2012

Economic and attitudinal perspectives of the recreational for-hire fishing industry in the U.S. Gulf of Mexico

Michelle Savolainen
Louisiana State University and Agricultural and Mechanical College, msavolainen@agcenter.lsu.edu

ECONOMIC AND ATTITUDINAL PERSPECTIVES OF THE RECREATIONAL FOR-HIRE FISHING INDUSTRY IN THE U.S. GULF OF MEXICO

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Science

in

The Department of Agricultural Economics and Agribusiness

by
Michelle Savolainen
B.B.A., Texas Woman's University, 2007
May 2012

ACKNOWLEDGEMENTS

This project was conducted by the Louisiana State University Center for Natural Resource Economics & Policy and Louisiana Sea Grant College Program. Support for the project was provided by the National Sea Grant Office, the National Oceanic and Atmospheric Administration, and the Louisiana Department of Wildlife and Fisheries. I would like to thank the following individuals and agencies for their time and help in providing guidance, data, and insight into the operations and management of the RFH fishing industry in the Gulf: Christopher Liese, NMFS Southeast Fisheries Science Center; Rita Curtis, Office of Science and Technology, NOAA Fisheries; Page Campbell, Julie Coxe, and Tom Spatz, Texas Parks and Wildlife Department; Jason Froeba and Joey Shepard, Louisiana Department of Wildlife and Fisheries; Corky Perret and Alan McArthur, Mississippi Department of Marine Resources; Kevin Anson, Alabama Department of Conservation and Natural Resources; Beverly Sauls, Florida Fish and Wildlife Conservation Commission; Dave Donaldson and Gregg Bray, Gulf States Marine Fisheries Commission; Kenneth Brennan and Kelly Fitzpatrick, NOAA Beaufort Laboratory, Southeast Fisheries Science Center; Jeanette Dudley and Andy Strelcheck, NMFS Southeast Regional Office; Michael Schuett, Texas A&M University Center for Socioeconomic Research and Education; and, Carol Harding, FedConsulting, Inc., USCG National Maritime Center.

It is my greatest honor and privilege to thank my major professor and mentor, Rex H. Caffey, as well as my other committee members whose incredible guidance made this thesis possible: Richard F. Kazmierczak, Jr., Walter R. Keithly, Jr., Margaret A. Reams, Matthew A. Freeman, and Christopher Liese. Special thanks to Charles A. Wilson and David L. Nieland of Louisiana Sea Grant for their continued support. Also, I am grateful to Marty Chavers and Debbie Worthy of Louisiana Sea Grant and Jackie Chen of LSU Office of Accounting Services who were instrumental in processing all survey payments. My greatest appreciation to the numerous captains who served in several capacities by providing guidance in constructing the questionnaire and those who returned completed surveys. And finally, I would like to thank my parents whose support means everything to me.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Socioeconomic and policy information is important to fisheries management in order to assess potential social and economic impacts of proposed fishing regulations. Previous surveys which collect this type of data for the recreational for-hire (RFH) fishing industry in the U.S. Gulf of Mexico were conducted in 1987 and 1997. The third Gulf-wide survey was conducted in 2010 to update the socioeconomic and policy data available on the RFH industry. More specifically, the survey collected captain, vessel, and trip characteristics, firm and trip financial data, targeted species, and opinions on policy issues and hurricane impacts.

State license information indicated that 3,315 captains were licensed to operate in the Gulf in 2009. Surveys were sent to 2,305 captains between March and June 2010. Overall, 689 responses were received with an approximate response rate of 33 percent. Because survey administration paralleled events of the Deepwater Horizon blowout and oil spill, data was examined for evidence of recall bias through the use of Discriminant Analysis and logistic regression analysis. These assessments attempted to predict when surveys were completed by examining respondent, operating, and financial characteristics. Evidence of recall bias was not found, and no adjustments were made to financial data.

Respondents were categorized using effort and license information into head, charter, and guide boat operating classes. Results of the survey are presented through costs, earnings, and attitudinal profiles for operating classes on the Gulf and state/regional levels. Statistical differences of means between operating classes and states/regions were examined using Analysis of Variance (ANOVA) and Kruskal-Wallis tests. Data and results presented under this study constitute the most comprehensive socioeconomic and policy data currently available on the Gulf RFH fishing industry.

CHAPTER 1. INTRODUCTION AND LITERATURE REVIEW

Coastal communities in the U.S. Gulf of Mexico depend on marine recreational and commercial fishing for employment, income, and tourism. Despite the sizeable catch and participation rates for recreational fishing, most fisheries economics research focuses on the commercial sector, for which more verifiable data are available. Commercial landings totaled 1.4 billion pounds with an estimated dockside value of $629 million in the Gulf in 2009 (Annual Commercial Landings Statistics 2010). Recreational anglers, including 2.8 million Gulf states residents, made 23 million trips and caught 173 million fish in the Gulf in 2009 (Fisheries of the United States 2010). One important part of the recreational sector is the recreational for-hire (RFH) industry.

Federal regulations define the RFH fishing industry in a broad sense. For example, the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) defines charter fishing as, "fishing from a vessel carrying a passenger for hire… who is engaged in recreational fishing" (16 USC 1801 *et seq.*). A subsequent notice in the *Federal Register* in 1989 defines a charter boat as, "a vessel whose operator is licensed by the U.S. Coast Guard to carry paying passengers and whose passengers fish for a fee" (54 FR 29564). Beyond the broad scope of these federal descriptions, standardized definitions for categorizing groups of operations within the industry (i.e., head, charter, or guide boat operations) do not exist. Prior to the advent of state and federal licensing requirements, RFH fishing vessels were classified primarily by payment structure and vessel size. For example, previous studies describe operations that charge for fishing trips on a per person basis as "party boat" or "head boat"[1] operations. Head boats are often larger vessels that have higher passenger carrying capacities. Operations that charge one group of renters a lump sum for chartering a vessel are typically defined as "charter boat" operations. These charter vessels tend to be smaller, often carrying six or less passengers

[1] Herein, "party boats" are referred to as "head boats".

(Ditton, Holland, and Gill 1992). The remainder of this chapter describes previous literature regarding the Gulf RFH fishing industry, as well as the need and objectives for updated economic research.

1.1. Literature Review

Existing literature of the Gulf RFH fishing industry contains a limited number of studies that address the supply side of this sector. The only Gulf-wide studies to date are those supported by the National Oceanic and Atmospheric Administration (NOAA), with the goal of understanding the status of the RFH industry (Ditton, Stoll, and Gill 1988; Holland and Milon 1989; Sutton et al. 1999; Holland, Fedler, and Milon 2000). Subsequent studies based on these NOAA surveys, as well as a few independent efforts, account for the remainder of the literature. The following section describes the two major NOAA studies, as well as additional related research.

1.1.1. First Gulf-Wide Survey (1987-88)

According to Stoll et al. (2002), the first Gulf-wide RFH survey was a culmination of two separate yet cohesive studies administered in 1987 and 1988 (Ditton et al. 1988; Holland and Milon 1989). In the first phase, researchers from Texas A&M University used in-person interviews to sample RFH operators who primarily fished offshore in Texas, Louisiana, Mississippi, and Alabama. The sampling frame was created from 1985 and 1986 vessel databases from the National Marine Fisheries Service (NMFS). During this period, the four states were estimated to have 26 head boat and 210 charter boat operators, for a total of 236 RFH operators. Of these, 17 head boat and 100 charter boat operators were interviewed (Ditton et al. 1988). The second phase, conducted by researchers from the University of Florida, surveyed operators who were active in Gulf of Mexico waters off of the Florida coast, including the Keys (Holland and Milon 1989). This area was estimated to have 70 head boat and 738 charter boat operators, for a total of 808 active RFH operators. Of these, 21 head boat and

145 charter boat captains were interviewed (Holland and Milon 1989). Data from each phase was combined and analyzed.

The first Gulf-wide study investigated head boat and charter boat operations separately, because it was assumed that their distinctive characteristics would lead to different sociological and economic behavior. Data were collected on the vessel level, and analysis focused on major geographic activity centers, general trip characteristics, targeted species, management opinions, and social structure of the industry.

1.1.2. Second Gulf-Wide Survey (1998)

The second Gulf-wide survey was the result of a collaborative study conducted by Texas A&M University (Sutton et al. 1999) and the University of Florida (Holland and Milon 2000) in 1998. The second study followed a period of regulatory activity for the RFH sector, including the implementation of additional federal licensing and permitting requirements. For example, Amendment 2 of the Coastal Migratory Pelagics Fishery Management Plan (FMP) in 1987 established a charter vessel permit for the fishing of coastal migratory pelagic species in federal waters (implementation occurred after the 1988 survey). Similarly, Amendment 11 of the Reef Fish FMP, established in 1996, required a permit for charter vessels retaining catch of reef fish in federal waters (Gulf of Mexico Fishery Management Council 2008). A moratorium was implemented in 2003 on these permits under Amendment 14 of the Coastal Migratory Pelagics FMP and Amendment 20 of the Reef Fish FMP in order to cap the charter fishing effort for these species.

Sutton et al. (1999) conducted in-person interviews with federally-licensed, offshore RFH operators from Texas, Louisiana, Mississippi, and Alabama. At the time, the four states were determined to have 453 licensed RFH operators, including 23 head boat and 430 charter boat operations. Interviews were conducted with 21 head boat and 96 charter boat captains (Sutton et al. 1999). A separate, concurrent survey of operators in Florida (Gulf and Atlantic coasts) was conducted by Holland

and Milon (1999) to allow for a complete data set for the Gulf region. At the time, researchers estimated that there were 69 head boats and 845 charter boats operating in Florida. Of these vessels, 22 head boats and 218 charter boats were included in the sample.

Using the first Gulf-wide survey as a baseline, these newer studies examined how the offshore industry developed since the previous decade by focusing on the social and economic conditions of RFH operations. Questions covered topics such as operator, vessel, and trip characteristics, targeted species and effort, species dependence, business finances, association memberships, and opinions about policy and management. All financial data were collected on the vessel level. The economic impacts and significant changes that occurred in the RFH sector over the 10-year period were partially compared to economic data collected in the first Gulf-wide survey (Sutton et al. 1999).

1.1.3. Additional Research

Supplemental studies were conducted based on data collected from the second Gulf-wide survey. Stoll et al. (2002) performed an economic impact analysis using the software package IMPLAN (IMpact analysis for PLANning) and found that output, incomes, and employment impacts for the charter boat industry in the five Gulf states were $131.0 million, $60.3 million, and 3,116 jobs, respectively. The output, incomes, and employment impacts associated with head boat operations were determined to be $18.5 million, $8.2 million, and 371 jobs, respectively. Another study extracted various typologies of offshore charter and head boat operators, finding a separation between those that relied on their charter fishing business for income and those that were primarily motivated by lifestyle (Norris-Raynbird 2004).

More recent economic data on the RFH industry were collected as an add-on to the Marine Recreational Fisheries Statistics Survey's (MRFSS) For-Hire Survey in the U.S. Gulf of Mexico in 2002-2003 (Liese, Carter, and Curtis 2009). The MRFSS For-Hire Survey captures data from a 10 percent sample of charter boat operators in the Gulf (except Texas which does not participate in

MRFSS) in an effort to estimate charter fishing effort in the Gulf.[2] The economic add-on survey collected charter revenue and expenditure data on the trip level from 2002-2003. Data were collected on captain and vessel characteristics, wages and salary, revenue, overhead costs, and vessel repairs (Liese et al. 2009).

1.2. Limitations of Previous Studies

Analyses from the first and second Gulf-wide surveys are primarily limited to the federal offshore fleet. Though inshore operations were difficult to identify at the time, these studies likely missed a major portion of the RFH industry by not accounting for the economic impacts and operational characteristics of the inshore fleet.

The economic study conducted by Liese et al. (2009) collected extensive financial information for inshore and offshore RFH businesses in the Gulf. The For-Hire Survey sample does not include charter businesses from Texas or head boat operations. Financial estimates could only be updated and provided for charter businesses based on Gulf operations in Louisiana, Mississippi, Alabama, and Florida. This absence of data from each Gulf state renders comparative regional analysis problematic.

1.3. Problem Statement

The lack of recent economic data for the Gulf RFH fishing industry limits the ability to fully determine the economic and social impacts associated with any regulation that may influence business operations. This lag in updated economic and policy data prevents fulfillment of Magnuson-Stevens Act mandates which require use of this data. Specifically, the Act states:

> Conservation and management measures shall… take into account the importance of fishery resources to fishing communities by utilizing economic and social data… in order to (A) provide for the sustained participation of such communities, and (B) to the extent

[2]Though head and charter boat effort was originally collected under a single survey, head boat fishing effort is now collected separately under the NMFS Southeast Head Boat Logbook Program, beginning in 1986 (Diaz and Phares 2004).

> practicable, minimize adverse economic impacts on such communities (16 USC 1801 *et seq.*).

The National Marine Fisheries Service is tasked with managing federal marine fisheries resources and implementing procedures for recommended management actions and policies outlined in fishery management plans (FMPs). These FMPs must follow procedures under the National Environmental Policy Act prior to becoming law (e.g., required to submit environmental/fishery impact statements). The Magnuson-Stevens Act details requirements for these plans:

> Any fishery management plan which is prepared by any Council, or by the Secretary, with respect to any fishery, shall… include a fishery impact statement for the plan or amendment… which shall assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for… participants in the fisheries and fishing communities affected by the plan or amendment… (16 USC 1801 *et seq.*).

The most comprehensive economic and social data for the RFH sector was collected over 10 years ago through the second Gulf-wide survey. Apparent growth in the industry, economic fluctuations, natural disturbances in the Gulf, and the expansion of regulatory actions over the past decade, combined with a paucity of recent RFH economic data, indicate a need for a third comprehensive economic and policy-oriented survey of the RFH sector in the U.S. Gulf of Mexico. Without updated and accurate economic and policy data for the RFH fishing sector, it is difficult to satisfy the Magnuson-Stevens Act mandates as they relate to the economic ramifications of proposed fisheries regulations in the Gulf region. This study helps rectify this situation by collecting new data for all segments of the RFH industry and analyzing it in the context of current policy developments in the Gulf of Mexico fishing industry.

1.4. Objectives

This project aims to provide an updated, comprehensive review of the economic and policy status of the RFH sector in the U.S. Gulf of Mexico. In doing so, the project will develop a baseline

socioeconomic dataset that can be used to analyze future economic, environmental, and policy questions, including those related to natural disturbances and the ongoing regulation of resource utilization in the Gulf. The specific project objectives are:

1. Administer and collect economic, social, and policy data for all segments of the RFH fishing sector through the third Gulf-wide socioeconomic survey, acting as an expanded and updated instrument from the two previous Gulf-wide studies;
2. Identify groups of respondents with relatively homogeneous characteristics, thereby defining operational classes that may be the focus of targeted, management-based economic and policy analysis;
3. Construct costs, earnings, and attitudinal profiles by operational class and state/region; and,
4. Examine data collected for evidence of recall bias as it relates to the Deepwater Horizon/BP oil spill.

1.5. Overview of Thesis

This first chapter provides the project's background and objectives. Chapter 2 details the methodology employed in the creation and administration of the third Gulf-wide comprehensive economic RFH survey, as well as the process used for data analysis. Results of the study are discussed through descriptive analyses in Chapter 3. The potential for recall bias as it relates to the Deepwater Horizon/BP oil spill is addressed in Chapter 4. And finally, Chapter 5 summarizes the project and entails conclusions and any future work anticipated.

CHAPTER 2. METHODOLOGY

Previous surveys of the RFH sector in the U.S. Gulf have provided the only management-relevant data sets for this industry (Ditton et al. 1988; Holland and Milon 1989; Sutton et al. 1999; Holland and Milon 2000; Liese et al. 2009). While these studies have helped to characterize the economic and policy aspects of this sector, the third Gulf-wide survey aimed to develop a more comprehensive regional assessment by collecting socioeconomic and policy information from a representative sample of operations in all five Gulf states. State-based RFH fishing licenses were used as the sampling frame, thereby allowing more extensive data collection from all vessel classes. Whereas the previous Gulf-wide studies relied on a charter boat versus head boat classification regime, the current study utilizes a more intuitive approach based on vessel- and license-specific attributes.

2.1. Sampling Frame and Population Estimation

Establishing a consistent sampling frame that captures inshore and offshore vessels across the five Gulf states in this study proved to be challenging. There was no standardized (in terms of participant definition) or comprehensive source for the number of charter and head boat operations across the Gulf, making it impossible to exactly identify the survey's target population on a Gulf-wide basis. Of all the available state and federal sources, state licensing frames were the most comprehensive sources for estimating the RFH fishing population.

2.1.1. Sampling Frame Using Primarily State Sources

Contacts for the survey sampling frame were obtained from captain or vessel license records for the license year 2008-2009 from Texas (Parks and Wildlife Department), Louisiana (LDWF), Mississippi (Department of Marine Resources), and Alabama (Department of Conservation and Natural Resources). These license sources were not available to previous studies of the RFH sector, as the additional licensing requirements only became effective during the mid- to late-1990s. This newer

sampling frame allows for surveying of all vessel classes and sectors of the industry without regard to inshore or offshore effort.

Florida's state for-hire licenses (managed by the Fish and Wildlife Conservation Commission) are sold for vessels and/or captains and do not distinguish between operations in the Gulf and Atlantic. The National Marine Fisheries Service (NMFS) active for-hire vessel registry was used in place of the state's licensing database as the sampling frame for Florida, because it captured vessels (one sampling unit) operating in the Gulf. State and federal sources were also referenced in efforts to estimate the number of operations over time.

2.1.2. State Sources for Population Estimates Across Time

With state sources, data are available for different spans of time and reflect two units of measurement due to licensing variation between states. Figure 2.1 shows apparent growth in the number of captains and vessels by state from 1980-2009, as new estimates became available from individual states. Estimates are measured as the number of captains in Texas and Louisiana and the number of vessels in Mississippi, Alabama, and West Florida. Some growth observed during the first few years after license implementation was likely due to an increase in compliance with these new requirements. Any growth realized after the effect of compliance was likely experienced in the charter and guide sector as a whole (i.e., head boat population remained relatively stable). Because state sources do not differentiate between head and charter operations in most cases, federal sources were referenced to gain insight on the head boat sector.

After accounting for duplicate contacts in each state, it was conservatively estimated that 3,315 RFH fishing captains were licensed to operate in the U.S. Gulf of Mexico in 2009. Because of the use of vessel-associated databases in some states, this population estimate does not necessarily capture all freelance captains (i.e., captains that do not own or are not associated with a specific vessel), though this group is not expected to be a significant proportion of the overall Gulf RFH industry. This estimate of

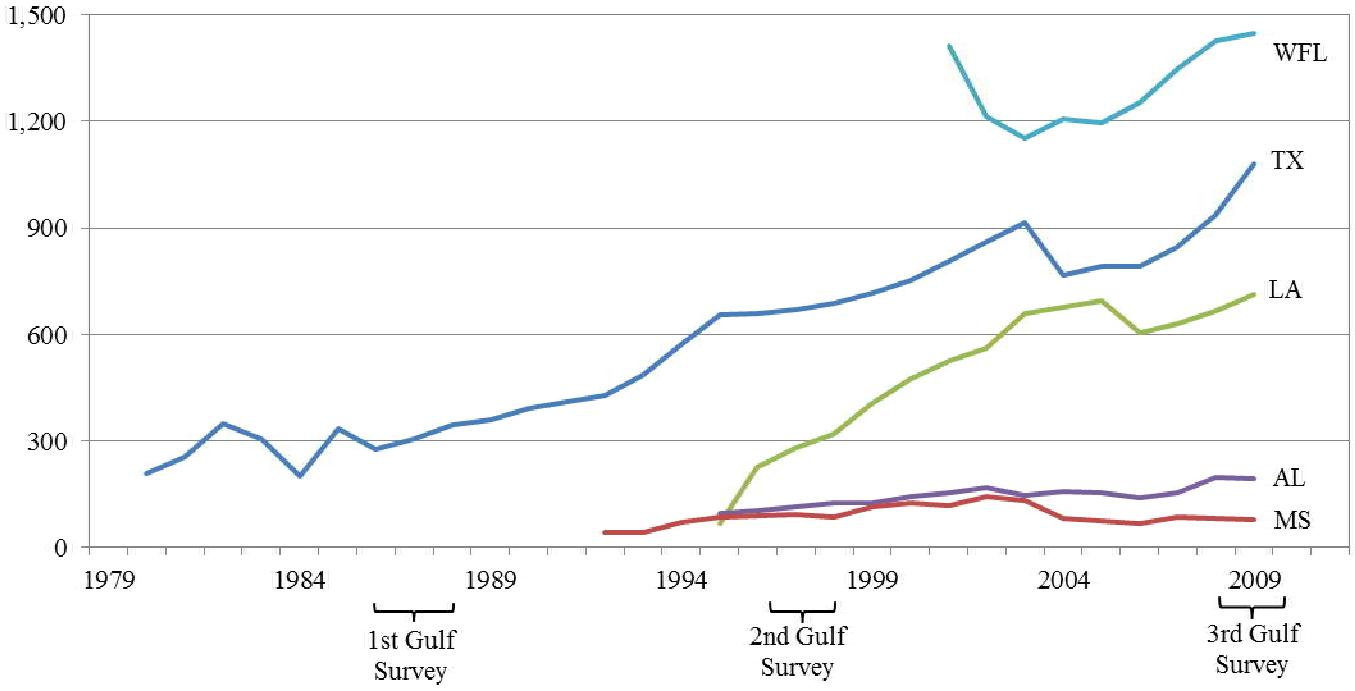


Figure 2.1 Development of State-Based Tracking of RFH Operations in the U.S. Gulf of Mexico, 1980-2009

the number of captains is not directly comparable to population estimates from the other Gulf-wide studies as the previous studies reported the number of vessels. Furthermore, the lack of comprehensive state licensing frames in previous studies would have led them to underestimate, or ignore entirely, the vessels operating inshore (i.e., guide boats). These intrinsic differences in the sampling frames and ability to identify inshore operations suggest caution when comparing data across the three decadal surveys.

2.1.3. Federal Sources for Population Estimates Across Time

Examining the number of vessels reporting to the NMFS Southeast Head Boat Logbook Program from 1986-2009 provides general estimates for head boats in the Gulf (K.B., unpublished data; Donaldson and Bray, unpublished data). Under the NMFS Head Boat Survey, head boats were defined as vessels carrying 15 or more passengers on average per trip and primarily fishing in federal waters (i.e., Exclusive Economic Zone, or EEZ; Kelly Fitzpatrick, NOAA Beaufort Laboratory, personal

communication). It is important to note that estimates from this source are not directly comparable to those from previous Gulf-wide surveys due to differences in the definition of head boats. Based on the NMFS source, there were approximately 85 head boats in 2009, as shown in Figure 2.2. The number of head boats, however, remained relatively stagnant throughout the estimation period and only fluctuated between 69 and 86 head boats.

Estimates for charter and guide boats were examined using the MRFSS For-Hire Survey sampling frame from 2001-2009. The vessel frame used is not an all-inclusive or standalone source for Gulf-wide vessel estimation as it did not include data from Texas for charter vessels and acted solely as a frequency of vessels included in the NOAA survey sampling frame (Gregg Bray, Gulf States Marine Fisheries Commission, personal communication). These estimates are presented alongside head boat estimates in Figure 2.2.

Other federal sources include Gulf charter and head boat fishing permits for reef fish and coastal migratory pelagic fish and the U.S. Coast Guard (USCG) federal for-hire captain license database. As with state sources, attempts at estimating the RFH fishing population from these federal databases were problematic. The federal reef and pelagic fishing permits only captured operations from the offshore

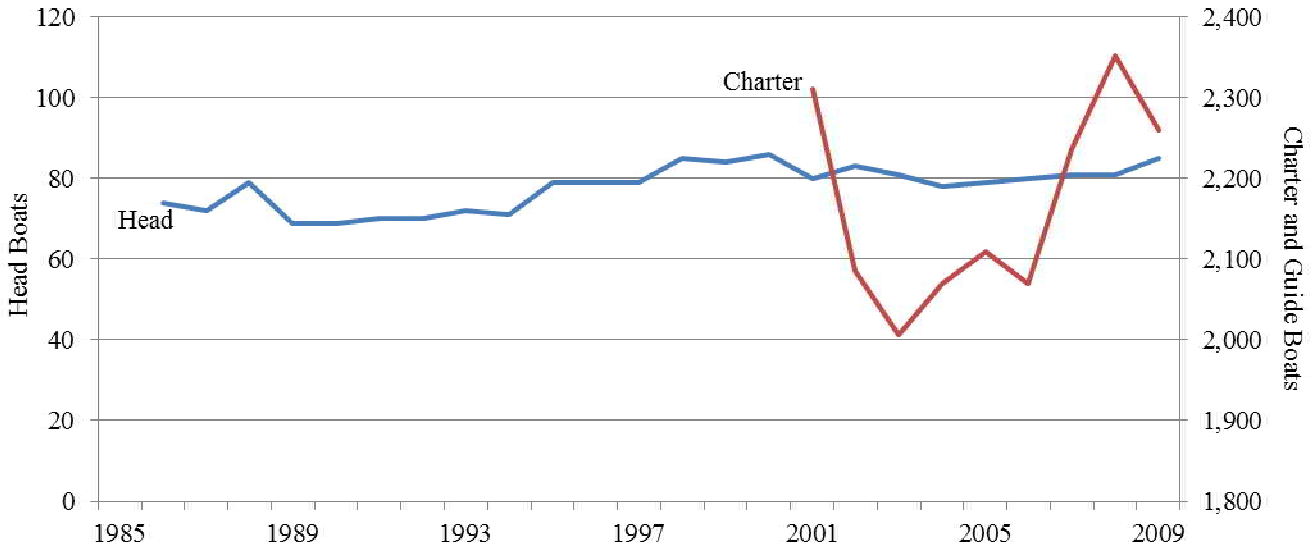


Figure 2.2 Gulf RFH Fishing Vessels (NMFS Head Boat Survey Frames and MRFSS For-Hire Survey)

fleet, and thus, could not act as a standalone source. Furthermore, the permits are under a moratorium and would not necessarily show fluctuations in the number of active operations over time. The final population source examined was USCG federal charter captain licenses, which are not exclusively required for for-hire fishing captains. They are also a requirement for captains that operated diving, sightseeing, and other non-fishing charter trips and did not differentiate between captains operating on the Gulf or Atlantic coasts of Florida.

