.19	NT	247.47	93.63	560	NT	NT	NT
OthIncome/Trip ($)	0.87	11.61	NT	33.98	9.29	390	NT	NT	NT
FuelOilCost/Trip ($)	93.7	49.72	NT	563.74	161.56	1040	NT	NT	NT
CaptainWage/Trip ($)	0	0	NT	18.09	21.25	0	NT	NT	NT
WagePerMate/Trip ($)	0	0	NT	121.47	36.01	216	NT	NT	NT
TipPerMate/Trip ($)	0	47.5	NT	131.72	50.15	310	NT	NT	NT
BaitCost/Trip ($)	20.43	14.4	NT	45.3	8.48	54	NT	NT	NT
IceCost/Trip ($)	5.74	3.88	NT	23.43	7.92	48	NT	NT	NT
FoodCost/Trip ($)	0	0	NT	0.99	11.97	0	NT	NT	NT
OthCostVar/Trip ($)	5.22	0	NT	17.63	0.31	0	NT	NT	NT
OwnerReturn/Trip ($)	386.65	292.4	NT	649	291.01	2132	NT	NT	NT

NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 27. Trip Characteristics, Northern Region, Charter Boats, Nov-Apr Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69	30-69	30-69	70+	70+	70+
		Trip Type			Trip Type			Trip Type	
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	2.86	3.67	NT	5.66	5.97	5.6	NT	NT	NT
Fee/Passenger/Trip ($)	168.14	103.56	NT	251.59	104.7	560	NT	NT	NT
OthIncome/Trip ($)	0	0	NT	42.63	15.19	390	NT	NT	NT
FuelOilCost/Trip ($)	110.71	47.56	NT	466.81	71.55	1040	NT	NT	NT
CaptainWage/Trip ($)	0	0	NT	12.62	6.9	0	NT	NT	NT
WagePerMate/Trip ($)	0	0	NT	119.04	39.83	216	NT	NT	NT
TipPerMate/Trip ($)	0	0	NT	133.36	52.12	310	NT	NT	NT
BaitCost/Trip ($)	18.57	14.89	NT	42.61	10	54	NT	NT	NT
IceCost/Trip ($)	4	4	NT	17.5	7.66	48	NT	NT	NT
FoodCost/Trip ($)	0	0	NT	1.11	2.65	0	NT	NT	NT
OthCostVar/Trip ($)	0	0	NT	11.79	0	0	NT	NT	NT
OwnerReturn/Trip ($)	352.43	309.11	NT	780.29	497.04	2132	NT	NT	NT

NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 28. Trip Characteristics, Northern Region, Head Boats, May-Oct Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69	30-69	30-69	70+	70+	70+
	Trip Type			Trip Type			Trip Type		
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	NT	NT	NT	26.17	25.53	NT	NT	NT	NT
Fee/Passenger/Trip ($)	NT	NT	NT	81.78	38.08	NT	NT	NT	NT
OthIncome/Trip ($)	NT	NT	NT	0	7.69	NT	NT	NT	NT
FuelOilCost/Trip ($)	NT	NT	NT	375	188.16	NT	NT	NT	NT
CaptainWage/Trip ($)	NT	NT	NT	133.33	28.42	NT	NT	NT	NT
WagePerMate/Trip ($)	NT	NT	NT	85.56	22.28	NT	NT	NT	NT
TipPerMate/Trip ($)	NT	NT	NT	74.69	43.46	NT	NT	NT	NT
BaitCost/Trip ($)	NT	NT	NT	55	18.53	NT	NT	NT	NT
IceCost/Trip ($)	NT	NT	NT	18.89	14.16	NT	NT	NT	NT
FoodCost/Trip ($)	NT	NT	NT	0	1.58	NT	NT	NT	NT
OthCostVar/Trip ($)	NT	NT	NT	0	0	NT	NT	NT	NT
OwnerReturn/Trip ($)	NT	NT	NT	1153.19	605.84	NT	NT	NT	NT

NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 29. Trip Characteristics, Northern Region, Head Boats, Nov-Apr Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69	30-69	30-69	70+	70+	70+
	Trip Type			Trip Type			Trip Type		
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	NT	NT	NT	15	20	NT	NT	NT	NT
Fee/Passenger/Trip ($)	NT	NT	NT	72.5	45	NT	NT	NT	NT
OthIncome/Trip ($)	NT	NT	NT	0	0	NT	NT	NT	NT
FuelOilCost/Trip ($)	NT	NT	NT	565.63	425	NT	NT	NT	NT
CaptainWage/Trip ($)	NT	NT	NT	0	0	NT	NT	NT	NT
WagePerMate/Trip ($)	NT	NT	NT	61.88	13.33	NT	NT	NT	NT
TipPerMate/Trip ($)	NT	NT	NT	50.63	30	NT	NT	NT	NT
BaitCost/Trip ($)	NT	NT	NT	65.63	33.33	NT	NT	NT	NT
IceCost/Trip ($)	NT	NT	NT	25	27.78	NT	NT	NT	NT
FoodCost/Trip ($)	NT	NT	NT	0	0	NT	NT	NT	NT
OthCostVar/Trip ($)	NT	NT	NT	0	0	NT	NT	NT	NT
OwnerReturn/Trip ($)	NT	NT	NT	630	373.89	NT	NT	NT	NT

NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 30. Trip Characteristics, Central/Southern Region, Charter Boats, May-Oct Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69	30-69	30-69 (1)	70+	70+	70+
	Trip Type			Trip Type			Trip Type		
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	3.58	3.6	NT	5.28	5.2	5.6	NT	NT	NT
Fee/Passenger/Trip ($)	168.95	109.84	NT	227.28	109.87	560	NT	NT	NT
OthIncome/Trip ($)	64.25	11.98	NT	43.72	2.88	390	NT	NT	NT
FuelOilCost/Trip ($)	283.84	69.65	NT	510.96	139.13	1040	NT	NT	NT
CaptainWage/Trip ($)	0	0	NT	44.09	24.18	0	NT	NT	NT
WagePerMate/Trip ($)	34.86	0	NT	112.49	35.53	216	NT	NT	NT
TipPerMate/Trip ($)	48.54	31.75	NT	96.85	42.25	310	NT	NT	NT
BaitCost/Trip ($)	27.76	12.48	NT	43.81	12.21	54	NT	NT	NT
IceCost/Trip ($)	11.44	6.5	NT	18.36	9.03	48	NT	NT	NT
FoodCost/Trip ($)	2.14	1.55	NT	6.16	0.14	0	NT	NT	NT
OthCostVar/Trip ($)	1.88	1.68	NT	41.54	3.7	0	NT	NT	NT
OwnerReturn/Trip ($)	324.64	284.62	NT	485.25	317.19	2132	NT	NT	NT

(1) Values are from Northern Region because no survey data were available for Central/Southern region.
NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 31. Trip Characteristics, Central/Southern Region, Charter Boats, Nov-Apr Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69	30-69	30-69 (1)	70+	70+	70+
		Trip Type			Trip Type			Trip Type	
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	3.31	3.11	NT	4.95	5.36	5.6	NT	NT	NT
Fee/Passenger/Trip ($)	170.59	123.95	NT	231.33	107	560	NT	NT	NT
OthIncome/Trip ($)	59.74	9.46	NT	464.44	0	390	NT	NT	NT
FuelOilCost/Trip ($)	204.36	58.18	NT	472.14	133.57	1040	NT	NT	NT
CaptainWage/Trip ($)	0	0	NT	50.04	17.14	0	NT	NT	NT
WagePerMate/Trip ($)	42.89	4.55	NT	120.37	26.61	216	NT	NT	NT
TipPerMate/Trip ($)	50.87	28.5	NT	86.87	32.13	310	NT	NT	NT
BaitCost/Trip ($)	29.46	15.03	NT	50.12	11.71	54	NT	NT	NT
IceCost/Trip ($)	10.31	5.15	NT	20.17	5.61	48	NT	NT	NT
FoodCost/Trip ($)	2.34	1.85	NT	4.27	0	0	NT	NT	NT
OthCostVar/Trip ($)	1.9	1.23	NT	0.96	0.93	0	NT	NT	NT
OwnerReturn/Trip ($)	337.55	274.3	NT	817.29	316.96	2132	NT	NT	NT

(1) Values are from Northern Region because no data were available for Central/Southern region.
NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 32. Trip Characteristics, Central/Southern Region, Head Boats, May-Oct Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69 (1)	30-69 (1)	30-69	70+	70+	70+
	Trip Type			Trip Type			Trip Type		
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	NT	NT	NT	26.17	25.53	NT	58.33	68	45
Fee/Passenger/Trip ($)	NT	NT	NT	81.78	38.08	NT	95	60	160
OthIncome/Trip ($)	NT	NT	NT	0	7.69	NT	137.5	200	0
FuelOilCost/Trip ($)	NT	NT	NT	375	188.16	NT	1220.83	525	1050
CaptainWage/Trip ($)	NT	NT	NT	133.33	28.42	NT	125	0	0
WagePerMate/Trip ($)	NT	NT	NT	85.56	22.28	NT	38.13	37.5	75
TipPerMate/Trip ($)	NT	NT	NT	74.69	43.46	NT	69.06	51	90
BaitCost/Trip ($)	NT	NT	NT	55	18.53	NT	250	50	300
IceCost/Trip ($)	NT	NT	NT	18.89	14.16	NT	57.83	20	50
FoodCost/Trip ($)	NT	NT	NT	0	1.58	NT	0	0	0
OthCostVar/Trip ($)	NT	NT	NT	0	0	NT	25	0	0
OwnerReturn/Trip ($)	NT	NT	NT	1153.19	605.84	NT	3678.83	3385	5200

(1) Values are from Northern Region because no data were available for Central/Southern region.
NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 33. Trip Characteristics, Central/Southern Region, Head Boats, Nov-Apr Season (mean values).

	Vessel Length (feet)								
	00-29	00-29	00-29	30-69 (1)	30-69 (1)	30-69	70+	70+	70+
	Trip Type			Trip Type			Trip Type		
Trip Characteristic	f	h	o	f	h	o	f	h	o
Passengers/Trip	NT	NT	NT	15	20	NT	42.5	50	45
Fee/Passenger/Trip ($)	NT	NT	NT	72.5	45	NT	93.75	60	160
OthIncome/Trip ($)	NT	NT	NT	0	0	NT	171.88	200	0
FuelOilCost/Trip ($)	NT	NT	NT	565.63	425	NT	1134.38	525	1050
CaptainWage/Trip ($)	NT	NT	NT	0	0	NT	93.75	0	0
WagePerMate/Trip ($)	NT	NT	NT	61.88	13.33	NT	41.09	37.5	75
TipPerMate/Trip ($)	NT	NT	NT	50.63	30	NT	49.53	37.5	90
BaitCost/Trip ($)	NT	NT	NT	65.63	33.33	NT	172.5	50	300
IceCost/Trip ($)	NT	NT	NT	25	27.78	NT	47.13	20	50
FoodCost/Trip ($)	NT	NT	NT	0	0	NT	0	0	0
OthCostVar/Trip ($)	NT	NT	NT	0	0	NT	31.25	0	0
OwnerReturn/Trip ($)	NT	NT	NT	630	373.89	NT	2326.63	2305	5200

(1) Values are from Northern Region because no data were available for Central/Southern region.
NT = No trips by vessels of this type and length in this region in this season.
f = full-day trip, h = half-day trip, o = overnight trip (spend night on boat at sea)

Table 34. Estimated Passengers per Year by County and Vessel Type.

County	Passengers per Year Charter Boats	Passengers per Year Head Boats	Passengers per Year Total
Beaufort Co.	1,576	-	1,576
Brunswick Co.	24,551	45,091	69,641
Camden Co.	664	-	664
Carteret Co.	54,843	32,844	87,687
Chowan Co.	1,679	-	1,679
Craven Co.	1,225	-	1,225
Currituck Co.	1,223	-	1,223
Dare Co.	156,232	31,446	187,677
Hyde Co.	9,266	3,494	12,760
New Hanover Co.	29,475	11,824	41,299
Onslow Co.	7,041	-	7,041
Pamlico Co.	3,392	-	3,392
Pasquotank Co.	1,887	-	1,887
Pender Co.	8,574	3,494	12,068
Tyrrell Co.	1,119	-	1,119
Totals	302,745	128,193	430,938

Table 35. Estimated Annual For-Hire Fishing Fees Paid by Passengers by County and Vessel Type.

County	Annual Passenger Fees Charter Boats	Annual Passenger Fees Head Boats	Annual Passenger Fees Total
Beaufort Co.	$215,646	$0	$215,646
Brunswick Co.	$4,395,705	$3,567,141	$7,962,846
Camden Co.	$146,196	$0	$146,196
Carteret Co.	$10,139,468	$2,799,039	$12,938,507
Chowan Co.	$201,879	$0	$201,879
Craven Co.	$197,217	$0	$197,217
Currituck Co.	$213,489	$0	$213,489
Dare Co.	$30,271,536	$1,964,516	$32,236,053
Hyde Co.	$1,313,398	$218,280	$1,531,677
New Hanover Co.	$5,069,599	$988,270	$6,057,869
Onslow Co.	$1,200,354	$0	$1,200,354
Pamlico Co.	$493,730	$0	$493,730
Pasquotank Co.	$359,684	$0	$359,684
Pender Co.	$1,380,518	$218,280	$1,598,798
Tyrrell Co.	$134,586	$0	$134,586
Totals	$55,733,005	$9,755,526	$65,488,531

Table 36. Estimated Annual Other Vessel Income (1) Paid by Passengers by County and Vessel Type.

County	Annual Other Vessel Income Charter Boats	Annual Other Vessel Income Head Boats	Annual Other Vessel Income Total
Beaufort Co.	$15,175	$0	$15,175
Brunswick Co.	$462,257	$71,228	$533,485
Camden Co.	$3,688	$0	$3,688
Carteret Co.	$1,102,399	$69,535	$1,171,934
Chowan Co.	$3,739	$0	$3,739
Craven Co.	$18,248	$0	$18,248
Currituck Co.	$4,934	$0	$4,934
Dare Co.	$730,236	$3,808	$734,044
Hyde Co.	$27,265	$423	$27,688
New Hanover Co.	$509,678	$23,319	$532,998
Onslow Co.	$119,424	$0	$119,424
Pamlico Co.	$39,113	$0	$39,113
Pasquotank Co.	$8,622	$0	$8,622
Pender Co.	$127,733	$423	$128,156
Tyrrell Co.	$2,493	$0	$2,493
Totals	$3,175,002	$168,737	$3,343,739

(1) "OtherVessel Income" includes vessel income from T-shirt and hat sales, food and beverage sales to passengers, etc.

Table 37. Estimated Annual Tips Paid by Passengers to For-Hire Crews by County and Vessel Type.

County	Annual Crew Tips Charter Boat	Annual Crew Tips Head Boat	Annual Crew Tips Total
Beaufort Co.	$8,210	$0	$8,210
Brunswick Co.	$405,281	$340,891	$746,171
Camden Co.	$14,967	$0	$14,967
Carteret Co.	$991,045	$274,153	$1,265,199
Chowan Co.	$1,943	$0	$1,943
Craven Co.	$14,306	$0	$14,306
Currituck Co.	$15,615	$0	$15,615
Dare Co.	$2,637,196	$173,478	$2,810,673
Hyde Co.	$53,320	$19,275	$72,595
New Hanover Co.	$430,937	$96,082	$527,019
Onslow Co.	$100,083	$0	$100,083
Pamlico Co.	$25,595	$0	$25,595
Pasquotank Co.	$30,581	$0	$30,581
Pender Co.	$100,144	$19,275	$119,420
Tyrrell Co.	$1,295	$0	$1,295
Totals	$4,830,518	$923,154	$5,753,673

Tips are paid directly to the crew by passengers and are in addition to any wages paid to the crew by the vessel captain/owner.

Table 38. Aggregate Current (Used/Depreciated) Value of All For-Hire Vessels by County/Port and Estimated Property Taxes Paid on Vessels.

	Charter Boat Value (1) Vessel Length (feet)			Head Boat Value (1) Vessel Length (feet)			Tax Rate	Property Tax on	Property Tax on
County	00-29	30-69	70+	00-29	30-69	70+	2008 (2)	Charter Boats	Head Boats
Currituck	$36,500	$338,578	$0	$0	$0	$0	0.32	$1,200	$0
Camden	$0	$338,578	$0	$0	$0	$0	0.59	$1,998	$0
Pasquotank	$36,500	$677,156	$0	$0	$0	$0	0.5	$3,568	$0
Chowan	$109,500	$0	$0	$0	$0	$0	0.56	$613	$0
Tyrrell	$73,000	$0	$0	$0	$0	$0	0.74	$540	$0
Dare--Manteo/Wanchese/Oregon Inlet	$1,752,000	$37,920,720	$0	$0	$1,590,000	$0	0.37	$146,789	$5,883
Dare--Hatteras	$949,000	$20,653,249	$0	$0	$795,000	$0	0.431	$93,106	$3,426
Hyde--Ocracoke	$474,500	$1,015,734	$0	$0	$265,000	$0	0.735	$10,953	$1,948
Beaufort	$352,588	$0	$0	$0	$0	$0	0.6	$2,116	$0
Pamlico	$661,103	$250,225	$0	$0	$0	$0	0.6525	$5,946	$0
Craven	$176,294	$250,225	$0	$0	$0	$0	0.61	$2,602	$0
Carteret--Morehead City & Atlantic Bch	$3,217,368	$21,769,575	$0	$0	$0	$2,100,000	0.4	$99,948	$8,400
Carteret--Bogue Inlet	$352,588	$500,450	$0	$0	$530,000	$0	0.4	$3,412	$2,120
Onslow--Bogue Inlet	$484,809	$1,751,575	$0	$0	$0	$0	0.503	$11,249	$0
Onslow--New River Inlet	$308,515	$250,225	$0	$0	$0	$0	0.503	$2,810	$0
Pender--Surf City & Topsail Bch	$220,368	$750,675	$0	$0	$0	$0	0.96	$9,322	$0
Pender--Surf City & Topsail Bch	$1,013,691	$1,000,900	$0	$0	$265,000	$0	0.96	$19,340	$2,544
New Hanover--Wrightsville Bch	$1,895,162	$4,504,050	$0	$0	$0	$0	0.5325	$34,076	$0
New Hanover--Carolina Bch	$1,278,132	$4,253,825	$0	$0	$265,000	$700,000	0.6275	$34,713	$6,055
Brunswick	$2,071,456	$8,757,875	$0	$0	$1,590,000	$2,100,000	0.42	$45,483	$15,498
TOTALS	$15,463,074	$104,983,615	$0	$0	$5,300,000	$4,900,000		$529,785	$45,875

(1) Current (used/depreciated) vessel values.
(2) Tax rate is dollars of tax per $100 of current (depreciated) vessel value.

Table 39. Derivation of Captain & Crew Net Disposable Income. **($ Thousands)**

County	Paid Captain Wages	Crew Wages	Crew Tips	Vessel Owner Returns	Total Gross Captain/Owner & Crew Income (1)	Savings (2)	Fed Income Tax (3)	State Income Tax (4)	FICA Tax (5)	Residence Property Taxes (6)	Vessel Property Taxes (7)	Total Net Disposable Income
Beaufort	$0	$3	$8	$13	$25	$1	$5	$2	$4	$0	$2	$11
Brunswick	$223	$686	$746	$1,835	$3,490	$192	$698	$244	$534	$37	$61	$1,724
Camden	$2	$13	$15	$23	$53	$3	$11	$4	$8	$1	$2	$25
Carteret	$362	$1,273	$1,265	$2,296	$5,196	$286	$1,039	$364	$795	$55	$114	$2,544
Chowan	$0	$0	$2	$104	$106	$6	$21	$7	$16	$1	$1	$53
Craven	$3	$13	$14	$18	$49	$3	$10	$3	$7	$1	$3	$22
Currituck	$2	$13	$16	$57	$88	$5	$18	$6	$14	$1	$1	$44
Dare	$442	$2,494	$2,811	$7,007	$12,754	$701	$2,551	$893	$1,951	$128	$249	$6,281
Hyde--Ocracoke	$17	$59	$73	$577	$725	$40	$145	$51	$111	$13	$13	$352
New Hanover	$142	$511	$527	$914	$2,094	$115	$419	$147	$320	$30	$75	$988
Onslow	$27	$102	$100	$119	$348	$19	$70	$24	$53	$4	$14	$163
Pamlico	$3	$18	$26	$36	$84	$5	$17	$6	$13	$1	$6	$36
Pasquotank	$4	$27	$31	$80	$142	$8	$28	$10	$22	$2	$4	$69
Pender	$34	$113	$119	$183	$449	$25	$90	$31	$69	$11	$31	$193
Tyrrell	$0	$0	$1	$69	$71	$4	$14	$5	$11	$1	$1	$35
Totals	$1,262	$5,326	$5,754	$13,333	$25,674	$1,412	$5,135	$1,797	$3,928	$286	$576	$12,540

(1) Includes captain and crew wages, tips and owner returns. (2) Assumed 5.5% of gross income. (3) Assumed 20% of gross income.
(4) Assumed 7% of gross income. (5) Assumed captain/owners self-employed, pay full 15.3% FICA tax.
(6) Property taxes paid on houses (not vessels). Based on 2008 property tax rates in each county, assuming 50% captain and crew own homes valued at average of $250,000 each. (7) Values are sum of two right-hand columns of Table 38, aggregated by county.

Table 40. Total Economic Impacts of For-Hire Captain & Crew Household Spending.

County	Total Net Disposable Income (1)	Total Impacts Output	Total Impacts Employment	Total Impacts Wages & Salaries	Total Impacts Indirect Taxes
Beaufort	$10,604	$12,857	0.1	$1,920	$467
Brunswick	$1,724,232	$2,345,209	15.7	$455,021	$104,932
Camden	$24,918	$30,212	0.2	$4,510	$1,098
Carteret	$2,543,622	$3,485,952	26.7	$744,991	$157,816
Chowan	$53,304	$64,630	0.4	$9,649	$2,349
Craven	$22,238	$26,964	0.1	$4,025	$980
Currituck	$44,258	$60,857	0.4	$12,579	$2,674
Dare	$6,280,789	$8,636,386	57.8	$1,785,088	$379,435
Hyde--Ocracoke	$352,409	$484,580	3.2	$100,160	$21,290
New Hanover	$987,802	$1,534,572	11.5	$378,130	$69,288
Onslow	$163,345	$198,052	1.1	$29,568	$7,198
Pamlico	$36,286	$43,996	0.2	$6,568	$1,599
Pasquotank	$68,527	$83,087	0.5	$12,404	$3,020
Pender	$192,586	$233,507	1.3	$34,861	$8,487
Tyrrell	$35,086	$42,541	0.2	$6,351	$1,546
Totals	$12,540,007	$17,283,402	119.3	$3,585,825	$762,180

(1) Values from right-hand column of Table 39.

Table 41. Economic Impacts of Non-Labor Vessel Expenditures.