2.2. Survey Development

Table 2.1 presents major milestones along the survey implementation process. The initial survey instrument was developed from June to October 2009 after a critical examination of the first and second Gulf-wide assessments and a supplementary financial RFH survey (Ditton et al. 1988; Holland and Milon 1989; Sutton et al. 1999; Holland and Milon 2000; Liese et al. 2009). The Tailored Design Method was followed to the extent possible when creating the survey instrument and supplemental documents (Dillman 2000).

2.2.1. Survey Compensation

In the process of designing the survey instrument, the researchers discovered that a similar survey of RFH captains in Louisiana was being developed through the Louisiana Department of Wildlife and Fisheries (LDWF). The agency's intent was to administer a compensation-based survey to Louisiana captains through which payments would be made using federal recovery funding obtained in the wake of hurricanes Katrina and Rita. The LDWF and NOAA studies were merged in order to avoid duplication such that, while overall survey development and implementation were overseen by NOAA, LDWF provided assistance in survey development and funding. Compensation was budgeted for all

Table 2.1 Implementation Overview

TIME FRAME	MILESTONE
Jun-Oct 2009	• Draft survey development • Decision to merge NOAA and LDWF survey efforts finalized along with plans for compensation of all participants
Nov-Dec 2009	• Panel testing for initial draft with 18 captains from 11 RFH associations in each Gulf state
Jan-Feb 2010	• Final postal version completed • Collaboration with Louisiana State University Public Policy Research Laboratory begins in efforts to develop an identical internet survey instrument • Obtain population lists of Gulf RFH fishing captains and vessels from each respective state for 2008-2009
Mar 2010	• Completion of internet survey instrument • Documents and communication distribution schedules completed • Respondent compensation administrative processes in place and ready for testing • Plans for sampling methods finalized: stratified random sampling to be conducted in Texas and West Florida; census to be conducted in Louisiana, Mississippi, and Alabama • Final contact list completed • Trial run of survey for 100 captains in Texas and Florida begins; payments are processed as responses are received
Apr 2010	• Trial run of survey ceases resulting in a 34% response rate; no changes made to survey instrument • Full survey begins and is administered to 2,205 captains from each Gulf state simultaneously; payments are processed as responses are received
Jun 2010	• Administration of full survey ends resulting in a 33% effective response rate • Remaining payments to recipients are processed and completed • Electronic entry of postal survey responses begins
Aug 2010	• Data entry finalized • Data from trial run and full survey merged and analysis begins

respondents Gulf-wide through NOAA and LDWF.[3]

The use of compensation for surveys is neither a new nor novel method of inducing respondent participation. As evidenced by Dillman (2000), "…no response-inducing technique is as likely to improve mail response rates as much as the appropriate use of financial incentives." Specifically,

[3] Respondents were compensated $100 for participation in the survey. Due to the availability of federal hurricane recovery funds in Louisiana through LDWF, some respondents were eligible to receive an additional $100.

monetary incentives have been shown to significantly increase response rates (Church 1993; James and Bolstein 1992); however, increases in the amount of prepaid incentives improve response at a decreasing rate (James and Bolstein 1992; Fox, Crask, and Jonghoon 1988). On the other hand, the promise of a larger amount of compensation after participation in the survey, compared to a smaller amount that is sent along with the questionnaire, has been shown to marginally reduce question nonresponse (Dillman 2000). Moreover, larger amounts of compensation have also been shown to moderately improve the quality of data in terms of respondent effort in answering to open-ended questions (James and Bolstein 1990).

Fisheries surveys often result in low response rates (U.S. Department of Commerce [DOC], National Oceanic and Atmospheric Administration [NOAA] 2007). This low participation is often attributed to survey fatigue, which can be caused by lengthy surveys and over-surveying of the sample population. In a report on the economic impacts of recreational fishing and diving in the Gulf, Hiett and Milon (2002) suggest, "Intensive telephone surveys by fisheries agencies may also be contributing to 'respondent fatigue', resulting in lower cooperation rates" (Hiett and Milon 2002). The report further suggests that economic surveys may be susceptible to low participation in that respondents are uncomfortable providing personal or business financial information. Therefore, compensation can be a viable tool in encouraging responses. For example, in reference to surveying groups associated with Alaskan fisheries, NOAA (2007) states that most mail surveys are discarded "especially if the survey is voluntary and does not provide any monetary or non-monetary reward".

Finally, payment for the collection of biophysical and socioeconomic data are increasingly commonplace in fisheries research, as evidenced by the expansion of fisheries cooperative research programs (National Marine Fisheries Service [NMFS] MARFIN 2011; National Sea Grant, NOAA, and DOC 2011; National Marine Fisheries Service CRP 2011; Hartley and Robertson 2006; Karp et al. 2001). In fact, cooperative research is authorized and funded under the Magnuson-Stevens Act. For example, the Emergency Disaster Recovery Program was enacted in an effort to provide assistance in

restoring Gulf marine fisheries in the years following the major hurricanes of 2005. This program funds and mandates the development of cooperative research to aid in the evaluation of the recovery process (Gulf States Marine Fisheries Commission 2008). Furthermore, compensation to industry members for participation in this research can be a key factor in improving involvement. In a survey of groundfish fishermen in the U.S. West Coast, hypothetical scenarios of cooperative research charter trips were posed along with differing levels of compensation and participation in designing and implementing a research project. Harms and Sylvia (2000) report that the level of compensation and participation in the project significantly affects a fisherman's inclination to assist in cooperative research. This finding is analogous to improving participation rates of a survey with a financial incentive.

2.2.2. Survey Components

From a broad sense, questions captured captain and vessel characteristics, business operating expenses on the trip level, overhead expenses on an annual level, hurricane impacts, and opinions on fisheries management and policy. Several questions were used from the first and second Gulf-wide assessments to allow for as much comparison between studies as possible and were primarily focused on activities and events in the year 2009. Inquiries were divided into seven major sections: General Information, Vessel Level, Firm Level, Hurricane Impacts, Policy and Management, Demographics, and Comments. The third Gulf-wide assessment differs from previous Gulf-wide surveys in that it includes expanded economic and policy sections and a hurricane impacts section. This hurricane section was a major portion of the original LDWF survey and was retained in the collaborative survey instrument.

The first section of the survey (General Information) collected data on the characteristics of vessel captains, including information about ownership and industry tenure, part- or full-time status, other employment activities, and membership in fishing-related organizations. The second section (Vessel Level) included two subsections: Primary Vessel and Typical Trip. "Primary vessel" referred to the primary boat used to generate revenue, recognizing that businesses may use more than one vessel in

their for-hire operations. Targeted species, vessel characteristics, engine specifications, permits used on the boat, and loan, insurance, and other pertinent financial data were also collected. The Typical Trip subsection focused on the characteristics of a typical half and full day trip, such as distance traveled, revenue, operating costs, and captain and crew compensation. A third section (Firm Level) was targeted towards business owners and asked about business structure, number of vessels in the operation, operating costs, and gross revenue.

The fourth section (Hurricane Impacts) targeted individuals whose business experienced financial damages from storms of Category 1 or greater in the previous five years. Questions inquired about impacts from the hurricane that caused the greatest financial damage to their operation, including actual dollar damages, reduction in charter fishing revenue the first year after the storm, and the magnitude of impact on listed infrastructure (e.g., damage to docks and ramps).

The fifth section (Policy and Management) collected data on opinions about (i) current and pending policy actions, (ii) operation and importance of state resource agencies, and (iii) potential short- and long-term problems related to the RFH industry. The last two sections (Demographics and Comments) collected general demographic data about the respondent and posed an open-ended question that allowed the respondent to comment on whatever topic they felt the questionnaire had not adequately covered.

2.3. Instrument Refinement

By November 2009, a draft of the cover letter and questionnaire were ready for external review. Leading and active members of major charter boat associations from each Gulf state were invited to serve on a panel to provide input on the survey. Copies of the draft cover letter and survey were mailed or emailed to 18 captains from 11 RFH associations across the region. Participating organizations from Texas included the Galveston Fishing Charter Association, Texas Coastal Bend Guides Association, Port Isabel and South Padre Island Guides Association, and Port Aransas Boatmen, Inc. Associations

from Louisiana, Mississippi, and Alabama include the Louisiana Charter Boat Association, Mississippi Charter Boat Captain's Association, and Orange Beach Fishing Association, respectively. Panel reviewers from Florida were recruited from the Florida Guides Association, Panama City Boatmen Association, National Association of Charterboat Operators, and Destin Charter Boat Association.

Panelists were asked to provide specific input on survey length and time for completion, appropriateness and clarity of content, and the need for consultation of financial records. Feedback was obtained via phone and in-person meetings and used to refine the draft instruments. Additional input was provided by the Louisiana State University (LSU) Institutional Review Board (IRB) who provided general comments and blanket exemption from the Human Subject Review process (IRB# E4092).

The final postal version of the cover letter and questionnaire were completed in January 2010 after reviewer suggestions were considered and incorporated. Between January and March 2010, an identical internet version of the survey was developed in collaboration with the LSU Public Policy Research Laboratory (PPRL) using internet survey software developed by Qualtrics, Inc. This version of the survey was accessible through a verification page hosted by the LSU Manship School Research Facility and Caspio, Inc., which provided a secure link to the survey that required respondent-specific identification numbers and matching passwords. Data transmitted through the survey website was protected through the use of a hypertext transfer protocol secure (HTTPS) connection.

Additional information provided in support of the survey included contact information for the study leaders, a press release announcing the project, frequently asked questions (FAQ) insert, and payment form. The payment form served several purposes as it asked: whether or not payment was requested; if the respondent was a U.S. citizen (required for LSU vendor system purposes); and, if the respondent wished to receive a copy of survey results. For respondents requesting payment, an Internal Revenue Service (IRS) Request for Taxpayer Identification Number and Certification Form (Form W-9)

was included on the postal version and replicated electronically on the web-based survey.[4] University accounting practices required collection of a valid social security number (SSN) or employer identification number (EIN) from each individual or business, respectively, requesting payment. Concurrent with development of these documents, a trial run of the survey was created along with a specific materials distribution schedule.

2.4. Survey Implementation

The third Gulf-wide socioeconomic RFH fishing survey was administered in 2010 through the Center for Natural Resource Economics and Policy (CNREP, with the sample frame containing captains from Texas, Louisiana, Mississippi, Alabama, and West Florida (including the Keys). Captain and vessel records from each target state indicated that 3,315 captains were licensed to operate in the Gulf of Mexico in 2009. Separate samples were drawn from the known population for the trial and full survey administration efforts.

In keeping with the Tailored Design Method, invitation, cover, and reminder letters were developed alongside guidelines for scheduled survey material distribution (Dillman 2000). The cover letter provided background, purpose, and contact information for the study. To aid in the prevention of responses outside the selected sample, login instructions for accessing the internet version of the survey were accompanied by respondent-specific survey identification numbers and passwords.

2.4.1. Trial Survey

A trial run of the survey (separate from and after the external reviews) was conducted between March and April 2010 using a proportional sample of 100 captains from Texas (n=40) and Florida (n=60). Due to the compensation-based nature of the survey and budget limitations, it was necessary to

[4] References made to the "payment form" are herein inclusive of the IRS W-9 form.

ascertain an estimated response rate for these states, which together account for more than half of all Gulf RFH operations. The trial run also provided an opportunity to identify any remaining structural problems with the questionnaire. Invitation letters were sent on March 10, with the survey packet following on March 15 (Appendix A; Appendix B). This packet included a cover letter, press release, FAQ, questionnaire, and payment form. Reminder letters were sent on March 31, with a deadline to return the survey by April 9 (Appendix C). Surveys that were returned after this date were still accepted (last survey from the trial run was received on April 21). A few calls and emails were fielded, namely from survey recipients that were concerned about the legitimacy of the letter due to the request for the SSN or EIN. The trial run realized an overall effective response rate of 37 percent (n=34), adjusted for respondents deemed unreachable (n=8) due to incorrect addresses and deceased individuals. No changes to the questionnaire were deemed necessary.

To ensure prompt receipt of compensation, payment information was processed immediately upon receipt of the survey and completed payment form. All surveys received in the mail or over the internet were checked for appropriate identification numbers and respondent names. Surveys received in the mail were immediately date-stamped and detached from the payment form for security and anonymity purposes. Postal questionnaires were stored in a secure location, and data received through the internet was securely managed under the supervision of the LSU PPRL as defined by a confidentiality agreement.

Required payment information was electronically entered into a spreadsheet and securely transmitted via fax or hand-delivered on a CD to the LSU Departments of Accounting Services and Louisiana Sea Grant Accounting. Payments were considered priority transactions and were, on average, processed within two weeks. Payment forms (postal and electronic) were stored in secure locations and destroyed upon the termination of the project's payment processing phase. Payments to trial survey respondents totaled $3,000 ($100 per respondent for 30 individuals and businesses requesting payment).

Four individuals completed the survey but did not wish to receive payment. Participants in the external review who requested payment were also compensated at this time, at a total cost of $1,600.

2.4.2. Full Survey

Once the trial was completed, the full survey was implemented simultaneously in all five target states from April to June 2010. Invitation letters were sent to all selected captains on April 16. Survey packets were sent on April 23 (notably, three days after the Deepwater Horizon oil rig exploded) with an original survey deadline of May 31. Reminder letters were sent on May 7, with an extended deadline to receive surveys by June 15. Surveys received after June 15 were treated as if received within this deadline (12 surveys were received up to two weeks after extended deadline).

Through a census of captains in Louisiana (n=681), Alabama (n=165), and Mississippi (n=72), and a 56 percent sample in West Florida (n=795) and Texas (n=592), the full survey resulted in an overall effective response rate of 33 percent (n=655) adjusted for respondents deemed unreachable (n=187) due to bad addresses, deceased individuals, or otherwise. Survey anonymity and payment security procedures were followed as detailed with the trial run. Phone calls and emails were fielded from recipients mainly confirming legitimacy of the project, requesting replacement copy of the survey, or asking for clarification of specific questions.

Payments to respondents totaled $77,900 for the 582 individuals and businesses requesting payment. Eight surveys were returned unfinished online and approximately two were returned incomplete by mail (where at least half of the survey was not completed in these cases). Follow-up attempts were made to contact individuals by phone or email to finish questionnaires for payment, where possible. Approximately 63 individuals completed the survey but did not wish to receive payment. Given that no changes were required following the trial run, responses from the trial run and full survey were aggregated for analysis, leading to a total effective response rate of 33 percent (n=689).

2.5. Survey Response

As demonstrated by Dillman (2000), most responses for the trial run and full survey were received within the first two weeks after sending the questionnaire. The effect of the reminder letter is evident in the administration of the full survey with a local peak in returned surveys in week 11. Figure 2.3 presents the number of responses received for the trial run (weeks 1 to 6) and full survey (weeks 7 to 16).

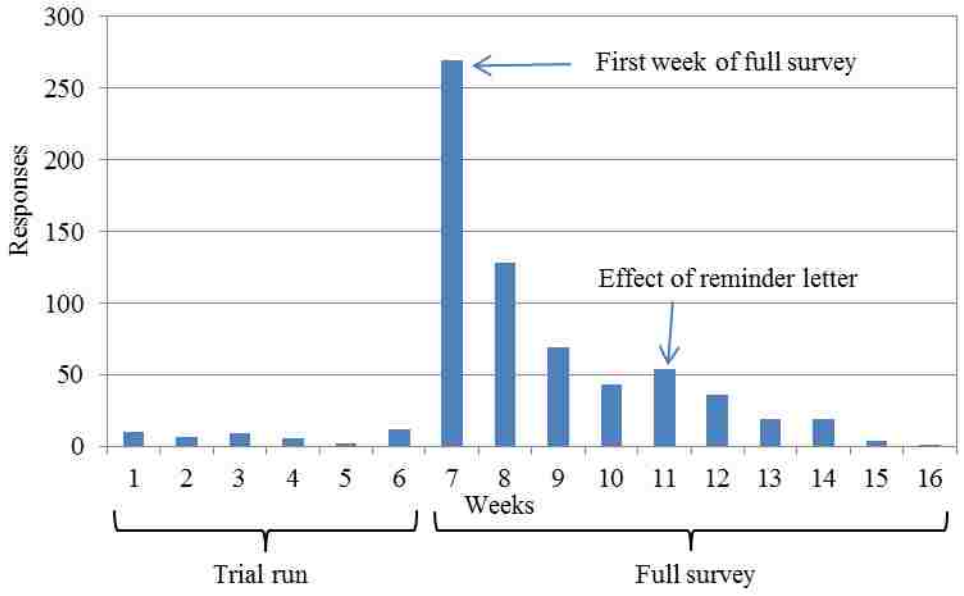


Figure 2.3 Number of Responses by Week for Trial Run and Full Survey

Overall, the survey realized an effective response rate of 33 percent. Notably, Alabama had the highest response rate by state (42 percent), while Florida showed the lowest (24 percent). Despite the higher payments offered to individuals licensed in Louisiana in 2008, the state realized a 38 percent rate which was the median value in this group of five states. This result is not surprising as it follows Dillman's findings of a marginal improvement in responses at a decreasing rate when the amount of financial incentive in increased (2000). Table 2.2 presents a breakdown of the number of surveys sent and received, and effective response rates for each state.

Data entry for surveys received by mail was performed from June to August 2010. To merge this data with internet responses, all postal surveys were electronically entered via the Qualtrics web-based interface. Subsequently, raw data was examined for coding errors and formatted appropriately for analysis in Excel and SAS.

After all surveys were returned and collaboration with the PPRL was complete, a project termination letter was submitted to the PPRL office on January 13, 2011, which requested confirmation that all data associated with the project were deleted. This request was honored and confirmed via email on February 9. All hard copies of payments forms and electronic payment data were also destroyed after payment processing had ceased.

Table 2.2 Survey Response Rates (Trial Run and Full Survey Combined)

State	Sent	Received	Unreachable	Effective Response
Texas	592	189	35	34%
Louisiana	681	247	39	38%
Mississippi	72	23	13	39%
Alabama	165	64	12	42%
Florida	795	166	96	24%
Gulf	2,305	689	195	33%

2.6. Classification Development

It is important at this point to note that official, standardized definitions for head, charter, and guide vessels do not exist across the state and federal levels. Instead, previous researchers have used a variety of designations, often focusing on client payment structure rather than the number of passengers a vessel is licensed to carry. Federal for-hire captain licensing requires that vessels carrying more than six passengers at a time be inspected by the USCG. Vessels carrying six or fewer passengers per trip are not required to be inspected. Instead, captains operating these uninspected boats must, at a minimum, hold an Operator of an Uninspected Passenger Vessel (OUPV), or “six pack”, license.

Previous attempts to classify the RFH industry have focused on a number of vessel- and operator-specific characteristics. Specific approaches have been utilized though which operator descriptors have been derived through typology studies to segregate respondents into homogenous groups. Norris-Raynbird (2004) describes four categories of operators based on socioeconomic and demographic characteristics. Effort-based delineations have also been utilized through which federal permit based populations were subdivided into distinct subgroups (Liese et al. 2009).

Previous Gulf-wide decadal surveys classified respondents by examining payment structure (Ditton et al. 1988; Holland and Milon 1989; Sutton et al. 1999; Holland and Milon 2000). Respondents from these studies were segregated into two groups: charter boat and head boat operations. Businesses that charged a lump sum to charter the entire vessel for a fishing trip were considered charter boat operations. Charter boats were said to typically be smaller in length and have fewer passengers per trip. For the second group, businesses that charged on a per head basis were considered head boat operations. These vessels were considered to be relatively larger in length and run mostly multi-passenger trips (more than six passengers), with as many customers per trip as possible. Anecdotal evidence from the industry (i.e., panel reviewer input, discussions with captains, web-based observation of fees), however, indicates that payment structure has evolved considerably during the past 20 years. Given this change, an alternative classification method was developed for the third Gulf-wide survey using a more intuitive, management-based approach to classify respondents.

Instead of working with customer payment structure, differences in operating conditions of individual businesses were examined. The proportion of type of trips conducted helped characterize key aspects of an operation such as vessel capacity, capability, and business cost structure. The third Gulf-wide survey collected this information in Question 25B as the number of inshore/coastal, offshore (bottom, reef, drift), and offshore (pelagic) trips run in 2009. Inshore vessels are typically smaller in length and have smaller passenger carrying capacities relative to offshore vessels. Vessels that predominantly operate offshore trips (bottom, reef, drift, and pelagic) are designed to handle tougher

operating conditions, especially those that operate in the open ocean. Because of the size difference in vessels between the inshore and offshore fleets, it is expected that offshore operations have higher operating costs and different economic behavior.

Even if a vessel has the ability to operate offshore and carry a higher number of passengers, an operator's license determines how many passengers the boat may legally have on board. The USCG handles federal licenses for RFH captains operating in federal waters. Four types of licenses are available: operator of uninspected passenger vessel (OUPV), OUPV limited, limited Master, and 100 tons Master. The OUPV licenses are for captains operating uninspected vessels only, while the limited Master and 100 tons Master allow for operation of uninspected and inspected vessels. According to federal licensing requirements, vessels that are uninspected may hold no more than six passengers, while vessels that carry more than six passengers must be inspected by the USCG (USCG National Maritime Center 2010). Therefore, examining the average number of passengers per trip for the offshore fleet provides another difference in business operating activities.

RFH firms responding to the survey were categorized using the average number of passengers per trip, effort, and vessel size. For the purposes of this study, a head boat operation was defined as a firm whose primary vessel carries more than six passengers on average per trip (i.e., a USCG inspected vessel). A charter boat operation was defined as a firm whose primary vessel carries six or fewer passengers on average per trip (i.e., uninspected vessel) and primarily conducts offshore fishing trips. Similar to charter operations, a guide boat operation was defined as a firm whose primary vessel carries six or fewer passengers per trip, is approximately 28 feet or less in length, and primarily fishes inshore (more than 75 percent of trips).

The number of survey responses that could be grouped into the head, charter, and guide categories combined using the definitions above totaled 600, as shown in Tables 2.3 and 2.4. Eighty-nine survey responses had missing data for the variables required to separate the observations or had indicated that they did not operate in 2009, and, therefore, could not be used in the analysis.

Table 2.3 Greatest Number of Categorized Sample Responses by State and Operating Class (n=600)

SAMPLE	Head	Charter	Guide	Total
Texas	3	20	142	165
Louisiana	2	31	179	212
Mississippi	1	10	5	16
Alabama	14	16	26	56
West Florida	13	52	86	151
Gulf-wide	33	129	438	600

Table 2.4 Estimated Distribution of State Recreational For-Hire Populations Across Head, Charter, and Guide Boat Operations Based on the Distribution of Sample Responses (N=3,315)

POPULATION	Head	Charter	Guide	Total
Texas	19	124	882	1,025
Louisiana	6	100	575	681
Mississippi	5	45	22	72
Alabama	41	47	77	165
West Florida	118	473	781	1,372
Gulf-Wide	189	789	2,337	3,315

2.7. Usable Sample and Limitations

To ensure that the same fleet of vessels was considered for all variables examined, only respondents who provided data on all the relevant captain, trip, and vessel characteristics were retained in the analysis. Although it would be valid to also use partial responses to build the analysis under the assumption that the sample responses reflect the true population parameters, the amount of data available allowed for this more restrictive interpretation of a usable response. The analysis was further restricted to responses from business owners and operation of the primary vessel. Under these restrictions, the final usable sample for financial and operational analyses totaled 400 responses.

Results are reported using the "rule of three," with analysis presented only when a variable contained three or more observations. This commonly employed rule promotes the anonymity and

confidentiality of responses, but at the cost of either response aggregation across categories or the dropping of variables from the analysis. In this study, for example, variables such as the number of deck hands used or half day trip characteristics are not directly reported in some vessel categories due to insufficient observations. Where possible, data are reported for each state; however, some states were combined due to the low number of responses. Data for head boats are combined for the Texas, Louisiana, Mississippi, and Alabama region, as well as for charter and guide boats for the Mississippi and Alabama region.

2.8. Testing for Significant Differences in Operating Characteristics and Costs and Earnings Assessments

One-way Analysis of Variance (ANOVA) testing was used to simultaneously evaluate unweighted means for statistically significant differences in SAS (Fisher 1970). ANOVAs are based on three assumptions. First, data should be independent, which was achieved through random sampling and assumed for each ANOVA described in this chapter. Second, the specified model's residuals should follow an approximately normal distribution, which was tested with the Shapiro-Wilk statistic (Shapiro and Wilk 1965). The ANOVA is typically a robust test, where the Type I error is only marginally affected if the normality assumption is not met. The Type I error, however, has the potential to be greatly affected under platykurtic distributions (i.e., non-normal distribution with negative kurtosis) with a small sample size. Therefore, in instances where at least one group or state/region exhibited a platykurtic distribution, results of the ANOVA are presented along with findings from a Kruskal-Wallis test. Kruskal-Wallis is a nonparametric test analogous to the ANOVA, except that it does not require the assumption of normality (Kruskal and Wallis 1952). And finally, the third condition for an ANOVA assumes homogeneity of variance between groups and is verified using Levene's test for homogeneity (Levene 1960). Under circumstances where this assumption was not met, results using a Welch F test are presented (Welch 1951). To work around the violation of one or two of the ANOVA's assumptions

(and, therefore, the possibility of biased p-values), results from multiple tests are reported where necessary in order to provide reasonable conclusions, especially where tests confirm one another's findings. A significance level of 0.05 was used for all tests unless otherwise noted.

2.9. Testing for Significant Differences in Attitudinal Assessments

Each policy was tested for statistically significant differences between operational classes on the Gulf level using an ANOVA and Kruskal-Wallis test (Fisher 1970; Kruskal and Wallis 1952). In cases where the ANOVA deemed a model significant at $\alpha=0.05$, a Tukey post-hoc test was conducted to determine which pairs were statistically significant (Tukey 1953). In cases where the Kruskal-Wallis test found a model to be significant at $\alpha=0.05$, pairwise tests using Wilcoxon-Mann-Whitney were used to determine which pairs were statistically significant using an adjusted rejection level of α / number of pairwise comparisons (i.e., 0.05/3=0.0166; Wilcoxon 1945; Mann and Whitney 1947; Elliott and Woodward 2009).

CHAPTER 3. SURVEY RESULTS

Results of the 2010 RFH fishing industry survey are presented by operating class on the Gulf and state/regional levels. Major sections include vessel and trip operating characteristics, costs and earnings of an average firm, and attitudinal assessments on issues and policy actions germane to the industry. Although the tables in this chapter comprehensively present the collected data, the text highlights only the most statistically or qualitatively important aspects of the data.

3.1. Primary Vessel and Trip Characteristics in 2009

Vessel operating conditions are directly reflected in observations of vessel characteristics, business capital structure, and trip attributes. As expected, differences in vessel specifications and trip characteristics emerged between head, charter, and guide operations due to their unique operating environments. For example, because head and charter boats typically operate in offshore (i.e., rig-reef and pelagic trips combined) and federal waters (i.e., exclusive economic zone, or EEZ), these primary vessels are typically larger in length and horsepower than guide boats. Overall, comparisons of averages across the three operation types were of anticipated magnitude and direction. Results for this section are presented as weighted averages in Tables 3.1 and 3.2. Further statistics, such as the median, standard deviation, and confidence interval, are provided for each variable in Appendix D on the Gulf and state/regional levels.

3.1.1. Head Boat Operations

Head boats are the largest in length and total horsepower among the Gulf RFH fishing fleet. These vessels average 54.7 feet and 891 HP Gulf-wide, and are similar in both the Texas to Alabama and West Florida regions. The majority of annual trips were run on a full day basis, with a smaller portion run as half day and overnight/multiday trips. Partly because of the way the operations were defined, head boat respondents reported carrying more than 13 passengers on average per trip, and all

Table 3.1 Overview of Primary Vessel and Trip Characteristics of an Average Gulf Firm by Operating Class in 2009

	Head n=20	**Charter** n=87	**Guide** n=292
Vessel Characteristics			
Length (ft)	54.7	32.6	22.0
Total horsepower	891	582	197
Percent outboard	0%	47%	94%
Number of engines	2	2	1
Age of vessel in 2009	18	18	8
Age of vessel at time of purchase	10	10	2
Vessel Operation			
Percent part-time operators	10%	34%	46%
Percent owner-operators	58%	77%	81%
Number of trips	108	82	86
Per head payment structure	34%	6%	4%
Percent full day	78%	67%	67%
Percent half day	17%	30%	33%
Percent overnight/multiday	5%	2%	0%
Percent inshore/coastal trips	10%	17%	98%
Percent rig-reef trips	84%	64%	2%
Percent pelagic trips	6%	19%	0%
Percent in EEZ	81%	68%	3%
Full day trip	**n=20**	**n=85**	**n=271**
Number of full day trips	83	46	60
Trip distance (mi)	64	69	37
Trip duration (hours)	10	9	8
Vessel fuel consumed (gal)	145	80	19
Passengers	13.1	4.8	3.0
Percent using deck hands	100%	63%	5%
Deck hands	1.5	1.0	0.9
Half day trip	**n=10**	**n=56**	**n=184**
Number of half day trips	37	55	46
Trip distance (mi)	31	26	22
Trip duration (hours)	6	5	5
Vessel fuel consumed (gal)	76	32	12
Passengers	14.6	4.6	2.9
Percent using deck hands	100%	52%	3%
Deck hands	1.5	1.0	1.0

Table 3.2 Overview of Primary Vessel and Trip Characteristics of an Average Gulf Firm by Operating Class and State/Region in 2009

	Head		Charter				Guide			
	TX, LA, MS, AL	**WFL**	**TX**	**LA**	**MS, AL**	**WFL**	**TX**	**LA**	**MS, AL**	**WFL**
	n=12	n=9	n=12	n=11	n=22	n=42	n=105	n=100	n=23	n=64
Vessel Characteristics										
Length (ft)	56.8	53.9	28.4	31.6	35.5	33.4	22.4	22.6	22.4	21.1
Total horsepower	887	892	396	532	572	643	203	227	182	171
Percent outboard	0%	0%	58%	82%	24%	40%	95%	98%	94%	91%
Number of engines	2	2	2	2	2	2	1	1	1	1
Age of vessel in 2009	19	18	19	10	22	19	7	7	8	11
Age of vessel at time of purchase	8	10	11	4	13	10	2	1	2	3
Vessel Operation										
Percent part-time operators	9%	11%	83%	27%	37%	21%	45%	57%	40%	39%
Percent owner-operators	65%	56%	67%	73%	91%	79%	80%	75%	92%	86%
Number of trips	89	115	52	75	48	98	85	71	91	99
Per head payment structure	19%	40%	0%	0%	10%	8%	5%	6%	1%	1%
Percent full day	71%	81%	73%	89%	59%	63%	73%	85%	35%	50%
Percent half day	16%	17%	26%	5%	36%	36%	27%	14%	65%	50%
Percent overnight/multiday	13%	2%	1%	6%	5%	2%	0%	1%	0%	0%
Percent inshore/coastal trips	11%	10%	16%	6%	25%	17%	99%	99%	99%	97%
Percent rig-reef trips	76%	87%	72%	46%	63%	67%	1%	1%	1%	3%
Percent pelagic trips	13%	3%	12%	48%	13%	16%	0%	0%	0%	0%
Percent in EEZ	91%	77%	58%	92%	65%	67%	0%	5%	1%	3%
Full day trip	**n=11**	**n=9**	**n=11**	**n=11**	**n=21**	**n=42**	**n=103**	**n=93**	**n=17**	**n=58**
Number of full day trips	69	88	34	63	29	49	60	68	39	55
Trip distance (mi)	78	59	91	105	62	58	38	44	34	32
Trip duration (hours)	10	10	9	11	9	9	8	8	8	8
Vessel fuel consumed (gal)	176	134	81	109	99	71	20	24	22	15
Passengers	13.1	13.1	4.8	5.1	5.1	4.7	3.2	3.2	3.1	2.6
Percent using deck hands	100%	100%	55%	73%	85%	60%	5%	6%	0%	3%
Deck hands	1.5	1.4	1.0	1.0	1.1	1.0	1.0	1.0	0.0	-
Half day trip	**n=4**	**n=6**	**n=5**	**n=2**	**n=17**	**n=32**	**n=65**	**n=43**	**n=20**	**n=56**
Number of half day trips	37	37	50	-	22	63	42	18	72	56
Trip distance (mi)	33	31	22	-	26	26	21	30	19	20
Trip duration (hours)	6	6	5	-	5	5	5	5	5	4
Vessel fuel consumed (gal)	64	79	19	-	44	30	12	16	13	10
Passengers	16.0	14.3	4.2	-	5.0	4.5	3.2	2.9	3.3	2.6
Percent using deck hands	100%	100%	20%	-	69%	53%	2%	5%	0%	4%
Deck hands	1.5	1.5	-	-	1.0	1.0	-	-	0.0	-

respondents reported using deck hands on trips. Operations in the Texas to Alabama region ran an average of 89 trips annually, while operations in West Florida averaged 115 trips. A one-way ANOVA was used to test whether there was a statistical difference in the annual number of head boat trips between these two regions. Annual trips were not found to be statistically different across the two regions, $F(1,19)=2.04$, $p=0.169$.

Though customer payment structure has historically been a defining factor for head boats, respondents reported running only 34 percent of trips on a per head payment basis, an unexpectedly low portion. Based on respondent averages, the majority of annual trips were operated using the traditional "charter payment" structure where one group was charged a trip fee. Operations in West Florida reported running a larger portion of trips on average on a per head basis (40 percent) compared to the Texas to Alabama region (19 percent), though the difference between regions was not found to be statistically significant, $F(1,19)=2.41$, $p=0.137$. Not only was the normality assumption not met, but the dependent variable is bounded (between 0 and 100 percent); therefore, a two sample Wilcoxon-Mann-Whitney nonparametric test was also used and found the difference between regions to not be statistically significant. Using the EXACT statement under PROC NPAR1WAY in SAS calculates the exact two-sided p-value, $S=119.00$, $p=0.153$.

The percent of part-time operators for business owners in the head boat sector has traditionally been low. In the survey, part-time operators were defined as those grossing less than 50 percent of earned income from RFH fishing operations. Only an average of 10 percent of business owners operated on a part-time basis Gulf-wide.

Head boats typically target offshore species and fish in federal waters, largely due to vessel size and consumer demand. An average of 84 percent of trips in the Gulf targeted rig-reef species, such as grouper (*Serranidae*) and snapper (*Lutjanidae*), while only 10 percent targeted inshore species and 6 percent pelagic species. Overall, 81 percent of these annual trips were run in the EEZ.

3.1.2. Charter Boat Operations

Charter boats are typically smaller in length and horsepower than head boats, with an average primary vessel length of 32.6 feet and 582 HP. The average number of passengers per charter trip was expected to be smaller than head boats, partly as a function of how the groups were defined. Charter operations were defined as those carrying six or fewer passengers, and thus, the averages reflect this restriction. Charter operators also report using deck hands on a smaller portion of trips (63 percent) relative to head boat operators (100 percent).

Charter operations ran an average of 82 trips during 2009. The annual number of trips for the four states/regions ranged between 48 and 98 trips, and most were run on a full day basis. On average, 67 percent of annual trips were conducted as full day, 30 percent as half day, and 2 percent as multiday/overnight. In line with expectations, a low portion of trips were run on a per person customer payment basis (6 percent) on the Gulf level. Only the Mississippi to Alabama and West Florida regions reported any trips being run on a per head payment structure, though the proportion was low at 10 and 8 percent, respectively.

The percent of part-time charter operators ranged between 21 and 83 percent in the individual states and regions, but an average of 34 percent Gulf-wide. Notably, a surprisingly higher proportion of respondents from Texas reported operating part-time relative to the other three areas.

Charter effort was similar to head boats, where trips were primarily conducted offshore (i.e., rig-reef and pelagic combined). While most charter operators in the Gulf reported targeting rig-reef species, Louisiana operators targeted almost the same proportion of rig-reef and pelagic species, with 92 percent of trips being conducted in the EEZ.

3.1.3. Guide Boat Operations

Guide boats are the smallest and newest vessels in the Gulf RFH fishing fleet, though they appear to account for the largest portion of the population. The average primary vessel was 22.0 feet.

Total horsepower is naturally the lowest in the fleet, with 197 HP for mostly outboard engines (over 90 percent in each state and region).

The number of annual trips averaged 86 in 2009. The number of trips was not found to be statistically significant between head, charter, and guide boat operations at the Gulf level, $F(2,397)=1.30$, $p=0.273$. The normality assumption was not satisfied for the ANOVA; therefore, a Kruskal-Wallis test was used and also concluded that the number of trips across the three operating classes was not statistically significant, $H=4.709$, 2 d.f., $p=0.095$. Very few of the annual trips were run on a per person payment basis, with the highest estimate of 6 percent in Louisiana. Full day trips were the most operated type of trip in Texas and Louisiana for guide operations; however, half day trips appear to be the primary type in the Mississippi to Alabama region, while full and half day trips were operated equally in West Florida. Only 1 percent of trips in Louisiana were run as overnight trips, while operators in other states did not report any of this type.

As anticipated, averages indicate that guide boats carry a fewer number of passengers per average trip than charter boats, though both operations use primary vessels categorized as USCG uninspected (six or fewer passengers). Very few trips were reported to have a deck hand on board due to the small size of the vessel and operation, as these are primarily one captain, one vessel businesses as indicated by the high percent of owner-operators Gulf-wide for this operation class.

3.2. Firm and Primary Vessel Costs and Earnings in 2009

Larger vessels, such as head boats, were expected to have higher capital expenditures, while generating greater amounts of revenue, costs, and net income to the owner. Revenue includes trip fees and tips and is reported on the trip and annual levels. Operating expenses, such as the cost of labor, fuel, and trip supplies, are reported on the trip level, as well as on the annual level. Other expenses reported on an annual basis include insurance, vessel maintenance, overhead, loan payments, and vessel investments and upgrades. As with the vessel and trip characteristics, financial estimates are restricted

to business owners and the primary vessel. Results for this section are presented as weighted averages in Tables 3.3 and 3.4 on the Gulf and state/regional levels, respectively. Further statistics, such as the median, standard deviation, and confidence interval, are presented in Appendix D.

3.2.1. Head Boat Operations

Largely due to the size and more sturdy design of head boats, these vessels are the most expensive of the RFH fishing fleet. The average fair market value for head boats was $315,150. Though averages of fair market value show some depreciation from the purchase price, it should be noted that this value was self-reported by respondents (Question 19), which required their interpretation and internal calculation of the vessel's depreciation. Because of the large capital expenditure, most vessels in the Gulf had an outstanding loan valued at over half the value of the vessel, with an average outstanding loan of $215,519 at the end of 2009. It should also be noted that under the conditions of this table, liabilities subtracted from assets will not generate equity since the outstanding loan describes a smaller subset of individuals who indicated having a loan on the vessel at the end of 2009 (Question 21B). In other words, the outstanding loan on vessel describes the average outstanding loan amount for those who had an outstanding loan amount.

The majority of boats were insured, and those that were insured were covered for an average of 96 percent of the value of the vessel. The average limit of coverage was 100 percent in the Texas to Alabama region. Percent coverage was calculated as the ratio between the total limit of coverage for the vessel's hull, engines, and equipment to the vessel's purchase price.

Revenue and variable expenditures were examined on the trip level for the primary vessel. The main source of revenue came from trip fees, followed by tips. For those operations offering full day trips, average trip fees were highest in the Texas to Alabama region at $2,145, while trip fees totaled $1,772 in West Florida. Fuel and oil constituted the largest operating expenditure, followed by crew labor and trip supplies. Fuel costs for a typical full day trip averaged $535 in the Texas to Alabama

Table 3.3 Overview of Costs and Earnings of an Average Gulf Firm by Operating Class in 2009

	Head n=20	**Charter** n=87	**Guide** n=292
Balance Sheet			
Assets – Vessel market value	315,150	67,341	23,166
Vessel purchase price	342,641	91,912	30,166
Liabilities – Outstanding loan on vessel	215,519	51,606	19,690
Percent of vessels with loan	59%	46%	41%
Equity – Equity in vessel	205,243	49,247	16,637
Percent of vessels with insurance	90%	91%	92%
Percent insurance coverage	96%	102%	112%
Vessel Operation			
Full day trip	**n=20**	**n=85**	**n=271**
Trip fee	1,871	979	518
Tips	250	93	61
Crew labor (if used)	131	93	58
Fuel and oil	431	240	68
Bait	52	44	33
Tackle	32	22	13
Ice	22	19	8
Net operating income to owner per trip	1,452	689	455
Half day trip	**n=10**	**n=56**	**n=184**
Trip fee	1,242	556	370
Tips	150	54	43
Crew labor (if used)	74	60	71
Fuel and oil	224	100	45
Bait	36	23	21
Tackle	19	12	10
Ice	12	9	7
Net operating income to owner per trip	1,028	435	329
Annual Cash Flow			
Inflow – Trip revenue (fees, tips)	229,830	75,825	45,495
Outflow – Total	162,740	53,405	19,514
Crew labor cost	13,260	4,120	85
Fuel and oil	44,814	15,851	5,101
Cost of other supplies (bait, ice, tackle)	10,949	5,971	4,137
Insurance	7,294	2,807	1,273
Regular maintenance	9,186	3,172	1,038
Overhead	52,395	14,924	4,988
Loan payments	21,251	4,082	1,985
Annualized investments since vessel acquired	3,590	2,478	908
Net income to owner (annual)[1]	67,090	22,420	25,981
Net income to owner (per average trip)[1]	621	273	302
Net income to owner (annual)[2]	160,806	49,882	36,174
Net income to owner (per average trip)[2]	1,476	630	409

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table 3.4 Overview of Costs and Earnings of an Average Gulf Firm by Operating Class and State/Region in 2009

	Head		Charter				Guide			
	TX, LA, MS, AL	**WFL**	**TX**	**LA**	**MS, AL**	**WFL**	**TX**	**LA**	**MS, AL**	**WFL**
	n=11	n=9	n=12	n=11	n=22	n=42	n=105	n=100	n=23	n=64
Balance Sheet										
Assets - Vessel market value	308,553	317,778	55,875	56,727	77,170	70,679	23,167	24,036	21,810	22,697
Vessel purchase price	367,404	332,778	69,000	76,818	85,438	102,369	30,288	31,840	25,194	29,427
Liabilities - Outstanding loan on vessel	152,962	217,250	60,750	38,000	61,601	53,215	19,811	20,747	17,775	18,926
Percent of vessels with loan	67%	56%	33%	64%	32%	48%	49%	41%	40%	31%
Equity - Equity in vessel	165,123	221,222	35,625	32,545	60,264	54,207	15,620	17,397	15,469	17,374
Percent of vessels with insurance	94%	89%	100%	100%	87%	88%	90%	92%	84%	95%
Percent insurance coverage	100%	94%	114%	99%	115%	97%	104%	108%	108%	125%
Vessel Operation										
Full day trip	**n=11**	**n=9**	**n=11**	**n=11**	**n=21**	**n=42**	**n=103**	**n=93**	**n=17**	**n=58**
Trip fee	2,145	1,772	1,150	1,197	975	893	514	538	570	501
Tips	274	241	79	116	104	90	63	69	53	53
Crew labor (if used)	116	136	91	115	90	89	50	73	-	-
Fuel and oil	535	394	266	300	278	213	68	76	96	58
Bait	48	54	47	49	33	44	44	31	39	20
Tackle	28	33	15	37	24	20	13	14	15	12
Ice	30	19	16	30	15	19	7	9	11	8
Net operating income to owner per trip	1,662	1,376	834	814	652	634	445	471	461	454
Half day trip	**n=4**	**n=6**	**n=5**	**n=2**	**n=17**	**n=32**	**n=65**	**n=43**	**n=20**	**n=56**
Trip fee	1,363	1,217	525	-	589	547	377	410	374	349
Tips	155	150	54	-	52	56	52	49	37	35
Crew labor (if used)	53	78	-	-	61	59	-	-	-	-
Fuel and oil	198	229	58	-	122	96	44	54	51	41
Bait	50	33	17	-	16	24	27	20	22	16
Tackle	24	18	7	-	13	13	9	12	10	9
Ice	13	12	6	-	9	9	6	10	7	7
Net operating income to owner per trip	1,181	996	476	-	439	429	342	356	320	310

(Table 3.4 continued)

	Head		Charter				Guide			
	TX, LA, MS, AL n=11	**WFL** n=9	**TX** n=12	**LA** n=11	**MS, AL** n=22	**WFL** n=42	**TX** n=105	**LA** n=100	**MS, AL** n=23	**WFL** n=64
Annual Cash Flow										
Inflow - Trip revenue (fees, tips)	240,052	225,758	52,086	107,581	58,125	78,777	46,190	42,268	41,098	47,644
Outflow - Total	169,542	160,030	32,561	67,335	43,626	57,826	20,001	18,894	20,077	19,351
Crew labor cost	10,289	14,444	1,818	6,408	3,545	4,351	102	122	0	49
Fuel and oil	51,031	42,338	9,339	24,884	14,885	15,837	5,024	5,010	4,523	5,326
Cost of other supplies (bait, ice, tackle)	10,578	11,097	2,517	9,442	3,369	6,650	4,956	3,782	4,481	3,428
Insurance	7,853	7,072	2,134	2,927	2,995	2,921	1,605	1,002	1,012	1,132
Regular maintenance	14,952	6,889	3,246	3,091	3,535	3,099	986	950	810	1,192
Overhead	47,445	54,366	8,350	10,068	11,053	18,428	3,999	4,941	6,744	5,915
Loan payments	22,515	20,748	3,677	4,431	2,458	4,430	2,554	2,065	1,824	1,305
Annualized investments since vessel acquired	4,879	3,077	1,480	6,085	1,786	2,111	775	1,022	682	1,004
Net income to owner (annual)[1]	70,510	65,728	19,524	40,246	14,499	20,951	26,189	23,375	21,021	28,293
Net income to owner (per average trip)[1]	792	572	375	537	302	214	308	329	231	286
Net income to owner (annual)[2]	168,154	157,880	38,411	66,848	36,326	51,939	36,107	33,355	32,093	38,841
Net income to owner (per average trip)[2]	1,765	1,362	751	855	621	553	415	465	357	369

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

region and $394 per trip in West Florida. Net income to owner per full day trip averaged $1,662 in the Texas to Alabama region and $1,376 in West Florida.

Though trip characteristics and financial data were only collected for full and half day trips, anecdotal evidence from industry leaders suggest that trip fees and expenditures for overnight trips are typically 2.2 times the amount of trip fees and costs for full day trips. As such, trip characteristics and financial data are not reported for overnight trips; however, revenue and costs for these trips are included in the calculations under the annual cash flow section in Tables 3.3 and 3.4.

Net income to owner is determined by subtracting annual outflow from annual inflow. Inflow included fees and tips from full day, half day, and overnight trips. Expenditures accounted for under total annual outflow include labor cost for deck hands and the cost of fuel, supplies, insurance, regular maintenance, overhead, loan payments, and annualized investments and upgrades since acquirement of the primary vessel.

For an average head boat operation in the Gulf, total annual revenue from fees and tips averaged $229,830, while average annual outflow totaled $162,740; therefore, the average net income to owner was $67,090. In order to examine a standardized measure of net income to compare firms from different operating classes and states/regions regardless of the type of trip (i.e., full day, half day, or overnight/multiday), the net income to owner per average trip was calculated as the annual net income to owner divided by the annual number of trips. This per average trip net income averaged $621.

The first set of estimates for net income to owner on the annual and trip levels accounts for all variable and fixed costs of the firm. In some cases, these calculations generate negative values indicating that some firms are operating with negative net returns. The second set of estimates for net income to owner, however, account for only variable operating costs, such as fuel, crew labor, bait, tackle, and ice. These calculations generate only positive, non-zero values for net income on the annual and trip levels. The average net income to owner using this calculation is $160,806 annually on the Gulf level and $1,476 per typical trip.

3.2.2. Charter Boat Operations

Since charter vessels are typically smaller in length and power than head boats, it naturally follows that they are less expensive, as reflected in the average vessel purchase price ($91,912) and fair market value ($67,341). Unlike the head boat sector, estimates indicate that less than half (46 percent) of charter vessels had an outstanding loan in 2009. For those with a loan, the average outstanding loan was for more than half the value of the vessel. Similar to head boats, almost all charter boats were insured (91 percent). The average limit of coverage was 102 percent of the purchase price of the vessel. Estimates over 100 percent potentially include coverage for aftermarket investments to the vessel, such as upgrades to engines, electronic equipment, and the hull and deck. Estimates may also include insurance covering the replacement value of the vessel. Limit of coverage for liability was collected separately but is not reported here.

Average charter trip fees were lower compared to head boats; however, head boat trips remain the cheaper alternative on a per person basis between these two types of operations for full and half day trips. The average full day charter trip fee was $979, and $556 for a half day trip. The two largest operating expenses were fuel and crew labor. As with head boats, fuel expenses outweighed labor costs by more than double on average in each state and region. Net operating income to owner per full day trip averaged $689.

Average annual charter revenue from fees and tips was not even half the estimated values for head boat operations, though Louisiana operations appear to have grossed considerably high revenue, calculated at $107,581. This estimate is likely a function of higher trip fees than in other areas and a relatively high number of full day trips annually. Other states and regions ranged between $52,086 and $78,777. No statistical differences, however, were found between states for annual gross charter revenue, $F(3,83)=2.12$, $p=0.105$. Because the normality assumption was not met and one of the regions exhibited a platykurtic distribution, a Kruskal-Wallis test was used, which also concluded that there were no statistical differences in inflow between states/regions, $H=5.27$, 3 d.f., $p=0.153$.

Annual expenditures on the Gulf level averaged $53,405. On the state/regional level, average annual expenditures ranged between $32,561 (Texas) and $67,335 (Louisiana). These estimates were examined for statistical differences between states/regions. The initial ANOVA used to test for differences indicated that no statistical differences were present, $F(3,83)=2.41$, $p=0.073$. Because the normality assumption was not met with one region exhibiting a platykurtic distribution, a Kruskal-Wallis test was performed, which showed that at least one pair of states/regions was statistically significant, $H=8.54$, 3 d.f., $p=0.036$. SAS does not provide a direct method for conducting post-hoc tests to specifically determine which states/regions are significant. Elliott and Woodward (2009) suggest performing pairwise Wilcoxon-Mann-Whitney tests using exact *p*-value calculations and a Bonferroni adjusted hypothesis rejection criterion (significance level divided by the number of pairwise tests conducted). Six pairwise tests were conducted between the states/regions with a rejection criterion of 0.0083 (0.05/6=0.0083). Only one test showed a statistical difference between states/regions for average annual expenditures, which was found between Texas and Louisiana, $S=176.00$, $p=0.0056$.