Beaufort Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$9,868	$0	$14,988	0.3	$4,725	$859
Boat Loan Payment ($/Yr)	430	$27,944	$0	$42,884	0.3	$12,457	$1,012
Boat Insurance ($/Yr)	428	$28,532	$0	$44,958	0.6	$18,316	$930
Phone ($/Yr)	422	$4,845	$0	$7,292	0.0	$1,779	$411
Other Monthly Fixed Costs ($/Yr)	498	$10,396	$0	$14,702	0.1	$3,477	$192
NC Recr Perm/Lic Fees ($/Yr)	504	$2,213	$0	$3,616	0.1	$2,555	$78
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$85	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$1,041	$0	$1,702	0.0	$1,215	$37
Fishing Supplies ($/Yr)	409	$15,160	$0	$23,900	0.5	$9,941	$2,568
Electronics Costs ($/Yr)	403	$3,124	$0	$5,105	0.1	$2,860	$548
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$9,112	$0	$13,755	0.2	$5,338	$1,006
Boat Yard Expenses ($/Yr)	358	$2,129	$0	$2,692	0.0	$611	$36
Other Vessel Maint. ($/Yr)	485	$4,372	$0	$6,289	0.1	$2,125	$246
Fishing Assoc/Prof Fees ($/Yr)	493	$589	$0	$914	0.0	$473	$19
Accounting Fees ($/Yr)	438	$2,347	$0	$3,583	0.0	$1,489	$70
Legal Expenses ($/Yr)	437	$284	$0	$438	0.0	$189	$13
Advertising/Promotion ($/Yr)	447	$9,165	$0	$14,057	0.1	$5,747	$297
Other Yearly Fixed Costs ($/Yr)	452	$237	$0	$0	0.0	$0	$0
Fuel/Oil Cost ($/Yr)	407	$68,369	$0	$107,471	1.4	$37,692	$11,640
Bait Cost ($/Yr)	16	$8,766	$0	$13,517	0.4	$3,340	$247
Ice Cost ($/Yr)	85	$3,757	$0	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$834	$0	$1,298	0.0	$534	$109
Other Trip (Variable) Costs ($/Yr)	409	$773	$0	$1,218	0.0	$507	$131
Totals		$213,942	$0	$324,379	$4	$115,367	$20,449

Table 42. Economic Impacts of Non-Labor Vessel Expenditures.

Brunswick Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$179,044	$50,100	$401,991	6.4	$128,585	$25,816
Boat Loan Payment ($/Yr)	430	$432,500	$145,776	$1,000,917	7.7	$287,018	$29,927
Boat Insurance ($/Yr)	428	$312,136	$92,100	$709,796	7.1	$273,323	$19,188
Phone ($/Yr)	422	$65,264	$26,634	$165,341	1.1	$38,925	$9,131
Other Monthly Fixed Costs ($/Yr)	498	$94,729	$103,023	$313,014	1.9	$78,993	$6,220
NC Recr Perm/Lic Fees ($/Yr)	504	$24,137	$5,736	$51,911	0.8	$34,926	$1,435
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$2,290	$1,936	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$11,779	$4,936	$29,046	0.2	$19,740	$806
Fishing Supplies ($/Yr)	409	$175,533	$90,840	$464,760	10.2	$174,176	$48,274
Electronics Costs ($/Yr)	403	$45,992	$10,500	$99,505	1.9	$52,521	$10,802
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$147,179	$269,900	$694,024	7.4	$252,308	$53,061
Boat Yard Expenses ($/Yr)	358	$67,254	$8,300	$102,910	0.6	$22,611	$1,911
Other Vessel Maint. ($/Yr)	485	$89,931	$42,050	$208,091	2.1	$63,128	$8,754
Fishing Assoc/Prof Fees ($/Yr)	493	$8,594	$800	$16,639	0.4	$8,503	$518
Accounting Fees ($/Yr)	438	$40,411	$39,200	$140,750	1.8	$51,346	$3,974
Legal Expenses ($/Yr)	437	$12,884	$20,200	$59,808	0.7	$24,383	$2,247
Advertising/Promotion ($/Yr)	447	$159,392	$68,550	$406,208	4.6	$110,101	$9,865
Other Yearly Fixed Costs ($/Yr)	452	$3,663	$44,523	$84,438	0.9	$25,322	$2,214
Fuel/Oil Cost ($/Yr)	407	$1,641,087	$719,194	$4,138,606	49.2	$1,384,074	$443,648
Bait Cost ($/Yr)	16	$162,679	$123,556	$503,602	13.4	$140,532	$13,833
Ice Cost ($/Yr)	85	$71,625	$35,186	$157,290	0.8	$23,058	$4,226
Food Cost ($/Yr)	405	$17,440	$522	$31,191	0.5	$12,241	$2,728
Other Trip (Variable) Costs ($/Yr)	409	$73,702	$9,543	$145,244	3.2	$54,433	$15,086
Totals		$3,839,245	$1,913,104	$9,925,083	$123	$3,260,247	$713,666

Table 43. Economic Impacts of Non-Labor Vessel Expenditures.

Camden Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$4,255	$0	$6,006	0.2	$1,310	$249
Boat Loan Payment ($/Yr)	430	$12,991	$0	$18,655	0.1	$5,351	$406
Boat Insurance ($/Yr)	428	$7,750	$0	$11,688	0.2	$4,247	$219
Phone ($/Yr)	422	$1,398	$0	$2,166	0.0	$537	$134
Other Monthly Fixed Costs ($/Yr)	498	$892	$0	$1,464	0.0	$319	$19
NC Recr Perm/Lic Fees ($/Yr)	504	$453	$0	$687	0.0	$502	$13
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$66	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$192	$0	$291	0.0	$215	$5
Fishing Supplies ($/Yr)	409	$3,579	$0	$5,284	0.1	$2,242	$622
Electronics Costs ($/Yr)	403	$1,065	$0	$1,609	0.0	$902	$181
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$5,278	$0	$7,455	0.1	$2,862	$554
Boat Yard Expenses ($/Yr)	358	$2,920	$0	$0	0.0	$0	$0
Other Vessel Maint. ($/Yr)	485	$3,105	$0	$4,231	0.0	$1,495	$171
Fishing Assoc/Prof Fees ($/Yr)	493	$322	$0	$473	0.0	$312	$10
Accounting Fees ($/Yr)	438	$908	$0	$0	0.0	$0	$0
Legal Expenses ($/Yr)	437	$116	$0	$164	0.0	$61	$4
Advertising/Promotion ($/Yr)	447	$3,208	$0	$4,339	0.0	$1,321	$70
Other Yearly Fixed Costs ($/Yr)	452	$275	$0	$384	0.0	$117	$7
Fuel/Oil Cost ($/Yr)	407	$54,479	$0	$80,568	1.2	$27,091	$9,055
Bait Cost ($/Yr)	16	$4,415	$0	$0	0.0	$0	$0
Ice Cost ($/Yr)	85	$2,256	$0	$2,758	0.0	$451	$45
Food Cost ($/Yr)	405	$324	$0	$469	0.0	$181	$40
Other Trip (Variable) Costs ($/Yr)	409	$1,541	$0	$2,275	0.0	$965	$268
Totals		$111,789	$0	$150,966	$2	$50,481	$12,072

Table 44. Economic Impacts of Non-Labor Vessel Expenditures.

Carteret Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$407,774	$44,900	$793,724	10.7	$278,292	$53,092
Boat Loan Payment ($/Yr)	430	$965,253	$108,736	$1,877,527	16.5	$568,121	$55,922
Boat Insurance ($/Yr)	428	$656,358	$48,700	$1,238,820	14.6	$500,769	$33,172
Phone ($/Yr)	422	$142,630	$22,234	$269,873	1.8	$69,550	$16,084
Other Monthly Fixed Costs ($/Yr)	498	$190,833	$55,956	$393,046	2.6	$101,660	$7,503
NC Recr Perm/Lic Fees ($/Yr)	504	$50,722	$3,336	$95,682	1.6	$65,156	$2,632
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$5,413	$1,569	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$24,942	$2,569	$48,712	0.5	$33,489	$1,344
Fishing Supplies ($/Yr)	409	$373,370	$83,040	$808,641	16.0	$323,764	$83,675
Electronics Costs ($/Yr)	403	$101,913	$6,700	$194,652	3.1	$105,116	$20,740
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$330,389	$203,367	$888,157	10.3	$329,528	$66,390
Boat Yard Expenses ($/Yr)	358	$160,765	$2,767	$220,524	1.5	$49,967	$3,969
Other Vessel Maint. ($/Yr)	485	$207,636	$25,217	$361,113	4.0	$109,760	$14,596
Fishing Assoc/Prof Fees ($/Yr)	493	$19,015	$267	$34,546	0.7	$18,704	$1,054
Accounting Fees ($/Yr)	438	$91,461	$24,067	$203,626	2.6	$80,818	$5,681
Legal Expenses ($/Yr)	437	$31,396	$17,733	$89,873	1.0	$38,870	$3,358
Advertising/Promotion ($/Yr)	447	$361,189	$24,550	$677,206	7.3	$219,188	$17,050
Other Yearly Fixed Costs ($/Yr)	452	$8,174	$35,856	$77,341	0.7	$25,832	$2,074
Fuel/Oil Cost ($/Yr)	407	$3,843,900	$592,228	$7,861,054	101.9	$2,745,624	$829,440
Bait Cost ($/Yr)	16	$371,466	$106,191	$819,768	22.8	$233,916	$22,709
Ice Cost ($/Yr)	85	$164,046	$27,762	$269,745	1.2	$47,200	$6,467
Food Cost ($/Yr)	405	$40,334	$174	$71,361	1.3	$28,418	$6,001
Other Trip (Variable) Costs ($/Yr)	409	$183,694	$9,543	$342,366	6.8	$137,077	$35,427
Totals		$8,732,672	$1,447,461	$17,637,357	$230	$6,110,820	$1,288,379

Table 45. Economic Impacts of Non-Labor Vessel Expenditures.

Chowan Co.	IMPLAN Sector	Direct Expenditure	Direct Expenditure	Total Output Impact	Total Employment Impact	Total Wages & Salaries Impact	Total Sales & Excise Taxes Impact
Vessel Expenditure Category	Number	Charter Boats	Head Boats	All For-Hire	All For-Hire	All For-Hire	All For-Hire
Dockage Fees ($/Yr)	478	$8,829	$0	$13,719	0.2	$4,593	$875
Boat Loan Payment ($/Yr)	430	$5,143	$0	$8,032	0.1	$2,358	$195
Boat Insurance ($/Yr)	428	$7,611	$0	$12,031	0.1	$4,953	$254
Phone ($/Yr)	422	$2,438	$0	$3,947	0.0	$937	$223
Other Monthly Fixed Costs ($/Yr)	498	$2,029	$0	$2,884	0.0	$681	$39
NC Recr Perm/Lic Fees ($/Yr)	504	$1,001	$0	$1,650	0.0	$1,155	$36
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$109	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$47	$0	$78	0.0	$55	$2
Fishing Supplies ($/Yr)	409	$16,693	$0	$26,475	0.6	$10,454	$2,781
Electronics Costs ($/Yr)	403	$1,071	$0	$1,757	0.0	$962	$190
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$6,150	$0	$9,177	0.1	$3,176	$659
Boat Yard Expenses ($/Yr)	358	$1,071	$0	$1,369	0.0	$316	$20
Other Vessel Maint. ($/Yr)	485	$3,386	$0	$4,698	0.1	$1,194	$153
Fishing Assoc/Prof Fees ($/Yr)	493	$300	$0	$493	0.0	$324	$12
Accounting Fees ($/Yr)	438	$1,391	$0	$2,197	0.0	$1,040	$49
Legal Expenses ($/Yr)	437	$214	$0	$342	0.0	$143	$10
Advertising/Promotion ($/Yr)	447	$2,850	$0	$0	0.0	$0	$0
Other Yearly Fixed Costs ($/Yr)	452	$141	$0	$218	0.0	$60	$4
Fuel/Oil Cost ($/Yr)	407	$30,660	$0	$48,349	0.5	$16,409	$5,287
Bait Cost ($/Yr)	16	$7,714	$0	$0	0.0	$0	$0
Ice Cost ($/Yr)	85	$2,061	$0	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$0	$0	$0	0.0	$0	$0
Other Trip (Variable) Costs ($/Yr)	409	$515	$0	$817	0.0	$322	$86
Totals		$101,424	$0	$138,231	$2	$49,132	$10,876

Table 46. Economic Impacts of Non-Labor Vessel Expenditures.

Craven Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$8,393	$0	$14,619	0.2	$5,500	$865
Boat Loan Payment ($/Yr)	430	$21,639	$0	$37,780	0.3	$13,272	$915
Boat Insurance ($/Yr)	428	$18,395	$0	$32,243	0.3	$14,901	$664
Phone ($/Yr)	422	$3,474	$0	$6,167	0.0	$1,798	$339
Other Monthly Fixed Costs ($/Yr)	498	$6,160	$0	$9,536	0.1	$2,828	$138
NC Recr Perm/Lic Fees ($/Yr)	504	$1,425	$0	$2,458	0.0	$1,798	$50
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$94	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$682	$0	$1,177	0.0	$869	$24
Fishing Supplies ($/Yr)	409	$10,051	$0	$17,974	0.4	$7,785	$1,751
Electronics Costs ($/Yr)	403	$2,352	$0	$4,193	0.1	$2,433	$422
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$7,232	$0	$12,172	0.1	$5,011	$848
Boat Yard Expenses ($/Yr)	358	$2,629	$0	$3,599	0.0	$1,024	$54
Other Vessel Maint. ($/Yr)	485	$4,022	$0	$6,350	0.1	$2,201	$227
Fishing Assoc/Prof Fees ($/Yr)	493	$441	$0	$773	0.0	$402	$19
Accounting Fees ($/Yr)	438	$1,934	$0	$3,401	0.0	$1,563	$79
Legal Expenses ($/Yr)	437	$462	$0	$835	0.0	$411	$27
Advertising/Promotion ($/Yr)	447	$7,598	$0	$13,253	0.1	$4,568	$274
Other Yearly Fixed Costs ($/Yr)	452	$183	$0	$322	0.0	$114	$7
Fuel/Oil Cost ($/Yr)	407	$69,597	$0	$125,020	1.5	$49,075	$12,397
Bait Cost ($/Yr)	16	$7,560	$0	$0	0.0	$0	$0
Ice Cost ($/Yr)	85	$3,294	$0	$4,356	0.0	$658	$69
Food Cost ($/Yr)	405	$775	$0	$1,375	0.0	$605	$110
Other Trip (Variable) Costs ($/Yr)	409	$2,362	$0	$4,225	0.1	$1,830	$412
Totals		$180,752	$0	$301,830	$4	$118,646	$19,688

Table 47. Economic Impacts of Non-Labor Vessel Expenditures.

Currituck Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$7,198	$0	$11,276	0.2	$3,711	$739
Boat Loan Payment ($/Yr)	430	$14,705	$0	$22,963	0.2	$6,494	$600
Boat Insurance ($/Yr)	428	$10,287	$0	$16,404	0.2	$5,939	$378
Phone ($/Yr)	422	$2,210	$0	$3,144	0.0	$736	$180
Other Monthly Fixed Costs ($/Yr)	498	$1,568	$0	$2,284	0.0	$574	$36
NC Recr Perm/Lic Fees ($/Yr)	504	$786	$0	$1,233	0.0	$876	$28
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$103	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$208	$0	$325	0.0	$233	$7
Fishing Supplies ($/Yr)	409	$9,144	$0	$14,542	0.3	$5,743	$1,598
Electronics Costs ($/Yr)	403	$1,422	$0	$2,278	0.1	$1,234	$260
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$7,328	$0	$10,904	0.1	$3,923	$836
Boat Yard Expenses ($/Yr)	358	$3,277	$0	$0	0.0	$0	$0
Other Vessel Maint. ($/Yr)	485	$4,233	$0	$5,852	0.1	$1,647	$212
Fishing Assoc/Prof Fees ($/Yr)	493	$422	$0	$668	0.0	$390	$18
Accounting Fees ($/Yr)	438	$1,371	$0	$2,155	0.0	$543	$48
Legal Expenses ($/Yr)	437	$188	$0	$301	0.0	$117	$10
Advertising/Promotion ($/Yr)	447	$4,158	$0	$6,407	0.1	$2,279	$148
Other Yearly Fixed Costs ($/Yr)	452	$322	$0	$497	0.0	$149	$11
Fuel/Oil Cost ($/Yr)	407	$64,700	$0	$103,418	1.5	$34,586	$11,390
Bait Cost ($/Yr)	16	$6,986	$0	$11,118	0.3	$2,947	$245
Ice Cost ($/Yr)	85	$2,944	$0	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$324	$0	$513	0.0	$206	$46
Other Trip (Variable) Costs ($/Yr)	409	$1,713	$0	$2,724	0.1	$1,076	$299
Totals		$145,597	$0	$219,005	$3	$73,402	$17,091

Table 48. Economic Impacts of Non-Labor Vessel Expenditures.

Dare Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$953,921	$11,700	$1,740,316	24.5	$591,078	$111,295
Boat Loan Payment ($/Yr)	430	$2,374,335	$83,340	$4,381,740	32.5	$1,297,497	$125,282
Boat Insurance ($/Yr)	428	$1,528,419	$97,650	$2,919,138	27.6	$1,168,055	$74,216
Phone ($/Yr)	422	$301,955	$9,900	$565,845	3.3	$154,075	$34,566
Other Monthly Fixed Costs ($/Yr)	498	$204,386	$105,900	$490,610	3.0	$126,941	$8,806
NC Recr Perm/Lic Fees ($/Yr)	504	$103,038	$5,400	$196,441	2.8	$131,999	$5,222
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$14,190	$825	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$34,354	$5,325	$71,907	0.6	$48,786	$1,919
Fishing Supplies ($/Yr)	409	$1,031,004	$17,550	$1,889,192	27.8	$783,698	$203,345
Electronics Costs ($/Yr)	403	$210,673	$8,550	$399,280	6.8	$212,907	$41,845
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$1,064,851	$149,700	$2,045,342	21.7	$757,642	$151,622
Boat Yard Expenses ($/Yr)	358	$531,530	$12,450	$727,676	4.5	$174,771	$12,529
Other Vessel Maint. ($/Yr)	485	$620,638	$37,875	$1,031,456	10.5	$316,596	$41,299
Fishing Assoc/Prof Fees ($/Yr)	493	$63,044	$1,200	$116,610	2.6	$58,287	$3,501
Accounting Fees ($/Yr)	438	$191,326	$34,050	$399,237	4.6	$163,140	$11,221
Legal Expenses ($/Yr)	437	$25,404	$5,550	$57,565	0.7	$23,887	$2,108
Advertising/Promotion ($/Yr)	447	$625,317	$99,000	$1,343,481	13.1	$455,137	$34,428
Other Yearly Fixed Costs ($/Yr)	452	$51,063	$19,500	$121,578	1.2	$37,598	$3,100
Fuel/Oil Cost ($/Yr)	407	$10,181,233	$404,975	$19,025,244	208.0	$6,519,628	$1,978,371
Bait Cost ($/Yr)	16	$954,007	$51,581	$1,777,073	39.2	$933,511	$69,429
Ice Cost ($/Yr)	85	$441,207	$22,727	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$56,086	$782	$101,883	1.5	$41,757	$8,842
Other Trip (Variable) Costs ($/Yr)	409	$279,367	$0	$503,338	7.4	$208,801	$54,177
Totals		$21,841,347	$1,185,530	$39,904,952	$444	$14,205,792	$2,977,123

Table 49. Economic Impacts of Non-Labor Vessel Expenditures.

Hyde Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$51,023	$1,300	$94,300	1.3	$32,028	$6,031
Boat Loan Payment ($/Yr)	430	$61,259	$9,260	$125,728	0.9	$37,230	$3,595
Boat Insurance ($/Yr)	428	$56,231	$10,850	$120,425	1.1	$48,187	$3,062
Phone ($/Yr)	422	$14,757	$1,100	$28,772	0.2	$7,834	$1,758
Other Monthly Fixed Costs ($/Yr)	498	$11,468	$11,767	$36,738	0.2	$9,506	$659
NC Recr Perm/Lic Fees ($/Yr)	504	$5,695	$600	$11,404	0.2	$7,663	$303
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$673	$92	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$780	$592	$2,485	0.0	$1,686	$66
Fishing Supplies ($/Yr)	409	$83,074	$1,950	$153,189	2.3	$63,548	$16,489
Electronics Costs ($/Yr)	403	$7,838	$950	$16,006	0.3	$8,535	$1,677
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$42,485	$16,633	$99,557	1.1	$36,878	$7,380
Boat Yard Expenses ($/Yr)	358	$13,402	$1,383	$19,778	0.1	$4,750	$341
Other Vessel Maint. ($/Yr)	485	$23,986	$4,208	$44,161	0.4	$13,555	$1,768
Fishing Assoc/Prof Fees ($/Yr)	493	$2,265	$133	$4,353	0.1	$2,176	$131
Accounting Fees ($/Yr)	438	$8,749	$3,783	$22,201	0.3	$9,072	$624
Legal Expenses ($/Yr)	437	$1,277	$617	$3,523	0.0	$1,462	$129
Advertising/Promotion ($/Yr)	447	$21,975	$11,000	$61,162	0.6	$20,720	$1,567
Other Yearly Fixed Costs ($/Yr)	452	$1,438	$2,167	$6,210	0.1	$1,921	$158
Fuel/Oil Cost ($/Yr)	407	$296,299	$44,997	$613,369	6.7	$210,191	$63,782
Bait Cost ($/Yr)	16	$46,670	$5,731	$92,602	2.0	$48,645	$3,618
Ice Cost ($/Yr)	85	$15,702	$2,525	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$973	$87	$1,898	0.0	$778	$165
Other Trip (Variable) Costs ($/Yr)	409	$6,856	$0	$12,352	0.2	$5,124	$1,329
Totals		$774,874	$131,726	$1,570,213	$18	$571,487	$114,632

Table 50. Economic Impacts of Non-Labor Vessel Expenditures.

New Hanover Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$209,882	$15,400	$447,541	5.6	$159,281	$27,806
Boat Loan Payment ($/Yr)	430	$519,826	$39,332	$1,127,439	8.2	$355,041	$32,954
Boat Insurance ($/Yr)	428	$401,298	$19,850	$835,459	8.0	$340,689	$22,009
Phone ($/Yr)	422	$80,405	$7,778	$175,078	1.1	$47,803	$9,679
Other Monthly Fixed Costs ($/Yr)	498	$127,217	$22,574	$262,616	1.6	$72,617	$5,155
NC Recr Perm/Lic Fees ($/Yr)	504	$31,054	$1,312	$62,257	0.8	$40,834	$1,660
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$2,556	$554	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$15,032	$1,054	$30,918	0.3	$20,472	$827
Fishing Supplies ($/Yr)	409	$222,908	$28,330	$505,113	8.3	$204,803	$48,376
Electronics Costs ($/Yr)	403	$55,753	$2,550	$116,010	1.6	$60,916	$11,372
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$175,653	$73,333	$474,055	4.5	$182,662	$33,470
Boat Yard Expenses ($/Yr)	358	$73,908	$1,383	$117,774	0.7	$31,154	$2,357
Other Vessel Maint. ($/Yr)	485	$103,593	$9,808	$203,347	1.9	$68,283	$8,340
Fishing Assoc/Prof Fees ($/Yr)	493	$10,436	$133	$20,531	0.4	$10,347	$614
Accounting Fees ($/Yr)	438	$47,746	$9,283	$112,644	1.3	$45,965	$3,172
Legal Expenses ($/Yr)	437	$13,770	$6,117	$40,252	0.5	$16,937	$1,448
Advertising/Promotion ($/Yr)	447	$188,032	$11,850	$390,602	3.7	$140,663	$10,340
Other Yearly Fixed Costs ($/Yr)	452	$4,403	$12,674	$33,935	0.3	$11,662	$919
Fuel/Oil Cost ($/Yr)	407	$1,854,741	$203,571	$4,194,634	46.1	$1,488,647	$399,384
Bait Cost ($/Yr)	16	$190,073	$36,381	$492,455	11.0	$138,931	$13,606
Ice Cost ($/Yr)	85	$83,366	$9,650	$143,634	0.6	$24,474	$3,293
Food Cost ($/Yr)	405	$20,046	$87	$40,367	0.6	$16,270	$3,182
Other Trip (Variable) Costs ($/Yr)	409	$76,117	$3,181	$159,429	2.6	$64,642	$15,269
Totals		$4,507,815	$516,186	$9,986,089	$110	$3,543,095	$655,229

Table 51. Economic Impacts of Non-Labor Vessel Expenditures.

Onslow Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$49,876	$0	$87,375	1.3	$34,709	$5,130
Boat Loan Payment ($/Yr)	430	$124,207	$0	$224,475	2.2	$85,803	$5,072
Boat Insurance ($/Yr)	428	$97,228	$0	$178,686	2.0	$86,448	$3,528
Phone ($/Yr)	422	$19,313	$0	$33,222	0.2	$10,446	$1,816
Other Monthly Fixed Costs ($/Yr)	498	$31,083	$0	$49,641	0.3	$16,062	$685
NC Recr Perm/Lic Fees ($/Yr)	504	$7,525	$0	$13,212	0.2	$9,800	$269
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$601	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$3,637	$0	$6,376	0.1	$4,769	$130
Fishing Supplies ($/Yr)	409	$53,874	$0	$96,573	1.8	$43,386	$9,369
Electronics Costs ($/Yr)	403	$13,346	$0	$23,909	0.5	$14,083	$2,386
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$41,907	$0	$69,934	0.8	$29,873	$4,812
Boat Yard Expenses ($/Yr)	358	$17,304	$0	$23,207	0.2	$6,242	$304
Other Vessel Maint. ($/Yr)	485	$24,522	$0	$37,893	0.4	$14,018	$1,335
Fishing Assoc/Prof Fees ($/Yr)	493	$2,499	$0	$4,211	0.1	$2,316	$97
Accounting Fees ($/Yr)	438	$11,366	$0	$19,373	0.3	$7,404	$389
Legal Expenses ($/Yr)	437	$3,202	$0	$5,647	0.1	$2,632	$166
Advertising/Promotion ($/Yr)	447	$44,746	$0	$76,231	0.8	$28,007	$1,486
Other Yearly Fixed Costs ($/Yr)	452	$1,052	$0	$1,846	0.0	$743	$39
Fuel/Oil Cost ($/Yr)	407	$437,126	$0	$800,717	10.7	$329,168	$77,050
Bait Cost ($/Yr)	16	$45,136	$0	$72,243	2.0	$21,061	$1,366
Ice Cost ($/Yr)	85	$19,780	$0	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$4,743	$0	$8,451	0.2	$3,737	$646
Other Trip (Variable) Costs ($/Yr)	409	$17,547	$0	$31,455	0.6	$14,131	$3,051
Totals		$1,071,618	$0	$1,864,678	$25	$764,839	$119,126

Table 52. Economic Impacts of Non-Labor Vessel Expenditures.

Pamlico Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$21,962	$0	$31,412	0.4	$10,932	$2,233
Boat Loan Payment ($/Yr)	430	$60,062	$0	$84,637	0.7	$23,705	$2,022
Boat Insurance ($/Yr)	428	$57,626	$0	$83,415	1.2	$32,331	$1,681
Phone ($/Yr)	422	$10,136	$0	$13,592	0.1	$2,629	$674
Other Monthly Fixed Costs ($/Yr)	498	$20,454	$0	$33,286	0.2	$6,785	$413
NC Recr Perm/Lic Fees ($/Yr)	504	$4,468	$0	$6,494	0.1	$4,805	$129
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$211	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$2,114	$0	$3,073	0.0	$2,298	$61
Fishing Supplies ($/Yr)	409	$30,896	$0	$44,896	1.0	$17,365	$4,996
Electronics Costs ($/Yr)	403	$6,646	$0	$9,802	0.2	$5,520	$1,145
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$19,760	$0	$27,145	0.3	$9,576	$2,051
Boat Yard Expenses ($/Yr)	358	$5,557	$0	$6,661	0.0	$1,519	$82
Other Vessel Maint. ($/Yr)	485	$10,033	$0	$12,948	0.1	$3,581	$449
Fishing Assoc/Prof Fees ($/Yr)	493	$1,252	$0	$1,851	0.0	$1,199	$44
Accounting Fees ($/Yr)	438	$5,161	$0	$7,338	0.1	$1,941	$139
Legal Expenses ($/Yr)	437	$852	$0	$1,263	0.0	$496	$39
Advertising/Promotion ($/Yr)	447	$20,200	$0	$0	0.0	$0	$0
Other Yearly Fixed Costs ($/Yr)	452	$509	$0	$0	0.0	$0	$0
Fuel/Oil Cost ($/Yr)	407	$163,604	$0	$237,841	2.6	$79,387	$27,711
Bait Cost ($/Yr)	16	$19,613	$0	$29,155	0.8	$10,205	$627
Ice Cost ($/Yr)	85	$8,460	$0	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$1,922	$0	$2,772	0.1	$1,062	$242
Other Trip (Variable) Costs ($/Yr)	409	$3,425	$0	$4,977	0.1	$1,925	$554
Totals		$474,923	$0	$642,558	$8	$217,261	$45,292

Table 53. Economic Impacts of Non-Labor Vessel Expenditures.

Pasquotank Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$11,453	$0	$18,583	0.5	$5,566	$909
Boat Loan Payment ($/Yr)	430	$27,697	$0	$46,889	0.4	$15,939	$1,171
Boat Insurance ($/Yr)	428	$18,036	$0	$30,861	0.3	$13,830	$677
Phone ($/Yr)	422	$3,608	$0	$5,741	0.0	$1,582	$322
Other Monthly Fixed Costs ($/Yr)	498	$2,461	$0	$4,030	0.0	$1,128	$63
NC Recr Perm/Lic Fees ($/Yr)	504	$1,239	$0	$2,079	0.0	$1,523	$45
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$169	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$399	$0	$670	0.0	$495	$15
Fishing Supplies ($/Yr)	409	$12,723	$0	$21,114	0.6	$8,420	$1,999
Electronics Costs ($/Yr)	403	$2,487	$0	$4,223	0.1	$2,457	$444
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$12,607	$0	$19,960	0.2	$7,875	$1,444
Boat Yard Expenses ($/Yr)	358	$6,196	$0	$0	0.0	$0	$0
Other Vessel Maint. ($/Yr)	485	$7,338	$0	$10,936	0.1	$3,415	$391
Fishing Assoc/Prof Fees ($/Yr)	493	$743	$0	$1,212	0.0	$575	$28
Accounting Fees ($/Yr)	438	$2,279	$0	$3,708	0.1	$1,304	$79
Legal Expenses ($/Yr)	437	$304	$0	$519	0.0	$242	$17
Advertising/Promotion ($/Yr)	447	$7,366	$0	$11,440	0.1	$3,489	$226
Other Yearly Fixed Costs ($/Yr)	452	$597	$0	$980	0.0	$295	$20
Fuel/Oil Cost ($/Yr)	407	$119,179	$0	$202,021	3.0	$77,670	$21,035
Bait Cost ($/Yr)	16	$11,401	$0	$0	0.0	$0	$0
Ice Cost ($/Yr)	85	$5,200	$0	$6,950	0.0	$970	$136
Food Cost ($/Yr)	405	$648	$0	$1,072	0.0	$459	$88
Other Trip (Variable) Costs ($/Yr)	409	$3,254	$0	$5,401	0.1	$2,154	$511
Totals		$257,387	$0	$398,390	$6	$149,387	$29,619

Table 54. Economic Impacts of Non-Labor Vessel Expenditures.

Pender Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$58,752	$1,300	$92,650	1.4	$30,836	$5,975
Boat Loan Payment ($/Yr)	430	$151,471	$9,260	$239,901	2.1	$68,090	$5,970
Boat Insurance ($/Yr)	428	$128,764	$10,850	$214,472	3.0	$86,451	$4,628
Phone ($/Yr)	422	$24,318	$1,100	$36,641	0.2	$10,026	$2,422
Other Monthly Fixed Costs ($/Yr)	498	$43,117	$11,767	$78,294	0.4	$19,512	$1,168
NC Recr Perm/Lic Fees ($/Yr)	504	$9,974	$600	$16,425	0.3	$11,753	$361
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$656	$92	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$4,776	$592	$8,342	0.1	$6,031	$184
Fishing Supplies ($/Yr)	409	$70,354	$1,950	$112,161	2.4	$45,037	$12,100
Electronics Costs ($/Yr)	403	$16,461	$950	$27,566	0.5	$15,342	$3,093
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$50,621	$16,633	$98,560	1.2	$33,728	$7,283
Boat Yard Expenses ($/Yr)	358	$18,402	$1,383	$25,624	0.1	$6,985	$449
Other Vessel Maint. ($/Yr)	485	$28,151	$4,208	$44,320	0.6	$10,178	$1,374
Fishing Assoc/Prof Fees ($/Yr)	493	$3,089	$133	$4,995	0.1	$2,667	$121
Accounting Fees ($/Yr)	438	$13,539	$3,783	$25,809	0.4	$8,960	$537
Legal Expenses ($/Yr)	437	$3,236	$617	$5,937	0.1	$2,489	$188
Advertising/Promotion ($/Yr)	447	$53,186	$11,000	$96,681	0.7	$47,158	$2,475
Other Yearly Fixed Costs ($/Yr)	452	$1,284	$2,167	$0	0.0	$0	$0
Fuel/Oil Cost ($/Yr)	407	$487,176	$44,997	$825,689	13.6	$284,415	$91,780
Bait Cost ($/Yr)	16	$52,917	$5,731	$99,007	2.8	$27,237	$2,695
Ice Cost ($/Yr)	85	$23,060	$2,525	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$5,427	$87	$8,502	0.1	$3,501	$759
Other Trip (Variable) Costs ($/Yr)	409	$16,537	$0	$25,653	0.5	$10,301	$2,768
Totals		$1,265,265	$131,726	$2,087,230	$31	$730,698	$146,329

Table 55. Economic Impacts of Non-Labor Vessel Expenditures.

Tyrrell Co. Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Output Impact All For-Hire	Total Employment Impact All For-Hire	Total Wages & Salaries Impact All For-Hire	Total Sales & Excise Taxes Impact All For-Hire
Dockage Fees ($/Yr)	478	$5,886	$0	$7,777	0.2	$1,926	$435
Boat Loan Payment ($/Yr)	430	$3,429	$0	$4,568	0.0	$1,289	$105
Boat Insurance ($/Yr)	428	$5,074	$0	$6,951	0.1	$2,647	$130
Phone ($/Yr)	422	$1,625	$0	$2,025	0.0	$316	$84
Other Monthly Fixed Costs ($/Yr)	498	$1,353	$0	$1,700	0.0	$337	$17
NC Recr Perm/Lic Fees ($/Yr)	504	$667	$0	$919	0.0	$702	$16
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$73	$0	$0	0.0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$31	$0	$43	0.0	$33	$1
Fishing Supplies ($/Yr)	409	$11,129	$0	$14,943	0.5	$5,022	$1,712
Electronics Costs ($/Yr)	403	$714	$0	$0	0.0	$0	$0
Engine Repair Costs ($/Yr)	1/2 401, 1/2 485	$4,100	$0	$5,230	0.1	$1,642	$391
Boat Yard Expenses ($/Yr)	358	$714	$0	$0	0.0	$0	$0
Other Vessel Maint. ($/Yr)	485	$2,257	$0	$2,702	0.0	$546	$74
Fishing Assoc/Prof Fees ($/Yr)	493	$200	$0	$275	0.0	$154	$6
Accounting Fees ($/Yr)	438	$927	$0	$0	0.0	$0	$0
Legal Expenses ($/Yr)	437	$143	$0	$198	0.0	$84	$6
Advertising/Promotion ($/Yr)	447	$1,900	$0	$0	0.0	$0	$0
Other Yearly Fixed Costs ($/Yr)	452	$94	$0	$0	0.0	$0	$0
Fuel/Oil Cost ($/Yr)	407	$20,440	$0	$27,658	0.5	$9,195	$3,394
Bait Cost ($/Yr)	16	$5,142	$0	$6,552	0.2	$2,000	$128
Ice Cost ($/Yr)	85	$1,374	$0	$0	0.0	$0	$0
Food Cost ($/Yr)	405	$0	$0	$0	0.0	$0	$0
Other Trip (Variable) Costs ($/Yr)	409	$343	$0	$461	0.0	$155	$53
Totals		$67,616	$0	$82,002	$2	$26,048	$6,552

Table 56. Economic Impacts of Non-Labor Vessel Expenditures, North Carolina coast-wide.

Coast-wide Vessel Expenditure Category	IMPLAN Sector Number	Direct Expenditure Charter Boats	Direct Expenditure Head Boats	Total Impact Output All For-Hire	Total Impact Employment All For-Hire	Total Impact Wages & Salaries All For-Hire	Total Impact Sales/Excise Tax All For-Hire
Dockage Fees ($/Yr)	478	$1,988,117	$124,700	$3,776,277	$53	$1,293,074	$242,307
Boat Loan Payment ($/Yr)	430	$4,802,462	$395,704	$9,244,135	$72	$2,779,663	$265,148
Boat Insurance ($/Yr)	428	$3,333,745	$280,000	$6,455,349	$67	$2,601,086	$164,735
Phone ($/Yr)	422	$678,376	$68,746	$1,318,845	$8	$348,973	$77,821
Other Monthly Fixed Costs ($/Yr)	498	$748,144	$310,986	$1,693,845	$11	$441,419	$31,114
NC Recr Perm/Lic Fees ($/Yr)	504	$244,399	$16,984	$466,469	$7	$316,046	$12,277
Non-NC Recr Perm/Lic Fee ($/Yr)	500	$27,290	$5,067	$0	$0	$0	$0
Federal Recr Perm/Lic Fee ($/Yr)	506	$100,015	$15,067	$205,146	$2	$140,386	$5,428
Fishing Supplies ($/Yr)	409	$2,119,491	$223,660	$4,198,756	$73	$1,705,383	$439,656
Electronics Costs ($/Yr)	403	$470,856	$30,200	$905,893	$15	$485,788	$95,107
Engine Repair Costs ($/Yr)	401/485	$1,924,651	$729,567	$4,475,427	$48	$1,662,021	$331,807
Boat Yard Expenses ($/Yr)	358	$907,059	$27,667	$1,251,813	$8	$299,952	$22,053
Other Vessel Maint. ($/Yr)	485	$1,137,201	$123,367	$1,984,387	$21	$611,723	$79,390
Fishing Assoc/Prof Fees ($/Yr)	493	$113,210	$2,667	$208,547	$5	$106,827	$6,193
Accounting Fees ($/Yr)	438	$420,916	$114,167	$946,020	$12	$374,584	$26,060
Legal Expenses ($/Yr)	437	$93,732	$50,833	$266,664	$3	$112,403	$9,769
Advertising/Promotion ($/Yr)	447	$1,510,282	$225,950	$3,101,067	$31	$1,038,377	$78,226
Other Yearly Fixed Costs ($/Yr)	452	$73,436	$116,886	$327,749	$3	$103,812	$8,552
Fuel/Oil Cost ($/Yr)	407	$19,332,590	$2,009,963	$38,391,660	$448	$13,292,854	$3,985,365
Bait Cost ($/Yr)	16	$1,894,542	$329,171	$3,917,091	$95	$1,562,325	$128,505
Ice Cost ($/Yr)	85	$848,132	$100,376	$584,733	$3	$96,812	$14,235
Food Cost ($/Yr)	405	$149,876	$1,739	$271,152	$4	$109,750	$22,957
Other Trip (Variable) Costs ($/Yr)	409	$667,747	$22,268	$1,241,936	$22	$503,442	$129,421
Totals		$43,586,266	$5,325,733	$85,232,963	$1,011	$29,986,701	$6,176,124

Table 57. Passenger Characteristics: Northern Region, Charter Boats

Averaged across all fishing trip types: full-day, half-day, and overnight .

	Vessel Length (feet)					
	0-29		30-69		70+	
Variable Description	n	mean	n	mean	n	mean
Percentage of respondents stating for-hire fishing is primary reason for visiting local area.	13	0.46	433	0.55	NA	NA
Percentage of respondents residing out-of-state (outside NC).	13	0.62	443	0.85	NA	NA
Percentage of passenger visits to area that are day trips (not overnight trips).	13	0	443	0.02	NA	NA
Total number of fishing passengers on vessel (incl. respondent, excl. captain & crew).	13	4.46	443	5.18	NA	NA
Total charter/head boat fees paid by all passengers together per vessel trip.	13	924.29	443	1151.25	NA	NA
Additional tips paid to captain & crew for good job, fish cleaning, etc., all passengers together per vessel trip.	13	172.57	443	226.06	NA	NA
Cost of food, beverages bought in county off vessel and brought onto vessel, all passengers together per vessel trip.	13	120.92	443	134.82	NA	NA
Cost of fishing supplies purchased in county for trip, all passengers together per vessel trip.	13	3.67	443	5.77	NA	NA
Cost of other supplies purchased in county for fishing trip (clothing, suntan lotion, etc.), all passengers together per vessel trip.	13	32.92	443	40.34	NA	NA
Cost of fuel bought in county for car/truck transportation during visit, all passengers together per vessel trip.	13	479.77	443	631.18	NA	NA
Cost of car/truck rental purchased in county, all passengers together per vessel trip.	13	54.48	443	85.17	NA	NA
Cost of lodging purchased in county, all passengers together per vessel trip.	13	1637.08	443	2013.71	NA	NA
Cost of camping/campground purchased in county, all passengers together per vessel trip.	13	49.08	443	84.94	NA	NA
Cost of restaurant meals purchased in county, all passengers together per vessel trip.	13	444.12	443	521.57	NA	NA
Portion of restaurant meals cost attributable to locally caught seafood, all passengers together per vessel trip.	13	99.83	443	117.49	NA	NA
Locally caught seafood purchased in county outside restaurants, all passengers together per vessel trip.	13	42.17	443	56.87	NA	NA
Other food/drink/ice purchased in county outside restaurants, all passengers together per vessel trip.	13	519.48	443	514.78	NA	NA
Other retail purchases (gifts, clothing, etc.) made in county, all passengers together per vessel trip.	13	82.52	443	99.25	NA	NA

n = Number of on-site passenger survey respondents.
NA = No vessels of this type and vessel length operating in this region.

Table 58. Passenger Characteristics: Northern Region, Head Boats

Averaged across all fishing trip types: full-day, half-day, and overnight .

	Vessel Length (feet)					
	0-29		30-69		70+	
Variable Description	n	mean	n	mean	n	mean
Percentage of respondents stating for-hire fishing is primary reason for visiting local area.	NA	NA	43	0.19	NA	NA
Percentage of respondents residing out-of-state (outside NC).	NA	NA	44	0.82	NA	NA
Percentage of visits to area that are day trips (not overnight trips).	NA	NA	44	0.07	NA	NA
Total number of fishing passengers on vessel (incl. respondent, excl. captain & crew).	NA	NA	44	24.25	NA	NA
Total charter/head boat fees paid by all passengers together per vessel trip.	NA	NA	44	2045.48	NA	NA
Additional tips paid to captain & crew for good job, fish cleaning, etc., all passengers together per vessel trip.	NA	NA	44	415.58	NA	NA
Cost of food, beverages bought in county off vessel and brought onto vessel, all passengers together per vessel trip.	NA	NA	44	404.15	NA	NA
Cost of fishing supplies purchased in county for trip, all passengers together per vessel trip.	NA	NA	44	68.02	NA	NA
Cost of other supplies purchased in county for fishing trip (clothing, suntan lotion, etc.), all passengers together per vessel trip.	NA	NA	44	90.59	NA	NA
Cost of fuel bought in county for car/truck transportation during visit, all passengers together per vessel trip.	NA	NA	44	1914.79	NA	NA
Cost of car/truck rental purchased in county, all passengers together per vessel trip.	NA	NA	44	1026.02	NA	NA
Cost of lodging purchased in county, all passengers together per vessel trip.	NA	NA	44	9157.92	NA	NA
Cost of camping/campground purchased in county, all passengers together per vessel trip.	NA	NA	44	5.58	NA	NA
Cost of restaurant meals purchased in county, all passengers together per vessel trip.	NA	NA	44	2601.4	NA	NA
Portion of restaurant meals cost attributable to locally caught seafood, all passengers together per vessel trip.	NA	NA	44	1206.07	NA	NA
Locally caught seafood purchased in county outside restaurants, all passengers together per vessel trip.	NA	NA	44	259.86	NA	NA
Other food/drink/ice purchased in county outside restaurants, all passengers together per vessel trip.	NA	NA	44	1967.37	NA	NA
Other retail purchases (gifts, clothing, etc.) made in county, all passengers together per vessel trip.	NA	NA	44	820.19	NA	NA

n = Number of on-site passenger survey respondents.
NA = No vessels of this type and vessel length operating in this region.

Table 59. Passenger Characteristics: Central Region, Charter Boats

Averaged across all fishing trip types: full-day, half-day, and overnight .

	Vessel Length (feet)					
	0-29		30-69		70+	
Variable Description	n	mean	n	mean	n	mean
Percentage of respondents stating for-hire fishing is primary reason for visiting local area.	2	0.5	22	0.95	NA	NA
Percentage of respondents residing out-of-state (outside NC).	2	0	22	0.23	NA	NA
Percentage of visits to area that are day trips (not overnight trips).	2	0	22	0.18	NA	NA
Total number of fishing passengers on vessel (incl. respondent, excl. captain & crew).	2	4	22	5.36	NA	NA
Total charter/head boat fees paid by all passengers together per vessel trip.	2	805.05	22	1236.32	NA	NA
Additional tips paid to captain & crew for good job, fish cleaning, etc., all passengers together per vessel trip.	2	154.73	22	242.18	NA	NA
Cost of food, beverages bought in county off vessel and brought onto vessel, all passengers together per vessel trip.	2	82.4	22	139.23	NA	NA
Cost of fishing supplies purchased in county for trip, all passengers together per vessel trip.	2	3.18	22	4.63	NA	NA
Cost of other supplies purchased in county for fishing trip (clothing, suntan lotion, etc.), all passengers together per vessel trip.	2	22.2	22	34.59	NA	NA
Cost of fuel bought in county for car/truck transportation during visit, all passengers together per vessel trip.	2	369.63	22	571.8	NA	NA
Cost of car/truck rental purchased in county, all passengers together per vessel trip.	2	47.22	22	68.68	NA	NA
Cost of lodging purchased in county, all passengers together per vessel trip.	2	1101	22	1641.48	NA	NA
Cost of camping/campground purchased in county, all passengers together per vessel trip.	2	42.54	22	61.88	NA	NA
Cost of restaurant meals purchased in county, all passengers together per vessel trip.	2	300.1	22	463.54	NA	NA
Portion of restaurant meals cost attributable to locally caught seafood, all passengers together per vessel trip.	2	74.19	22	119.19	NA	NA
Locally caught seafood purchased in county outside restaurants, all passengers together per vessel trip.	2	36.21	22	50.27	NA	NA
Other food/drink/ice purchased in county outside restaurants, all passengers together per vessel trip.	2	294.55	22	455.39	NA	NA
Other retail purchases (gifts, clothing, etc.) made in county, all passengers together per vessel trip.	2	62.85	22	106.87	NA	NA

n = Number of on-site passenger survey respondents.
NA = No vessels of this type and vessel length operating in this region.

Table 60. Passenger Characteristics: Central Region, Head Boats

Averaged across all fishing trip types: full-day, half-day, and overnight .