Annual net income to the owner on the Gulf level averaged $22,420, and ranged between $14,499 (Mississippi and Alabama) and $40,426 (Louisiana) on the state/regional level. Welch's ANOVA was first used to test for statistical differences between states/regions, because the data had heterogeneous variance between tested groups. This test did not find statistical differences in annual net income to the owner between states/regions for charter operations, $F(3,26)=0.49$, $p=0.689$. Since the normality assumption also was not fulfilled, a Kruskal-Wallis test was conducted to confirm results and did not find a statistical difference between the tested groups, $H=1.49$, 3 d.f., $p=0.685$.

3.2.3. Guide Boat Operations

Primary vessels for guide boat operations are the smallest and had the lowest capital expenditures of the three types of RFH fishing operations in the Gulf. Reported fair market value for guide boats averaged $23,166. Responses indicate that less than half of vessels had an outstanding loan

(41 percent). As with the head and charter boat sectors, almost all guide boats were insured (92 percent). For all states and regions, the limit of coverage exceeded 100 percent of the purchase price of the vessel. These estimates over 100 percent can include aftermarket upgrades to the vessel or may include insurance covering the replacement value of capital equipment.

In most cases, full day trip fees were about half the amount of charter fees. Average full day trip fees ranged from $501 (West Florida) to $570 (Mississippi and Alabama) in the four states and regions. Because very few guide trips used deck hands, crew labor is not reported in the Mississippi to Alabama and West Florida regions. Though estimates for fuel expenses were low compared to head and charter operations, fuel costs were the highest operating expenditure for guide boats, estimated at $68 per typical trip. As anticipated, the cost of trip supplies for bait, tackle, and ice were relatively similar between charter and guide boat operations. This result was expected due to the operations running trips with a similar number of passengers on average. Net operating income to owner per full day trip was similar among states and regions, averaging between $445 (Texas) and $471 (Louisiana).

Gross annual revenue from fees and tips averaged $45,495, while total annual expenditures averaged $19,514. The largest annual expenses were incurred with fuel, trip supplies, and overhead. The lowest annual expenditure was crew labor as guide boat operations from each state or region had few or no hired crew. After accounting for annual inflow and outflow, guide boat operations realized an estimated net income to owner of $25,981. Welch's ANOVA (used because of violation to homogeneous variance assumption) determined that the average annual net income to owner was statistically different between the head, charter, and guide operations (in at least one pairwise comparison), $F(2,46)=3.33$, $p=0.0445$. A Tukey post-hoc test was conducted to specifically determine which pairs were statistically different. While average annual net income to owner for charter and guide operations were not found to be statistically different ($p=0.706$), head boat operations were significantly different from both charter and guide boat operations (head vs. charter $p=<0.0001$, head vs. guide $p=<0.0001$). Because the normality assumption was also violated, a Kruskal-Wallis test was conducted

and found that at least one pair of groups tested was statistically significant, H=7.69, 2 d.f., p=0.021. When pairwise Wilcoxon-Mann-Whitney tests were conducted using exact p-value calculations and a Bonferroni adjusted hypothesis rejection criterion (0.05/3=0.0167), none of the pairs were found to have a statistical difference though the head and charter comparison was very close to being significant (head vs. charter p=0.0171, head vs. guide p=0.0261, and charter vs. guide p=0.1161). Because the Kruskal-Wallis and Wilcoxon-Mann-Whitney tests also assume homogenous variance between groups, the p-values may be biased enough to inflate Type I error and not produce accurate results. P-values from Welch's ANOVA may be the least biased of these tests.

3.3. Attitudinal Profiles

The 2010 survey collected respondents' opinions regarding current and pending policy issues (Question 52), as well as potential problems facing the industry (Question 48). In this section, responses are first examined for Question 52 and then Question 48.

3.3.1. Gauging Opinions on Current and Pending Policy Actions (Question 52)

Question 52 gauges opinions on policy issues using a five-point Likert scale, where values are assigned for each option. "Strongly oppose" is assigned as 1, "moderately oppose" is 2, "neutral" is 3, "moderately support" is 4, and "strongly support" is 5. The "don't know" option is examined and reportedly separately. Averages are examined for each policy action. These policy issues include the expansion of artificial reefs, coastal restoration projects, marine sanctuaries, and petroleum platforms, offshore wind farms, open-loop liquefied natural gas terminals, offshore aquaculture, state- and federal-based fisheries stock assessments, regulatory discards based on fish size, federal fisheries observers on charters, mandatory and voluntary log book reporting for charters, use of electronic vessel monitoring systems, and limited entry and catch share management. Averages for each policy are examined by operational class on the Gulf level in Table 3.5 and state/regional level in Appendix E. Statistically

significant differences between means are examined using ANOVA and the Kruskal-Wallis nonparametric test at the 0.05 level of significance. The standard deviation, coefficient of variation (CV), and proportion of "don't know" responses are reported in addition to the Gulf and state/regional means in Appendix E.

As anticipated, certain policy issues drew more support across operational classes in the Gulf than other issues (though statistical tests were not performed between issues, only between operational classes). For example, as shown in Table 3.5, the two most supported policy issues are the expansion of artificial reefs and coastal restoration projects. With 1 representing the lowest amount of support and 5 being the greatest support, these policy issues show average support at 4.39 and higher. Other issues with relatively high support across operating classes include the expansion of petroleum platforms, offshore wind farms, and state-based stock assessments, while limited entry as a tool for fisheries management averaged relatively high for head boat operators. Some of the lowest levels of support were concerning issues related to catch share management. Specifically, average support ranged between 1.62 and 1.96 for the unlimited accumulation of catch shares through sale or transfer, and from 1.95 to 2.30 for the sale or transfer of catch shares. As shown in Tables E.1 to E.13 in Appendix E, these catch share issues also had some of the greatest levels of "don't know" responses and CV estimates by operating class and state/region. These estimates may indicate a relative indecisiveness or lack of exposure to these potential policies facing the industry, as well as a need for further outreach to the RFH sector.

Results of the ANOVAs, Kruskal-Wallis, and subsequent tests are presented in Tables 3.6 and 3.7. Differences in means are also reported in these tables where a statistically significant difference was found with the respective test. The ANOVA and Kruskal-Wallis tests successfully identified and agreed on which issues showcase significant differences in levels of support between operational classes. Results from the respective post-hoc tests, however, are inconsistent for 3 of the pairwise comparisons (out of a total of 30 pairwise tests).

Table 3.5 Summary of Means for Question 52 by Operating Class

	Head		Charter		Guide	
Current or Pending Policy Issue	n	Mean	n	Mean	n	Mean
Expansion of artificial reefs	33	4.81	127	4.77	415	4.65
Expansion of coastal restoration projects	30	4.47	124	4.39	423	4.62
Expansion of marine sanctuaries	33	2.59	125	2.88	412	3.34
Expansion of petroleum platforms	33	3.99	125	3.48	416	3.23
Offshore wind farms	29	3.87	112	3.73	359	3.65
Open-Loop Liquefied Natural Gas (LNG) Terminals	29	2.54	106	2.88	353	2.61
Offshore aquaculture	31	2.99	114	3.02	360	3.19
State-based fisheries stock assessments	33	4.09	122	3.72	396	4.12
Federally-based fisheries stock assessments	33	3.11	124	2.72	392	3.28
Regulatory discards based on fish size	30	2.77	117	2.76	363	3.38
Federal fisheries observers on charters	33	3.35	126	2.56	396	2.60
Mandatory log book reporting for charters	33	3.54	127	2.34	420	2.20
Voluntary log book reporting for charters	33	3.23	126	3.15	419	3.09
Use of electronic vessel monitoring systems	33	3.00	125	1.84	398	1.95
Limited entry as a tool for fisheries management	32	3.79	121	3.07	368	2.79
Catch shares for commercial fisheries	30	2.91	112	2.35	334	2.74
Catch shares for the charter boat sector	29	2.55	116	2.17	342	2.39
Sale or transfer of catch shares	27	2.30	116	1.95	331	2.23
Unlimited accumulation of catch shares through sale or transfer	29	1.74	116	1.62	323	1.96

Table 3.6 Summary of ANOVA and Tukey Post-Hoc Test Results for Question 52 on the Gulf Level

	ANOVA			Tukey Post-Hoc P-Values			Mean Differences		
Policy	d.f.	F	p-value	Head vs. Charter	Head vs. Guide	Charter vs. Guide	Head - Charter	Head - Guide	Charter - Guide
Expansion of artificial reefs	2, 572	4.68	0.0097*	0.9524	0.1636	0.0210*	-	-	0.12
Expansion of coastal restoration projects	2, 574	3.87	0.0215*	0.9245	0.2063	0.0449*	-	-	-0.23
Expansion of marine sanctuaries	2, 567	11.28	<0.0001*	0.2339	0.0007*	0.0018*	-	-0.75	-0.46
Expansion of petroleum platforms	2, 571	4.95	0.0074*	0.6720	0.0576	0.0403*	-	-	0.25
Offshore wind farms	2, 497	0.40	0.6718	-	-	-	-	-	-
Open-Loop Liquefied Natural Gas (LNG) Terminals	2, 485	0.61	0.5416	-	-	-	-	-	-
Offshore aquaculture	2, 502	1.57	0.2100	-	-	-	-	-	-
State-based fisheries stock assessments	2, 548	1.92	0.1481	-	-	-	-	-	-
Federally-based fisheries stock assessments	2, 546	6.02	0.0026*	0.9558	0.2654	0.0031*	-	-	-0.56
Regulatory discards based on fish size	2, 507	14.33	<0.0001*	0.8859	0.0511	<0.0001*	-	-	-0.62
Federal fisheries observers on charters	2, 552	2.21	0.1107	-	-	-	-	-	-
Mandatory log book reporting for charters	2, 577	14.44	<0.0001*	0.0002*	<0.0001*	0.2078	1.20	1.34	-
Voluntary log book reporting for charters	2, 574	0.22	0.8019	-	-	-	-	-	-
Use of electronic vessel monitoring systems	2, 553	8.64	0.0002*	0.0003*	0.0002*	0.9243	1.16	1.05	-
Limited entry as a tool for fisheries management	2, 518	6.46	0.0017*	0.0474*	0.0019*	0.2740	0.72	1.00	-
Catch shares for commercial fisheries	2, 473	1.79	0.1678	-	-	-	-	-	-
Catch shares for the charter boat sector	2, 484	0.61	0.5440	-	-	-	-	-	-
Sale or transfer of catch shares	2, 471	1.05	0.3507	-	-	-	-	-	-
Unlimited accumulation of catch shares through sale or transfer	2, 465	3.79	0.0232*	0.9920	0.2812	0.0345*	-	-	-0.34

* Significant at α=0.05

Table 3.7 Summary of Kruskal-Wallis and Wilcoxon-Mann-Whitney Test Results for Question 52 on the Gulf Level

	Kruskal-Wallis			Wilcoxon-Mann-Whitney Exact Pairwise P-Values			Mean Differences		
Policy	d.f.	H	p-value	Head vs. Charter	Head vs. Guide	Charter vs. Guide	Head - Charter	Head - Guide	Charter - Guide
Expansion of artificial reefs	2	13.38	0.0012*	1.0000	0.0738	0.0009**	-	-	0.12
Expansion of coastal restoration projects	2	13.21	0.0014*	0.5713	0.0104**	0.0023**	-	-0.15	-0.23
Expansion of marine sanctuaries	2	21.98	<0.0001*	0.0971	0.0002**	0.0005**	-	-0.75	-0.46
Expansion of petroleum platforms	2	12.13	0.0023*	0.5823	0.0153**	0.0048**	-	0.76	0.25
Offshore wind farms	2	0.45	0.8001	-	-	-	-	-	-
Open-Loop Liquefied Natural Gas (LNG) Terminals	2	0.94	0.6253	-	-	-	-	-	-
Offshore aquaculture	2	3.17	0.2047	-	-	-	-	-	-
State-based fisheries stock assessments	2	2.16	0.3397	-	-	-	-	-	-
Federally-based fisheries stock assessments	2	10.93	0.0042*	0.8111	0.1570	0.0015**	-	-	-0.56
Regulatory discards based on fish size	2	25.83	<0.0001*	0.6681	0.0232	<0.0001**	-	-	-0.62
Federal fisheries observers on charters	2	4.37	0.1127	-	-	-	-	-	-
Mandatory log book reporting for charters	2	22.67	<0.0001*	0.0003**	<0.0001**	0.0887	1.20	1.34	-
Voluntary log book reporting for charters	2	0.70	0.7034	-	-	-	-	-	-
Use of electronic vessel monitoring systems	2	12.76	0.0017*	0.0007**	0.0005**	0.4807	1.16	1.05	-
Limited entry as a tool for fisheries management	2	13.10	0.0014*	0.0246	0.0003**	0.1302	-	1.00	-
Catch shares for commercial fisheries	2	3.89	0.1429	-	-	-	-	-	-
Catch shares for the charter boat sector	2	1.60	0.4502	-	-	-	-	-	-
Sale or transfer of catch shares	2	3.24	0.1983	-	-	-	-	-	-
Unlimited accumulation of catch shares through sale or transfer	2	9.29	0.0096*	0.9952	0.1185	0.0050**	-	-	-0.34

* Significant at α=0.05

** Significant at adjusted rejection level (α/number of pairwise tests, 0.05/3=0.0166; Elliott and Woodward 2009)

The largest differences in levels of support between operational classes were found for the following policies: mandatory log book reporting, use of electronic vessel monitoring systems, and limited entry as a tool for fisheries management. Not surprisingly, where the charter and guide operators tended to have similar levels of support for these named issues, the greatest differences in opinion were found for head versus charter operators and for head versus guide operators. Specifically, head boat operators were more in support for these policies than charter and guide operators.

This greater support is in line with expectations and may be linked between issues. For example, head boat operators were more in support of limited entry as a tool for fisheries management. Because of head boat operations' heavy investment of resources into the industry (time, capital investment, or the like), it makes sense that these operators might want to increase barriers to entry, thereby limiting competition to some extent. Unlike the commercial fishing sector, one of the major roadblocks to implementing limited entry programs for the RFH sector is the lack of highly-detailed catch records. Detailed catch histories would aid in determining eligibility of participation in sector separation for limited entry that would allow for catch-based allocations of shares or quotas. Catch history might also be recorded and verified with the use of electronic vessel monitoring systems and mandatory log book reporting, which were also found to have a greater amount of support by head boat operators. Electronic vessel monitoring systems can be costly, but head boat operations might more easily absorb this cost on average than charter and guide operations.

Statistical differences were not found between operating classes for several policies, which indicate a general consensus of the industry in levels of support for issues such as offshore wind farms, open-loop liquefied natural gas terminals, state-based fisheries stock assessments, and voluntary log book reporting for charters. Perhaps more unexpectedly, however, differences were also not found across operating classes for catch share issues, including catch shares for commercial and RFH sectors, and sale or transfer of shares. Across operating classes, average levels of support for these policies were relatively low, with some of the lowest averages among all the issues listed. Low averages and absence

of differences amongst operating classes may be an artifact of any relative indecisiveness or lack of exposure to these topics, as evidenced by the relatively higher proportions of "don't know" responses and CV estimates previously mentioned.

3.3.2. Gauging Opinions on Potential Problems Facing the Industry (Question 48)

Question 48 is posed as a three-point Likert scale and gauges a respondent's level of concern in the short term (defined as within the next one to five years) and long term (defined as beyond five years) regarding the following topics: climate change/sea level rise, coastal habitat loss and degradation, demand for charter services, fuel costs, harmful algal blooms/red tides, reductions in fish stocks, insurance cost/availability, labor cost/availability, fishing permit/license costs, recruitment of new anglers, hypoxia (dead zones), and unlicensed charter operators. Values were assigned to each point on the Likert scale for analysis, where "not a problem" is assigned as 1, "minor problem" is 2, and "major problem" is 3. The "no opinion" option was examined and reported separately.

Averages were assessed for each issue and timeframe (i.e., long and short term) by operation class on the Gulf level and are presented in Table 3.8. Statistically significant differences between operational classes are examined using an ANOVA and the Kruskal-Wallis nonparametric test. Further statistics, such as standard deviation, CV, and proportion of those reporting "no opinion", are reported for the Gulf and state/regional means in Appendix F.

Values close to 3 indicate a considerable concern for a particular issue, while values close to 1 indicate little concern. Though statistical tests were not conducted between issues, some generalities can be established. As anticipated, fuel costs in the long and short term appear to have generated the greatest level of concern across the three operational classes. Especially because fuel is the greatest operating cost for RFH fishing operations, fuel cost is naturally a perpetual concern as these operations attempt to maximize profit in order to remain in business. After fuel costs, it appears that the industry is most concerned about the demand for charter services and insurance cost/availability in the long and

Table 3.8 Summary of Means for Question 48 by Operating Class

Issue	Head		Charter		Guide	
	n	Mean	n	Mean	n	Mean
Climate change/sea level rise (long term)	29	1.52	113	1.63	382	1.78
Climate change/sea level rise (short term)	32	1.33	119	1.26	399	1.45
Coastal habitat loss and degradation (long term)	30	1.98	121	2.33	414	2.56
Coastal habitat loss and degradation (short term)	32	1.73	119	2.05	425	2.33
Demand for charter services (long term)	32	2.37	114	2.44	392	2.03
Demand for charter services (short term)	32	2.40	122	2.37	408	2.01
Fishing permit/license costs (long term)	31	2.00	119	2.16	411	2.07
Fishing permit/license costs (short term)	31	1.89	125	2.05	427	1.91
Fuel costs (long term)	33	2.94	124	2.93	415	2.77
Fuel costs (short term)	32	2.92	127	2.87	429	2.65
Harmful algal blooms/red tides (long term)	31	2.20	113	2.19	397	2.27
Harmful algal blooms/red tides (short term)	32	2.20	125	2.09	411	2.14
Hypoxia/dead zones (long term)	30	2.08	100	2.07	348	1.99
Hypoxia/dead zones (short term)	31	1.95	108	1.85	359	1.80
Insurance cost/availability (long term)	31	2.18	118	2.42	393	2.24
Insurance cost/availability (short term)	31	2.07	124	2.34	415	2.13
Labor cost/availability (long term)	31	1.88	111	1.75	315	1.52
Labor cost/availability (short term)	31	1.77	114	1.69	333	1.48
Recruitment of new anglers (long term)	30	2.16	117	2.19	389	2.00
Recruitment of new anglers (short term)	31	2.20	122	2.10	402	1.89
Reductions in fish stocks (long term)	31	2.07	121	2.16	407	2.29
Reductions in fish stocks (short term)	31	2.11	125	1.96	424	2.14
Unlicensed charter operators (long term)	31	1.87	113	2.37	401	2.32
Unlicensed charter operators (short term)	32	1.87	119	2.35	412	2.26

short terms. On the other hand, climate change/sea level rise produced relatively low concern across the operational classes. Not surprisingly, labor cost/availability seemingly generated the lowest average concern for the guide boat sector. This result is expected since guide boat operators typically do not hire crew members and tend to operate with an owner-operator business structure.

Mean differences between the long and short term time horizons were not as large as anticipated; however, the small values are primarily due to the use of a three-point Likert scale instead of a larger scale which could show greater differences and variation. Between the two time horizons, the greatest differences in magnitude were found for climate change/sea level rise, and coastal habitat loss and degradation. Across operating classes, average concern was greater in the long term than short term for these two issues. Depending on the operating class, the change in level of concern remained almost or exactly equal for demand for charter services and unlicensed charter operators. More specifically, head boat operators indicated no change in the level of concern for harmful algal blooms/red tides and unlicensed charter operators between the long and short terms.

In order to detect statistically significant differences between operational classes, ANOVA and Kruskal-Wallis tests were conducted for each issue and timeframe. Results from these tests are presented in Tables 3.9 and 3.10, respectively. Results of the post-hoc tests differed in only 4 of the 36 pairwise comparisons that were examined. Where post-hoc tests determined a significant difference between operating classes, the difference in means for each pairwise comparison is provided.

The greatest differences were found for: coastal habitat loss and degradation between head versus guide boat operators in the short and long term, the demand for charter services between charter operators versus guides in the long term and between head versus guide operators in the short term. The greater level of concern of coastal habitat loss and degradation for guide boat operators compared to head boat operators is likely due to the difference in where these vessels operate. Because guides typically conduct trips inshore, fish species targeted by guide boat captains are more readily impacted by coastal habitat loss and degradation than offshore species targeted by head boat operators. With regards

to demand for charter services, it is logical that a statistically significant difference was found between head and guide vessel operators, because head boats tend to operate trips with a greater number of passengers (more than 13 passengers on average) than guide boat trips (approximately 2 to 3 passengers on average). Head boat operations tend to have greater investment and risk in the industry and potentially stand to lose more than guide boat operations should the business fail.

Significant differences were not found between all operating classes in the long and short term for fishing permit/license costs, harmful algal blooms/red tides, hypoxia/dead zones, insurance cost/availability, reductions in fish stocks, and unlicensed charter operators. This absence of differences indicates a similar level of concern across operating classes in the industry for these potential issues facing the RFH sector.

Table 3.9 Summary of ANOVA and Tukey Post-Hoc Test Results for Question 48 on the Gulf Level

	ANOVA			Tukey Post-Hoc P-Values			Mean Differences		
Issue	d.f.	F	p-value	Head vs. Charter	Head vs. Guide	Charter vs. Guide	Head - Charter	Head - Guide	Charter - Guide
Climate change/sea level rise (long term)	2, 521	4.48	0.0118*	0.6117	0.0621	0.0669	-	-	-
Climate change/sea level rise (short term)	2, 547	7.89	0.0004*	0.8565	0.2441	0.0004*	-	-	-0.19
Coastal habitat loss and degradation (long term)	2, 560	15.71	<0.0001*	0.0164*	<0.0001*	0.0022*	-0.35	-0.58	-0.23
Coastal habitat loss and degradation (short term)	2, 575	16.92	<0.0001*	0.0444*	<0.0001*	0.0003*	-0.32	-0.60	-0.28
Demand for charter services (long term)	2, 535	17.55	<0.0001*	0.6430	0.0004*	<0.0001*	-	0.34	0.41
Demand for charter services (short term)	2, 559	17.76	<0.0001*	0.5945	0.0004*	<0.0001*	-	0.39	0.36
Fishing permit/license costs (long term)	2, 558	0.87	0.4200	-	-	-	-	-	-
Fishing permit/license costs (short term)	2, 580	2.22	0.1101	-	-	-	-	-	-
Fuel costs (long term)	2, 569	7.44	0.0006*	0.8647	0.0418*	0.0030*	-	0.17	0.16
Fuel costs (short term)	2, 585	9.78	<0.0001*	0.7557	0.0135*	0.0006*	-	0.27	0.22
Harmful algal blooms/red tides (long term)	2, 538	0.27	0.7662	-	-	-	-	-	-
Harmful algal blooms/red tides (short term)	2, 565	1.11	0.3294	-	-	-	-	-	-
Hypoxia/dead zones (long term)	2, 475	0.12	0.8876	-	-	-	-	-	-
Hypoxia/dead zones (short term)	2, 495	0.17	0.8404	-	-	-	-	-	-
Insurance cost/availability (long term)	2, 539	1.50	0.2251	-	-	-	-	-	-
Insurance cost/availability (short term)	2, 567	2.92	0.0546	-	-	-	-	-	-
Labor cost/availability (long term)	2, 454	5.65	0.0038*	0.2797	0.0111*	0.0851	-	0.36	-
Labor cost/availability (short term)	2, 475	4.69	0.0096*	0.3195	0.0222*	0.1395	-	0.29	-
Recruitment of new anglers (long term)	2, 533	5.43	0.0046*	0.7686	0.0654	0.0204*	-	-	0.19
Recruitment of new anglers (short term)	2, 552	9.59	<0.0001*	0.3246	0.0026*	0.0036*	-	0.31	0.21
Reductions in fish stocks (long term)	2, 556	1.29	0.2754	-	-	-	-	-	-
Reductions in fish stocks (short term)	2, 577	1.85	0.1585	-	-	-	-	-	-
Unlicensed charter operators (long term)	2, 542	2.37	0.0946	-	-	-	-	-	-
Unlicensed charter operators (short term)	2, 560	1.88	0.1529	-	-	-	-	-	-

* Significant at α=0.05

Table 3.10 Summary of Kruskal-Wallis and Wilcoxon-Mann-Whitney Test Results for Question 48 on the Gulf Level

	Kruskal-Wallis			Wilcoxon-Mann-Whitney Exact Pairwise P-Values			Mean Differences		
Issue	d.f.	H	p-value	Head vs. Charter	Head vs. Guide	Charter vs. Guide	Head - Charter	Head - Guide	Charter - Guide
Climate change/sea level rise (long term)	2	9.32	0.0095*	0.3818	0.0240	0.0214	-	-	-
Climate change/sea level rise (short term)	2	14.18	0.0008*	0.6923	0.1252	0.0003**	-	-	-0.19
Coastal habitat loss and degradation (long term)	2	28.74	<0.0001*	0.0110**	<0.0001**	0.0025**	-0.35	-0.58	-0.23
Coastal habitat loss and degradation (short term)	2	31.07	<0.0001*	0.0246	<0.0001**	0.0001**	-	-0.60	-0.28
Demand for charter services (long term)	2	34.40	<0.0001*	0.2832	<0.0001**	<0.0001**	-	0.34	0.41
Demand for charter services (short term)	2	34.02	<0.0001*	0.1583	0.0001**	<0.0001**	-	0.39	0.36
Fishing permit/license costs (long term)	2	1.69	0.4306	-	-	-	-	-	-
Fishing permit/license costs (short term)	2	4.59	0.1007	-	-	-	-	-	-
Fuel costs (long term)	2	15.42	0.0004*	0.7013	0.0253	0.0009**	-	-	0.16
Fuel costs (short term)	2	19.23	<0.0001*	0.3974	0.0078**	0.0002**	-	0.27	0.22
Harmful algal blooms/red tides (long term)	2	0.72	0.6974	-	-	-	-	-	-
Harmful algal blooms/red tides (short term)	2	2.23	0.3276	-	-	-	-	-	-
Hypoxia/dead zones (long term)	2	0.23	0.8903	-	-	-	-	-	-
Hypoxia/dead zones (short term)	2	0.31	0.8570	-	-	-	-	-	-
Insurance cost/availability (long term)	2	3.30	0.1917	-	-	-	-	-	-
Insurance cost/availability (short term)	2	5.52	0.0633	-	-	-	-	-	-
Labor cost/availability (long term)	2	14.57	0.0007*	0.0909	0.0007**	0.0144**	-	0.36	0.23
Labor cost/availability (short term)	2	14.52	0.0007*	0.0850	0.0006**	0.0144**	-	0.29	0.21
Recruitment of new anglers (long term)	2	10.73	0.0047*	0.5393	0.0275	0.0072**	-	-	0.19
Recruitment of new anglers (short term)	2	18.22	0.0001*	0.1784	0.0009**	0.0016**	-	0.31	0.21
Reductions in fish stocks (long term)	2	1.99	0.3704	-	-	-	-	-	-
Reductions in fish stocks (short term)	2	3.68	0.1586	-	-	-	-	-	-
Unlicensed charter operators (long term)	2	5.58	0.0613	-	-	-	-	-	-
Unlicensed charter operators (short term)	2	4.66	0.0974	-	-	-	-	-	-

* Significant at α=0.05

** Significant at adjusted rejection level (α/number of pairwise tests, 0.05/3=0.0166; Elliott and Woodward 2009)

CHAPTER 4. RECALL BIAS

All surveys are confronted with issues of bias resulting from instances such as sampling methodology, questionnaire formation, or state of mind of the respondent. Concurrent timing of the Deepwater Horizon/BP oil spill and data collection for the RFH fishing industry survey calls into question the chances of this major incident introducing a systematic misreporting bias to survey responses. Though the survey asked for vessel, trip, and firm information pertaining to 2009, the Deepwater Horizon blowout on April 20, 2010, may have led to systematic differences in reported versus actual 2009 data, as administration of the survey spanned from March to June 2010 (includes aggregation of data from the trial run and full survey phases).