	Vessel Length (feet)					
	0-29		30-69		70+	
Variable Description	n	mean	n	mean	n	mean
Percentage of respondents stating for-hire fishing is primary reason for visiting local area.	NA	NA	43	0.42	29	0.34
Percentage of respondents residing out-of-state (outside NC).	NA	NA	43	0.49	29	0.66
Percentage of visits to area that are day trips (not overnight trips).	NA	NA	43	0.05	29	0.14
Total number of fishing passengers on vessel (incl. respondent, excl. captain & crew).	NA	NA	43	23.26	29	31.55
Total charter/head boat fees paid by all passengers together per vessel trip.	NA	NA	43	1933.32	29	2639.57
Additional tips paid to captain & crew for good job, fish cleaning, etc., all passengers together per vessel trip.	NA	NA	43	386.21	29	531.86
Cost of food, beverages bought in county off vessel and brought onto vessel, all passengers together per vessel trip.	NA	NA	43	384.37	29	519.09
Cost of fishing supplies purchased in county for trip, all passengers together per vessel trip.	NA	NA	43	62.38	29	85.09
Cost of other supplies purchased in county for fishing trip (clothing, suntan lotion, etc.), all passengers together per vessel trip.	NA	NA	43	88.16	29	115.99
Cost of fuel bought in county for car/truck transportation during visit, all passengers together per vessel trip.	NA	NA	43	1765.45	29	2407.85
Cost of car/truck rental purchased in county, all passengers together per vessel trip.	NA	NA	43	883.78	29	1217.42
Cost of lodging purchased in county, all passengers together per vessel trip.	NA	NA	43	8278.32	29	11184.92
Cost of camping/campground purchased in county, all passengers together per vessel trip.	NA	NA	43	5.34	29	8.63
Cost of restaurant meals purchased in county, all passengers together per vessel trip.	NA	NA	43	2395.41	29	3226.2
Portion of restaurant meals cost attributable to locally caught seafood, all passengers together per vessel trip.	NA	NA	43	1149.27	29	1528.96
Locally caught seafood purchased in county outside restaurants, all passengers together per vessel trip.	NA	NA	43	252.9	29	335.39
Other food/drink/ice purchased in county outside restaurants, all passengers together per vessel trip.	NA	NA	43	1823.76	29	2452.35
Other retail purchases (gifts, clothing, etc.) made in county, all passengers together per vessel trip.	NA	NA	43	749.95	29	1023.57

n = Number of on-site passenger survey respondents.
NA = No vessels of this type and vessel length operating in this region.

Table 61. Passenger Characteristics: Southern Region, Charter Boats

Averaged across all fishing trip types: full-day, half-day, and overnight .

	Vessel Length (feet)					
	0-29		30-69		70+	
Variable Description	n	mean	n	mean	n	mean
Percentage of respondents stating for-hire fishing is primary reason for visiting local area.	117	0.43	236	0.53	NA	NA
Percentage of respondents residing out-of-state (outside NC).	117	0.47	236	0.44	NA	NA
Percentage of visits to area that are day trips (not overnight trips).	117	0.09	236	0.08	NA	NA
Total number of fishing passengers on vessel (incl. respondent, excl. captain & crew).	117	3.2	236	4.67	NA	NA
Total charter/head boat fees paid by all passengers together per vessel trip.	117	653.46	236	1000.89	NA	NA
Additional tips paid to captain & crew for good job, fish cleaning, etc., all passengers together per vessel trip.	117	121.76	236	192.63	NA	NA
Cost of food, beverages bought in county off vessel and brought onto vessel, all passengers together per vessel trip.	117	86.56	236	116.15	NA	NA
Cost of fishing supplies purchased in county for trip, all passengers together per vessel trip.	117	3.24	236	4.68	NA	NA
Cost of other supplies purchased in county for fishing trip (clothing, suntan lotion, etc.), all passengers together per vessel trip.	117	21.48	236	32.43	NA	NA
Cost of fuel bought in county for car/truck transportation during visit, all passengers together per vessel trip.	117	324.36	236	494.19	NA	NA
Cost of car/truck rental purchased in county, all passengers together per vessel trip.	117	60.04	236	64.4	NA	NA
Cost of lodging purchased in county, all passengers together per vessel trip.	117	1085.68	236	1580.79	NA	NA
Cost of camping/campground purchased in county, all passengers together per vessel trip.	117	31.79	236	53.68	NA	NA
Cost of restaurant meals purchased in county, all passengers together per vessel trip.	117	319.19	236	446.88	NA	NA
Portion of restaurant meals cost attributable to locally caught seafood, all passengers together per vessel trip.	117	94	236	130.17	NA	NA
Locally caught seafood purchased in county outside restaurants, all passengers together per vessel trip.	117	39.11	236	52.09	NA	NA
Other food/drink/ice purchased in county outside restaurants, all passengers together per vessel trip.	117	259.24	236	388.04	NA	NA
Other retail purchases (gifts, clothing, etc.) made in county, all passengers together per vessel trip.	117	93.09	236	103.68	NA	NA

n = Number of on-site passenger survey respondents.
NA = No vessels of this type and vessel length operating in this region.

Table 62. Passenger Characteristics: Southern Region, Head Boats

Averaged across all fishing trip types: full-day, half-day, and overnight .

	Vessel Length (feet)					
	0-29		30-69		70+	
Variable Description	n	mean	n	mean	n	mean
Percentage of respondents stating for-hire fishing is primary reason for visiting local area.	NA	NA	43	0.42	41	0.63
Percentage of respondents residing out-of-state (outside NC).	NA	NA	43	0.49	41	0.29
Percentage of visits to area that are day trips (not overnight trips).	NA	NA	43	0.05	41	0.37
Total number of fishing passengers on vessel (incl. respondent, excl. captain & crew).	NA	NA	43	23.26	41	44.83
Total charter/head boat fees paid by all passengers together per vessel trip.	NA	NA	43	1933.32	41	3755.95
Additional tips paid to captain & crew for good job, fish cleaning, etc., all passengers together per vessel trip.	NA	NA	43	386.21	41	747.8
Cost of food, beverages bought in county off vessel and brought onto vessel, all passengers together per vessel trip.	NA	NA	43	384.37	41	751.02
Cost of fishing supplies purchased in county for trip, all passengers together per vessel trip.	NA	NA	43	62.38	41	123.51
Cost of other supplies purchased in county for fishing trip (clothing, suntan lotion, etc.), all passengers together per vessel trip.	NA	NA	43	88.16	41	167.97
Cost of fuel bought in county for car/truck transportation during visit, all passengers together per vessel trip.	NA	NA	43	1765.45	41	3409.71
Cost of car/truck rental purchased in county, all passengers together per vessel trip.	NA	NA	43	883.78	41	1735.76
Cost of lodging purchased in county, all passengers together per vessel trip.	NA	NA	43	8278.32	41	15938.12
Cost of camping/campground purchased in county, all passengers together per vessel trip.	NA	NA	43	5.34	41	10.52
Cost of restaurant meals purchased in county, all passengers together per vessel trip.	NA	NA	43	2395.41	41	4688.6
Portion of restaurant meals cost attributable to locally caught seafood, all passengers together per vessel trip.	NA	NA	43	1149.27	41	2231.09
Locally caught seafood purchased in county outside restaurants, all passengers together per vessel trip.	NA	NA	43	252.9	41	490.67
Other food/drink/ice purchased in county outside restaurants, all passengers together per vessel trip.	NA	NA	43	1823.76	41	3515.74
Other retail purchases (gifts, clothing, etc.) made in county, all passengers together per vessel trip.	NA	NA	43	749.95	41	1459.41

n = Number of on-site passenger survey respondents.
NA = No vessels of this type and vessel length operating in this region.

Table 63. Passenger expenditures off-vessel in coastal counties. (Values in $Millions)

	Region						
	Northern		Central		Southern		NC Coast TOTALS
Passenger Expenditure Category	Charter Boats	Head Boats	Charter Boats	Head Boats	Charter Boats	Head Boats	
Cost of food, beverages bought in county off vessel and brought onto vessel	$4.63	$0.57	$1.95	$0.41	$1.26	$0.80	$9.63
Cost of fishing supplies purchased in county for trip	$0.18	$0.10	$0.07	$0.07	$0.05	$0.13	$0.59
Cost of other supplies purchased in county for fishing trip (clothing, suntan lotion, etc.)	$1.34	$0.13	$0.50	$0.09	$0.33	$0.18	$2.57
Cost of fuel bought in county for car/truck transportation during visit	$20.39	$2.70	$8.29	$1.88	$5.07	$3.67	$42.00
Cost of car/truck rental purchased in county	$2.60	$1.45	$1.02	$0.95	$0.78	$1.85	$8.64
Cost of lodging purchased in county	$66.67	$12.91	$24.14	$8.75	$16.55	$17.16	$146.18
Cost of camping/campground purchased in county	$2.51	$0.01	$0.92	$0.01	$0.53	$0.01	$3.98
Cost of restaurant meals purchased in county	$17.57	$3.67	$6.72	$2.53	$4.76	$5.01	$40.26
Portion of restaurant meals cost attributable to locally caught seafood	$3.95	$1.70	$1.70	$1.20	$1.39	$2.39	$12.35
Locally caught seafood purchased outside restaurants in county	$1.82	$0.37	$0.76	$0.26	$0.57	$0.53	$4.31
Other food/drink/ice purchased outside restaurants in county	$18.57	$2.77	$6.60	$1.92	$4.01	$3.78	$37.66
Other retail purchases (gifts, clothing, etc.) in county	$3.31	$1.16	$1.50	$0.80	$1.23	$1.56	$9.56
TOTALS	$143.55	$27.53	$54.17	$18.87	$36.54	$37.08	$317.73

Table 64. Economic Impacts of Off-Vessel Passenger Spending, Northern Region

Economic Sector	IMPLAN Sector Number	Direct Expenditure	Total Impact Output	Total Impact Employment	Total Impact Wages & Salaries	Total Impact Sales & Excise Taxes
Lodging	479	$82,100,000	$145,687,175	1879	$53,192,121	$10,830,334
Fuel	407	$23,093,000	$41,502,110	454	$14,222,068	$4,315,665
Restaurants	481	$21,239,000	$35,463,576	548	$12,740,574	$1,958,639
Groceries	405	$28,733,000	$51,476,640	756	$21,097,620	$4,467,629
Fishing Supplies	409	$272,000	$488,238	6	$171,381	$50,812
Other Shopping	410	$5,934,000	$10,682,952	150	$4,440,807	$1,148,481
Rental Car	432	$4,044,000	$6,850,198	65	$1,581,123	$217,432
TOTALS	Totals	$165,415,000	$292,150,890	3,857	$107,445,694	$22,988,991

Table 65. Economic Impacts of Off-Vessel Passenger Spending, Central Region

Economic Sector	IMPLAN Sector Number	Direct Expenditure	Total Impact Output	Total Impact Employment	Total Impact Wages & Salaries	Total Impact Sales & Excise Taxes
Lodging	479	$33,817,000	$58,646,625	898	$21,397,742	$4,360,812
Fuel	407	$10,165,885	$18,014,487	234	$6,291,906	$1,900,754
Restaurants	481	$9,251,000	$15,277,101	271	$5,130,001	$811,521
Groceries	405	$11,908,000	$20,977,812	372	$8,354,068	$1,763,983
Fishing Supplies	409	$134,700	$238,363	4	$85,104	$25,156
Other Shopping	410	$2,885,000	$5,113,766	82	$2,093,431	$537,727
Rental Car	432	$1,965,916	$3,289,196	31	$842,668	$113,843
TOTALS		$70,127,501	$121,557,350	1,891	$44,194,920	$9,513,797

Table 66. Economic Impacts of Off-Vessel Passenger Spending, Southern Region

Economic Sector	IMPLAN Sector Number	Direct Expenditure	Total Impact Output	Total Impact Employment	Total Impact Wages & Salaries	Total Impact Sales & Excise Taxes
Lodging	479	$34,244,000	$68,362,983	964	$25,037,518	$4,642,197
Fuel	407	$8,738,000	$17,807,169	196	$6,319,645	$1,695,475
Restaurants	481	$9,772,000	$17,514,699	292	$5,938,014	$887,136
Groceries	405	$10,954,000	$21,963,042	331	$8,852,448	$1,731,165
Fishing Supplies	409	$180,000	$364,540	5	$131,664	$34,819
Other Shopping	410	$3,311,600	$6,655,802	96	$2,713,912	$641,005
Rental Car	432	$2,633,000	$5,379,063	45	$1,471,527	$185,357
TOTALS		$69,832,600	$138,047,297	1,929	$50,464,729	$9,817,154

Table 67. Summary Table of the Economic Impacts of North Carolina For-Hire Fishing.

Expenditure Category			Direct Expenditure / Income	Total Impact Output	Total Impact Employment	Total Impact Wages & Salaries	Total Impact State/Local/Fed Sales & Excise Taxes
Passenger Spending On-Vessels	$74,585,943	Vessel Costs	$48,912,000	$85,232,963	1,011	$29,986,701	$6,176,124
		Captain & Crew Wages, Tips, Returns	$25,674,000	$30,417,395	1,564 (1)	$29,259,825	$762,180
Passenger Spending Off-Vessel			$305,375,101	$551,755,537	7,677	$202,105,343	$42,319,942
Totals			$379,961,101	$667,405,895	10,252	$261,351,869	$49,258,246

Note (1): 1,564 Jobs = 1,445 Captain & Crew Jobs +119 Multiplier Effect Jobs.

In addition to the economic impacts in the table above, the income earned by for-hire captain/owners and crew from for-hire fishing operations supports an estimated $5.13 million in Federal income tax, $1.80 million in state income tax, $3.93 million in payroll (FICA) taxes, and $576,000 in local property taxes paid on for-hire fishing vessels.

Table 68. Coastal North Carolina For-Hire Fishing Alternatives for Consumer Surplus (WTP) Analysis.

			Primary Purpose		Secondary Purpose	
Waters	Mode	Site	Trips	%	Trips	%
Federal	Charter	Roanoke Island	47	7.87	84	13.84
Federal	Charter	Outer Banks	188	31.49	123	20.26
Federal	Charter	Central Coast	40	6.70	2	0.33
Federal	Charter	New Hanover	84	14.07	58	9.56
Federal	Charter	Brunswick	50	8.38	41	6.75
State	Charter	Roanoke Island	15	2.51	46	7.58
State	Charter	Outer Banks	6	1.01	15	2.47
State	Charter	Central Coast	7	1.17	1	0.16
State	Charter	New Hanover	71	11.89	120	19.77
State	Charter	Brunswick	3	0.50	8	1.32
Both	Headboat	Roanoke Island	5	0.84	38	6.26
Both	Headboat	Outer Banks	5	0.84	7	1.15
Both	Headboat	Central Coast	12	2.01	23	3.79
Both	Headboat	New Hanover	33	5.53	4	0.66
Both	Headboat	Brunswick	31	5.19	37	6.10
		Total	597		607	

Table 69. Fisherperson Characteristics for Consumer Surplus (WTP) Analysis

	Charter				Headboat			
	Primary		Secondary		Primary		Secondary	
Variable	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
FEE	402.00	396.11	319.50	328.94	89.73	33.22	84.68	34.93
MALE (=1)	0.90	0.30	0.82	0.38	0.73	0.45	0.83	0.37
AGE	43.33	11.66	43.27	10.92	40.16	12.36	41.54	11.10
INCOME ($1000)	72.93	23.27	75.80	22.09	56.77	27.15	71.72	23.84
PASSENGERS	4.97	2.84	4.65	1.45	43.23	34.93	26.92	10.90
NIGHTS	3.23	2.54	6.48	4.51	3.06	3.49	6.78	3.89
DAYTRIP	0.10	0.31	0.03	0.18	0.45	0.50	0.05	0.21
CB_TRIPS	3.27	2.98	2.43	1.27	0.66	1.79	0.59	1.26
HB_TRIPS	0.17	0.74	0.12	0.56	2.24	1.45	2.71	3.19
Sample Size	511		498		86		96	

Note: The sample size for the fee variable is lower than other variables due to item nonreponse.

Table 70. Target Species for Consumer Surplus (WTP) Analysis.

	Charter				Headboat			
	Primary		Secondary		Primary		Secondary	
Variable	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
BILLFISH	0.10	0.29	0.14	0.35	0.00	0.00	0.00	0.00
TUNA	0.22	0.41	0.12	0.33	0.00	0.00	0.02	0.13
KING	0.11	0.32	0.09	0.29	0.05	0.21	0.02	0.13
SPANISH	0.10	0.30	0.21	0.41	0.00	0.00	0.05	0.21
WAHOO	0.17	0.38	0.12	0.32	0.00	0.00	0.01	0.10
DOLPHIN	0.34	0.47	0.34	0.47	0.02	0.15	0.07	0.26
GROUPER	0.06	0.24	0.02	0.15	0.06	0.24	0.08	0.28
SNAPPER	0.02	0.15	0.01	0.11	0.07	0.26	0.05	0.21
COBIA	0.02	0.15	0.03	0.17	0.01	0.11	0.03	0.16
STRIPER	0.01	0.09	0.01	0.09	0.00	0.00	0.03	0.16
DRUM	0.01	0.11	0.01	0.11	0.00	0.00	0.03	0.16
BLUEFISH	0.04	0.19	0.11	0.31	0.01	0.11	0.13	0.34
Sample Size	511		498		86		96	

Table 71. Nested Logit Model Results for Primary Purpose Fishers

	Mean	S.D.	Coeff	t-stat
Trip cost + Fee	629.58	286.17	0.012	14.95
Billfish kept	0.02	0.04	26.798	7.75
CMG kept	2.35	4.17	0.662	12.31
Mackerel kept	1.79	1.84	0.470	4.70
Snapper-Grouper kept	1.07	1.25	1.117	7.25
Other fish kept	4.30	3.34	0.048	1.05
Outer Banks	0.07	0.25	1.177	2.11
Central Coast	0.07	0.25	1.501	3.14
New Hanover	0.07	0.25	2.060	4.52
Brunswick	0.07	0.25	0.016	0.04
Inclusive Value			0.840	6.28
⍰2			852.82	
R2			0.26	
Fishers			597	
Alternatives			15	

Table 72. Nested Logit Model Results for Secondary Purpose Fishers

	Mean	S.D.	Coeff	t-stat
Trip cost	526.78	237.71	-0.008	10.10
Fee	254.09	175.46	-0.021	12.07
Billfish kept	0.02	0.04	22.666	6.54
CMG kept	2.35	4.17	0.797	11.87
Mackerel kept	1.79	1.84	0.477	7.57
Snapper-Grouper kept	1.07	1.25	0.749	6.06
Other fish kept	4.30	3.34	-0.036	1.45
Outer Banks	0.07	0.25	-0.498	1.21
Central Coast	0.07	0.25	-2.058	6.11
New Hanover	0.07	0.25	-4.663	7.40
Brunswick	0.07	0.25	-1.361	4.70
Inclusive Value			0.890	3.72
χ^2			662.76	
R2			0.20	
Fishers		607		
Alternatives		15		

Table 73. Consumer Surplus (WTP) Value of Additional Fish Caught and Kept per Trip

	Primary		Secondary	
	WTP	t-value	WTP	t-value
Billfish	2243.89	10.37	1839.89	7.35
Coastal Migratory Pelagic	55.42	20.26	64.73	18.79
Mackerel	39.39	4.82	38.69	8.98
Snapper-Grouper	93.51	8.62	60.79	7.14
Other	-3.99	1.04	2.94	1.41

Table 74. Consumer Surplus (WTP) Value per Site per Trip

			Primary Purpose		Secondary Purpose	
Waters	Mode	Site	WTP	t-value	WTP	t-value
Federal	Charter	Roanoke Island	5.77	5.13	10.86	3.69
Federal	Charter	Outer Banks	27.03	5.48	16.62	3.87
Federal	Charter	Central Coast	4.88	5.12	0.24	3.45
Federal	Charter	New Hanover County	10.70	5.20	7.30	3.60
Federal	Charter	Brunswick County	6.15	5.14	5.07	3.55
State	Charter	Roanoke Island	1.80	5.29	5.76	3.74
State	Charter	Outer Banks	0.71	5.15	1.81	3.53
State	Charter	Central Coast	0.83	5.17	0.12	3.45
State	Charter	New Hanover County	9.55	7.11	16.54	4.78
State	Charter	Brunswick County	0.35	5.11	0.96	3.49
Both	Headboat	Roanoke Island	0.59	5.15	4.76	4.00
Both	Headboat	Outer Banks	0.59	5.15	0.84	3.52
Both	Headboat	Central Coast	1.44	5.28	2.82	3.73
Both	Headboat	New Hanover County	4.12	5.82	0.48	3.49
Both	Headboat	Brunswick County	3.85	5.75	4.63	3.98

Table 75. Allocation of Trips Across Fishing Nest, Mode and County Location

Nest	Mode	County	Mean	S.D.	Min	Max	Trips
For-Hire	Charter	Currituck	0.06	0.44	0	6	14
For-Hire	Charter	Dare	1.52	1.83	0	20	370
For-Hire	Charter	Carteret	0.14	0.78	0	8	33
For-Hire	Charter	Pender	0.00	0.00	0	0	0
For-Hire	Charter	New Hanover	0.17	0.64	0	7	42
For-Hire	Charter	Brunswick	0.05	0.24	0	2	11
For-Hire	Head	Currituck	0.01	0.14	0	2	3
For-Hire	Head	Dare	0.05	0.25	0	2	12
For-Hire	Head	Carteret	0.01	0.13	0	2	2
For-Hire	Head	Pender	0.00	0.00	0	0	0
For-Hire	Head	New Hanover	0.03	0.45	0	7	7
For-Hire	Head	Brunswick	0.01	0.13	0	2	2
Private	Private	Currituck	0.06	0.96	0	15	15
Private	Private	Dare	0.89	3.67	0	30	216
Private	Private	Hyde	0.01	0.13	0	2	2
Private	Private	Carteret	0.18	1.49	0	20	45
Private	Private	Onslow	0.13	1.92	0	30	32
Private	Private	Pender	0.00	0.00	0	0	0
Private	Private	New Hanover	0.16	1.20	0	12	40
Private	Private	Brunswick	0.06	0.56	0	6	15
Shore	Pier	Currituck	0.06	0.78	0	12	15
Shore	Pier	Dare	0.44	1.35	0	12	108
Shore	Pier	Hyde	0.00	0.06	0	1	1
Shore	Pier	Carteret	0.02	0.22	0	3	6
Shore	Pier	Pender	0.02	0.24	0	3	6
Shore	Pier	New Hanover	0.09	0.81	0	10	23
Shore	Pier	Brunswick	0.18	1.98	0	30	45
Shore	Beach	Currituck	0.13	1.06	0	12	31
Shore	Beach	Dare	1.68	4.62	0	30	409
Shore	Beach	Carteret	0.22	2.09	0	30	53
Shore	Beach	Onslow	0.14	1.94	0	30	34
Shore	Beach	Pender	0.01	0.13	0	2	2
Shore	Beach	New Hanover	0.22	1.17	0	10	53
Shore	Beach	Brunswick	0.34	2.63	0	30	84

Table 76. Mode-Site Selection Nested Logit Model Results

Model Variable	Coefficient	t-ratio
TC	-0.017	-5.98
COST	-0.111	-5.85
CHARTER	39.568	5.94
HEADBOAT	6.445	4.50
IV	0.662	3.39
LLF	-4619.11	
AIC	37.9	
R2	0.17	
Cases	244	
Alternatives	34	
Trips	1731	

Table 77. Negative Binomial Trip Frequency Model

	Coefficient	t-ratio
Constant	1.433	3.31
IV	0.098	5.09
MALE	0.284	1.27
WHITE	-0.385	-1.34
AGE	0.013	2.42
INCOME	0.006	1.71
Alpha	0.920	7.14
LLF	-705.190	
AIC	5.84	
R2	0.46	
Cases	244	

Table 78. Consumer Surplus (WTP) per North Carolina For-Hire Trip

			95% Confidence Interval	
	WTP	S.E.	Lower	Upper
Charter boat	624.02	19.90	585.02	663.02
Head boat	101.64	9.49	83.04	120.24

Table 79. Impact of For-Hire Fishing Loss on Trip Distribution across Fishing Modes

	Baseline	Without Charter Boat	Without Headboat
Charter	26%	-----	27%
Headboat	2%	6%	-----
Private	21%	27%	21%
Pier	12%	18%	14%
Beach	40%	49%	38%

Table 80. Trip Data for Revealed and Stated Preference Model

Scenario	Charter trips	Other trips
RP: Past 12 Months	1.71	4.64
SP0: Status Quo Next 12 Months	1.99	2.09
SP1: Increased Charter Fee	1.52	2.27
SP2: Decreased Snapper-Grouper Bag Limit	1.45	2.07
SP3: Decreased King Mackerel Bag Limit	1.86	2.11

Table 81. RP-SP Mode/Participation Logit Model Results

Variable	Coefficient	t-ratio
TCFEE	-0.0075	-16.32
SGBAG	0.0723	5.67
KMBAG	0.1289	3.07
Scale	1.51	25.74
LLF	-44,653	
AIC	73.21	
R2	0.24	
Cases	244	
RP alternatives	1	
SP alternatives	4	

Table 82. Consumer Surplus (WTP) per Trip to Avoid Bag Limit Changes

	WTP/fish/trip	t-ratio
Snapper-Grouper	9.59	7.83
King Mackerel	17.08	3.60

Table 83. Impacts of Changes in Trip Costs and Bag Limits on Allocation of Trips

	Baseline	25% Increase in Cost	Zero SG Bag	Zero KM Bag
Charter	6.80%	3.46%	3.73	5.56
Other Modes	18.55%	19.33	19.31	18.85
No Fishing	74.65%	77.21	76.96	75.59

FIGURES

Figure 1. Geographic Distribution of For-Hire Captains Interviewed.