A truly intentional and strategic form of misreporting bias is often associated with contingent valuation studies in which a respondent's stated willingness to pay is greater than the actual willingness to pay in efforts to sway a study's results to a conclusion seemingly beneficial to the respondent (Mitchell and Carson 1989). In stock assessments for fisheries, misreporting bias has been described in surveys of fishing effort in the form of underreporting of landings. Bousquet et al. (2010) suggest that the motivation behind reporting reduced values in effort surveys potentially stems from a respondent's perceived incentive to ultimately impact policies stemming from survey conclusions, such as annual total allowable catch set by government agencies.

One type of systematic misreporting bias is called recall bias, and errors resulting from this can be the result of a deliberate or unintentional act. Recall bias is a type of survey measurement error in which respondents are influenced by external forces when recalling and reporting information. At their simplest, these external forces are linked to the elapsed time between the events and reporting, as when subsequent experiences or memory failure leads respondents to report information that are substantially different than that which actually occurred, perhaps because the respondent's state of mind has changed by the time of survey (Eisenhower, Mathiowetz, and Morganstein 2010). Any of these influences can

result in a systematic, intentional, and/or mistaken response bias, ultimately leading to erroneous analysis of past events and potential cause-and-effect relationships.

The widely reported event and increased public awareness had the potential to influence the misreporting of data. For example, if an increase was found in average trip revenue, a deliberate misreporting of past events due to an external force may have transpired in attempts to benefit the respondent in some manner and, thereby, introducing bias to the data set. A simultaneous and unintentional misreporting of events as a function of the mindset of the respondent at the time of the survey relative to an external force also has the potential to introduce bias. A third option may also be that the two groups being examined are statistically different, because respondents with higher trip incomes completed questionnaires later in the survey period by chance (meaning that the real population mean is higher in the second group than the first group and not just the sample mean).

The financial variables are of particular interest under this analysis, because these data directly affect revenue and profitability estimates on the trip and annual levels, such as gross revenue, net income to the owner, and dockside revenue, which have potential policy implications. The opportunity to correct for bias exists if the magnitude of the bias is known. If found to be significant in explaining when a respondent completed a survey, the direction and magnitude of change in the financial variables between responding periods should be considered. The true direction and magnitude can only be determined, however, by examining official, verified records that accurately report the industry's financial and firm characteristics, which currently does not exist at the trip level.

Though several studies address potential adverse effects of recall bias due to elapsed time between inquired events and the survey, few studies (if any) examine this misreporting bias in relation to socioeconomic data collection in the wake of a major natural disaster. To address this question of potential recall bias, a suite of respondent and operating characteristics was used in conjunction with financial data to determine which variables were significant in predicting when a respondent completed a survey.

4.1. Usable Sample and Methods of Assessing Problem

A less restrictive sample (n=536) was used to test for evidence of recall bias than that which was used for primary vessel, trip, and firm characteristics reported in Chapter 3 (n=400). This sample includes business owners and non-owners, as well as individuals who, at minimum, responded to variables examined under analyses in this chapter. The sample is listed by state and operating class in Table 4.1.

Table 4.1 Usable Sample for Examination of Recall Bias

	Head	Charter	Guide	Total
Texas	2	18	130	150
Louisiana	2	27	156	185
Mississippi	1	10	5	16
Alabama	14	14	18	46
West Florida	10	52	77	139
Total	29	121	386	536

Media coverage helped draw attention to the magnitude and intensity of the spill. With the first reports of the Deepwater Horizon blowout surfacing on April 20, 2010, stories surrounding the event began flooding media outlets throughout the following weeks. For example, coverage included news of the 11 employees who were killed on the rig, numerous tactics used to stop the oil spillage, estimates of how much oil was leaking into the Gulf of Mexico per day, and potential costs and effects to the Gulf coast.

Pew Research Center's Project for Excellence in Journalism tracks coverage of media events over time. The Pew Research Center (2010) estimated the percent of newshole[5] dedicated to oil spill coverage. A line graph depicting this index is superimposed on a histogram of the survey's usable

[5] "Newshole", as defined by the Pew Research Center (2010), is an index which measures "the percent of total time on TV and radio and space online or in print studied". Specific data collection methodology used by Pew can be found online at: http://www.journalism.org/about_news_index/methodology

sample by week survey completed, as shown in Figure 4.1. Recording of the survey completion date (Question 63) allowed for the possibility to examine the data for recall bias.

Data were partitioned into three time periods for analysis based on instances where the newshole variable increased relatively sharply during administration of the survey. Table 4.2 shows how the data were divided by week. The first time period included only pre-event responses from weeks 1-5. With the oil rig blowout occurring during week 6 of the survey, the first spike in news reports began during this week (as measured by the newshole variable). A second spike in newshole occurred during week 11. Therefore, the second time period included post-event responses from weeks 6-10, and the third time period included those from weeks 11-16.

4.2. Testing for Recall Bias

Initial efforts to identify recall bias involved examining whether a time variable (week survey completed) was significant in explaining change in a financial variable (revenue per full day trip) through regression analysis and a Chow Test to determine if a structural break was present. This method, however, would assume that analysis is for time series data. Though data was collected at different points in time depending on when a respondent completed the questionnaire, the survey is cross-sectional and primarily collects information based on the same point in time (year 2009). Because week survey completed is not considered time series in nature, discriminant function analysis and logistic regression were used to test if a set of variables pertaining to respondent and firm characteristics could predict in which time period a respondent completed the survey.

4.2.1. Discriminant Analysis

Discriminant Analysis (DA) using PROC CANDISC in SAS helped determine which variables separated respondents into the three weekly groupings presented in Table 4.2 and whether a specified set of variables could significantly distinguish between the three time periods. The specific predictors

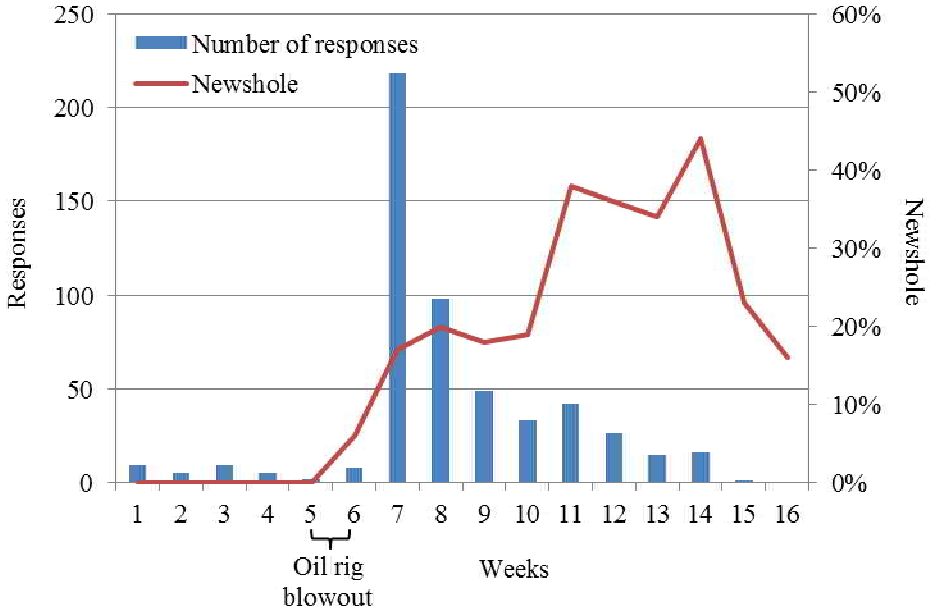


Figure 4.1 Number of Survey Responses and Percent of Media Coverage Dedicated to the Oil Spill during Duration of Survey Administration

Table 4.2 Usable Sample for Assessing Recall Bias by Week of Survey Completion

Time Period	Week	Time Frame	n	Cumulative n	Notes
1	1	March 14 - 20	9	9	First week of trial survey
	2	March 21 - 27	5	14	
	3	March 28 - April 3	9	23	
	4	April 4 - 10	5	28	
	5	April 11 - 17	2	30	
2	6	April 18 - 24	8	38	Oil rig blowout, starting point of first spike in newshole variable
	7	April 25 - May 1	218	256	First week of full survey
	8	May 2 - 8	98	354	
	9	May 9 - 15	49	403	
	10	May 16 - 22	33	436	
3	11	May 23 - 29	42	478	Second spike in newshole variable
	12	May 30 - June 5	26	504	
	13	June 6 - 12	15	519	
	14	June 13 - 19	16	535	
	15	June 20 - 26	1	536	
	16	June 27 - July 3	0	536	No usable observations for week

examined include: level of vessel ownership (*vownership*), full-time or part-time operating status (*fulltime*), tenure (*tenure*), expectation of participation in industry within the next three years (*notactivein3*), vessel size (*vsize*), average number of passengers per full day trip (*pass*), percent of inshore trips (*inshore*), gross revenue (*grossrev*), ownership of business (*busowner*), gender (*male*), year born (*yrborn*), education (*educ*), number of people in household (*hhpeople*), total household income (*hhinc*), and percent of household income from for-hire operations (*hhrfhinc*).

DA assumes that each of these variables is normally distributed and absent of a high degree of multicollinearity. To test for normality, a Shapiro-Wilk test was conducted for each variable using the NORMAL option with PROC UNIVARIATE in SAS. The normality assumption was violated for each variable. Because logistic regression analysis (i.e., binary logit model) does not assume normality of independent variables, a logit model is presented as a follow-up in order to compare results wherever a statistically significant difference was found by DA.

DA also assumes the absence of a high degree of multicollinearity, which was examined using PROC CORR. This procedure computes Pearson correlation coefficients, as shown in Table 4.3, which always lie between -1 and 1. Higher correlation between variables is associated with a higher absolute value of the coefficient. There are no set rules or cutoff values for determining a high level of correlation between variables, mainly guidelines or "rules of thumb". In this case, the highest correlation between pairs of variables is between *vsize* and *pass* at 0.716, but this is not considered a value of concern, especially when considering further diagnostics.

Tolerance and variance inflation values, as presented in Table 4.4, also suggest that there is not a high amount of correlation between the variables. These values were calculated using the TOL and VIF options with PROC REG in SAS. Multicollinearity can be detected if tolerance is low (especially when tolerance ≤ 0.1) or the variance inflation is high (especially when variance inflation factor ≥ 10). Estimates remain in the appropriate ranges for these diagnostics, and therefore, suggest that multicollinearity is not a concern with the specified set of variables.

After examining diagnostics, data from time period 1 (pre-event class) were tested against time periods 2 and 3 (post-event class) to see if statistically significant differences exist between means of the 15 selected variables across the two classes of data. No differences were found using Wilks' lambda, which is, in effect, a Multivariate Analysis of Variance (MANOVA) test under the null hypothesis that the canonical correlation was zero ($F(15,520)=1.17$, $p=0.2921$). The time periods were then tested against one another as three separate classes. A significant difference was found between the three groups ($F(30,1038)=1.82$, $p=0.0047$). The MANOVA, however, does not determine which pair of classes is different; therefore, pairwise comparisons were conducted to see if pre-event data were different from post-event data.

Time period 1 was tested against time period 2, and the two groups were not found to be statistically different ($F(15,420)=1.19$, $p=0.2774$); therefore, data from these two groups were combined. Time periods 1 and 2 (combined) were then tested against time period 3. These two classes were found to be statistically different ($F(15,520)=2.43$, $p=0.0020$), indicating that the examined variables differentiated respondents between these two time groupings. The analysis suggested that gender and percent of inshore trips most heavily influenced the separation of the respondents into the two classes. The raw canonical coefficients, shown in Table 4.3, present the relative influence of each variable as coefficients of a linear combination that produce statistically significant separation in respondents.

4.2.2. Logistic Regression

Logistic regression analysis was then employed to further examine which predictor variables were statistically significant in differentiating respondents between the two classes. The following model was elicited to explain the predicted odds of respondents being in time period 3 (those who

Table 4.3 Pearson Correlation Coefficients

	vownership	fulltime	tenure	notactive in3	vsize	pass	inshore	grossrev	busowner	male	yrborn	educ	hhpeople	hhinc	hhrfhinc
vownership	1.000	-0.083	-0.101	0.020	0.004	-0.074	0.010	0.004	-0.348	0.009	0.146	0.020	0.016	-0.107	-0.069
fulltime	-0.083	1.000	0.281	-0.027	0.180	0.157	-0.107	0.427	-0.049	-0.008	0.031	-0.082	-0.139	-0.194	0.691
tenure	-0.101	0.281	1.000	0.074	0.294	0.229	-0.199	0.283	0.174	-0.005	-0.420	-0.035	-0.045	-0.051	0.297
notactivein3	0.020	-0.027	0.074	1.000	0.112	0.114	-0.206	0.014	-0.012	0.007	-0.078	0.026	-0.019	-0.080	-0.075
vsize	0.004	0.180	0.294	0.112	1.000	0.716	-0.675	0.602	-0.050	-0.029	-0.023	-0.031	0.036	0.037	0.201
pass	-0.074	0.157	0.229	0.114	0.716	1.000	-0.584	0.563	-0.018	0.041	-0.007	-0.018	0.017	0.070	0.182
inshore	0.010	-0.107	-0.199	-0.206	-0.675	-0.584	1.000	-0.418	0.030	-0.031	-0.008	0.016	0.016	0.038	-0.110
grossrev	0.004	0.427	0.283	0.014	0.602	0.563	-0.418	1.000	-0.158	-0.006	0.129	-0.051	-0.024	0.074	0.449
busowner	-0.348	-0.049	0.174	-0.012	-0.050	-0.018	0.030	-0.158	1.000	-0.013	-0.258	0.016	-0.025	0.117	-0.099
male	0.009	-0.008	-0.005	0.007	-0.029	0.041	-0.031	-0.006	-0.013	1.000	0.034	-0.015	0.064	0.017	-0.025
yrborn	0.146	0.031	-0.420	-0.078	-0.023	-0.007	-0.008	0.129	-0.258	0.034	1.000	-0.021	0.158	-0.006	0.097
educ	0.020	-0.082	-0.035	0.026	-0.031	-0.018	0.016	-0.051	0.016	-0.015	-0.021	1.000	0.023	0.200	-0.164
hhpeople	0.016	-0.139	-0.045	-0.019	0.036	0.017	0.016	-0.024	-0.025	0.064	0.158	0.023	1.000	0.235	-0.203
hhinc	-0.107	-0.194	-0.051	-0.080	0.037	0.070	0.038	0.074	0.117	0.017	-0.006	0.200	0.235	1.000	-0.347
hhrfhinc	-0.069	0.691	0.297	-0.075	0.201	0.182	-0.110	0.449	-0.099	-0.025	0.097	-0.164	-0.203	-0.347	1.000

Table 4.4 Tolerance and Variance Inflation Factor Estimates

Variable	TOL	VIF
vownership	0.81377	1.22884
fulltime	0.48881	2.0458
tenure	0.62878	1.59038
notactivein3	0.91782	1.08954
vsize	0.33571	2.9788
pass	0.42789	2.33705
inshore	0.50791	1.96884
grossrev	0.42412	2.35781
busowner	0.76184	1.31261
male	0.97353	1.02719
yrborn	0.68308	1.46396
educ	0.94844	1.05436
hhpeople	0.86065	1.16191
hhinc	0.72466	1.37996
hhrfhinc	0.38970	2.56608

Table 4.5 Raw Canonical Coefficients for Time Periods 1 and 2 against Time Period 3

Variable	Can1
vownership	0.1640
fulltime	-0.3896
tenure	-0.0044
notactivein3	-0.5426
vsize	0.0513
pass	0.1529
inshore	2.5568
grossrev	-0.000002
busowner	-0.4960
gender	3.5604
yrborn	-0.0291
educ	-0.0954
hhpeople	-0.2077
hhinc	-0.1103
hhrfhinc	0.5943

responded after the second spike in the newshole variable in weeks 11-16):

$$\text{predicted logit } (\textit{secondspike} = 1) = \alpha + \beta_1 * \textit{vownership} + \beta_2 * \textit{fulltime} + \beta_3 * \textit{tenure} + \beta_4 * \textit{notactivein3} + \beta_5 * \textit{vsize} + \beta_6 * \textit{pass} + \beta_7 * \textit{inshore} + \beta_8 * \textit{grossrev} + \beta_9 * \textit{busowner} + \beta_{10} * \textit{male} + \beta_{11} * \textit{yrborn} + \beta_{12} * \textit{educ} + \beta_{13} * \textit{hhpeople} + \beta_{14} * \textit{hhinc} + \beta_{15} * \textit{hhrfhinc} ,$$

where *secondspike* is the outcome variable in which 1 stands for respondents in time period 3, and 0 otherwise. The model was found to be statistically significant by three overall model tests of significance calculated through PROC LOGISTIC in SAS, including the likelihood ratio, Score, and Wald tests. As shown in Table 4.6, each of these tests shows that the model is significant at α=0.01. A Hosmer and Lemeshow test was used to assess goodness-of-fit. As described by Peng and So (2002), because the diagnostic was not significant, this indicates a good fit of the model and data (χ^2=7.0491, 8 d.f., p=0.5313).

Table 4.6 Overall Logistic Regression Model Tests of Significance

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	34.2489	15	0.0031
Score	35.1239	15	0.0024
Wald	31.204	15	0.0082

Table 4.7 presents results of the logistic regression, where the variables significant in explaining the predicted probability of a respondent completing a survey in time period 3 are designated at the 0.10, 0.05, and 0.01 levels of significance. In this instance, it is important to note that gross revenue was not significant in explaining when a respondent completed a survey. Results indicated that respondent and operating characteristics, such as the average number of passengers on a full day trip, the percent of trips conducted inshore, gender, and year born, determined when a survey was completed (i.e., non-financial variables). This finding is consistent with results from DA when testing time periods 1 and 2 against

time period 3, where gross revenue was not found to discriminate between responding periods (raw canonical coefficient was -0.000002 for *grossrev*).

Table 4.7 Logistic Regression Parameter Estimates

Parameter	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
vownership	-0.1269	0.269	0.2224	0.6372
fulltime	0.2856	0.332	0.7402	0.3896
tenure	0.00597	0.0153	0.1517	0.6969
notactivein3	0.3292	0.4009	0.6742	0.4116
vsize	-0.031	0.0233	1.7699	0.1834
pass	-0.1477	0.0833	3.145	0.0762*
inshore	-1.6125	0.3876	17.3021	<.0001***
grossrev	0.000001	0.000002	0.623	0.4300
busowner	0.3678	0.4666	0.6215	0.4305
male	-1.7552	0.7815	5.0437	0.0247**
yrborn	0.0216	0.0121	3.1987	0.0737*
educ	0.0618	0.1257	0.2418	0.6229
hhpeople	0.1355	0.1052	1.6604	0.1975
hhinc	0.0684	0.0868	0.6205	0.4309
hhrfhinc	-0.4806	0.5619	0.7315	0.3924
	*p<0.10	**p<0.05	***p<0.01	

4.2.3. Additional Analysis

A similar model was investigated using the same process as described above. Instead of examining gross revenue, however, this variable was replaced with two of several variables which are used to calculate gross revenue: the annual number of trips and average trip fee for a full day trip. These variables are tested separately to see if either is significant in explaining when respondents completed a survey. Unlike the calculated gross revenue variable, the number of trips and full day trip fee were directly self-reported variables and subject to direct effects of misreporting due to recall bias. The usable sample increased slightly to 559 responses with the new set of variables. Despite the increase, the second set of variables provided the same conclusions as the first set of variables examined.

Statistical differences were not found when testing time period 1 against time periods 2 and 3 (i.e., trial versus full survey data) with DA ($F(16,542)=1.19$, $p=0.2739$). Because differences were also not found between time periods 1 and 2 ($F(16,438)=1.23$, $p=0.2438$), the data was combined and tested as one class against time period 3. As with previous efforts, differences were found between these two classes ($F(16,542)=2.34$, $p=0.0023$); however, the annual number of trips and full day trip fee variables did not discriminate between the two reporting periods (raw canonical coefficients for annual trips and trip fee equals 0.0048 and 0.0001, respectively). Because all variables did not meet the normality assumption, logistic regression was utilized to further test the data. Of particular interest under this analysis was that the variables for annual number of trips and full day trip fee were not significant in explaining when a survey was completed ($\chi^2=1.6863$, 1 d.f., $p=0.1941$ for annual trips; $\chi^2=0.2108$, 1 d.f., $p=0.6462$ for trip fee).

4.3. Conclusions

Through the use of DA and logistic regression analysis, respondent, operating, and financial characteristics were investigated to determine which were significant in explaining what time period a respondent completed a survey. Three time periods were designated by examining Pew Research Center's index describing the percent of newshole on a weekly basis captured by media coverage of the Deepwater Horizon oil spill over the 16-week survey administration period.

These attempts at investigating potential effects of recall bias on the data did not show any evidence of this bias affecting financial variables, which were the primary concern. Results show that operating and respondent characteristics, such as average number of passengers on a full day trip, the percent of trips conducted inshore, gender, and year born, were significant in explaining time period surveys were completed. Because of these results, any attempts at correcting or adjusting the data were not deemed necessary. Though no evidence was presented that would indicate the need for further testing under these analyses, other variables and models could be considered should the opportunity

arise to further examine the data set for this misreporting bias. Additional suggestions for future research related to recall bias are further discussed in Chapter 5.

CHAPTER 5. SUMMARY AND CONCLUSIONS

The main purpose of this research was to develop a current and comprehensive socioeconomic understanding of the recreational for-hire fishing sector in the U.S. Gulf of Mexico. Data were collected through the third Gulf-wide RFH fishing industry economic survey, which partially acted as an extension of the first and second Gulf-wide industry surveys in 1988 and 1998. These updated data are necessary to meet national standards set forth by the Magnuson-Stevens Act, such that social and economic ramifications of proposed federal fishing regulations in the Gulf can be made part of the overall decision- and policy-making process. Data collected under this research initiative are expected to be primarily utilized by federal and state fisheries managers, as well as interested stakeholders, such as industry leaders and charter fishing organizations.

5.1. Revisiting the Objectives

Four key objectives were presented which addressed the need for an updated data set. In contrast to previous surveys, the first objective was to produce and administer a socioeconomic and policy survey instrument that would serve as a means to capture information from all vessel classes in the industry. The two previous Gulf-wide studies used sampling frames based on federal databases, and primarily included offshore vessels (excluded smaller, inshore vessels). The third Gulf-wide survey used a captain-based approach founded on licensing databases from each state. Though the industry's captain population can be estimated through the use of state licensing frames and federal databases, determining the exact size of the Gulf RFH fishing industry is confounded with inconsistencies (e.g., each state has different licensing requirements in which licenses are sold for the vessel and/or captain). Nonetheless, the best estimate suggested that 3,315 RFH fishing captains operated in the U.S. Gulf in 2009. Of these, surveys were sent to 2,305 captains and were administered between March and June 2010. The effective response rate was 33 percent (n=689), which accounts for surveys known to have never reached the intended recipient (n=195).

The second objective was to identify groups of respondents with relatively homogenous characteristics using key variables which are known to be relevant indicators for classification in industry and fisheries management practice. Official, standardized definitions for head, charter, and guide operations do not exist across state and federal agencies. Following methods and definitions of previous studies and fisheries management agencies, variables related to trip and vessel characteristics, such as vessel size, customer payment structure, effort, and number of passengers, were examined for use in separating respondents. The two previous Gulf-wide RFH studies classified operations by customer payment structure, whereas those paying trip fees on a per person basis were head boats and those paying a lump sum were charter boats (Ditton, Stoll, and Gill 1988; Holland and Milon 1989; Sutton et al. 1999; Holland, Fedler, and Milon 2000). Liese et al. (2009) examine heterogeneity in three groups utilizing a geographic- and effort-based method. Distance fished from shore and type of fishing were used to identify guide boats, offshore troll vessels, and offshore bottom vessels.