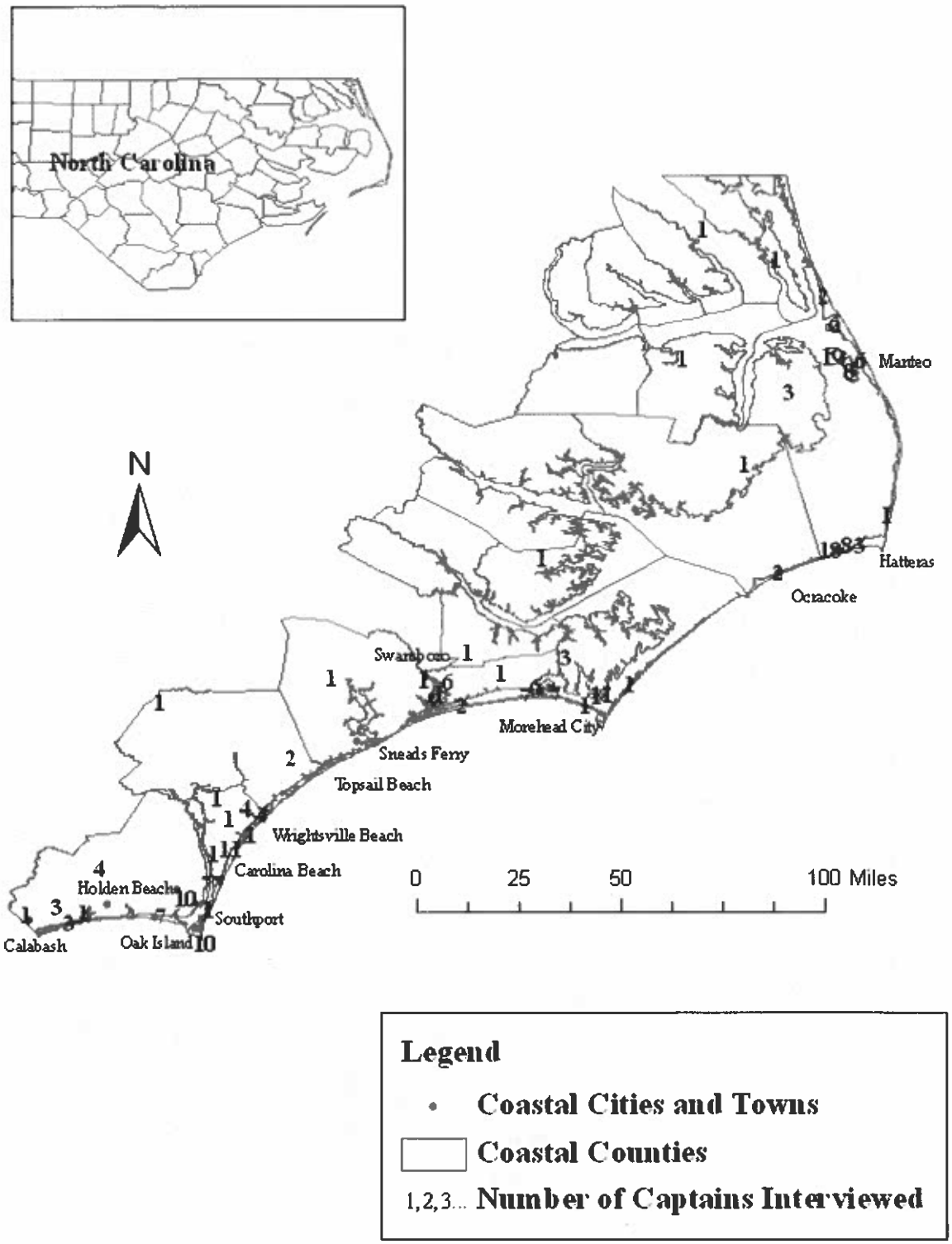


Figure 2. The Economic Impacts of For-Hire Fishing

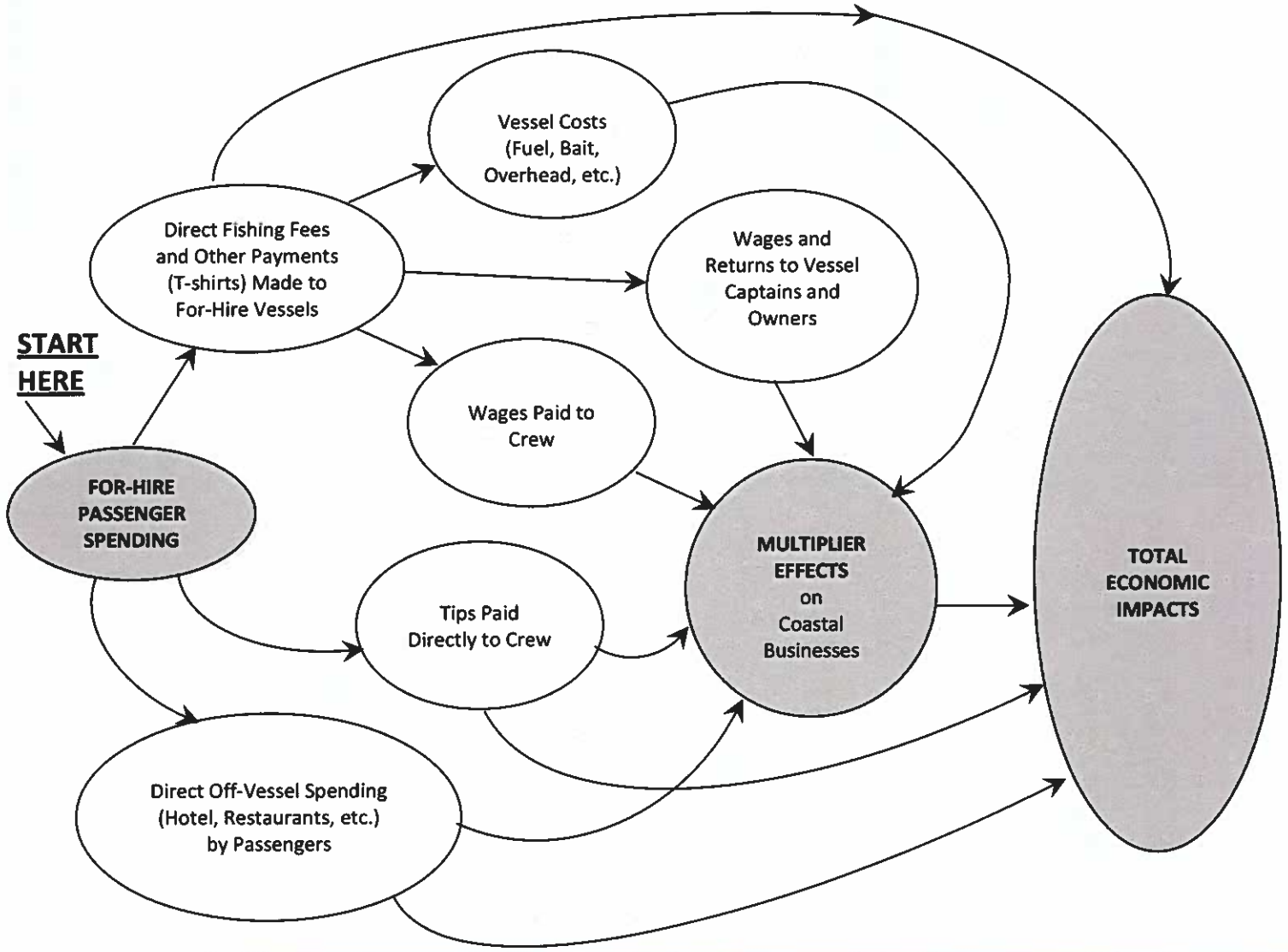


Figure 3. For-Hire Captain Survey Attitudes -- Fleet Size for Healthy Fish Stocks.

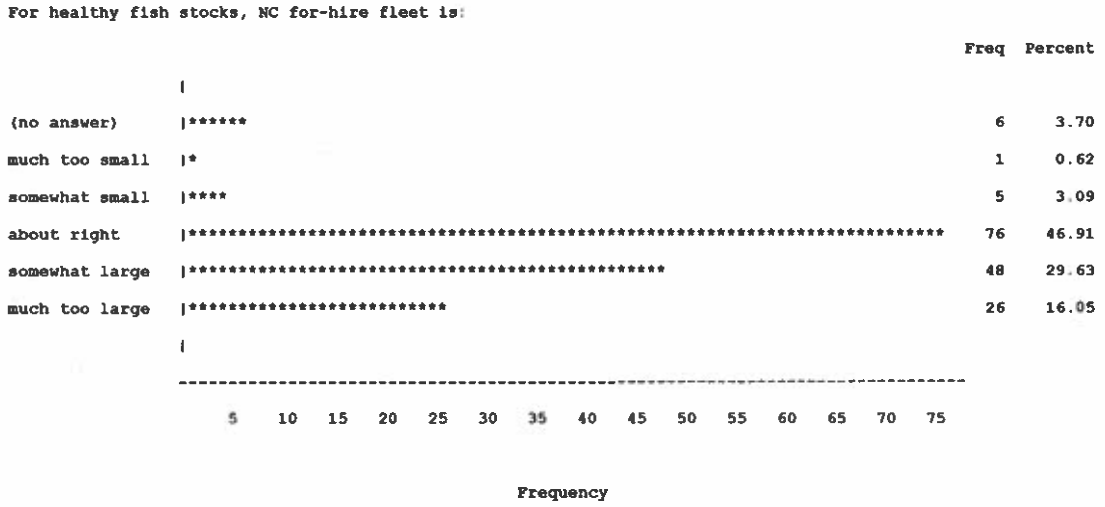


Figure 4. For-Hire Captain Survey Attitudes -- Fleet Size for Industry Financial Health.

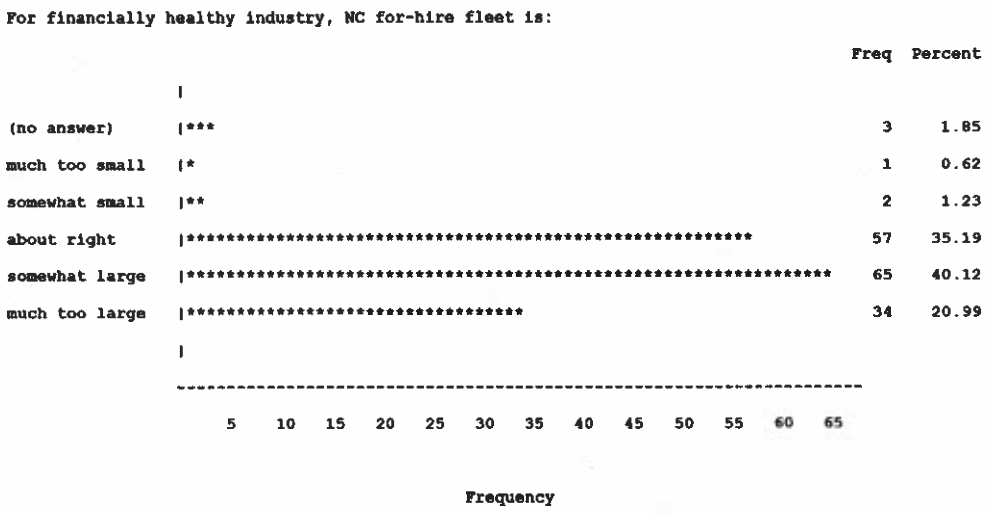


Figure 5. For-Hire Captain Survey Attitudes -- Limited Vessel Entry / Permit Cap

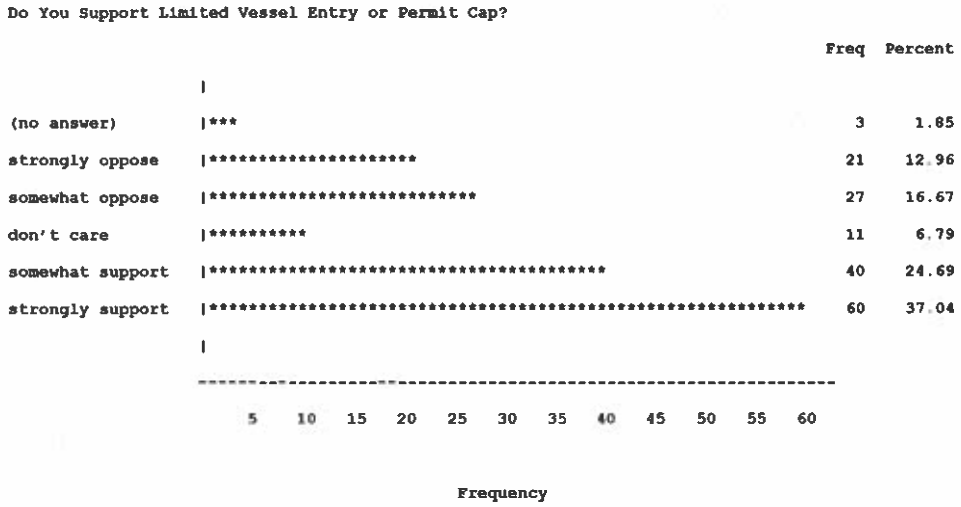


Figure 6. For-Hire Captain Survey Attitudes -- NCMFC For-Hire Advisory Committee

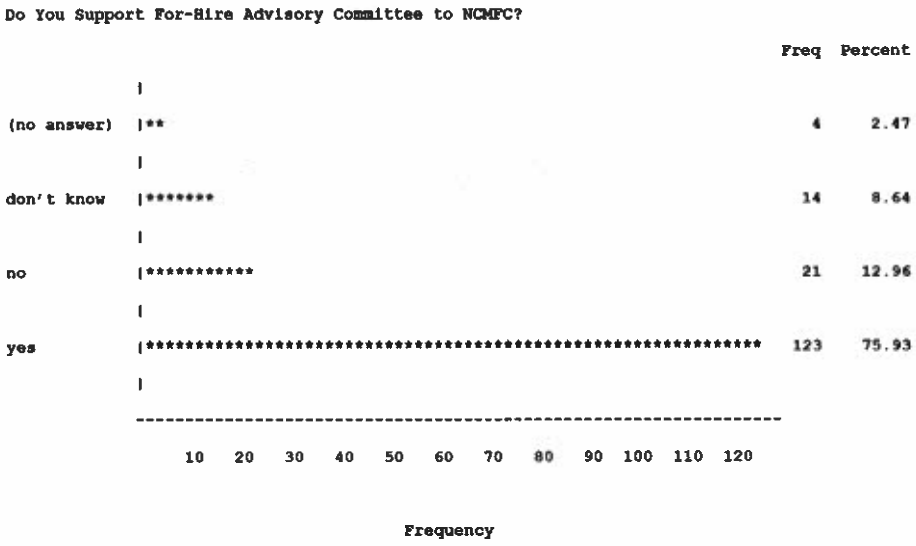


Figure 7. For-Hire Captain Survey Attitudes -- Willingness to Serve on Advisory Committee

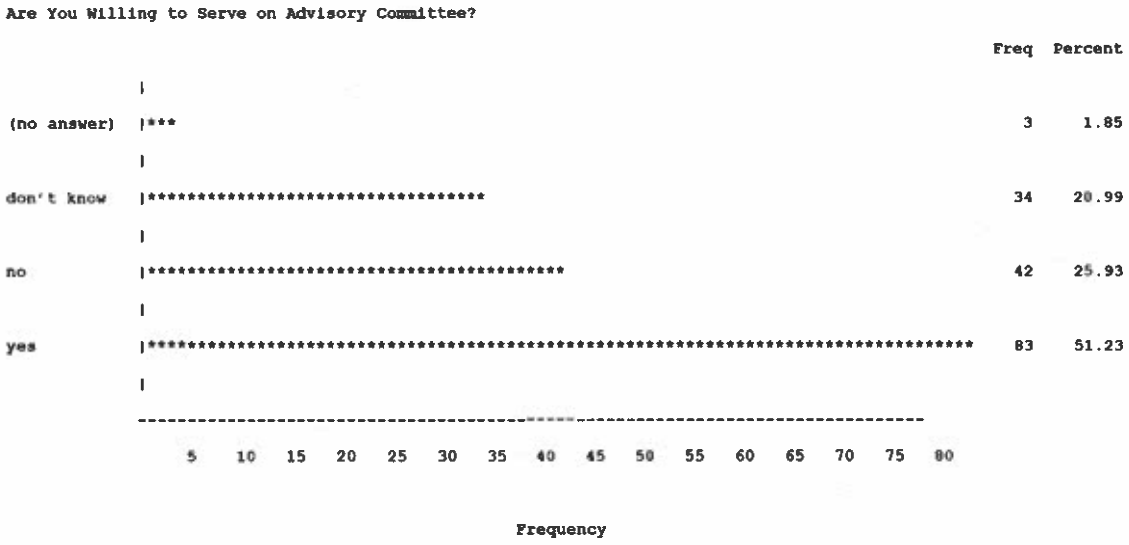
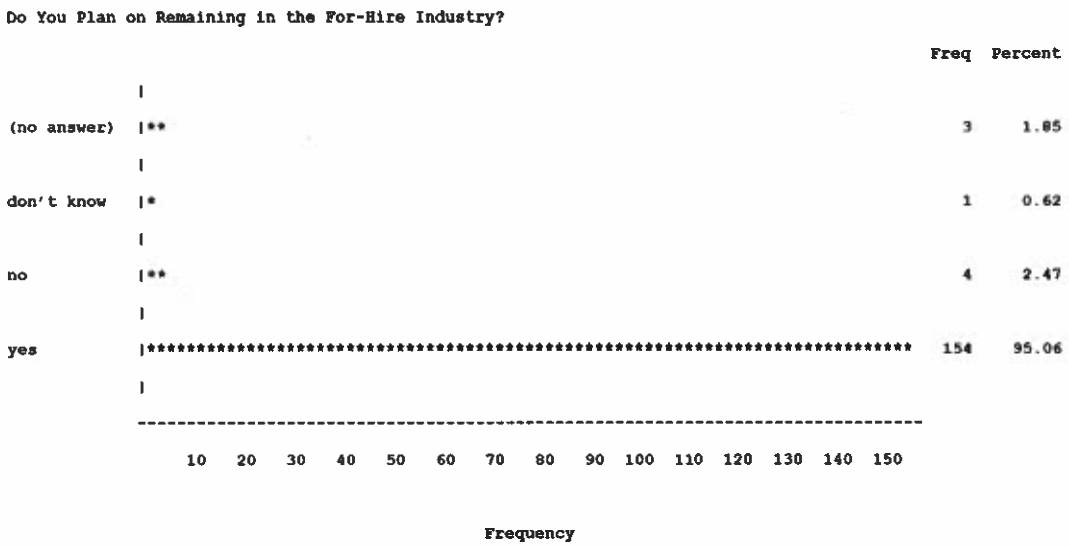


Figure 8. For-Hire Captain Survey Attitudes -- Plans to Remain in For-Hire Industry



APPENDIX 1 For-Hire Captain Survey Instrument

For-Hire Charter/Headboat Captain Survey

COMPLETE ONE SURVEY FOR EACH FOR-HIRE VESSEL

1.0 PURPOSE OF SURVEY

North Carolina Sea Grant is funding this survey of the North Carolina For-Hire fishing fleet to determine the economic impacts of For-Hire fleet activity on North Carolina's economy. The activity of for-hire vessels makes an important contribution to North Carolina's economy. For-Hire vessels employ crewmembers, purchase goods and services, pay taxes, and provide incomes to vessel captains, owners and their families. This survey is intended to collect the information needed to estimate these economic impacts. Although there is some overlap, much of the economic information collected on this survey is not collected on other surveys intended to manage fish stocks or measure angler participation. This survey also collects economic information across all N.C. fishing seasons and updates older, out-of-date information.

The survey should be completed by a for-hire vessel owner or captain, someone with knowledge of vessel revenues and costs over the past year (past 12 months). Although your participation is voluntary, your help is essential to ensure that the survey results reflect the full range of for-hire activities across all vessel sizes, geographic locations, and fishing seasons. **All information is confidential—only "industry average" and "industry total" results will be reported.**

2.0 OWNER/CAPTAIN DATA

Q1 Today's date:_____
Q2 Name of person completing survey form:_____
Q3 Are you an (check one): Owner/Captain ___ Owner/non-Captain ___
Paid Captain (private) ___ Paid Captain (corporate) ___
Q4 In what year were you born? _____year
Q5 How long have you owned/captained/operated for-hire fishing vessels? _____years/months.
Q6 How long have you been licensed by the US Coast Guard?_____years/months
Q7 What is the zip code of your current permanent residence? _____
Q8 In what state were you were born? _____.
Q9 What is your gender?: Male_____ Female _____
Q10 What is your ethnicity?: ___White (Non-Hispanic) ___Black (Non-Hispanic)
___Hispanic ___Asian/Pacific Islander ___American Indian/Alaskan
___Other (Please specify_____)
Q11 What percentage of your total household income would you say comes from Charter/Headboat fishing?
_____% (The purpose of this question is to estimate part-time vs. full-time fishing activity.)

3.0 VESSEL, CREW, AND FOR-HIRE FISHING DAYS DATA

If you own/captain more than one for-hire vessel, focus on just one as you complete this survey.

Q12 Name of vessel: _____
Q13 City/Town where vessel is docked:_____
Q14 County where vessel is docked:_____
Q15 Dock/Marina where vessel is docked:_____
Q16 Is this vessel a: ☐ Charter Boat ☐ Headboat
Q17 Vessel length? _____ feet.
Q18 What is the combined horsepower of all the engines powering this vessel? _____ horsepower
Q19 What is the estimated current market value (used) of your vessel if sold today? _____ dollars
Q20 Number of full-time crewmembers (not including the captain) on this vessel: _____
Q21 Number of part-time crewmembers (not including the captain) on this vessel: _____
Q22 Approximately how many days per year does this vessel fish for-hire? -_____days.