Statistical methods to separate groups (e.g., using cluster analysis techniques) have not been documented in the Gulf RFH literature. Though not intended for classifying head, charter, and guide operations, the only typology-related study of grouping respondents was conducted using data from the second Gulf-wide survey. Norris-Raynbird (2004) reported on four types of operators based on captain and firm characteristics to associate typologies of captains operating in the Gulf (whether as weekend hobbyists, full-time traditionalists whose only source of income was from chartering, or something in between). For the purposes of the third Gulf-wide RFH industry assessment, head, charter, and guide operators were classified using the average number of passengers per trip, type of trips conducted, and vessel size. This study parts from previous surveys such that guide and charter operations were examined separately in attempts to provide more meaningful comparisons.

In line with the third objective of the study, primary vessel, trip, and firm characteristics, cost and earnings summaries, and attitudinal profiles were presented in Chapter 3 using the newly defined

operating classes on the Gulf and state/regional levels. Heterogeneity of groups was examined through statistical testing of differences in characteristics of these three operational classes.

To examine primary vessel, trip, and firm characteristics and cost and earnings, a restrictive usable sample (n=400) was employed. The sample was restricted to business owners who provided data on all examined characteristics, costs, and earnings variables. These restrictions were imposed to allow for proper comparison of firm level financial data on the annual level (such that all annual overhead expenses are included, which were not collected from non-owners) and to ensure that the same fleet of vessels was considered for all variables examined.

Statistical differences between operational classes were tested for relevant variables using a one-way ANOVA. In instances where variables exhibited platykurtic distributions, results from a Kruskal-Wallis nonparametric test were presented for comparison's sake. Results proved to be very much as anticipated, where clear differences were found in the three operational classes. Head boats were the largest and most expensive of the fleet (54.7 feet, $315,150), while guide boats were the smallest and least expensive (22 feet, $23,166). Averages for charter vessels fell between these two groups with vessels averaging 32.6 feet and $67,341. This dynamic with head and guide boat operations falling on the two extremes of the spectrum, with charter operations falling in between, is followed throughout the characteristics examined as anticipated. Primary vessel and firm characteristics of these operations follow the environment in which operated (distance from shore) and the number of passengers on board. With head boats and charter boats operating offshore and head boats carrying a larger average number of passengers per trip than charter or guide vessels, the heterogeneity of this fleet begins to emerge.

In contrast to previous studies, it would appear that head boat operations can no longer be identified primarily by examining trip fee payment structure. Previously, head boats were almost exclusively associated with a per person payment system. Few trips were run on a per head basis in

2009, with the highest average showing only 40 percent of head boat trips in West Florida operating using this method.

The average annual number of trips for head, charter, and guide boat operations was 108, 82, and 86, respectively, though these averages were not found to be statistically significant between operational classes. A finding which was not expected was that the net income to the owner on the annual level was also found to be statistically insignificant between charter and guide operations, where average net income to owner was $22,420 for charter operations and $25,981 for guide operations. With the higher capital investment and risk incurred by charter boat operations, it was expected that the higher risk would grant higher returns, but clearly this is not always the case. The higher charter revenue (compared to guide boats) was not large enough to overcome the also elevated expenses. Head boat operations averaged net income to owner of $67,090 for 2009, and this was found to be statistically different from the charter and guide boat operations. With this operational class, the higher risk and capital expenditure compared to charter and guide operations realized greater return.

According to 2009 estimates, guide boat captains made up 70.5 percent of the Gulf RFH population, while head and charter boat captains accounted for only 5.7 and 23.8 percent, respectively. While head boat operations have the ability to generate more revenue per trip than charter and guide operations due to larger vessel capacities and trip structure, these offshore fishing businesses account for only 20.2 percent of the industry's $215.3 million in dockside revenue. The influence of the guide boat sector is more predominant than originally expected as these small inshore operations earned 51.3 percent of the industry's total dockside revenue. Guide boat operations make up a unique category of inshore fishing businesses, though this group has historically received less attention in research and fisheries resource management and has generally been lumped under the charter boat category.

This finding suggests that previous surveys may have unintentionally missed a large portion of the recreational for-hire industry in focusing primarily on the federal offshore fleet. For the most part, sources for identifying these guide boat operations did not exist as state licensing requirements were not

established until a few years prior to the administration of the second Gulf wide survey. Any changes in the number of guide boats cannot be captured by current or previous estimation sources. This specific group is often lumped into one category with charter captain and vessel estimates, though it is essentially a rather large "subgroup" of charter captains.

A more relaxed usable sample was considered for attitudinal assessments and was different for each topic examined. Under this portion of the research, any respondent who answered the Likert scale questions was considered under the usable n (except for "don't know" or "no opinion" responses which were analyzed separately). ANOVA and Kruskal-Wallis tests were employed to test for statistical differences in opinion between operational classes for current and pending policy issues (Question 52) and potential problems facing the industry (Question 48). The largest differences among operational classes were found between head versus charter and guide operators for the following policies in Question 52: mandatory log book reporting for charters, use of electronic vessel monitoring systems, and limited entry as a tool for fisheries management. The greater support by the head boat sector for these policies is in line with expectations since these more established operations would likely want more barriers to entry and the tools to put this type of policy into action (such as data from electronic vessel monitoring systems) in order to protect their investment by limiting competition.

For Question 48 of the survey, the greatest differences in level of concern between operating classes were found for: coastal habitat loss and degradation between head versus guide boat operators in the short and long term, the demand for charter services between charter operators versus guides in the long term and between head versus guide operators in the short term. Coastal habitat loss and degradation is likely more of a concern for guide boat operators than head boat operators since guide boats typically operate inshore and would be affected first. Demand for charter services is likely a greater concern for head boat operators than guides since they have more invested in the industry and require more passengers per trip to make a profit.

The project's fourth and final objective is linked with the Deepwater Horizon blowout and subsequent oil spill which served as the main motivation for the task. With the unique opportunity to study potential effects of the oil spill on survey responses, the data set was examined for signs of recall bias by using discriminant analysis and logistic regression analysis in attempts to examine if a set of respondent, operating, and financial characteristics could predict when a survey was completed. The financial variables, such as annual gross revenue and trip fees, were of particular interest especially when examining whether or not these were significant in explaining what time period a survey was completed relative to events surrounding the oil spill. A more relaxed usable sample (n=536) was used compared to that which was used to describe the primary vessel, trip, and firm characteristics (n=400). Therefore, respondents who provided an answer for all variables used in the analyses were retained in the usable sample.

Though analyses indicated that the specific variables were significant in predicting when surveys were completed, financial variables were not significant in this explanation. Respondent and operating characteristics, such as gender, age, average number of passengers per trip, and percent of trips operated inshore, determined when a survey was completed. Had financial data been affected by recall bias due to the oil spill, financial variables would be significant factors in explaining time of survey completion. The significance would indicate that these data were different between time periods for reasons other than differences in respondent and operating characteristics. No adjustments have been made to the data since analyses did not reveal any evidence of recall bias.

5.2. Limitations

Limitations of this research vary for each topic examined. Results for the primary vessel, trip, and firm characteristics, as well as the cost and earnings profiles, were drawn from the most restrictive usable sample utilized in this study. Only respondents who provided data on all the relevant captain, trip, and vessel characteristics were retained in the analysis. Furthermore, the sample was restricted to

responses from business owners and operation of the primary vessel. Under these restrictions, the final usable sample for financial and operational analyses totaled 400 responses. The limitations of this sample were present when analyzing and reporting data by operational class on the state/regional level, especially with head boat operations. Though the population of head boats in the Gulf is rather low to begin with, methods of reporting by regions (Texas, Louisiana, Mississippi, and Alabama, and West Florida) were extended from the two previous Gulf-wide studies.

The usable samples for attitudinal profiles and tests for recall bias were less restrictive such that business owners and non-owners alike were included. More specifically, the tests for recall bias were based on a sample of 536 respondents, which only required that responses were provided for each variable specified in the analyses. The attitudinal profiles, however, were constructed on a different sample for each issue or policy action examined, which only required that the specific issue was provided with a response.

5.3. Future Research

Future research is available on topics collected through the survey but not yet examined, and for material already presented under this thesis. For instance, the survey collected data on topics not covered or fully examined here, such as hurricane impacts, demographics, and comments (comments include responses to Question 62, see Appendix G). These subject areas are important and still require analysis. Further testing can be done on some of the topics already discussed under this cover. Since statistical tests were run only between operational classes for the issues listed under Questions 48 and 52, testing should also be completed for differences between issues. Statistical differences for levels of concern between long and short run topics for Question 48 should be captured.

Though not covered under the scope of this thesis, opportunities exist for comparison with the two previous Gulf-wide surveys (Ditton, Stoll, and Gill 1988; Holland and Milon 1989; Sutton et al. 1999; Holland, Fedler, and Milon 2000). Because of sampling and questionnaire differences, limited

conclusions can be drawn from the comparisons, but should be attempted for relevant variables to extend the work of previous longitudinal comparisons. In order to allow for a relatively comparable sample, analysis for the third Gulf-wide survey should be attempted for a sample which excludes guide boat operations since previous surveys focused on offshore vessels.

Further attempts at assessing potential effects of the Deepwater Horizon oil spill on survey responses can be conducted using different variables and models. Potential variables to examine include half day trip variables, such as average number of passengers and trip revenue. Policy issues from the attitudinal section (Question 52) should also be tested to investigate how opinions on the energy-related topics may have changed throughout the survey administration period. More specifically, the level of support for the expansion of petroleum platforms and offshore wind farms could be considered for testing. Direction and magnitude of change in support for these policies could be compared with the timeline of newshole to assess if opinions were impacted by media coverage of the oil spill. The suite of socioeconomic and policy data made available through the third Gulf-wide survey affords several opportunities for further research.

REFERENCES

Bousquet, N., N. Cadigan, T. Duchesne, and L.P. Rivest. (2010). "Detecting and correcting underreported catches in fish stock assessment: trial of a new method." *Canadian Journal of Fisheries and Aquatic Sciences* 67(8): 1247-1261.

Church, A.H. (1993). "Estimating the effect of incentives on mail survey response rates: A meta-analysis." *Public Opinion Quarterly* 57(1): 62-79.

Collis, A. (2010). An Economic Impact Study of the Effects of Closures in the South Atlantic Snapper-Grouper Fishery on the Bait and Tackle Retail Industry. Georgetown Economic Services. Retrieved March 1, 2011, from www.keepamericafishing.org/action/article_se/preventing_the_south_atlantic_red_snapper_closure.

Diaz, Guillermo A. and Patty Phares (2004). Estimated conversion factors for calibrating MRFSS charterboat landings and effort estimates for the Gulf of Mexico in 1981-1997 with For Hire Survey estimates with application to red snapper landings. National Marine Fisheries Service, Southeast Fisheries Science Center, Sustainable Fisheries Division. Contribution No. SFD-2004-036.

Dillman, D.A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York, John Wiley & Sons, Inc.

Ditton, R. B., Holland, S.M., and D. A. Gill (1992). "The U.S. Gulf of Mexico Party Boat Industry: Activity Centers, Species Targeted, and Fisheries Management Options." *Marine Fisheries Review* 54(2).

Ditton, R. B., J. R. Stoll, and D.A. Gill. (1988). The Social Structure and Economics of the Charter and Party Boat Fishing Fleets in Alabama, Mississippi, Louisiana, and Texas. Technical Report. St. Petersburg, FL, Southeast Regional Office, National Marine Fisheries Service: 323 p.

Eisenhower, D., N.A. Mathiowetz, and D. Morganstein (2004). "Recall Error: Sources and Bias Reduction Techniques." *Measurement Errors in Surveys*. Ed. P.P. Biemer, R.M. Groves, L.E. Lyberg, N.A. Mathiowetz, and S. Sudman. New York, John Wiley & Sons.

Elliott, A. C. and W.A. Woodward (2009). *SAS Essentials: A Guide to Mastering SAS for Research*. Hoboken, NJ, Jossey-Bass.

Federal Register (1989). 54: 29564.

Fisher, R.A. (1970). *Statistical Methods for Research Workers*. London, Macmillan.

Fox, R. J., Crask, M.R., and Jonghoon Kim. (1988). "Mail Survey Response Rate: A Meta-Analysis of Selected Techniques for Inducing Response." *Public Opinion Quarterly* 52(4): 467-491.

Gulf of Mexico Fishery Management Council (2008). Reef Fish Fishery Management Plan (FMP). Retrieved October 11, 2010, from www.gulfcouncil.org/beta/gmfmcweb/fmps/reef_fish_amend.htm.

Gulf States Marine Fisheries Commission (2008). Emergency Disaster Recovery Program (EDRP). Retrieved on August 9, 2011, from http://www.gsmfc.org/default.php?p=programs.htm#:content@4:links@5.

Harms, J. and G. Sylvia (2000). The Economics of Cooperative Fishery Research: A Survey of U.S. West Coast Groundfish Industry and Scientists. *Proceedings of the Tenth Biennial Conference of the International Institute of Fisheries Economics and Trade*, Corvallis, OR: 10 p.

Hartley, T. W. and R. A. Robertson (2006). "Stakeholder Engagement, Cooperative Fisheries Research and Democratic Science: The Case of the Northeast Consortium." *Human Ecology Review* 13(2): 161-171.

Hiett, R.L. and J.W. Milon. (2002). Economic Impact of Recreational Fishing and Diving Associated with Offshore Oil and Gas Structures in the Gulf of Mexico. Final Report. New Orleans, U.S. Department of the Interior, Minerals Management Service: 98 p.

Holland, S. and J. W. Milon (1989). The Structure and Economics of the Charter and Party Boat Fishing Fleet of the Gulf Coast of Florida. Technical Report. St. Petersburg, FL, Southeast Regional Office, National Marine Fisheries Service: 278 p.

Holland, S. M., Fedler, A.J., and J.W. Milon (2000). The Operations and Economics of the Charter and Head Boat Fleets of the Eastern Gulf of Mexico and South Atlantic Coasts. Report. St. Petersburg, FL, Southeast Regional Office, National Marine Fisheries Service: 205 p.

James, J. M. and R. Bolstein (1990). "The Effect of Monetary Incentives and Follow-Up Mailings on the Response Rate and Response Quality in Mail Surveys." *Public Opinion Quarterly* 54(3): 346-361.

James, J. M. and R. Bolstein (1992). "Large monetary incentives and their effect on mail survey response rates." *Public Opinion Quarterly* 56(4): 442.

Karp, W. A., C. S. Rose, et al. (2001). "Government-Industry Cooperative Fisheries Research in the North Pacific under the MSFCMA." *Marine Fisheries Review* 63(1): 40.

Kruskal, W.H. and W.A. Wallis (1952). "Use of Ranks in One-Criterion Variance Analysis." *Journal of the American Statistical Association* 47 (260): 583-621.

Levene, H. (1960). "Robust Tests for the Equality of Variance." *Contributions to Probability and Statistics*, Stanford University Press: 278–292.

Liese, C. (2011). 2009 Economics of the Federal Gulf Shrimp Fishery Annual Report. National Marine Fisheries Service, Southeast Fisheries Science Center, Miami, FL USA. 24 pp.

Liese, C., Carter, D., and R. Curtis (2009). Surveying the For-Hire Sector: Economic Heterogeneity in the Southeastern U.S. Charter Boat Industry, NOAA Fisheries Service, Southeast Fishery Science Center.

Magnuson-Stevens Fisheries Conservation and Management Act of 2006 (2007). 16 USC 1802 *et seq.*

Mann, H. B. and D.R. Whitney (1947). "On a Test of Whether One of Two Random Variables is Stochastically Larger than the Other." *Annals of Mathematical Statistics* 18(1): 50-60.

Mitchell, R.C. and R.T. Carson (1989). *Using Surveys to Value Public Goods: The Contingent Valuation Method*. Washington, D.C., RFF Press.

National Sea Grant Office, National Oceanic and Atmospheric Administration, and U.S. Department of Commerce (2011). FY2010 Requests for Proposals (RFPs). Retrieved August 9, 2011, from http://www.seagrant.noaa.gov/funding/rfp.html.

Norris-Raynbird, C. (2004). "'For Hire' in the U.S. Gulf of Mexico: A Typology of Offshore Charter and Party Boat Operations." *Maritime Studies (MAST)* 3(1): 51-65.

Peng, Chao-Ying Joanne and Tak-Shing Harry So (2002). "Logistic Regression Analysis and Reporting: A Primer." *Understanding Statistics* 1(1): 31-70.

Pew Research Center (2010). "100 Days of Gushing Oil: A Different Kind of Disaster Story." Project for Excellence in Journalism, published August 25, 2010. Retrieved January 11, 2012, from http://www.journalism.org/analysis_report/oil_spill_was_very_different_kind_disaster_story.

Shapiro, S. S. and M. B. Wilk (1965). "An Analysis of Variance Test for Normality (Complete Samples)." *Biometrika* 52: 591-611.

Southeast Regional Office, NOAA Fisheries Service (2011). Cooperative Research Program – CRP. Retrieved on August 9, 2011, from http://sero.nmfs.noaa.gov/grants/crp.htm.

Southeast Regional Office, NOAA Fisheries Service (2011). Marine Fisheries Initiative (MARFIN). Retrieved on August 9, 2011, from http://sero.nmfs.noaa.gov/grants/marfin.htm.

Stoll, J. R., Milon J.W., Ditton, R.B., Sutton S.G., and S.M. Holland (2002). "The Economic Impact of Charter and Party Boat Operations in the Gulf of Mexico." *Proceedings of the Fifty-Third Annual Gulf and Caribbean Fisheries Institute* 53: 318-331.

Sutton, S. G., Ditton, R.B., Stoll, J.R., and J.W. Milon (1999). A Cross-Sectional Study and Longitudinal Perspective on the Social and Economic Characteristics of the Charter and Party Boat Fishing Industry of Alabama, Mississippi, Louisiana, and Texas. Technical Report. St. Petersburg, FL, Southeast Regional Office, National Marine Fisheries Service: 184 p.

Tukey, J. W. (1953). "The Problem of Multiple Comparisons," in H. I. Braun, ed., *The Collected Works of John W. Tukey*, vol. 8, 1994, New York: Chapman & Hall.

U.S. Coast Guard, National Maritime Center (2010). "Charter Boat Captain Information." Retrieved August 1, 2011, from http://www.uscg.mil/nmc/cb_capt.asp.

U.S. Department of Commerce, National Marine Fisheries Service, Office of Science and Technology (2010). Fisheries of the United States 2009. Current Fishery Statistics No. 2009.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration (2007). Supporting Statement: Regional Economic Data Collection Program for the Gulf Coast Region of Alaska. Retrieved August 9, 2011, from http://www.cio.noaa.gov/itmanagement/0571%20New%20Rev1010.pdf.

U.S. Department of Commerce, NOAA Fisheries (2010). Annual Commercial Landings Statistics, Gulf 2009.

Welch, B. L. (1951). "On the Comparison of Several Mean Values: An Alternative Approach." *Biometrika* 38: 330-336.

Wilcoxon, F. (1945). "Individual Comparisons by Ranking Methods." *Biometrics Bulletin* 1(6):80-83.

APPENDICIES

APPENDIX A. INVITATION LETTER

<<DATE>>

«FIRSTNAME» «LASTNAME» «SUFFIX»
«COMPANY»
«ADDRESS»
«CITY», «STATE» «ZIP»

«GREETING» «FIRSTNAME»«COMPANY»,

A few days from now, you will receive a request in the mail to fill out a questionnaire for an important research project being conducted by Louisiana State University. This survey is conducted once every ten years to examine the recreational for-hire (RFH) charter industry in the U.S. Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama, and West Florida).

By participating, you will provide vital information on the economic structure and impact of your industry. You will also help generate much-needed data on the implications to the RFH sector resulting from changes in fisheries management, natural disasters, and national economic trends. For your assistance with this project, you will be provided a monetary payment of $«PAYMENT».

For your convenience, the survey can be taken online or on the hard copy that will be provided. Your answers are completely confidential as we will process the survey itself anonymously. Further, the data will be released only as summaries in which no individual's answers can be identified.

We hope that you will accept this invitation to participate and help us develop a more accurate picture of the industry's health. You can expect to receive the survey by mail within the next week.

Thank you in advance for your consideration.

Sincerely,

Rex H. Caffey

Survey Project Leader
Professor and Director
Center for Natural Resource Economics & Policy
Louisiana Sea Grant College Program

Michelle Savolainen

Survey Project Co-Leader
Graduate Research Assistant
Center for Natural Resource Economics & Policy
Louisiana Sea Grant College Program

APPENDIX B. SURVEY PACKET

<<DATE>>

«FIRSTNAME» «LASTNAME» «SUFFIX»
«COMPANY»
«ADDRESS»
«CITY», «STATE» «ZIP»

«GREETING» «FIRSTNAME»«COMPANY»,

You have been selected to participate in a survey of the recreational for-hire (RFH) charter fishing industry in your region. This important assessment is administered every ten years to gauge the economic health and policy concerns of the RFH sector in the U.S. Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama, and West Florida). The survey is coordinated by fisheries economists at Louisiana State University. Previous versions of the survey were conducted by the University of Florida in 1999 and Texas A&M University in 1989.
A monetary payment of $<<PAYMENT>> will be provided for your help.

By participating, you will provide vital information on the economic structure and impact of your industry. You will also help generate much-needed data on the implications to the RFH sector resulting from changes in fisheries policy, natural disasters, and national economic trends. For additional information about the project, please see the list of Frequently Asked Questions (FAQ) included in this packet.

Please note that this survey is voluntary and all responses are completely confidential as we will process the survey itself anonymously. Information from the questionnaire will only be released only as summaries in which no individual's answers can be identified. The survey should take approximately 45 minutes to complete.

For your convenience, the questionnaire and payment information can be completed in two ways:

1) **POSTAL** - Fill out the enclosed survey and payment form and return using the self-addressed envelope
2) **INTERNET** - Log on to www.survey.lsu.edu/charterboatsurvey
   Enter Survey ID number: <<**SURVEYID**>> and Password: <<**PASSWORD**>>
   If you opt to take the survey online, all payment information can be submitted electronically via our secure, encrypted server.

If you opt to receive the $<<PAYMENT>> payment, Louisiana State University requires that we collect a standard W-9 form from each respondent. All payments will be processed and mailed promptly in the order received. The survey and payment information must be submitted electronically or postmarked by Monday, May 31, 2010, to guarantee payment.

Thank you very much for your help with this important study. If you have specific questions, please feel free to contact us at (225) 578-2393 or RFHsurvey@lsu.edu.

Sincerely,

Rex H. Caffey
Survey Project Leader
Professor and Director
Center for Natural Resource Economics & Policy
Louisiana Sea Grant College Program

Michelle Savolainen
Survey Project Co-Leader
Graduate Research Assistant
Center for Natural Resource Economics & Policy
Louisiana Sea Grant College Program

Sea Grant Launches Cooperative Research Survey of Charter Boat Sector in U.S. Gulf of Mexico

More than 2,000 licensed charter boat captains in the Gulf of Mexico will have the opportunity to participate in the 2009 Recreational For-Hire Economic Survey (RFHES), which will be held through mid-April.

The RFHES is conducted once every 10 years to gauge the economic health and policy concerns of the charter fishing sector in the U.S. Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama and West Florida). This year, participants will be offered payment in exchange for their cooperation.

"The recreational-for-hire industry is one of the most important sectors of our coastal economy, but they are also one of the most heavily surveyed groups," said Rex Caffey, project leader and professor of natural resource economics at Louisiana Sea Grant and the LSU AgCenter. "We recognize that our respondents' time is valuable, so we're glad to have cooperative research funds available for those captains who elect to participate in this study."

Payments for the voluntary survey will depend on availability of funding by state. Information collected from the project will be used to construct a baseline assessment of the financial health and economic impact of the RFH industry. Future researchers and policy-makers will have access to this data for determining the economic effects of other external forces, such as economic downturns, fuel prices, policy changes, and natural disasters.

Earlier versions of the survey were conducted by Texas A&M University in 1989 and by the University of Florida in 1999. The 2009 survey is being coordinated by Louisiana Sea Grant and the LSU Center for Natural Resource Economics & Policy, and is supported by federal fisheries research funding provided via the National Sea Grant College Program and the Louisiana Department of Wildlife and Fisheries.

FREQUENTLY ASKED QUESTIONS
2009 Economic Survey of the Recreational for Hire Fishing Sector in the U.S. Gulf of Mexico

Why is this survey being conducted?
The recreational for-hire (RFH) survey is conducted once every ten years to gauge the economic health and policy concerns of the industry in the U.S. Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama, and West Florida). This project covers many topics, including policy actions, economic trends, and impacts of natural disasters. Previous versions of the survey were conducted by Texas A&M University in 1989 and by the University of Florida in 1999.

Who is conducting the survey?
The survey is being conducted by researchers at the Louisiana State University Center for Natural Resource Economics & Policy and the Louisiana Sea Grant College Program. Funding for the project comes from the National Sea Grant College Program, the National Oceanic and Atmospheric Administration, and the 2006 Emergency Supplemental funds for fisheries cooperative research.

How will participants be selected? *and* **Is participation voluntary?**
Participants will be randomly selected from a pool of 2009 RFH license-holders in each state. There are approximately 3300 licensed captains in the Gulf, and more than half of these individuals will be invited to participate. Participation in this survey is completely voluntary.

How long will it take to complete the survey?
After reviewing this project with a panel of RFH captains from the five states, the average time to complete the survey was approximately 45 minutes.

Why are captains being asked to provide economic information?
By collecting information about individual businesses, we can construct a baseline assessment of the financial health and economic impact of the RFH industry. Knowing the industry's profitability and economic value (by region, vessel class, and fishery) is especially important when benefits and costs of new regulations are discussed by policy makers. The information is also important when determining the economic effects of other external forces, such as economic downturns, rising fuel prices, and natural disasters. Such information is commonly requested by decision makers and media outlets interested in publicizing the industry's economic situation.

Will the IRS get any of the information?
No. As fisheries economists, we are only interested in collecting appropriate data to capture an accurate snapshot of the RFH industry Gulf-wide. Individual data is treated as confidential and will not be released. When a survey is returned, any identifying information will be removed to prevent future linkage of data with individuals.

Will the answers remain anonymous?
Yes. All individual information will be treated as strictly confidential. Individual data will be combined with information from other respondents to present an overall view of the economic health of the industry or a particular component of the industry.

Is there a payment for participation in this survey?
Yes. For each captain that fully completes the survey, an optional, one-time payment of $100 is available[1]. After completing the questionnaire, respondents will have the option to: 1) receive the payment as an individual, 2) receive the payment as a business, or 3) opt out of receiving the payment. The completed survey and payment form must be postmarked or submitted electronically before the deadline to guarantee payment. Only one payment is allowed per captain.

Will a Social Security Number (SSN) or Employer Identification Number (EIN) be required for payment?
Yes. As a standard practice, compensation of industry participants using cooperative research funding requires collection of a SSN or EIN in order to process payments to individuals or businesses. This information will be kept confidential by the office of Accounting Services at Louisiana State University and will be processed separately from the survey.

How will the survey be administered?
Randomly-selected captains will receive an invitation letter by mail. A few days later, a personalized survey packet will arrive with: 1) a paper version of the survey, 2) an optional payment form, 3) a return envelope for the postal version of the survey, and 4) a personalized ID number and password with directions for participating in the survey online. Respondents who opt to participate in the survey online can submit the required payment information electronically at the end of the survey and should not return the paper survey or forms. All survey and payment data collected over the internet will be encrypted and processed via secure web server.

When will the survey be sent out?
The survey will be sent out in two phases. A small batch of surveys (Phase 1) will be sent out on March 15 and should be returned by April 9, 2010. The majority of surveys (Phase 2) will be sent out on April 16 and returned by May 31, 2010. The completed survey and payment form must be postmarked or submitted electronically before the deadline to guarantee payment.

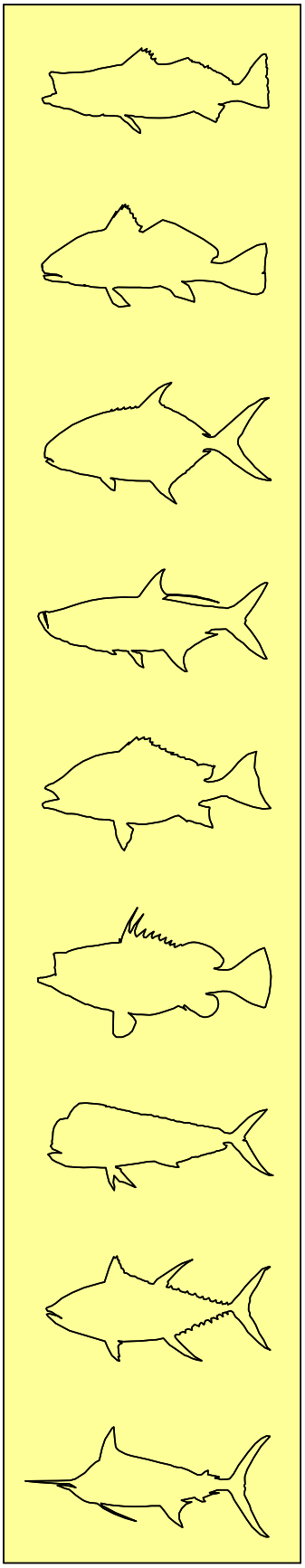
How long will it take to receive payment?
Payments will be processed in a timely manner and in the order received. If all necessary information is provided, respondents should receive a payment check by mail within two weeks of submitting the completed survey and completed payment form by mail or by internet.

Who should be contacted for additional information regarding the survey?
Because of the large number of captains involved, email correspondence will be the preferred method of communication. A special email address has been set up for submitting questions or comments pertaining to the survey. Please direct all questions or comments to RFHSurvey@lsu.edu. To the extent possible, some questions will also be handled by phone. The phone number for the project leaders (Rex Caffey or Michelle Savolainen) is 225-578-2393.

---

[1] A small number of RFH captains in Louisiana who were licensed in 2008 will have the option to receive $200 for participating. Funding for this increased payment level is location-dependent and is provided by the Louisiana Department of Wildlife and Fisheries. This additional funding is derived from residual fisheries recovery funds authorized in the wake of hurricanes Katrina, Rita, Gustav, and Ike.

2009 Economic Survey of the Recreational For-Hire Fishing Sector in the U.S. Gulf of Mexico



Center for Natural Resource Economics & Policy

Louisiana Sea Grant College Program

Louisiana State University

April 2010

I. GENERAL INFORMATION

1. Which of the following best describes your status in the recreational for-hire industry in 2009? (Please select only one.)

- ☐ Recreational for-hire captain *and* owner of two or more charter vessels
- ☐ Recreational for-hire captain *and* owner of one charter vessel
- ☐ Recreational for-hire captain *only* (employee or independent contractor, not owner of a charter vessel)
- ☐ Owner of a charter vessel but *not* a captain

2. Did you consider yourself a full-time or part-time recreational for-hire captain in 2009?

- ☐ Full-time (the majority of my earned income was from chartering)
- ☐ Part-time (the majority of my earned income was *not* from chartering)

3. How long have you been actively operating as a recreational for-hire captain?
Note: Active means operating for commercial purposes, either full-time or part-time.

_____ number of years

4. During 2009, what other job(s) did you hold besides charter fishing? (Please select all that apply.)

A. Employment

- ☐ Commercial fishing
- ☐ Hired captain, other than for charter operation or commercial fishing
- ☐ Other maritime-related business
- ☐ Non-maritime

B. ☐ No other employment in 2009

5. A. What port did you use the most for your chartering activities in 2009?

Port/Marina Name _____

Address Information (if known): Street_____

City _____ State _____ Zip _____ County/Parish _____

B. What percentage of your trips departed from this port in 2009? _____%

C. How long have you operated out of this port? _____ number of years

6. Did you maintain membership in any of the following in 2009? (Please select all that apply.)

- ☐ A local, state, or regional charter boat association
- ☐ A national association for charter boat operators (for example: NACO, NMCA, etc.)
- ☐ A recreational fishing conservation/recreational fishing lobbying organization (for example: CCA, RFA, etc.)
- ☐ A non-fishing environmental/conservation group
- ☐ Chamber(s) of Commerce
- ☐ Other related - Please describe: _____

7. A. Did you leave the recreational for-hire industry prior to 2009?

- ☐ Yes – If yes, please skip to Question 42
- ☐ No

B. Do you expect to be in the charter/head boat business three years from now?

- ☐ Yes
- ☐ No – If no, why not? _____

II. VESSEL LEVEL

A. Primary Vessel

The following questions refer to the primary vessel that was used for your chartering operations in 2009. Please limit your responses to those that only describe the primary vessel in 2009.

8. **What was the length of the primary vessel used in 2009?** _____ feet

9. **Hull material (check one):** ☐ Fiberglass ☐ Steel ☐ Wood ☐ Aluminum ☐ Other

10. **Vessel type (check all that apply):** ☐ Dual console ☐ Center console ☐ Cabin ☐ Flybridge ☐ Other

11. **Please provide the following information on the primary vessel's engine(s) in 2009 (write in or circle):**

	Engine 1	Engine 2	Engine 3	Engine 4
Brand/Manufacturer				
Size (hp)				
Year				
Fuel	Gas / Diesel	Gas / Diesel	Gas / Diesel	Gas / Diesel
Type	Inboard / Outboard	Inboard / Outboard	Inboard / Outboard	Inboard / Outboard
2 stroke or 4 stroke	2 stroke / 4 stroke	2 stroke / 4 stroke	2 stroke / 4 stroke	2 stroke / 4 stroke

12. **Equipment onboard primary vessel in 2009 (check all that apply):**
☐ Radio ☐ GPS ☐ Sonar ☐ Radar ☐ EPIRB ☐ Life raft

13. **What year was the primary vessel built?** _____ year of hull ☐ Don't know

14. **What year did you purchase or acquire this vessel?** _____year acquired ☐ Don't know

15. **How was the primary vessel purchased or acquired (check only one)?**
☐ New ☐ Used ☐ Demo ☐ Self-built ☐ Don't know

16. **In what U.S. state did you purchase or acquire this vessel?** _____ state ☐ Don't know

17. **For what price was this vessel purchased (or estimated value if self-built or gift)?** $_____ price

18. **Did you receive a dealer or sponsor discount on this vessel?**
_____ No _____ Yes - If yes, what percent of MSRP? _____%

19. **If you were to have sold the primary vessel in 2009, what price could you reasonably expect to have received on the used vessel market (*i.e., fair market value*)?** Note: this is NOT the replacement value of everything you have invested in the vessel. The fair market value is an estimate of the value on the used vessel market.
$_____ fair market value in 2009

20. **What amounts of expenditures have been made to the primary vessel since it was acquired, and in 2009?**

Expenditures	In 2009 only	Prior to 2009
Engine upgrades/replacement	$_____	$_____
Electronics expenditures	$_____	$_____
Hull and deck upgrades/additions	$_____	$_____
Regular maintenance	$_____	$_____

21. A. Was there a loan on the primary vessel at any time during 2009?

□ Yes

□ No – If no, please skip to Question 22

□ Don't know – If don't know, please skip to Question 22

B. If yes, what was the outstanding loan amount on the primary vessel (end of 2009)?

$_____ outstanding loan amount □ Don't know

C. What was the average monthly loan payment on the primary vessel in 2009?

$_____ monthly loan payment □ Don't know

D. What was the approximate interest rate (APR) on this loan?

_____% (APR) on loan □ Don't know

22. A. Was the primary vessel insured in 2009?

□ Yes

□ No – If no, please skip to Question 23

□ Don't know – If don't know, please skip to Question 23

B. If yes, what was the total limit of coverage for the hull, engine(s), and equipment?

$_____ hull, engine(s), and equipment □ Don't know

C. What was the total limit of coverage for liability?

$_____ liability □ Don't know

D. What was the total insurance cost on the primary vessel in 2009?

$_____ total insurance cost in 2009 □ Don't know

23. How many more years do you plan to keep the primary vessel? _____ years □ Don't know

24. Which of the following licenses or permits did you have for use on the primary vessel in 2009? (Please select all that apply.)

Recreational For-Hire Permits

□ Atlantic HMS Charter/Head Boat (sharks, swordfish, billfish, and tunas)

□ South Atlantic Charter Head Boat for Dolphin Wahoo

□ South Atlantic Charter Head Boat for Pelagic Fish (mackerel)

□ South Atlantic Charter Head Boat for Snapper Grouper

□ Gulf of Mexico Charter Head Boat for Pelagic Fish

□ Gulf of Mexico Charter Head Boat for Reef Fish

□ Historical Captain GoM Charter Head Boat for Pelagic Fish

□ Historical Captain GoM Charter Head Boat for Reef Fish

Recreational For-Hire Licenses

□ USCG Operator of Uninspected Passenger Vessel (OUPV) / "6-Pack"

□ USCG OUPV Limited Credential

□ USCG Limited Master

□ USCG Master, 100 Tons

□ State Charter / For-Hire License(s)

Commercial Licenses/Permits

□ Any commercial harvest licenses or permits (State or Federal)

□ Any commercial dealer licenses or permits (State or Federal)

25. A. Please estimate how many trips with paying customers the primary vessel conducted in 2009.

_____ number of trips

B. To the best of your recollection, please indicate how many trips were made in the designated three-month periods during 2009 with the primary vessel. Note: If "zero", then leave blank.

Type of Trip	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Inshore/Coastal Fishing	#_____	#_____	#_____	#_____
Offshore Fishing (Bottom/Reef/Drift)	#_____	#_____	#_____	#_____
Offshore Fishing (Pelagic*)	#_____	#_____	#_____	#_____
Fishing Tournament/Rodeo Trips	#_____	#_____	#_____	#_____
Diving	#_____	#_____	#_____	#_____
Sightseeing Only	#_____	#_____	#_____	#_____
Scouting Trips	#_____	#_____	#_____	#_____
Other (list one): _____	#_____	#_____	#_____	#_____

*_Pelagic_ refers to fishing that targets open-water, migratory species such as tuna, billfish, etc.

26. What percent of the charter trips made with the primary vessel in 2009 were taken into federal waters (EEZ)? _____% of trips in 2009

27. Please identify the <u>main</u> species targeted with the primary vessel for each period in 2009. If you have a main target species that is not listed below, please list it in the space provided.

Target Species	Main Winter Species (Jan-Mar)	Main Spring Species (Apr-Jun)	Main Summer Species (Jul-Sep)	Main Fall Species (Oct-Dec)
Spotted Sea Trout	☐	☐	☐	☐
Red Drum	☐	☐	☐	☐
Flounder	☐	☐	☐	☐
Tarpon	☐	☐	☐	☐
Jacks	☐	☐	☐	☐
Mackerels	☐	☐	☐	☐
Red Snapper	☐	☐	☐	☐
Other Snappers	☐	☐	☐	☐
Groupers	☐	☐	☐	☐
Sharks	☐	☐	☐	☐
Cobia	☐	☐	☐	☐
Dolphin	☐	☐	☐	☐
Wahoo	☐	☐	☐	☐
Tunas	☐	☐	☐	☐
Billfish	☐	☐	☐	☐
Other main target species (list one): _____	☐	☐	☐	☐

28. What percent of trips chartered with the primary vessel in 2009 were:

Half day (less than 6 hours)	_____%
Full day (6 hours or more)	_____%
Overnight (1 night)	_____%
Multi-day (2 or more nights)	_____%
	TOTAL 100 %

29. What percent of the customers on the primary vessel in 2009 requested:

Catch and release only	_____%
Partial catch and release trips	_____%
To keep all legal fish	_____%
	TOTAL 100 %

30. What percent of trips chartered on the primary vessel in 2009 paid:

One price to charter entire vessel (typical "charter")	_____%
On a per-person basis ("head boat" trip)	_____%
	TOTAL 100 %

31. What percent of customers on the primary vessel in 2009 were from out of state? _____%

32. How many charter trips (if any) did you donate to charitable purposes in 2009? _____ number of trips

33. Did you refer your customers to taxidermy services?

☐ No ☐ Yes - If yes, how many referrals did you make in 2009? _____ number of referrals

B. Typical Trip

The following questions refer to what you consider to be a typical trip on your primary vessel in 2009.

34. The following table pertains to your most common type of half day and full day trips on the primary vessel during 2009. Please estimate the following averages for a typical half day trip and typical full day trip. For dollar value estimates, write "0" (zero) if no expense. Write "N/A" if the field is not applicable or "D/K" if you don't know. Please do not leave any spaces blank.

	Typical Half Day	**Typical Full Day**
Average Trip Characteristics in 2009		
Length of trip	_____hours	_____hours
Distance traveled (round trip)	_____statute miles	_____statute miles
Vessel fuel consumed	_____total gallons	_____total gallons
Average number of passengers	_____ passengers	_____passengers
Number of deck hands	_____deck hands	_____deck hands
Average Trip Revenues in 2009		
Average Charter Fee (total from all passengers, surcharges included)	$_____ per trip	$_____ per trip
Average tips (total from all passengers)	$_____ per trip	$_____ per trip
Average revenue from any fish sold	$_____ per trip	$_____ per trip

Average Trip Operating Costs in 2009	Typical Half Day	Typical Full Day
Fuel and Oil Expenses	$_____ per trip	$_____ per trip
Bait Related Expenses	$_____ per trip	$_____ per trip
Ice Expenses	$_____ per trip	$_____ per trip
Terminal Tackle (lost hooks, lure, etc.)	$_____ per trip	$_____ per trip
Labor Compensation (Captain)	$_____ per trip	$_____ per trip
Labor Compensation (Crew)	$_____ per trip	$_____ per trip

35. Did your typical trip on the primary vessel in 2009 include a fuel surcharge in addition to the base rate?

☐ Yes ☐ No

36. A. How was the captain on the primary vessel compensated in 2009? (Please select all that apply.)

☐ Not applicable ☐ Tips ☐ Meals
☐ Per trip basis ☐ Fish cleaning ☐ Other
☐ Wages or salary ☐ Fish sales

B. How was the crew on the primary vessel compensated in 2009? (Please select all that apply.)

☐ Not applicable ☐ Tips ☐ Meals
☐ Per trip basis ☐ Fish cleaning ☐ Other
☐ Wages or salary ☐ Fish sales

III. FIRM LEVEL

37. A. Were you the owner of the charter business you worked for in 2009?

☐ Yes ☐ No – If no, please skip to Question 42

B. *For business owners only,* please indicate your business structure (check one):

☐ Sole Proprietorship ☐ Partnership ☐ Corporation ☐ Limited Liability Company ☐ Other

***C. For business owners only,* what percent of your 2009 business activity took place in the following states?**

Texas _____% Louisiana _____% Mississippi _____% Alabama _____% Florida _____%

38. *For business owners only,* how many vessels were in your charter operation in 2009?

_____ number of vessels

39. *For business owners only*, please provide your best estimate for the following business overhead expenses during 2009. Write "0" (zero) if no expense. Write "N/A" if the field is not applicable or "D/K" if you don't know. Please do not leave any spaces blank.

Dockage	$_____
Permits/Licenses	$_____
Staff expenses (incl. wages and salaries not paid per trip)	$_____
Office expenses (rent, utilities, bookkeeping, etc.)	$_____
Advertising and promotion	$_____
Other overhead expenses	$_____

40. *For business owners only*, what was the total gross revenue generated by all your fishing-related business operations during 2009? Note: Gross revenue is income prior to expenses.

□ Less than $25,000	□ $100,000 - $200,000	□ $400,000- $500,000
□ $25,000 - $50,000	□ $200,000 - $300,000	□ More than $500,000
□ $50,000 - $100,000	□ $300,000 - $400,000	□ Don't know

41. *For business owners only*, what percent of the above revenues from Question 40 were derived from:

____% Charter operations (paid to charter the entire vessel)

____% Party/Head boat operations (paid on a per-person basis)

____% Commercial fishing activities – Please describe:_____

____% Other - Please describe (ex: hunting, lodging, government contract work, etc.):

_____

100% TOTAL

IV. HURRICANE IMPACTS

42. Between 2004 and 2008, 13 hurricanes of category 1 or greater intensity have made landfall along the U.S. Gulf of Mexico. Please review the list below.

Year	Hurricane
2004	Charley, Frances, Jeanne, Ivan
2005	Cindy, Dennis, Katrina, Rita, Wilma
2007	Humberto
2008	Dolly, Gustav, Ike

A. Did you experience any financial damages from the hurricanes listed in the table above?

□ Yes □ No – If no, please skip to Question 48

B. Indicate which <u>one storm</u> caused the <u>greatest</u> financial damages to your chartering operations. (Please list only one.)

Name of hurricane: _____

43. How many hours did you spend preparing (moving vessels, boarding up, etc.) for the storm identified above? _____ hours

44. For the storm you identified in Question 42B, please estimate the following to the best of your recollection:

Storm intensity

Maximum wind speed *at your business location* _____ mph

Maximum surge/flood depth *at your business location* _____ ft

45. Please estimate the following to the best of your recollection.

Business damages directly resulting from the hurricane listed above (*not including personal property)*

Total dollar damages to vessel(s), engines, and equipment $_____

Percent reduction in charter fishing revenue in first year following storm _____ %

46. Please indicate the degree to which the following factors contributed to any negative impacts from the storm identified in Question 42B. For each factor below, please select <u>one</u> level of impact.

Factor	No Impact	Minor Impact	Moderate Impact	Severe Impact	Don't Know
Lack of electricity and water	☐	☐	☐	☐	☐
Loss of phone service or internet access	☐	☐	☐	☐	☐
Lack of road/highway access	☐	☐	☐	☐	☐
Absence of food and lodging	☐	☐	☐	☐	☐
Absence of fuel for vessels and operations	☐	☐	☐	☐	☐
Lack of fishing supplies, such as ice and bait	☐	☐	☐	☐	☐
Debris in waterways	☐	☐	☐	☐	☐
Damage to docks and ramps	☐	☐	☐	☐	☐
General decrease in tourism	☐	☐	☐	☐	☐
Delays in insurance payments	☐	☐	☐	☐	☐
Difficulty with recovery application process	☐	☐	☐	☐	☐
Hold-ups in disbursement of funds	☐	☐	☐	☐	☐
Customers' perceptions of charter availability	☐	☐	☐	☐	☐
Concerns about seafood safety	☐	☐	☐	☐	☐
Loss of customer contact information and records in storm	☐	☐	☐	☐	☐

47. Please indicate any positive impacts during the recovery period from the storm you identified in Question 42B. (Select all that apply.)

☐ Reduction in competition
☐ Relocation of operations
☐ Influx of clients
☐ Improved fishing
☐ Other – Please describe: _____
☐ No positive impacts

V. POLICY AND MANAGEMENT

48. How would you rate the following issues in regards to the recreational for-hire industry? For each issue below, select one "Short Term" and one "Long Term" option.

Issue	In the Short Term (next 1- 5 years)				In the Long Term (beyond 5 years)			
	Not a problem	Minor problem	Major problem	No Opinion	Not a problem	Minor problem	Major problem	No Opinion
Climate change/sea level rise	☐	☐	☐	☐	☐	☐	☐	☐
Coastal habitat loss and degradation	☐	☐	☐	☐	☐	☐	☐	☐
Demand for charter services	☐	☐	☐	☐	☐	☐	☐	☐
Fuel costs	☐	☐	☐	☐	☐	☐	☐	☐
Harmful algal blooms/red tides	☐	☐	☐	☐	☐	☐	☐	☐
Reductions in fish stocks	☐	☐	☐	☐	☐	☐	☐	☐
Insurance cost/availability	☐	☐	☐	☐	☐	☐	☐	☐
Labor cost/availability	☐	☐	☐	☐	☐	☐	☐	☐
Fishing permit/license costs	☐	☐	☐	☐	☐	☐	☐	☐
Recruitment of new anglers	☐	☐	☐	☐	☐	☐	☐	☐
Hypoxia (Dead Zones)	☐	☐	☐	☐	☐	☐	☐	☐
Unlicensed charter operators	☐	☐	☐	☐	☐	☐	☐	☐

49. What overall effects (if any) have Hypoxic Zones (or Dead Zones) in the Gulf of Mexico had on your charter operation?

Factor	No Effects	Negative Effects	Positive Effects	No Opinion
Travel distance to fishing grounds	☐	☐	☐	☐
Population of target species	☐	☐	☐	☐
Overall biomass of fisheries	☐	☐	☐	☐
Impact on income	☐	☐	☐	☐

50. How many times did enforcement officers inspect your permits or catch in 2009?

_____ number of times ☐ Not applicable

51. How many times were you interviewed by fisheries biologists (dockside) in 2009?

_____ number of times ☐ Not applicable

52. How would you rate the following current or pending actions in regards to the charter industry? For each current or pending action below, please select one option.

Current or Pending Actions	Strongly Oppose	Moderately Oppose	Neutral	Moderately Support	Strongly Support	Don't Know
Expansion of artificial reefs	☐	☐	☐	☐	☐	☐
Expansion of coastal restoration projects	☐	☐	☐	☐	☐	☐
Expansion of marine sanctuaries	☐	☐	☐	☐	☐	☐
Expansion of petroleum platforms	☐	☐	☐	☐	☐	☐
Offshore wind farms	☐	☐	☐	☐	☐	☐
Open-Loop Liquefied Natural Gas (LNG) Terminals	☐	☐	☐	☐	☐	☐
Offshore aquaculture	☐	☐	☐	☐	☐	☐
State-based fisheries stock assessments	☐	☐	☐	☐	☐	☐
Federally-based fisheries stock assessments	☐	☐	☐	☐	☐	☐
Regulatory discards based on fish size	☐	☐	☐	☐	☐	☐
Federal fisheries observers on charters	☐	☐	☐	☐	☐	☐
Mandatory log book reporting for charters	☐	☐	☐	☐	☐	☐
Voluntary log book reporting for charters	☐	☐	☐	☐	☐	☐
Use of electronic vessel monitoring systems	☐	☐	☐	☐	☐	☐
Limited entry as a tool for fisheries management	☐	☐	☐	☐	☐	☐
Catch shares for commercial fisheries	☐	☐	☐	☐	☐	☐
Catch shares for the charter-boat sector	☐	☐	☐	☐	☐	☐
Sale or transfer of catch shares	☐	☐	☐	☐	☐	☐
Unlimited accumulation of catch shares through sale or transfer	☐	☐	☐	☐	☐	☐

53. Please indicate the degree to which you agree or disagree with the following statements.

My fishing organization...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
Sends me information about what is happening in the industry	☐	☐	☐	☐	☐	☐
Provides a unified voice for industry members	☐	☐	☐	☐	☐	☐
Provides a valuable service to fisheries	☐	☐	☐	☐	☐	☐
Improves the condition of fisheries	☐	☐	☐	☐	☐	☐

54. To what extent do you participate in the following management activities?

Action	Never	Rarely	Sometimes	Frequently	Very Frequently	N/A
Informally discuss fishery issues with a charter boat industry association officer	☐	☐	☐	☐	☐	☐
Attend charter boat industry association meetings	☐	☐	☐	☐	☐	☐
Attend state agency meetings about fisheries	☐	☐	☐	☐	☐	☐
Attend federal agency meetings about fisheries	☐	☐	☐	☐	☐	☐

55. Indicate the extent to which you agree or disagree that the following organizations are receptive to concerns and issues raised by the charter boat industry.