4.0 FIXED/OVERHEAD COSTS DATA

Q23 Please estimate the MONTHLY and ANNUAL costs for THE VESSEL DESCRIBED IN SECTION 3.0:

MONTHLY FIXED/OVERHEAD COSTS	
Dock/slip fees per month (not including fuel)	$'s per MONTH
Vessel loan payment per month (if any)	$'s per MONTH
Vessel insurance payment per month	$'s per MONTH
Telephone costs per month	$'s per MONTH
Any other monthly fixed costs? (Describe: _____) (Note: See Questions 27, 31 and 35 for per-trip costs.)	_____ $'s per MONTH

YEARLY FIXED/OVERHEAD COSTS	
North Carolina recreational fishing permit/license fees per year (for-hire salt recr. blanket license, vessel registration, etc.)	_____ $'s per YEAR
Other State (VA,SC,etc.) recr. fishing permit/license fees per year	$'s per YEAR
Federal recreational fishing permit/license fees per year (recr. HMS/tuna permits, Coast Guard vessel registration, etc.)	_____ $'s per YEAR
Fishing Supplies (Tackle/equipment purchases, loss of tackle, rentals, etc) per year	_____ $'s per YEAR
Electronics costs per year (radio, navigation, fish finding, etc.)	$'s per YEAR
Engine repair costs per year.	$'s per YEAR
Boat Yard (not including engine repair) expenses per year	$'s per YEAR
Other vessel maintenance expenses per year (on average) (such as: washing, interior painting, repairing plumbing, woodwork, fixtures, upholstery, rigging, etc.) NOT electronics or engine (covered above)	_____ $'s per YEAR
Fishing association / professional fees per year	$'s per YEAR
Accounting / book keeping fees per year	$'s per YEAR
Legal (lawyer) expenses per year	$'s per YEAR
Advertising & promotion (ads, web site, shows, booking fees to marina, tournament fees, travel, entertainment) per year	_____ $'s per YEAR
Any other yearly fixed costs? (Describe: _____)	_____ $'s per YEAR

5.0 PER-TRIP DATA: PASSENGERS, REVENUES, TARGET SPECIES, AND COSTS

FULL-DAY TRIPS

Q24 Over the past 12 months, did you make any **FULL-DAY**, For-Hire trips, using THE VESSEL DESCRIBED IN SECTION 3.0? Yes ___ No ___ **IF NO, SKIP QUESTIONS Q25, Q26, AND Q27.**

Q25 Considering **FULL-DAY TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0. (Note: We ask for these data by month to ensure that we collect full information on vessels that participate in multiple fisheries.)

Month	Number of Trips	Miles from Shore (Ave.)	List Top (up to 3) Species TARGETED	List Top (up to 3) Species ACTUALLY CAUGHT
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

Q26 Considering **FULL-DAY TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Average Number of Passengers PER TRIP	Percentage of Out-of-State Passengers	Charter Fee or Passenger Fare PER PASSENGER	Income From Sale of Fish PER TRIP	Other Income PER TRIP
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

*For Example: Fish cleaning done by captain/mate, tackle sales, gear rental, vessel sales of food, drink, tee-shirts, etc.

Q27 Considering **FULL-DAY TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Cost of Fuel & Oil PER TRIP	Paid to Captain* (if not owner) PER TRIP	Total Paid to Mate/Crew (not incl. tips) PER TRIP	Bait Costs PER TRIP	Ice Costs PER TRIP	Food/Drink Costs PER TRIP
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

* Note: If captain is the owner, put zero in the "Paid to Captain" column.

Q27 CONTINUED Considering **FULL-DAY TRIPS ONLY**, please list and describe any other per-trip costs in the table below FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Other Cost 1 (describe:_____) PER TRIP	Other Cost 2 (describe:_____) PER TRIP	Other Cost 3 (describe:_____) PER TRIP
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

HALF-DAY TRIPS

Q28 Over the past 12 months, did you make any **HALF-DAY**, For-Hire trips, using THE VESSEL DESCRIBED IN SECTION 3.0? Yes ___ No ___ **IF NO, SKIP QUESTIONS Q29, Q30, AND Q31.**

Q29 Considering **HALF-DAY TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0. (Note: We ask for these data by month to ensure that we collect full information on vessels that participate in multiple fisheries.)

Month	Number of Trips	Miles from Shore (Ave.)	List Top (up to 3) Species TARGETED	List Top (up to 3) Species ACTUALLY CAUGHT
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

Q30 Considering **HALF-DAY TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Average Number of Passengers PER TRIP	Percentage of Out-of-State Passengers	Charter Fee or Passenger Fare PER PASSENGER	Income From Sale of Fish PER TRIP	Other Income PER TRIP
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

*For Example: Fish cleaning done by captain/mate, tackle sales, gear rental, vessel sales of food, drink, tee-shirts, etc.

Q31 Considering **HALF-DAY TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Cost of Fuel & Oil PER TRIP	Paid to Captain* (if not owner) PER TRIP	Total Paid to Mate/Crew (not incl. tips) PER TRIP	Bait Costs PER TRIP	Ice Costs PER TRIP	Food/Drink Costs PER TRIP
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

* Note: If captain is the owner, put zero in the "Paid to Captain" column.

Q31 CONTINUED Considering **HALF-DAY TRIPS ONLY**, please list and describe any other per-trip costs in the table below FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Other Cost 1 (describe:_____) PER TRIP	Other Cost 2 (describe:_____) PER TRIP	Other Cost 3 (describe:_____) PER TRIP
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

OVERNIGHT TRIPS

Q32 Over the past 12 months, did you make any **OVERNIGHT**, For-Hire trips, using THE VESSEL DESCRIBED IN SECTION 3.0? Yes ___ No ___ **IF NO, SKIP QUESTIONS Q33, Q34, AND Q35.**

Q33 Considering **OVERNIGHT TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0. (Note: We ask for these data by month to ensure that we collect full information on vessels that participate in multiple fisheries.)

Month	Number of Trips	Miles from Shore (Ave.)	List Top (up to 3) Species TARGETED	List Top (up to 3) Species ACTUALLY CAUGHT
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

Q34 Considering **OVERNIGHT TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Average Number of Passengers PER TRIP	Percentage of Out-of-State Passengers	Charter Fee or Passenger Fare PER PASSENGER	Income From Sale of Fish PER TRIP	Other Income PER TRIP
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

*For Example: Fish cleaning done by captain/mate, tackle sales, gear rental, vessel sales of food, drink, tee-shirts, etc.

Q35 Considering **OVERNIGHT TRIPS ONLY**, please complete the following table FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Cost of Fuel & Oil PER TRIP	Paid to Captain* (if not owner) PER TRIP	Total Paid to Mate/Crew (not incl. tips) PER TRIP	Bait Costs PER TRIP	Ice Costs PER TRIP	Food/Drink Costs PER TRIP
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

* Note: If captain is the owner, put zero in the "Paid to Captain" column.

Q35 CONTINUED Considering **OVERNIGHT TRIPS ONLY**, please list and describe any other per-trip costs in the table below FOR THE VESSEL DESCRIBED IN SECTION 3.0.

Month	Other Cost 1 (describe:_____) PER TRIP	Other Cost 2 (describe:_____) PER TRIP	Other Cost 3 (describe:_____) PER TRIP
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

6.0 THE FUTURE OF CHARTER/HEADBOAT FISHING IN N.C.

Q36 To maintain healthy fish stocks off the NC coast, do you believe the number of vessels in the NC for-hire fleet is:
____ much too small ____ somewhat small ____ about right
____ somewhat large _____ much too large

Q37 To maintain a financially healthy for-hire industry in NC, do you believe the number of vessels in the NC for-hire fleet is: ____ much too small ____ somewhat small ____ about right
____ somewhat large _____ much too large

Q38 Do you support a Limited Vessel Entry or Permit Cap program on the number of vessels in the NC for-hire fleet?
____ strongly oppose ____ somewhat oppose ____ don't care
____ somewhat support ____ strongly support

Q39 Do you support the creation of an Advisory Committee to advise the NC Marine Fisheries Commission on issues important to the NC For-Hire fishery? ___ Yes ____ No ____ Don't Know

Q40 Would you be willing to serve on such an Advisory Committee? (This would require attending a meeting every few months.) ___ Yes ____ No ____ Don't Know

Q41 I plan on remaining in the Charter/Headboat industry ☐ Yes ☐ No
Reason(s) _____

Q42 If I was not a Charter/Headboat captain I would likely be doing:
_____

Q43 How would you describe the NC coastal culture/community?
_____

Q44 People visit the North Carolina coast primarily to (give reasons you believe bring people here):
_____

Q45 Describe the changes you have seen along the NC coast since you have been a captain here:
_____

Q46 If you could change anything about the NC coastal culture/community what would it be?
_____

Q47 How would you describe your Charter/Headboat fishing business?
_____

Q48 If you could change anything about the NC Charter/Headboat fishing business, what would it be?
_____

Q49 How is coastal development influencing your Charter/Headboat business?
_____

Q50 What do you think the future holds for the NC Charter/Headboat business?
_____

Q51 What specific recommendations would you make to change the Charter/Headboat industry in NC?
_____

This concludes the survey. Thank you very much for participating!

APPENDIX 2 For-Hire Passenger Field Survey Instrument

Charter/Headboat On-Site (Dockside) Passenger Survey

Name of Interviewer: _____
Date of Interview: _____ Time of Interview: _____
Port/Marina of Interview:_____
Name of the Vessel: _____

Hello, I'm_____ from the University of North Carolina. We are conducting a study about the economic impact of Charter and Headboat fishing in North Carolina. Your participation in this survey is entirely voluntary and will likely take less than 10 minutes. All survey information will be reported on an aggregate or average basis; information about individuals will not be reported.

Would you be willing to answer a few questions? YES ___ NO ___

(If YES, go to Question Q1. If NO, thank them for their time, terminate the interview, and keep this survey sheet as a record of an attempted survey. If a question is Not Applicable, put NA; if you Don't Know, put DK.)

Q1 Is the individual being surveyed: **Q1a** _____Male **Q1b** _____Female
Q2 Is the individual being surveyed:
Q2a_____White (Non-Hispanic) **Q2b**_____Black (Non-Hispanic)
Q2c_____Hispanic **Q2d**_____Asian/Pacific Islander
Q2e_____American Indian/Alaskan Native
Q2f_____Other (Please specify_____)
Q3a In what year were you born? _____Year (If under the age of 18, born 1988 or later , thank the individual, tell them you are only allowed to interview individuals 18 or older, and terminate the interview.)
Q3b It is okay if you are surveyed more than once for this research project. Have you been surveyed for this project before? YES ____ NO _____.
Q4 What is the zip code of your current permanent residence? _____

FOR THE PURPOSES OF THIS SURVEY, THE WORD "FISHING TRIP" MEANS GOING OUT ONCE ON A FISHING VESSEL, WHILE THE WORD "VISIT" MEANS YOUR STAY IN THE LOCAL AREA. SOME PEOPLE TAKE MORE THAN ONE "FISHING TRIP" DURING A "VISIT" TO THE AREA.

Q5 Including yourself but excluding the captain and crew of the boat, how many passengers took the same fishing trip on this vessel today? _____(Number of passengers – approximates are OK)
Q6 Was this fishing trip a:
Q6a _____CHARTER TRIP, where passengers pay as a group to charter the boat, or
Q6b _____HEADBOAT TRIP, where passengers pay per-person for fishing space on the boat?
Q7 On this visit to the local area, how many nights will you stay in the local area away from home?_____
Q8 During this visit to the local area, how many Charter fishing trips will you take? _____(Trips)
Q9 During this visit to the local area, how many Headboat fishing trips will you take? _____(Trips)
Q10 Over the past 12 months, how many Charter fishing trips did you take in North Carolina?_____(Trips)
Q11 Over the past 12 months, how many Headboat fishing trips did you take in North Carolina?_____(Trips)
Q12 Would you say that saltwater fishing on a Charter boat and/or Headboat was:
Q12a _____ the primary reason for visiting the local area—the visit would not have occurred if Charter/Headboat fishing were not available, or
Q12b _____ a secondary reason--the visit would have occurred even without Charter/Headboat fishing?
Q13 Was most of the saltwater fishing on this trip:
Q13a _____ less than 3 miles from shore (state waters)
Q13b _____ more than 3 miles from shore (federal waters)
Q13c _____ don't know

Q14 Which types of fish did **you, individually** target, catch and keep, and catch and release on this fishing trip?

Fish Types	Targeted? (check if yes)	Caught and Kept? (number of fish)	Caught and Released? (number of fish)
Q27a Billfish (marlin, swordfish, and/or sailfish)			
Q27b Tuna: Q27b1Bluefin, Q27b2 Yellowfin, Q27b3 Big Eye, Q27b4 Other tuna:			
Q27c King Mackerel			
Q27d Spanish Mackerel			
Q27e Wahoo			
Q27f Dolphin (Mahi Mahi)			
Q27g Grouper			
Q27h Snapper			
Q27i Cobia			
Q27j Striper / Striped Bass			
Q27k Drum			
Q27l Bluefish			
Q27m Other types? (specify:)			
Q27n Targeted "anything," nothing specific			

Q15 Please estimate the amount of money that **YOU, INDIVIDUALLY**, spent SOLELY FOR THE PURPOSE OF FISHING on THIS PARTICULAR FISHING TRIP in each of the following categories (do not include money that you would have spent anyway, even if you had not gone fishing):

Expenditure Category	$ Spent During this Fishing Trip	
	In County of Interview	Elsewhere in NC
Q15a/b Charter/Headboat fee (per person average)		
Q15c/d Additional tips/money paid to captain/crew for tips, fish cleaning, etc. (per person average)		
Q15e/f Food, Groceries, Ice and Beverages to take on board vessel (per person average)		
Q15g/h Fishing Supplies to take on board vessel (Bait/Tackle—per person average)		
Q15i/j Other Supplies & Retail Purchases to take on board vessel: clothing, suntan lotion,, etc. (per person average)		

Q16a In terms of expenses, is this a typical fishing trip for you? Yes _____ No _____

If "Yes," go to question Q17

Q16b If "No," how much more/less do you typically spend? _____ $'s more OR _____ $'s less

Q17a/b How many NON-FISHING traveling companions / family members accompanied you on your visit to the local area? _____ adults _____ kids under 18 years of age

Q18 Please estimate the amount of money that **YOU** and any **NON-FISHING traveling companions / family members** spent **PER PERSON, ON AVERAGE** on THIS PARTICULAR VISIT TO THE LOCAL AREA in each of the following categories (DO NOT include money mentioned previously above):

Expenditure Category	$ Spent During this Visit	
	In County of Interview	Elsewhere in NC
Q18a/b Fuel for Car/Truck Transportation (per person average)		
Q18c/d Car/Truck Rental (per person average)		
Q18e/f Lodging (Hotel, motel, cottage, condo, bed & breakfast, etc.—per person average)		
Q18g/h Camping/Campground (per person average)		
Q18i/j Restaurant Meals (per person average)		
Q18k/l Of restaurant meal expenditures, amount spent on locally caught seafood (per person average) (estimates okay)		
Q18m/n Locally caught seafood purchased elsewhere (seafood market, grocery store, etc.) (per person average)		
Q18o/p Other Food, Groceries, Ice and Beverages (per person average)		
Q18q/r Gifts, clothing, and other retail purchases (per person average)		

Q19a In terms of expenses, is this a typical visit for you and your fellow travelers / family? Yes ___ No ___
If "Yes," skip to question Q20a
Q19b If "No," how much more/less do you typically spend per person? _____ $ more OR _____ $ less
Q20a Did you use air transportation to reach the local area during this visit? Yes ____ No ____
Q20b If "Yes," which airport did you use? _____
If "No," continue to question Q21
Q21 What is your occupation? _____
If retired or currently unemployed, what was your occupation?_____
Q22 What is your household's approximate annual income (pre-tax)? Check one
Q22a___$25,000 or less
Q22b___Between $25,001 and $50,000
Q22c___Between $50,001 and $100,000
Q22d___More than $100,000
Q23 For you, what is unique about visiting the NC coast?

_____

_____

Q24 How would you describe the changes you have seen along the NC coast since you have been visiting/fishing here? (IF THIS IS YOUR FIRST FISHING TRIP TO NC COAST, write "First Trip.")

_____

_____

Q25 If you could change anything about the NC coast, what would it be?

_____

_____

Q26 How would you describe your NC charter fishing experience?

_____

_____

Q27 If you could change anything about a future NC charter fishing experience, what would it be?

_____

_____

Q28 If there was no charter fishing available would you still visit the area? _____Yes _____No. Please explain your answer_____

_____

Q29 How do you describe the NC coastal area(s) that you visited?

_____

_____

Q30 Compared to other coastal regions, what do you think is unique about the NC coast?

_____

_____

Q31a Is (or could) coastal over-development influence your decision to purchase a charter trip in NC?
YES ___ NO ___
Q31b IF YES, how? _____

Q32a. The charter fishing industry is facing some significant challenges. Would you be willing to participate in a follow-up telephone survey to provide your opinion about charter fishing in North Carolina? The telephone survey should take about 10 minutes and would take place after the winter holiday season. The results would be provided to fisheries managers and other policy makers. Would you be willing to participate?
Yes _____ No _____
If "Yes":" **Q32b** Name _____
Q32c Telephone Number _____ **Q32d** Best time to call _____

This concludes our interview. Thank you very much for participating!

APPENDIX 3 For-Hire Passenger Telephone Follow-Up Survey Instrument

Charter/Headboat Telephone Follow-Up Passenger Survey

For the first few questions, we'll be talking about the fishing trip you took this past year when we interviewed you in North Carolina.

1.	How well do you remember this fishing trip? Do you remember it...? **[READ LIST]** **[CIRCLE ONE ANSWER ONLY]**	Very well ..... 3 Somewhat well or ..... 2 Not very well 1
2.	How would you rate this fishing trip? Would you say it was...? **[READ LIST]** **[CIRCLE ONE ANSWER ONLY]**	Excellent ..... 4 Good. ..... 3 Fair or ..... 2 Poor 1
3.	Considering this fishing trip, during the past 12 months in North Carolina, was this a **typical** trip in terms of catch, location, type of fishing and total cost?	Yes**[Skip to Q8]** ..... 1 No 2
4.	How would you rate **a typical North Carolina fishing** trip? Would you say it was...? **[READ LIST]** **[CIRCLE ONE ANSWER ONLY]**	Excellent ..... 4 Good. ..... 3 Fair or ..... 2 Poor 1
5.	In which North Carolina county do you take your **typical fishing** trip? **[IF MORE THAN ONE LOCATION, ASK FOR THE MOST RECENT TRIP]** **[CIRCLE ONE ANSWER ONLY]**	Currituck ..... 01 Dare ..... 02 Hyde ..... 03 Carteret ..... 04 Onslow ..... 05 Pender ..... 06 New Hanover ..... 07 Brunswick 08
6.	Is your **typical** trip an overnight trip, where you spend at least one night away from home?	Yes ..... 1 No 2
7.	Would you say that on your **typical** trip...?	The main reason for leaving home is fishing, or ..... 1 Fishing is a secondary reason for leaving home 2
8.	Do you typically fish in the ocean or the sounds?	Ocean ..... 1 Sounds 2

9. a. Thinking about your North Carolina saltwater fishing trips during the past 12 months, **how many were . . .?**

1. **Charter boat trips, where passengers pay as a group to charter the boat? (RECORD BELOW)**
2. **Head boat trips, where passengers pay per-person for fishing space on the boat? (RECORD BELOW)**
3. **Private boat trips, where you fished from your boat or a friend's boat? (RECORD BELOW)**
4. **Pier trips, where you fished from a private or public pier? (RECORD BELOW)**
5. **Beach trips, where you fished from the beach or shore but not a pier? (RECORD BELOW)**

b. How many of these (**READ TYPE**) trips were launched out of (**READ COUNTY NAMES**)?

	a. Charter	b. Head Boat	c. Private Boat	d. Pier Trips	e. Beach
RECORD Trips					
b1. Currituck County					
b2. Dare County					
b3. Hyde County					
b4. Carteret County					
b5. Onslow County					
b6. Pender County					
b7. New Hanover County					
b8. Brunswick County					

10. Including charter, head, private boats, piers and the beach, how many saltwater fishing trips did you take in **other states** during the past 12 months?

RECORD Trips-OTHER States ___ ___ ___

FUTURE TRIPS: Now think about the saltwater fishing trips you might take next year in North Carolina. Please answer the following questions to the best of your ability.

11. About how many **saltwater fishing** trips do you think you will take during the next 12 months in North Carolina?

RECORD Trips ..... ___ ___ ___

[If none, skip to Q33]

12. About how many of these saltwater fishing trips would be **charter boat** trips?

RECORD Trips ..... ___ ___ ___

[If none, skip to Q33]

13. Do you think these charter boat trips would be in about the same locations that you took trips during the past 12 months?

Yes**[Skip to Q15]** 1
No 2

14. **IF NO:** How do you think your trip locations will change?

Record verbatim_____ ..... ___ ___

15.	Suppose the cost of your portion of the charter fee increases by ($50/$100) because of a fuel surcharge. For example, if you paid $250 for your portion of the charter fee during the past 12 months, during the next 12 months you would pay ($300/$350). If your charter fee was ($50/$100) higher, would you take more, fewer, or the same number of charter trips during the next 12 months?	More ..... 3 Fewer, or the ..... 2 Same **[Skip to Q17]** 1
16.	How many more/fewer charter trips would you take?	RECORD More..... __ __ __ RECORD Fewer ..... __ __ __

Now think about the number of all other types of saltwater fishing trips including head boat, private boat, pier and beach trips that you expect to take next year.

17.	If your charter fee was ($50/$100) higher and the cost of all other saltwater fishing trips were the same, would you take more, fewer, or the same number of other types of saltwater fishing trips during the next 12 months?	More ..... 3 Fewer, or the ..... 2 Same **[Skip to Q19]** 1
18.	How many more/fewer trips would you take?	RECORD More..... __ __ __ RECORD Fewer ..... __ __ __

Many fish species in North Carolina are overfished for a variety of reasons. The South Atlantic Fishery Management Council, an agency that regulates North Carolina offshore fishing, is expected to consider tighter recreational bag limits in the future. For the next several questions, consider how tighter bag limits will affect you. Assume that the costs of charter fishing trips are not higher due to a fuel surcharge.

19.	Do you ever try to catch **snapper or grouper** species on your charter fishing trips?	Yes..... 1 No**[Skip to Q24]**..... 2
20.	The current bag limit for many snapper species is 10 snapper per person per day. The current bag limit for many grouper species is 5 grouper per person per day. Suppose new bag limits of 5 snapper and 2 grouper per person per day are put into place before your next charter fishing trip. All other bag limits remain the same. Considering the new bag limits, would you take more, fewer, or the same number of charter fishing trips during the next 12 months?	More ..... 3 Fewer, or the ..... 2 Same **[Skip to Q22]** 1
21.	How many more/fewer charter trips would you take?	RECORD More..... __ __ __ RECORD Fewer ..... __ __ __
22.	Considering the new bag limits, would you take more, fewer or the same number of **other types of saltwater fishing trips** during the next 12 month?	More ..... 3 Fewer, or the ..... 2 Same **[Skip to Q24]** 1
23.	How many more/fewer trips would you take?	RECORD More..... __ __ __ RECORD Fewer ..... __ __ __

24.	Do you ever try to catch **king mackerel** on your charter fishing trips?	Yes ..... 1 No **[Skip to Q29]** 2
25.	The current bag limit for king mackerel is 3 king mackerel per person per day. Suppose a new bag limit of 1 king mackerel per person per day is put into place before your next charter fishing trip. All other bag limits remain the same. Considering the new bag limit, would you take more, fewer or the same number of charter fishing trips during the next 12 months?	More ..... 3 Fewer, or the ..... 2 Same **[Skip to Q27]** 1
26.	How many more/fewer charter trips would you take?	RECORD More ..... __ __ __ RECORD Fewer .....
27.	Considering the new bag limit, would you take more, fewer, or the same number of **other types of saltwater fishing** trips during the next 12 months?	More ..... 3 Fewer, or the ..... 2 Same **[Skip to Q29]** 1
28.	How many more/fewer trips would you take?	RECORD More ..... __ __ __ RECORD Fewer .....
29.	Now that the hypothetical questions are over, how sure are you about your answers? Are you…? **[READ LIST]** **[CIRCLE ONE ANSWER ONLY]**	Very sure ..... 3 Somewhat sure, or ..... 2 Not sure at all 1
30.	When you answered the hypothetical trip questions, did you tell us the number of trips that you would hope to take in the future or the number of trips that you really think you will be able to take in the future? **[READ LIST]** **[CIRCLE ONE ANSWER ONLY]**	Hope to take ..... 3 Really think I'll take ..... 2 Neither ..... 1 Don't know 8
31.	In general, do you think that you will actually take more or fewer trips than you told us you would take?	Fewer ..... 1 More ..... 2 Same 3
32.	Do you think your answers to the hypothetical questions are good enough for scientists to use to provide good information for fishery management decisions?	Yes ..... 1 No ..... 2 Don't know 8

GO TO Question 34.

DON'T ASK Q33 IF QUESTIONS 11-32 ANSWERED

33. We'd like to know the main reasons why you don't plan to take any **SALTWATER/CHARTER** boat fishing trips next year in North Carolina.
Please answer **yes or no** for each of the following reasons.

[IF Q11 SKIP, READ SALTWATER FISHING TRIPS, IF Q12 SKIP, READ CHARTER BOAT TRIPS]

[READ LIST]

		Yes	No
a.	Gas prices are too high	1	2
b.	Charter fees are too high	1	2
c.	Catch rates are too low	1	2
d.	Too many regulations	1	2
e.	I'm uncertain about my job status	1	2
f.	can't afford the trip	1	2
g.	y family status has changed or is going to change	1	2
h.	'm going to pursue other recreational activities in North Carolina instead	1	2
i.	'm going to pursue other recreational activities outside of North Carolina instead	1	2
j.	'd rather stay home	1	2

EVERYONE ANSWERS 34-37

34. What is the make, model and year of the vehicle that you typically drive for your fishing trips?

a. Make_____ .....__ __

b. Model_____ .....__ __

c. Year_____ .....__ __ __ __

35. How many miles per gallon do you typically get when you travel for your fishing trips?

Miles Per Gallon_____ .....__ __

36. Do you plan to buy a new vehicle during the next 12 months?

Yes..... 1
No **[Skip to Q38]**..... 2
Don't know **[Skip to Q38]**..... 8

37. How many miles per gallon do you think your new vehicle will get?

Miles Per Gallon_____ .....__ __

38.	Our questions are completed. Would you like to receive a summary of the results of this survey?	Yes..... 1 No **[Go to End]** ..... 2 Blank

39. Do you have an email address?

Yes _____ @ _____ **[Go to End]**
No [Go to Q40]

40. What is your mailing address?

Name_____

Road_____

City_____ NC, ZIP..... _ _ _ _ _

END: Thanks for participating in this study.

APPENDIX 4 Responses to Open-Ended Survey Questions

Answers to: "If I were not a Charter/Headboat captain, I would likely be doing . . "

commercial fishing, boatbuilding, landscaping
surveying or engineering work
toolmaker
preaching
retired
(no answer)
don't know
farming
contracting
I cant think of anything else
?
mating on a boat
seabird research, commercial fishing, charter fishing deckhand
private boat captain, commercial boat captain
selling heavy equipment
commercial fisher
building
running a marina
bank robber
my degrees are in accounting and psych; I'd probably be an accountant
(no answer)
I don't know
retired
I've done everything except be a blues musician
stand up comedian
business manager
starving to death, commercial fishing
electrical work
commercial fishing
I worked as an electrical engineer. I hope I don't have to go back.
teaching
commercial fishing
mechanic work
small business owner
commercial fishing
golfing
commercial fishing
(no answer)
still affiliated with the fishing industry

commercial fishing
mechanical, restoring old cars
something to do with boats
I am a full time human resource manager
commercial fishing
retired
sales
building boats
ganeral contractor
commercial fishing, operating ferry or tour boat
hating life, living in another area, probably doing construction work
commercial fishing or construction industry
part time work
(no answer)
general contracting, residential construction
laying brick, tackle store
vetrinary medicine
construction, sales
drugs of alcohol
stock broker
whatever NEDMF and NMF's would allow me to "not much"
retire or manage the restaurant I own
construction, forestry
retire
a politician
(no answer)
marine construction
something to make real money
mechanical engineer
commercial fishing
don't know
commercial fishing
boat repairs, engineer consulting, dive boat charter
I do not know any other business
manual labor
(no answer)
nothing
(?)
unemployed
doing exterminating
don't know
nothing
working in another marine profession
fishing for free; no income from fishing
I am not a for hire captain, I only buy permits so if they ever quit selling them
carpentry
retire
working 40 hours a week job
living on retirement

advertising or bartending
land development real estate sales
building houses
dead
(no answer)
insurance business full time, chartering is part time in 2008
building
going poor
(no answer)
boatbuilding, for hire captain
boat delivery
building houses
boat building
??
(no answer)
retired
boat building
I was a marine fisheries biologist for nc
boat repair, private captain
??
something else in the marine industry
mating on a boat
teaching
commercial fisherman
commercial fishing
commercial full time
commercial full time
alcohol and drugs or some dead end banking/white shirt and tie job
firefighter
(no answer)
?
commercial fishing
not sure
be retired completely
commercial fishing
I work construction work now and work commercial fishing in the winter
police officer
commercial fishing
not sure, never done anything else
hunting/guiding hunts for white tail deer
be a mate
marine repair and maintanence
retired
herpetology-studies or a curator of a zoo
fishing nc marine fisheries
clothing store
nothing
boat deliveries
?

building boats
selling fishing supplies
I also manage a pine plantation/logging operation in the fall/winter in hyde co.
captain - ferry boats
business
my wife asks me the same question
don't know, it's all I have ever done
building contractor
retail sales
commercial fishing or a mate
sales for an internet fish
recreational fishing
real estate development
recreationally fishing
working elsewhere in the boating industry
brain surgery, managing restaurant
doing something on the water; mating, fishing, etc
tackle shop
I don't know
I am also a yacht broker and own a charter boating office/tackle store
tugboat captain, commercial fisherman, or teacher
finance
teaching fishing
commercial fishing
don't know

Answers to: "How would you describe your Charter/Headboat business? "

I'm very lucky, I feel like I have built a very good business with a high return rate
slowly growing repeats, hanging on
minimal
12% off this year
slower than past years
good
not as good as once was
okay
tough!
okay - must be supplemental
30% off
(no answer)
mine is full time but most of our bookings occur in a short season; we have a niche for charters of seven or more passengers
well established; however, business is down with the downturn in the economy
slow due to economic times
good, averaging about the same number of trips each year
good when you can go
getting harder to make a living with all the out of state charter boats taking our people
there are difficult times; we are over regulated; we are becoming endangered
reeling from fuel cost, it is very worrisome; prices went up so fast, and we do not know where it will end up
slow
competitive
too many part time and corporate charter boats losing money at full timers expense
okay, but a struggle
decent but not great
good
hard work, very competitive
fair, but failing
fair
the economy is such that we're just holding on, the economy is sinking us
difficult to make a profit
we have been lucky but it is dwindling all around us.
off in 2008
average
struggling
fun, but one could not make a living doing it without working 365 days a year
part time work
(no answer)
slow due to depressed economy with fuel prices high and everything else
cater to inshore/nearshore clients; offer entire package, lodging, charters, friendly captains
declining across the board
labor of love
strictly part time right now, but had planned to be full time within 5 years. May have to rethink that due to economics
difficult and hard to make a living

families and vacation groups - not experienced offshore fishermen
lots of repeat customers
poor, fuel cost is bad
hard to make a living
very small and slow, but okay!
struggling; like everyone else due to the high fuel cost and other rising cost
struggling to survive to do fewer charters because of economy and gas
stable with high fuel prices putting it in jeopardy
you have to love it
very enjoyable, part time business; it would be hard to make a living solely by charter fishing
good
diminishing because of unlicensed vessels taking passengers for hire and no enforcement
growing yearly, with a lot of loyal customers
light tackle inshore and coastal fishing. Fun for serious fishermen or first timers
suffering
first class with local watermen crew
for a man that owns his own boat, getting worse
slower than past but okay
declining
terrible - down this year because of economy and fuel prices
(no answer)
somewhat adequate, could do better
fair
good
average - could be a lot better
very slow, hard to make a living. I have not come close to a profit this or last year
stable
fledging
one of the best known and largest charter businesses on the coast
a struggle
(no answer)
dying (fast)
(?)
rebuilding
good
fair
(no answer)
struggling due to fuel prices and the economy
right now more of a hobby part time summer employment to help with boating expenses
slowing down due to rising fuel costs
over regulated by NOAA with bag and size
focus on catching deep water bottom fish but selling entertainment
fair, reasonable, successful
slow, business off due to high gas prices
an inshore/nearshore light tackle fishing guide service
slow
the business has been hard - you can't make enough money to pay your overhead
small, part time, fun on the water
family oriented - but still accommodate serious anglers. Total package - waterfront lodging and fishing chargters

fun
slower than a year ago, but maintaining because of website and good repeat customers
sound and exciting
bad
we are lucky to have loyal clients - the business is challenging and less money remains as the expenses continue climbing
not good
good
it is the love of my life to entertain people that want to learn how to fish
was a great business, now so-so
bad
adequate for me - semi retired
in trouble - too many charters - cost of fuel
struggling
on the decline
making a living
rapidly declining
okay
not as healthy as it was
very good if you work hard at it in every aspect
okay, just making a weeks work
slow
slow
very good (?) I bust ass, try hard, and I did not marry wealthy... I have to succeed
good. Good year this year
fatally wounded
quality
I try to bring a good service with fair prices and knowledge
(no answer)
fair to good - 2008 is way down
fair
struggling
every year was good until 2007 then was over crowded out of charter industry
going down hill
headed for some bad times (due to high fuel prices) once a very healthy business
better advertising "out of town" to bring fishermen to the outer banks, shows
it's a living
surviving
a niche market that will probably make it for the foreseeable future
fair
in trouble
getting to be too many boats
good
slow
long hours
down this year by 10%
it is primarily a part time business targeting the younger generation and encouraging release of most species
ten years ago I was fishing 160 days a year in NC and taking my boat to Mexico each spring, now I took on two partners, fish 60 days and work in the woods half the year
1 90' party boat, 2-6 pass charter boats. Tough business, but very positive

stable, but scared with fuel prices
with fuel cost declining
a good business, despite growing competition from part time charter operation
good
as I want it
bad
in decline due to fuel prices
declining
bleak, due to high fuel prices. In order to make a profit, I've had to increase my trip costs and will probably lose trips to smaller boats that can't go offshore safely. I consider myself very lucky, I don't know how captains that have boat mortgages make it
I enjoy taking people out for a good time and being able to catch fish
too many boats
very good
fading
healthy
long hours
down this year, but would attribute to high cost of fuel
fair
good
flourishing, I actively market it
excellent
good

Answers to: "If you could change anything about the NC Charter/Headboat business, what would it be"

lower fuel prices, no saltwater license, fewer part-timers
I would take NC out of federal control, let us manage our own fisheries
no comment
nothing
gas prices, less paper work
in my specific region I would like to see more access to the water, such as public docks and wildlife access areas
big government regulations
farm
reduced fuel costs, so it would be affordable for families on vacation
remove inexperienced "guides"
fuel costs
all of the laws, saltwater fishing license
try to rid ourselves of the idea that all of our parties need or want a box full of fish. Ask them what they want
moratorium on for hire permits issued
less competition
I think things are pretty fair right now
bag limits and fuel cost
if you don't live in nc you don't run charters in nc
don't know
costs, especially fuel costs, I would like to keep fishing affordable for everybody. It is a real pleasure to have a man and his family charter the boat and learn to fish. The coasts are becoming prohibitive for one man to pay for his whole family
have cap/limit
I think that all charter boats should be required to make a profit - not be allowed to take tax losses and still stay in business. I would like clients to experience the fishing without needing excesses (ac, vcr's, dvd's, ice machines) on the boats
limit on for hire vessels
change is inevitable - with the economy and the raise in fuel prices
less paperwork, permits, govt oversight
require more professional standards to get license
have th cg revoke licenses of people who lied on days 0 sea to get a license
cost of fuel and license
(no answer)
if fuel prices went down, the business would come back. Limited entry for for-hire vessels would also help
(no answer)
most groups want enough fish for one meal. The no summer stripers and no red drum needs to be changed
central booking for our fleet
charter boats are no longer viable options for owner/operators unless they are millionaires already
fewer for hire captains
lower permit cost, fuel cost, etc
limit the number of licenses
(no answer)
marinas/gas companies ripping off boaters with gas prices higher at marinas
follow other states inshore regulations (such as sc, fl, la) to improve inshore species
give back our option to sell rec. caught fish, do away with/lessen our tax on boat (commercial) paper work,

licenses, fees
more fish
I would like to see us permit holders to still be allowed to sell our by catch. Grouper/snapper/reef complex fish
reduce fleet
fewer "fringe" competition from people with primary jobs who augment boat costs with occasional charters
fewer restrictions on charter boats (all boats)
stop part timers
lower the number of boats competing for the same groups
a true working water front where for-hire and commercial boats have better access to the public
stop boats from running trips from boat ramps and stop price cutting by part timers
we would all join together and for a group that looks after our interests and way of life, a non-governmental group
have captains work together more
more marine fisheries enforcement, more dock checks
more promoting of the industry
(no answer)
limit licensed vessels
limit entry, make it a little more even; pricing evening out
limited access, more drug testing
decrease cost of business, more state support to promote fishing industry and moritorium on out of state permits
(no answer)
limited access, the operate in NC state are a charter boat should be able to (?) boats
nothing, except too much government regulation on commercial recreational sale of fish
I think computer websites has been very bad for the business
less regulations
(no answer)
more enforcement of fisheries laws
lose the 3 mile striper limitation
fewer boats
fewer boats - no more licenses for hire issued to nonlegacy people
again, less boats, less permits
help with high fuel cost... buck purchase on contract by all boats
continue to allow bag limit sales of fish by charter and scfl license holders
I would stop so many regulations people don't want to fish if they do not have the opportunity to catch anything
let people go fishing for less money - less limit laws, no 3 mile law for striped bass
(no answer)
give it more support from the state
size limits for recreational, make same as commercial
better regulation of license
more boat ramps and parking area
(no answer)
(no answer)
lower fuel costs
blanket coverage licenses should cover all boats
nothing
less federal and nc state regulations
require less permits, licenses and fees that don't benefit charter industry
all the red tape

less permits
we need an organization to bring all of the captains together as a kind of guild that works with conservation and economic issues to work together so we can all thrive and so can the fish
more business
work to get better fuel cost
more access to water
regulate gill nets
hard to make money
a unified charter/headboat association would be helpful for a single voice
nothing
too many regulations
streamlined regulations, based on facts not bureaucracy
owner operators only
too many for hire
get rid of the sheisters
get rid of main fisheries
(no answer)
allow less boats
take out part timers
lower fuel prices
create a moratorium on new for hire permits, with % of income as the determining factor
fewer boats
closely regulate out of state charter boat operators and unlicensed boats taking people for hire
regulations
nothing
the number of people who are running or own a charter boat for a hobby
lees boats, more regulation over out of state charter business
less cheap unexperienced competition
less cheap unexperienced competition
too much to go into here
fewer boats, fuel prices to be comp with farm fuel prices
income requirement, all in or all out
limited entry, % of income required
N/A
less part time boats
(no answer)
(no answer)
less vessels, less permit restrictions, one government office to handle ALL permits, not 20
it's fine
na
not allow boats to be in the business who do not make there sole living off of charter fishing
unknown
more money to run boat on buy boats
(no answer)
I would like to see appropriate representation on the governing bodies
we have self governed ourselves for years. Pay more attention to other areas
keep costs from rising too rapidly; diesel fuel needs to be stabilized
limit the number of boats
nothing
(no answer)

fuel costs
price of fuel
locally, the charter/headboat business should be more united to insure their interest are focused on issues affecting their business, specifically tourism
only sell for hire permits to individuals who have spent at leas 5 years in the industry prior to starting up (mates, etc)
better limits on grouper, vermillion, snappers, and kings, black sea bass
cost of fuel and no long liners
have everyone on the same page - with drug cards - twic cards and permits
limit the number of for hire permits
reduce fuel and charter prices
have jetties
more fish
subsidized fuel prices so we can continue to operate and bring more tourists to nc
?
more stringent education requirements prior to licensing, do away with fuel tax for charter/headboat and commercial boats in NC
I would try to have the chamber of commerce provide free advertising for the industry
more control on who can be a charter boat
limit number of boats, lot of small boat captains have no experience handling boats
remove politics from our industry
(no answer)
that every captain be a make for a certain number of days on a charter or headboat before they can run one. Shocking at the number of captains that have little experience
fewer boats, especially part-time guys
too many in it
n/a
no part time fishermen
limited entry
number of boats with for-hire permits

Answers to question: "How is coastal development influencing your Charter/Headboat business?"

brings more people here but we also have a lot more charter boats here now
it may be helping but...
making it more difficult and expensive
helped it, more people come here
badly - places that used to hold fish don't
the development has helped the charter boats, more people, more trips
not much
(no answer)
I think to an extent, it is helpful, but we must protect the local charm and flavor of the obx!
destroying environment and fish habitat
it brings more people to the beach but with the economy, it's hard to get someone to spend the extra money we have to charge
(no answer)
it has probably helped bring more people, but the types of houses don't encourage people to get out and visit the docks
when the economy was way up, more people had money to spend on fishing trips
it has enhanced business
it is going to make it tough in the with boat ramps
different class of clientele
brings more people to us
it is bringing a different kind of people here - more families, etc
it is not good for the estuarial (fish) growth
hurt it because housing is so expensive - different for middle low income people to rent housing
indirectly, less inshore fish breeding in estuaries is limited now
income of customers much higher a plus
yes - good. Brought more people
it has helped us overall
making it harder to find dockage
more people more business - more people, more pollution
bringing a lot of people to Hatteras, for the fishing and fine beaches
(no answer)
getting people here helps us
none
none I can tell
helping
unknown, most vacation property owners are wealthy enough to own their own fishing vessels though the average family can not afford to visit
brings more people to the coast
good for business
(no answer)
no influence that I'm aware of
more retired people means more boat traffic but also more charters
made it costly to come just to fish; rentals, fuel, food, etc
land and water rights cost too much

"not applicable"
access to the water is too expensive
rental houses and condos are attracting the people who visit our area
(no answer)
not
not much effect
fewer places to dock boats, fewer places to repair them, less access to the public
large houses and people from other areas mooring boat here are increasing, slip rent and slip cost to prices out of reach
overall, a steady increase until 2005
brings more people to beach with more potential customers
more business
helped by bringing more people to the area, greater exposure
good
too much legislation
more people coming to coast increases business but people with borast (?) put more pressure on fish
bring more people to coast to go fishing
decreasing habitat and water quality, taking away resources and disproportionate for people living on coast
making the cost of living too high and more tree-huggers to complain about my way of life
land becoming too expensive to operate fish houses
(no answer)
don't know
brings more people; actually helps business
(no answer)
good for business, more tourists equal more customers, but [increases congestion on] the beach and community
brings more potential clients to the area
detrimental
rentals make it better - hurts to have fewer marinas
more tourists are good but over-regulations and over-permits are killing "the good ol' boys"
killing it. This is becoming the condo coast, most renter bring everything with them. Not many piers
(no answer)
the development would not be so bad if only they would leave in place entertainment for children
it is not
(no answer)
taking away beat slips for private condos
see more recreational boats
was growing but with economy slowed considerably
destroying environment at shoreline to fish hatcheries
(no answer)
(no answer)
don't know
about the same
it's not
not at all
dock fees rising due to high property values
hard to find an affordable place to do business
no impact
the more people that are on the water, the further you have to go to find good fishing and undisturbed habitats

helping
it is changing the way you do business
decreased the number of fish and increased the number of fishermen
none
"not applicable"
more folks are buying into marina so up ownership, more private boats than ever, generating not as many charters available
bring in more income
it should be helping but don't see it
getting harder because expenses keep rising. Dockage is at a premium
should be more charters, but are not
less charters
It has made dockage and hauling out very expensive
hard to tell (the larger you get the bigger the problems and people)
(no answer)
putting too many people - everywhere
it is bringing more people
coastal development is nonexistent due to economy
it has brought a greater number of people here, including more customers and for hire vessels
loss of working waterfront is alarming
bringing an influx of new people to the area, some are assets to the community and some are not
"not applicable"
it brings more people and potential clients for charter fishing
(no answer)
too much development creating too much boating traffic
more high price housing, no place for us
more high price housing, no place for us
everyone builds mansions, buys boats, do not hire captains
lack of access to waterfront/dock space
(no answer)
yes - good
it is bringing customers
more people
no affect
(no answer)
customers are shopping for prices - many more booking offices
not an influence
more people, more charters
(no answer)
high price of fuel concerns me! Families that once booked 3 trips a year now only book 1. I am very concerned
it keeps
mixed
it hurts; private boat owners take friends which eats into charter business
bigger groups to pay for housing/less money to spen leisurely
it's hurting it because of increase in property values, other costs
actually helps business - but too many boats hurts
helping a little
helping
closed beaches to ORV access has prevented customers to come down and fish
longer seasons

unknown
I am not really sure...
there is no marketing promoting fishing from the state
don't know
just an impact on inland fish stocks
more people, more tourism is always good - more development with 2nd home owners and boat owner not good for business
very little impact
increasing business
people come with their own boats or buy boats
it is especially hurting those who must fish commercially as all the fish houses are gone or disappearing
has not been negative or positive
it's helping bring more people here which should increase the number of charters for me
more people are coming to the coast and hopefully that will increase business
less places for people to stay
(no answer)
bring in too many special interest groups
loss of fish stocks
not helped much. The more people, the more new boats in the business
more people fishing their own boat
helps and hurts
more people = more charters
more small boats on water, harder for people doing it for business
it helps
not affected

Answers to question "What do you think the future holds for NC Charter/Headboat business?"

I think it will be good for the ones who put in the effort and change with the times
smaller boats that burn less fuel, the big offshore boats are having a very hard time
no comment
if fuel keeps going up, we're going to be in bigger trouble
continue to drop if our fish stocks don't improve
the future for the small boats looks good, the larger boats will see (fuel and dock fees)
looks very bad
not good
I feel the future is very bleak. I think it will become a thing of the past, unless fuel costs are reduced, we have been forced to price ourselves out of business
the government will run us out of business like they have with commercial fishing
our biggest expense is fuel - our price is dictated by fuel cost - when you talk with people who have been charter fishing for 20+ years and they are not fishing every day - I think it is up in the air - the next 2 years are going to be hard
(no answer)
I am concerned about bag limits for dolphin and some of the bottom fish. Limiting our catch might discourage some of our people from coming. I also think high fuel prices will drive some operators out.
we have got a rocky road ahead of us... fuel prices, poor economy, less dollars in my customer's pockets = less dollars in my pocket
increased competition, decreased fishing, limited opportunities in the industry
not sure, I hope it stays around for guys like me
the sky is the limit, it's all about entertainment
with the rising cost of expenses and fly by night charter guys, it is a bleak outlook for us
don't know
I wish I had a crystal ball; with increasing costs, the future in questionable
uncertain
less profit
expenses getting higher at a faster rate than the value of a day fishing trip the only boats will be those willing to lose money
I think charter fishing will be the last fishery left; no commercial fishing will be going on. Only a few charter boats can make a living; I'm sorry if some people have to leave to make it better for those of us left
with proper leadership it could be okay
does not look good with 4.70/gal diesel fuel and everything going up
if the economy is good, we will be fine. When the economy is bad we suffer
doom, gloom
not very much
I think limited entry will keep the business alive
improved travel to island
the fleet will be boats that are smaller due to fuel prices, they will also have to be more versatile (fish offshore, inshore, bottom) due to lack of parties. I say you will see a 70% decrease in true charter boats within 10 years
I think the future looks good if fuel prices will come down
I don't see much of a future for people trying to earn a living. I think it will continue to serve as a tax write-off for wealthy boat owners and retired business people
many will sell their boats and try to make a living doing something else
not good - with cost of boats, fuel, etc. the average person will not be able to afford charter boat fleet fees

inshore charters will be fine, but offshore charters will slow down drastically because of grouper limits and gas prices
(no answer)
due to increasing costs of gas, slip fees, insurance, marinas - I believe we will see a decrease in the future for the business. I do not see how anyone makes a living in their businesses
people will always want to take fishing trips (hopefully)
it's becoming harder to make ends meet every yea. A decline in the number of boats operating full time, a shift to more smaller operations (6 people center console, no mate)
with the new fish quotas that become effective 1-1-09, bleak!!
I do not see it holding up for small boat owners due to fuel cost and new regulations concerning fish sales and future bag limits of rec fish. Have been fishing my whole life but only for business the last two years
fleet will reduce but inshore fleet increases and the number of unlicensed charters increasing to offset the cost of boat ownership. Full time becoming impossible to make a living
declining fish stocks and increased fuel costs will continue to reduce client as many customers are priced our of offshore trips
rising fuel prices are going to squeeze out a lot of boats, especially larger boats that are paying a full time captain
less people doing it
much smaller fleet due to rising fuel prices
higher cost will kill us, fuel, dockage, and insurance costs will put us out of reach to our customers
with high fuel cost, rising overhead cost and cost of living more and more part time and corporate boats, owner operations are a dying breed
a decrease in the fleet or numbers of charters for a year or so due to economy. Smaller boats and shorter trips due to fuel, overall cost, and fewer customers
fuel prices will chase several to go out of business more will ???
because of fuel cost (if it continues to rise) we can not survive
I see greater difficulty, operating costs increasing, fish stocks decreasing, with more regulations
(no answer)
if economy does not improve (i.e., fuel prices) and the number of licensed vessels is not limited, the industry will not survive
I think that a lot of the core people will stay in it. The people that do not have support/equipment/ability/desire will go out. Desire keeps you in this business, not money
with proper regulations and restriction, it can be a great way to make a living
huge change
fuel and CCA along with irresponsible political decisions will make us jobless
fuel prices and more regulation, it looks real dismal
the small person will eventually be a thing of the past
if the number of boats continues to grow as it has in the past 10 years, I think the future is dim, but I will keep doing it as long as I'm able
I can't answer, doesn't seem to be a future business
(no answer)
don't know
a slow extinction of the owner operators and an increase in privately owned boats, therefore decreasing the fishing quality of a hired trip
tough!
(bad) need less new boats - it should be a business for a living not summer work or jus to pay for some gas
many vessels will go up for sale due to fuel prices, dock rental rats, more boats, and in 2008 many less trips due to more vessels undercharging
not a good future... with rising fuel cost and increased distance to good groups. Way too much local pressure on local fisheries from local boat (private) pushing charters further offshore and increasing cost
a good future if fish stocks are properly managed and regulated in a fair and equitable manner
as long as the government does not regulate me out of business, I feel that there will be people there that want to go fishing

fewer boats will survive
(no answer)
I think if the state doesn't soon help out it is going to go away
aging out
reorganization
very good if the overfishing from trappers are slowed or stopped. Hook and line doesn't create such a burden on fish stocks
it eventually will be one where the "working person" can not survive
(no answer)
doom!
it is declining primarily because of rising costs of fuel, causing the cost of charter trips to increase dramatically
good question, it depends on fuel costs
it will be regulated out of business - also high fuel costs will raise costs of trips out of sight
fuel and other cost are forcing boats out of business
with proposed fishing restrictions and such it will be very tough for many to survive
will see great decrease in boats if gas prices do not come down greatly
with proper regulation and enforcement, a collective effort of conservation among charter captains, and a decline/elimination of inshore commercial fishing, NC has the potential to be as desirable a charter fishing destination as anywhere in the us
continues to be slow unless the state begins promoting us so that we can compete with other states
it will probably go down the drain - also the feds are controlling more areas that you can fish
a steady decline due to economic pressure from development
people will always go fishing - it has been going for a long time and continued growth in the future
it will get tougher to make the business profitable with gas prices and number of charter boats
because of the increased number of boats, more dependable engines and easy to understand navigational equipment and electronics, anyone can go offshore. I see the NC charter/headboat to be a dying industry
one day we will be forced out because of lack of business and stiffer fines and cost of permits will go up
home to survive
more challenges, bureaucratic rules/red tape, additional permits and fees from multiple organizations and fewer operators as it slowly puts more out of business
no future
there will be too may charters if there is no control over the for hire permits
truthfully it depends on the price of fuel
a very hard business to be in and compete in
there is no future for this business, it is over NC Marine Fisheries and NOAA marine fishery has made sure of this
if there is rampant development and increased fuel/energy costs I see downturn
not very bright-the work for a living guys (like me) may get forced out. I'm afraid my son won't be able to make it
not much! Fuel prices go up - business goes down
the cost of operations is becoming prohibitive to growth of the business. Charter fees are reflecting these increases and are limiting our new business
needs to be fewer boats and more owner/operator boats
with continued fuel price increases, rising operating costs, corporation owned charter boats, charter boats operating at a loss, out of state boats, it is a bleak picture for the owner/operator of a charter boat in nc
in the marine fisheries keeps going the way they are we won't be able to keep any fish
politicians and fishery managers will run us out of business
I think the strong will survive because there will always be people who want to fish
very strong if kept to limited entry
it isn't looking good with the high dock fees, high fuel prices, un-navigable inlets
it isn't looking good with the high dock fees, high fuel prices, un-navigable inlets

lets wait and see what happens to fuel prices, WWIII, hurricanes, etc
to get better, tough to make a living - owner/operator cant compete with owner who hires
fisheries reform act took the professionalism out of it. It is dead the MFC killed it
tough with fuel - high end operation may survive better
I think it has a very bright future because all the people moving into the area
more boats and captains
fuel will strongly affect prices, vacationers, therefore I see a significant downturn in number of charters
only those that can keep costs down will survive
(no answer)
if the charter boats can survive for 5 more years all will be fortunate
they will wish out everything that swims over populate the industry and starve each other out. No fish, no fishermen, my prediction
decline due to economy
it is going to be tough until the fuel prices come down, I myself will be looking for new work this winter just so I can pay my bills and feed my family
better advertising - there are still a lot of people in the mid west - ohio, w. va., ill. Who don't know how to reach a good charter capt.
it will get harder because of fuel costs
worse environment for owner/operator
it's questionable; as long as the tax laws allow "hobby boats; it is difficult for owner/operators to make a living
up in the air
hard times because of cost and pressure on the fisheries from increases in unregulated recreational fishing (too many small outboards)
looks pretty good
good
over
people who work hard will be fine, people who don't work
regulations more enforced/strict
again, with the current fuel prices, offshore, big boat charters will be impacted the most due to a more limited number of customers being able to pay the additional cost
I think that the days of 20-25 knot single screw boats that are simple inside are going to be the only ones that will make it; if our national government keeps in the dark and continues to lie about the crude oil truth, then we've all had it anyway...
if they keep dropping the limits and size limits, they will put everybody out of business
no stable due to cost of fuel
at present a recession and fuel make for a dim future
it will get more competitive and harder for true charter fisherman to make a living. Overhead rising at a large rate
with the advent of dependable outboard engines, and the gps, I think that the business will continue to diminish
increased pressure as more people move to the coast
declining with no chance of survival especially with increase in price of fuel
doom and gloom due to fuel prices and arbitrary regulation from groups that have no knowledge of fish stocks or the industry
declining fishery will negatively impact business
if fuel prices continue to rise, or even stay where they are today, private charters and headboat charters will be priced out of reach for the majority of people who visit NC
I am very concerned about the high costs of fuel. I am glad that this is not my primary source of income. I'm probably going to have to really raise my rates, or stop altogether
with fuel and too many boats, very hard to stay healthy
there will be boats dropping every year fuel prices increase

poor if it continues in this way
slow decline of fish until no longer viable
many businesses will go out of business due to the economy
if it can make it through this slowdown, and we can cap the number of people, I would say it will remain stable
bad
hopefully good
good, if we act now
there will be ups and downs
hopefully good

Answers to question: "What specific recommendations would you make to change the Charter/Headboat industry in NC?"

limit emissions
(no answer)
no comment
nothing
remove netting that destroys our coastal hatcheries (look at Florida)
I'm content with the industry - Would like to see fisheries change, such as no inshore nets and enforcement of existing rules
stop big government making more regulations every year
ease up on the permits
reduction of costs of operating. We used to see family groups charter fishing, but with all of the other expenses (cottage rentals, food, etc) it is no longer affordable for most families
(no answer)
limited entry - it is too easy for someone to get a for hire license, anyone with one outboard or bigger boat can get one - when we have to increase our fees to compensate for rising cost it allows someone with less overhead to undercut prices
(no answer)
I think marinas should be more selective about some of the operators they book trips for. Experience and ability to procure a catch are important because with high fuel prices, our clients are paying a premium to go fishing these days
moratorium on for hire captains; everyone and their mother is a "charter captain" underwriting prices; just out there for the fun of it
consider regulations, stricter rules, decrease in fees
I think it is okay right now
a good captain's association; everyone working for a common goal
go back to the way it was when you had to have a NC commercial license to run charters in NC, that stopped a lot of what goes on today in our business
(no answer)
limit the growth of for hire vessels, so the ones already here can survive
limit entry
more wise development
limit on for hire vessels
we don't like rules... don't make more "rules"
limited entry
require more professional standards to get license
random drug tests for all captains and mates enforced
one fishing permit for all fish, not so many licenses. Regulation
(no answer)
not specific ones
stop all net fishing
allowing the tourist to be able to keep enough fish for supper, or to justify the cost of the trip. Also the constant increase in permits, license, etc. for charter boats is ridiculous
(no answer)
fewer tax dollars spent maintaining government surveys and more spent on marketing, resource management, and law enforcement
make it harder to obtain a charter for hire permit
none that I haven't previously mentioned

limit the number of licensed captains
(no answer)
control pollution, control nets that rape the bottom and steal everything
(no answer)
promote with better advertisement concerning fishing off our coast; look at bag and size limit
(no answer)
we have paid our hard earned money for permits, classes, equipment, etc. just like the full time commercial fishermen and we should be allowed to sell our catch to supplement the business
enforce license requirements
require liability insurance for all charter boat/head boat permits thus eliminating some "fringe" competition (those who take a trip to help "pay for their boat" but are really in business
need to work together more to increase demand for fishing
(no answer)
none
don't know
more policies to make sure all charter boats are licensed and have their permits, limit part time charters, add more artificial reefs, allow our for hire license fee to be covered by our commercial fishing license fee
we need to join together to try an protect a way of life that is vital to the local economy. Costs are too high and fewer younger generations don't have much of a chance to pursue this career
(no answer)
(no answer)
(no answer)
(no answer)
limit the number of licensed vessels by proving that 75% or more of their income is from fishing
I think that we have a great economic impact. Localities need to encourage the exposure of fishing to help the business grow. Encourage the promotion of year round fishery we have
more drug testing, limited access
separate charter/headboat into our sector, like it used to be, eliminate the salt water fishing license income requirement for being for hire vessel, new captains serve apprenticeship for at least 3 years
(no answer)
we need more artificial reefs, boats should meet a certain size requirement to go offshore more than 3 miles
less government
I wish I had some
fewer regulations, more fun back in the industry
(no answer)
hire more marine patrol and fisheries enforcement officers to do more enforcement of size limits and bag limits of fish caught on head/charter boats to help maintain adequate future fish stocks in NC
need to invest in the future the blindsided commercial abuse of our fisheries has degraded and continues to oppress our stocks to a point where old and new clients have and are losing faith in the quality of fishing we have to offer
we have enough regulations; they are only enforced on high profile targets; enforcement on smaller part-time vessels would give more integrity to the business
make the license for a limited entry with qualifications
some deregulations is necessary and definitely one place to purchase our permits
more near shore reef building and limit the number of commercial licenses. Too many private boats draw commercial registration
charter/headboats should be required to complete a trip ticket for each trip - this data should be compiled by the state and used in fishery assessments and allocations
slack up on regulations, they are choking the fisherman that depends on this
change 3 mile law for striped bass, no fishing license
(no answer)

support the fleet
make size limits same as commercial
permit qualifications/standards
(no answer)
(no answer)
(no answer)
decrease fees and strict regulations - lower fuel prices
more support from government, reduce tax, or some sort of compensation, especially for full time businesses, cost of fuel, etc
none
increase bag limits, reduce fees and license costs
get legislators educated about onerous rules, support from tourist bureau and require NOAA to manage with real catch data
listen to your captains and crews for fishery issues
reduced gas tax
creation of the advisory committee; everyone needs to work together, many captains are stand alone types; we should work together to better our industry
promotion of tourism
if all the fees that are charged would go back into rebuilding fish stock, this would help
need to set aside docks for commercial and charter boats so they don't have to compete with recreational boats for dock space
need lobbyist for the group - some organization
limited number of charter boats
maybe some tax credits from the state to help offset rising costs, or even supplements. I do not know of may in this industry who are making money, captains are in this business because they love it
unite the charter fleet and help fight the raising of permit costs
the state could advertise more for the fishing and coast, not the mountains
streamline regulations and bring licensing/permit fees back to benefit the industry
too many boats are written off not making money, owner operators only
cap on for hire permits, buy someone out (license)
people that have been fishing in other places tell me some horror story about cheap rates and captains without a clue, lets send them home
keep government out and studies
run, sell, etc
put cap on participants
fuel prices need to come down
find another job!
issue for hire permits based on income and charter history. Make the permit transferable and so give inherent value in each vessel's business
fewer boats
make our voices heard to the governing bodies in the state of NC
marine fisheries should raise more species of fish instead of putting their efforts toward laws and law enforcement
na
limit the entry of charter boats!
stricter regulations on who can charter for hire, too many under-experienced captains out there, anyone can get a license and charter
tax breaks for letting boats use docks, strict regulations, and a NC charter boat list listing recommended boats and areas
tax breaks for letting boats use docks, strict regulations, and a NC charter boat list listing recommended boats and areas
get the hobbyist out first. Full time or "no time"

fuel prices/limited entry sounds good but in reality? What you can catch, keep - limit on drum caught
(no answer)
stop retired, part time charter fishing; damaging to full time operators
there's not much to change; everyone is doing a good job
(no answer)
(no answer)
(no answer)
central union for pricing of fishing trips. The cheap prices are killing the industry
regulate the amount of everything. Let people who know what's going on make the rules, increase safety, eliminate part timers, better enforcement
na
the rich boat owner who has his boat as a charter boat as a tax write off needs to be eliminated by law. You should have to qualify by making 75% or more of your income from charter fishing
(no answer)
don't know
more input from coastal communities
representation on governing boards (marine fisheries and joint commission on seafood and agriculture); the charter industry has grown through the years and has only concerned itself when affected by legislation, we are self governing
keep beach very accessible
license recreational boats and limit the number
limit number of boats, it would help the fish and the environment
none
prove by your taxes you are trying to make a living
no
limited entry
(no answer)
I don't feel real good about making recommendations in regards to this, as I myself have become one of the "part timers" even though I have charter fished here full time since1990. you do what you have to do to get by
have on board surveys done every season both on head and charter boats
reduce fuel prices
have a greater voice in rules and regulations
limit the number of for hire permits - allow us to continue at existing bag limits with no further reductions
there should be an effort by economic (nc) development to form an assoc. to protect the industry
check for illegal charter boats more
more fish closer to shore. Drill for oil off nc coast. Oil rigs attract fish, could then become a year round activity
I support an advisory board where the members are all charter boat captains. Cooperation with other fuel dependent industries to work out some subsidization
I haven't any specific suggestions
more artificial reefs
I would try to provide some tax relief on the fuel costs, they are killing us
limit the number of for hire licenses
advisory panel, people should be able to show how they handle a boat
rid us of the bureaucracy and oppressive regulations
(no answer)
that each boat be designated a number of passengers depending on size
put a cap on it. require a permit only available to people who can document a percentage of income from charter/commercial fishing.
get rid of 3 mile line on striper fishing; if you don't fish for a living, then don't do it
n/a

require regulations hat are stricter / mandatory report of catch and drug testing
limited entry / regulations on 3-mile rockfish season
limited entry

APPENDIX 5 Willingness-to-pay and Recreation Demand Models

Suppose a fisherperson considers a number of recreation sites on each choice occasion. The individual utility from the trip is decreasing in trip cost and increasing in trip quality:

$$(1) \qquad u_i = v_i(y - tc_i - fee, q_i) + \varepsilon_i$$

where u is the individual utility function, v is the non-stochastic portion of the utility function, y is income, tc is the trip cost, fee is the charter/headboat fee, q is site quality (i.e., catch rate), ε is the error term, and i is a member of s recreation sites, $j = 1, \ldots, i, \ldots J$. The individual chooses the site that gives the highest utility:

$$(2) \qquad \pi_i = \Pr(v_i + \varepsilon_i > v_s + \varepsilon_s \quad \forall s \neq i),$$

where π is the probability that site i is chosen. If the error terms are independent and identically distributed extreme value variates then the conditional logit model results. The conditional logit model restricts the choices according to the assumption of the independence of irrelevant alternatives (IIA). The IIA restriction forces the relative probabilities of any two choices to be independent of other changes in the choice set. For example, if a quality characteristic at site i causes a 5% decrease in the probability of visiting site i then the probability of visiting each of the other j sites must increase equally to sum to a 5% increase. This assumption is unrealistic if any of the j sites are better substitutes for site i than the others.

The nested logit model relaxes the IIA assumption. The nested logit site selection model assumes that recreation sites in the same nest are better substitutes than recreation sites in other nests. Choice probabilities for recreation sites within the same nest are still governed by the IIA assumption. Consider a two-level nested model. The site choice involves a choice among M groups of sites or nests, $m = 1, \ldots, M$. Within each nest is a set of J_m sites, $j = 1, \ldots, J_m$. When the nest chosen, n, is an element in M, the site choice, i, is an element in J_m and the error term is distributed as generalized extreme value the site selection probability in a two-level nested logit model is:

$$(3) \qquad \pi_{ni} = \frac{e^{v_{ni}/\theta}\left[\sum_{j=1}^{J_n} e^{v_{nj}/\theta}\right]^{\theta-1}}{\sum_{m=1}^{M}\left[\sum_{j=1}^{J_m} e^{v_{mj}/\theta}\right]^{\theta}}$$

where the numerator of the probability is the product of the utility resulting from the choice of nest n and site i and the summation of the utilities over sites within the chosen nest n. The denominator of the probability is the product of the summation over the utilities of all sites within each nest summed over all nests. The dissimilarity parameter, $0 \leq \theta \leq 1$, measures the degree of similarity of the sites within the nest. As the dissimilarity parameter approaches zero the alternatives within each nest become less similar to each other when compared to sites in other nests. If the

dissimilarity parameter is equal to one, the nested logit model collapses to the conditional logit model.

Welfare analysis is conducted with the nested logit model by, first, specifying a functional form for the site utilities. It is typical to specify the utility function as linear:

$$\begin{aligned} v_{ni}(y - tc_{ni} - fee_{ni}, q_{ni}) &= \alpha(y - tc_{ni} - fee_{ni}) + \beta q_{ni} \\ &= \alpha y - \alpha tc_{ni} - \alpha fee_{ni} + \beta q_{ni} \\ &= -\alpha tc_{ni} - \alpha fee_{ni} + \beta q_{ni} \end{aligned} \tag{4}$$

where α is the marginal utility of income. Since αy is a constant it will not affect the probabilities of site choice and can be dropped from the utility function. Theory suggests that the marginal utility of income is constant on trip cost and fee, but empirical results may indicate that these differ:

$$v_{ni}(y - tc_{ni} - fee_{ni}, q_{ni}) = -\alpha_{tc} tc_{ni} - \alpha_{fee} fee_{ni} + \beta q_{n} \tag{5}$$

The willingness to pay for a quality change (e.g., changes in catch rates) can be measured as

$$WTP(\Delta q \mid ni) = \frac{\beta \Delta q_{ni}}{\alpha} \tag{6}$$

If the coefficients on trip cost and fee differ then we estimate willingness with the weighted average of the marginal utility of income:

$$WTP(\Delta q \mid ni) = \frac{\beta \Delta q_{ni}}{\gamma_{tc}\alpha_{tc} + \gamma_{fee}\alpha_{fee}} \tag{7}$$

where $\gamma_{tc} = tc/(tc + fee)$ and $\gamma_{fee} = fee/(tc + fee)$. Willingness to pay for the elimination of a recreation site from the choice set (e.g., shoaling of an inlet) is

$$WTP(i \mid n) = \frac{\ln\left[(1 - \Pr(i \mid n))^{\theta} \Pr(n) + (1 - \Pr(n))\right]}{\gamma_{tc}\alpha_{tc} + \gamma_{fee}\alpha_{fee}}, \tag{8}$$

where $\Pr(i \mid n)$ is the unconditional probability of choosing site *i* given that nest *n* is chosen and $\Pr(n)$ is the unconditional probability of choosing nest *n*. These welfare measures apply for each choice occasion, in other words, trips taken by the individuals in the sample.

These welfare measures apply for each choice occasion, in other words, trips taken by the individuals in the sample. If the number of trips taken is unaffected by the changes in cost and/or quality, then the total willingness to pay is equal to the product of the per trip willingness to pay and the average number of recreation trips, $\bar{x}$.

If the number of trips taken is affected by the changes in cost and/or quality then the appropriate measure of aggregate welfare must be adjusted by the change in trips. We link the trip frequency

model with the site selection model by including the inclusive value as a variable in the trip frequency model:

$$(9) \qquad x = x\left[IV(c,q;\alpha,\beta), y, z\right]$$

where $x[\cdot]$ is a trip frequency model and z is a vector of individual characteristics that affect trip frequency. These models are typically estimated with count (i.e, integer) data models such as the Poisson or negative binomial models.

Trips under various welfare scenarios can be simulated by substitution of the cost and/or quality changes into the trip frequency model:

$$(10) \qquad x(\Delta) = x\left[IV(\Delta c, \Delta q;\alpha,\beta), y, z\right]$$

The total willingness to pay of a quality change that might affect the number of trips is aggregated over the number of trips:

$$(11) \qquad TWTP(\Delta q_k) = \Sigma_{m=1}^{M} \Sigma_{j=1}^{J_m} \left(\left[\bar{x}_{mj}(\Delta)\right] WTP(\Delta q_k \mid mj) + \left[\bar{x}_{mj} - \bar{x}_{mj}(\Delta)\right] WTP(m \mid j) \right)$$

The first component of the willingness to pay is the product of the average number of trips taken with the quality change and the value of the quality change. The second component of the willingness to pay is the product of the difference in trips and the willingness to pay for a trip to a particular site.