Organization	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
Marine Extension/Sea Grant	☐	☐	☐	☐	☐	☐
State resource agencies	☐	☐	☐	☐	☐	☐
NOAA Fisheries Service	☐	☐	☐	☐	☐	☐
Gulf of Mexico Fishery Mgmt. Council	☐	☐	☐	☐	☐	☐

VI. DEMOGRAPHICS

56. What is your gender?

- ☐ Male
- ☐ Female

57. In what year were you born?

_____ year

58. What is your highest level of education? (Please select one.)

- ☐ Grade school
- ☐ Some high school
- ☐ High school degree
- ☐ Some college
- ☐ College degree
- ☐ Post graduate degree

59. How many people lived in your household in 2009 (including dependents)?

_____ number of people

60. What was your total household income in 2009? (Please select one.)

- ☐ Less than $25,000
- ☐ $25,000 - $35,000
- ☐ $35,000 - $50,000
- ☐ $50,000 - $75,000
- ☐ $75,000 - $100,000
- ☐ $100,000 - $150,000
- ☐ $150,000 or more

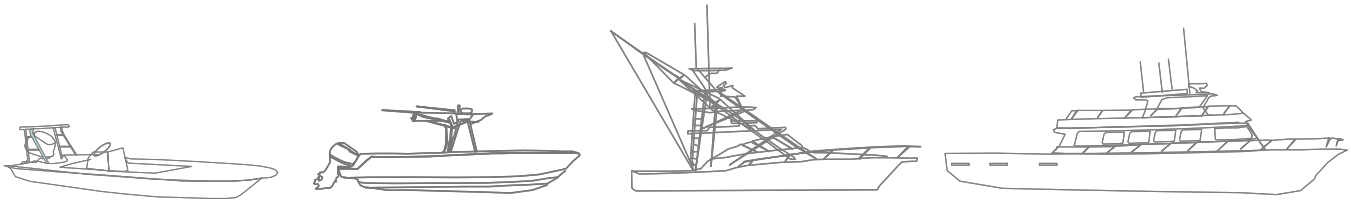
61. What percent of your above household income came from charter operations?

_____ % of household income

VII. YOUR THOUGHTS

62. Finally, we welcome your opinion on any topics that might not have been adequately covered in this survey.

63. Date survey completed:_____



SURVEY ID: «SURVEYID»

PAYMENT FORM

(POSTAL VERSION ONLY)

Please indicate below if you would like to receive the monetary payment for this survey. If you opt to receive payment as an individual or business, the enclosed W-9 form must be completed. Louisiana State University requires this information before payments can be processed. A completed survey and W-9 form must be submitted together and postmarked by «DATE», to guarantee payment. Please return in the envelope provided.

This sheet will be kept confidential and immediately separated from your survey upon receipt by our office.

Check one of the options below and provide all required information:

- ☐ I do not wish to receive the payment.
- ☐ I wish to receive the $«PAYMENT» payment.

Are you a U.S. citizen? (required)

- ☐ Yes
- ☐ No

The enclosed W-9 form must be fully completed and returned with this survey to receive payment.

SURVEY RESULTS

If you would like to receive a copy of the survey results, please provide your email address in the space provided below.

Please write legibly.

Email: _____

Business Website: _____

QUESTIONS

If you have specific questions, please contact Rex Caffey or Michelle Savolainen at 225-578-2393 or RFHsurvey@lsu.edu

APPENDIX C. REMINDER LETTER

<<DATE>>

«FIRSTNAME» «LASTNAME» «SUFFIX»
«COMPANY»
«ADDRESS»
«CITY», «STATE» «ZIP»

«GREETING» «FIRSTNAME»«COMPANY»,

Just a reminder that you have been selected to participate in a survey of the recreational for-hire (RFH) charter fishing industry in your region. If you have already completed the survey, please disregard this correspondence.

This important assessment is administered every ten years to gauge the economic health and policy concerns of the RFH sector in the U.S. Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama, and West Florida). For additional information about the project, please refer to the list of Frequently Asked Questions (FAQ) on the back of this letter.

Please note that this survey is voluntary and all responses are completely confidential as we will process the survey itself anonymously. Information from the questionnaire will only be released only as summaries in which no individual's answers can be identified. The survey should take approximately 45 minutes to complete. A monetary payment of $«PAYMENT» will be provided for your help. The survey and payment information must be submitted electronically or postmarked by **«DATE» (extended deadline)**, to guarantee payment.

For your convenience, the questionnaire and payment information can be completed in two ways:

1) **POSTAL** - Fill out the enclosed survey and payment form and return using the self-addressed envelope
2) **INTERNET** - Log on to www.survey.lsu.edu/charterboatsurvey
   Enter Survey ID number: **«SURVEYID»** and Password: **«PASSWORD»**
   If you opt to take the survey online, all payment information can be submitted electronically via our secure, encrypted server.

Thank you very much for your help with this important study. If you have specific questions, please feel free to contact us at (225) 578-2393 or RFHsurvey@lsu.edu.

Sincerely,

Rex H. Caffey

Survey Project Leader
Professor and Director
Center for Natural Resource Economics & Policy
Louisiana Sea Grant College Program

Michelle Savolainen

Survey Project Co-Leader
Graduate Research Assistant
Center for Natural Resource Economics & Policy
Louisiana Sea Grant College Program

APPENDIX D. VESSEL, TRIP, AND FINANCIAL CHARACTERISTICS

Table D.1 Primary Vessel and Trip Characteristics of an Average Gulf Head Boat Operation (n=21)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	54.7	14.8	48.5	61.0	55.0
Total horsepower	891	395	724	1057	800
Percent outboard	0%	0%	.	.	0%
Number of engines	2.1	0.6	1.9	2.4	2.0
Age of vessel in 2009	18	9	14	22	16
Age of vessel at time of purchase	10	11	5	14	7
Vessel Operation					
Percent part-time operators	10%	34%	-4%	25%	0%
Percent owner-operators	58%	55%	35%	81%	100%
Number of trips	108	52	86	129	105
Per head payment structure	34%	37%	19%	50%	15%
Percent full day	78%	30%	65%	91%	90%
Percent half day	17%	30%	5%	29%	1%
Percent overnight/multiday	5%	13%	-1%	10%	0%
Percent inshore/coastal trips	10%	23%	0%	20%	0%
Percent rig-reef trips	84%	27%	72%	95%	100%
Percent pelagic trips	6%	14%	0%	12%	0%
Percent in EEZ	81%	31%	68%	94%	90%
Full day trip (n=20)					
Number of full day trips	83	50	61	104	63
Trip distance (mi)	64	32	50	78	60
Trip duration (hours)	10	2	9	10	10
Vessel fuel consumed (gal)	145	72	115	176	150
Passengers	13.1	6.9	10.2	16.1	12.0
Percent using deck hands	100%	0%	.	.	100%
Deck hands (n=20)	1.5	0.7	1.2	1.8	1.0
Half day trip (n=10)					
Number of half day trips	37	52	6	69	26
Trip distance (mi)	31	18	21	42	31
Trip duration (hours)	6	1	5	6	6
Vessel fuel consumed (gal)	76	41	52	101	68
Passengers	14.6	14.4	6.0	23.3	8.0
Percent using deck hands	100%	0%	.	.	100%
Deck hands (n=11)	1.5	0.9	1.0	2.0	1.0

Table D.2 Primary Vessel and Trip Characteristics of an Average Texas, Louisiana, Mississippi, and Alabama Head Boat Operation (n=12)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	56.8	11.2	50.0	63.6	59.5
Total horsepower	887	438	622	1152	775
Percent outboard	0%	0%	.	.	0%
Number of engines	1.9	0.3	1.7	2.1	2.0
Age of vessel in 2009	19	9	14	25	20
Age of vessel at time of purchase	8	9	2	14	4
Vessel Operation					
Percent part-time operators	9%	31%	-10%	27%	0%
Percent owner-operators	65%	52%	33%	97%	100%
Number of trips	89	38	66	112	88
Per head payment structure	19%	32%	-1%	38%	2%
Percent full day	71%	33%	51%	91%	80%
Percent half day	16%	32%	-3%	36%	0%
Percent overnight/multiday	13%	22%	0%	26%	4%
Percent inshore/coastal trips	11%	31%	-8%	29%	0%
Percent rig-reef trips	76%	32%	56%	96%	89%
Percent pelagic trips	13%	21%	1%	26%	3%
Percent in EEZ	91%	31%	72%	110%	100%
Full day trip (n=11)					
Number of full day trips	69	34	47	90	70
Trip distance (mi)	78	52	45	111	75
Trip duration (hours)	10	2	8	11	10
Vessel fuel consumed (gal)	176	75	128	224	150
Passengers	13.1	5.1	9.9	16.4	12.0
Percent using deck hands	100%	0%	.	.	100%
Deck hands	1.5	0.6	1.2	1.9	2.0
Half day trip (n=4)					
Number of half day trips	37	38	-19	93	26
Trip distance (mi)	33	14	12	54	33
Trip duration (hours)	6	1	4	7	6
Vessel fuel consumed (gal)	64	47	-6	134	78
Passengers	16.0	12.0	-1.8	33.8	12.5
Percent using deck hands	100%	0%	.	.	100%
Deck hands	1.5	0.6	0.6	2.4	1.5

Table D.3 Primary Vessel and Trip Characteristics of an Average West Florida Head Boat Operation (n=9)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	53.9	15.3	42.1	65.6	52.0
Total horsepower	892	360	616	1169	800
Percent outboard	0%	0%	-	-	0%
Number of engines	2.2	0.7	1.7	2.7	2.0
Age of vessel in 2009	18	9	11	25	16
Age of vessel at time of purchase	10	11	2	19	7
Vessel Operation					
Percent part-time operators	11%	33%	-15%	37%	0%
Percent owner-operators	56%	53%	15%	96%	100%
Number of trips	115	52	75	155	135
Per head payment structure	40%	35%	13%	67%	40%
Percent full day	81%	27%	60%	102%	95%
Percent half day	17%	27%	-4%	38%	2%
Percent overnight/multiday	2%	3%	-1%	4%	0%
Percent inshore/coastal trips	10%	19%	-4%	24%	0%
Percent rig-reef trips	87%	23%	69%	105%	100%
Percent pelagic trips	3%	9%	-3%	10%	0%
Percent in EEZ	77%	29%	55%	99%	80%
Full day trip					
Number of full day trips	88	51	49	127	63
Trip distance (mi)	59	14	48	70	60
Trip duration (hours)	10	2	8	11	10
Vessel fuel consumed (gal)	134	63	86	183	150
Passengers	13.1	7.1	7.7	18.5	12.0
Percent using deck hands	100%	0%	.	.	100%
Deck hands	1.4	0.7	0.9	2.0	1.0
Half day trip (n=6)					
Number of half day trips	37	48	-13	88	23
Trip distance (mi)	31	16	14	48	31
Trip duration (hours)	6	1	5	6	6
Vessel fuel consumed (gal)	79	34	44	114	68
Passengers	14.3	12.9	0.8	27.9	8.0
Percent using deck hands	100%	0%	.	.	100%
Deck hands	1.5	0.8	0.6	2.4	1.0

Table D.4 Primary Vessel and Trip Characteristics of an Average Gulf Charter Boat Operation (n=87)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	32.6	7.6	31.1	34.1	31.0
Total horsepower	582	806	422	741	450
Percent outboard	47%	54%	36%	57%	0%
Number of engines	1.8	0.6	1.6	1.9	2.0
Age of vessel in 2009	18	13	16	21	15
Age of vessel at time of purchase	10	11	8	12	5
Vessel Operation					
Percent part-time operators	34%	51%	24%	44%	0%
Percent owner-operators	77%	45%	68%	86%	100%
Number of trips	82	67	69	95	75
Per head payment structure	6%	21%	2%	10%	0%
Percent full day	67%	34%	61%	74%	80%
Percent half day	30%	35%	23%	37%	20%
Percent overnight/multiday	2%	7%	1%	4%	0%
Percent inshore/coastal trips	17%	26%	11%	22%	0%
Percent rig-reef trips	64%	36%	57%	71%	67%
Percent pelagic trips	19%	30%	13%	25%	7%
Percent in EEZ	68%	39%	61%	76%	85%
Full day trip (n=85)					
Number of full day trips	46	39	39	54	39
Trip distance (mi)	69	42	61	77	60
Trip duration (hours)	9	2	9	9	8
Vessel fuel consumed (gal)	80	51	70	91	75
Passengers	4.8	1.2	4.6	5.0	5.0
Percent using deck hands	63%	52%	53%	74%	100%
Deck hands (n=57)	1.0	0.1	1.0	1.0	1.0
Half day trip (n=56)					
Number of half day trips	55	58	40	69	40
Trip distance (mi)	26	16	22	30	20
Trip duration (hours)	5	1	4	5	4
Vessel fuel consumed (gal)	32	23	26	38	30
Passengers	4.6	1.1	4.3	4.9	4.0
Percent using deck hands	52%	54%	38%	65%	100%
Deck hands (n=31)	1.0	0.0	-	-	1.0

Table D.5 Primary Vessel and Trip Characteristics of an Average Texas Charter Boat Operation (n=12)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	28.4	3.8	26.0	30.9	28.0
Total horsepower	396	136	309	482	420
Percent outboard	58%	51%	26%	91%	100%
Number of engines	1.8	0.4	1.6	2.1	2.0
Age of vessel in 2009	19	16	9	29	11
Age of vessel at time of purchase	11	13	3	20	5
Vessel Operation					
Percent part-time operators	83%	39%	59%	108%	100%
Percent owner-operators	67%	49%	35%	98%	100%
Number of trips	52	59	15	90	29
Per head payment structure	0%	0%	-	-	0%
Percent full day	73%	38%	49%	97%	95%
Percent half day	26%	38%	2%	50%	0%
Percent overnight/multiday	1%	3%	-1%	3%	0%
Percent inshore/coastal trips	16%	23%	1%	31%	0%
Percent rig-reef trips	72%	27%	55%	89%	78%
Percent pelagic trips	12%	19%	0%	24%	2%
Percent in EEZ	58%	42%	31%	85%	70%
Full day trip (n=11)					
Number of full day trips	34	23	18	50	32
Trip distance (mi)	91	46	60	122	80
Trip duration (hours)	9	1	8	10	8
Vessel fuel consumed (gal)	81	36	57	105	80
Passengers	4.8	0.9	4.2	5.4	4.5
Percent using deck hands	55%	52%	19%	90%	100%
Deck hands (n=6)	1.0	0.0	-	-	1.0
Half day trip (n=5)					
Number of half day trips	50	61	-25	126	18
Trip distance (mi)	22	8	13	31	20
Trip duration (hours)	5	1	4	6	5
Vessel fuel consumed (gal)	19	13	3	35	15
Passengers	4.2	0.8	3.2	5.2	4.0
Percent using deck hands	20%	45%	-36%	76%	0%
Deck hands (n=1)	-	-	-	-	-

Table D.6 Primary Vessel and Trip Characteristics of an Average Louisiana Charter Boat Operation (n=11)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	31.6	5.3	28.0	35.1	31.0
Total horsepower	532	159	425	638	500
Percent outboard	82%	40%	55%	109%	100%
Number of engines	2.1	0.7	1.6	2.6	2.0
Age of vessel in 2009	10	7	5	15	9
Age of vessel at time of purchase	4	4	1	7	3
Vessel Operation					
Percent part-time operators	27%	47%	-4%	59%	0%
Percent owner-operators	73%	47%	41%	104%	100%
Number of trips	75	51	41	109	90
Per head payment structure	0%	0%	-	-	0%
Percent full day	89%	18%	77%	101%	95%
Percent half day	5%	15%	-5%	15%	0%
Percent overnight/multiday	6%	8%	1%	11%	2%
Percent inshore/coastal trips	6%	20%	-7%	20%	0%
Percent rig-reef trips	46%	38%	20%	71%	50%
Percent pelagic trips	48%	39%	22%	75%	32%
Percent in EEZ	92%	21%	78%	106%	100%
Full day trip					
Number of full day trips	63	43	35	92	53
Trip distance (mi)	105	38	79	130	100
Trip duration (hours)	11	1	10	12	12
Vessel fuel consumed (gal)	109	34	86	132	110
Passengers	5.1	0.9	4.5	5.7	5.0
Percent using deck hands	73%	47%	41%	104%	100%
Deck hands (n=8)	1.0	0.0	-	-	1.0
Half day trip (n=2)					
Number of half day trips	-	-	-	-	-
Trip distance (mi)	-	-	-	-	-
Trip duration (hours)	-	-	-	-	-
Vessel fuel consumed (gal)	-	-	-	-	-
Passengers	-	-	-	-	-
Percent using deck hands	-	-	-	-	-
Deck hands (n=1)	-	-	-	-	-

Table D.7 Primary Vessel and Trip Characteristics of an Average Mississippi and Alabama Charter Boat Operation (n=22)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	35.5	8.8	31.6	39.4	36.0
Total horsepower	572	306	436	707	600
Percent outboard	24%	44%	4%	43%	0%
Number of engines	1.7	0.5	1.5	1.9	2.0
Age of vessel in 2009	22	9	18	26	22
Age of vessel at time of purchase	13	9	9	18	16
Vessel Operation					
Percent part-time operators	37%	49%	15%	59%	0%
Percent owner-operators	91%	30%	78%	104%	100%
Number of trips	48	34	33	63	42
Per head payment structure	10%	26%	-2%	21%	0%
Percent full day	59%	30%	46%	72%	50%
Percent half day	36%	32%	22%	50%	30%
Percent overnight/multiday	5%	10%	1%	10%	0%
Percent inshore/coastal trips	25%	32%	10%	39%	10%
Percent rig-reef trips	63%	35%	47%	78%	74%
Percent pelagic trips	13%	18%	5%	21%	0%
Percent in EEZ	65%	36%	49%	81%	80%
Full day trip (n=21)					
Number of full day trips	29	22	19	39	22
Trip distance (mi)	62	31	48	76	60
Trip duration (hours)	9	2	8	10	8
Vessel fuel consumed (gal)	99	87	60	138	80
Passengers	5.1	1.0	4.6	5.6	6.0
Percent using deck hands	85%	36%	69%	102%	100%
Deck hands (n=18)	1.1	0.2	0.9	1.2	1.0
Half day trip (n=17)					
Number of half day trips	22	22	11	33	15
Trip distance (mi)	26	13	20	33	25
Trip duration (hours)	5	1	4	5	5
Vessel fuel consumed (gal)	44	36	25	62	45
Passengers	5.0	1.2	4.4	5.6	5.0
Percent using deck hands	69%	48%	45%	94%	100%
Deck hands (n=12)	1.0	0.0	-	-	1.0

Table D.8 Primary Vessel and Trip Characteristics of an Average West Florida Charter Boat Operation (n=42)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	33.4	7.3	31.1	35.6	31.5
Total horsepower	643	952	346	940	438
Percent outboard	40%	50%	25%	56%	0%
Number of engines	1.7	0.5	1.5	1.8	2.0
Age of vessel in 2009	19	11	15	23	17
Age of vessel at time of purchase	10	11	7	13	5
Vessel Operation					
Percent part-time operators	21%	42%	8%	34%	0%
Percent owner-operators	79%	42%	66%	92%	100%
Number of trips	98	65	77	118	98
Per head payment structure	8%	22%	1%	14%	0%
Percent full day	63%	31%	53%	72%	65%
Percent half day	36%	32%	26%	46%	35%
Percent overnight/multiday	2%	5%	0%	3%	0%
Percent inshore/coastal trips	17%	24%	10%	25%	0%
Percent rig-reef trips	67%	33%	56%	77%	64%
Percent pelagic trips	16%	26%	8%	24%	2%
Percent in EEZ	67%	36%	56%	78%	80%
Full day trip					
Number of full day trips	49	37	37	60	46
Trip distance (mi)	58	33	47	68	50
Trip duration (hours)	9	1	8	9	8
Vessel fuel consumed (gal)	71	39	59	83	60
Passengers	4.7	1.2	4.3	5.1	4.8
Percent using deck hands	60%	50%	44%	75%	100%
Deck hands (n=25)	1.0	0.0	-	-	1.0
Half day trip (n=32)					
Number of half day trips	63	57	42	83	48
Trip distance (mi)	26	17	20	32	20
Trip duration (hours)	5	1	4	5	4
Vessel fuel consumed (gal)	30	17	24	36	28
Passengers	4.5	1.1	4.1	4.9	4.0
Percent using deck hands	53%	51%	35%	71%	100%
Deck hands	1.0	0.0	-	-	1.0

Table D.9 Primary Vessel and Trip Characteristics of an Average Gulf Guide Boat Operation (n=292)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	22.0	2.6	21.7	22.3	22.0
Total horsepower	197	83	188	206	200
Percent outboard	94%	24%	92%	97%	100%
Number of engines	1.1	0.3	1.0	1.1	1.0
Age of vessel in 2009	8	8	8	9	6
Age of vessel at time of purchase	2	6	2	3	0
Vessel Operation					
Percent part-time operators	46%	53%	40%	51%	0%
Percent owner-operators	81%	41%	77%	86%	100%
Number of trips	86	67	79	94	75
Per head payment structure	4%	18%	2%	5%	0%
Percent full day	67%	38%	63%	71%	80%
Percent half day	33%	38%	29%	37%	20%
Percent overnight/multiday	0%	3%	0%	0%	0%
Percent inshore/coastal trips	98%	7%	97%	99%	100%
Percent rig-reef trips	2%	7%	1%	2%	0%
Percent pelagic trips	0%	2%	0%	0%	0%
Percent in EEZ	3%	10%	1%	4%	0%
Full day trip (n=271)					
Number of full day trips	60	56	53	66	45
Trip distance (mi)	37	23	35	40	35
Trip duration (hours)	8	1	8	8	8
Vessel fuel consumed (gal)	19	21	17	22	16
Passengers	3.0	0.7	2.9	3.1	3.0
Percent using deck hands	5%	22%	2%	7%	0%
Deck hands (n=13)	0.9	0.2	0.8	1.0	1.0
Half day trip (n=184)					
Number of half day trips	46	51	39	53	30
Trip distance (mi)	22	14	20	24	20
Trip duration (hours)	5	1	5	5	5
Vessel fuel consumed (gal)	12	7	11	13	10
Passengers	2.9	0.8	2.8	3.0	3.0
Percent using deck hands	3%	18%	0%	5%	0%
Deck hands (n=5)	1.0	0.6	0.4	1.6	1.0

Table D.10 Primary Vessel and Trip Characteristics of an Average Texas Guide Boat Operation (n=105)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	22.4	1.9	22.0	22.8	22.0
Total horsepower	203	66	190	215	200
Percent outboard	95%	21%	91%	99%	100%
Number of engines	1.1	0.3	1.0	1.1	1.0
Age of vessel in 2009	7	7	6	9	5
Age of vessel at time of purchase	2	6	1	3	0
Vessel Operation					
Percent part-time operators	45%	50%	35%	54%	0%
Percent owner-operators	80%	40%	72%	88%	100%
Number of trips	85	59	73	96	71
Per head payment structure	5%	19%	1%	8%	0%
Percent full day	73%	32%	67%	80%	90%
Percent half day	27%	32%	20%	33%	10%
Percent overnight/multiday	0%	0%	-	-	0%
Percent inshore/coastal trips	99%	5%	98%	100%	100%
Percent rig-reef trips	1%	5%	0%	2%	0%
Percent pelagic trips	0%	2%	0%	1%	0%
Percent in EEZ	0%	3%	0%	1%	0%
Full day trip (n=103)					
Number of full day trips	60	51	50	70	48
Trip distance (mi)	38	23	33	42	30
Trip duration (hours)	8	1	8	8	8
Vessel fuel consumed (gal)	20	11	18	22	20
Passengers	3.2	0.5	3.1	3.3	3.0
Percent using deck hands	5%	22%	1%	9%	0%
Deck hands (n=5)	1.0	0.0	-	-	1.0
Half day trip (n=65)					
Number of half day trips	42	45	30	53	25
Trip distance (mi)	21	11	19	24	20
Trip duration (hours)	5	1	5	5	5
Vessel fuel consumed (gal)	12	6	11	14	12
Passengers	3.2	0.6	3.0	3.3	3.0
Percent using deck hands	2%	12%	-2%	5%	0%
Deck hands (n=1)	-	-	-	-	-

Table D.11 Primary Vessel and Trip Characteristics of an Average Louisiana Guide Boat Operation (n=100)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	22.6	2.1	22.1	23.0	23.0
Total horsepower	227	90	209	245	225
Percent outboard	98%	14%	95%	101%	100%
Number of engines	1.1	0.3	1.0	1.1	1.0
Age of vessel in 2009	7	6	6	8	5
Age of vessel at time of purchase	1	4	1	2	0
Vessel Operation					
Percent part-time operators	57%	50%	47%	67%	100%
Percent owner-operators	75%	44%	66%	84%	100%
Number of trips	71	65	58	84	41
Per head payment structure	6%	23%	2%	11%	0%
Percent full day	85%	29%	79%	91%	100%
Percent half day	14%	28%	9%	20%	0%
Percent overnight/multiday	1%	5%	0%	2%	0%
Percent inshore/coastal trips	99%	5%	98%	100%	100%
Percent rig-reef trips	1%	5%	0%	2%	0%
Percent pelagic trips	0%	1%	0%	0%	0%
Percent in EEZ	5%	14%	3%	8%	0%
Full day trip (n=93)					
Number of full day trips	68	64	55	81	38
Trip distance (mi)	44	22	40	49	40
Trip duration (hours)	8	1	8	8	8
Vessel fuel consumed (gal)	24	37	17	32	20
Passengers	3.2	0.7	3.0	3.3	3.0
Percent using deck hands	6%	25%	1%	12%	0%
Deck hands (n=6)	1.0	0.0	-	-	1.0
Half day trip (n=43)					
Number of half day trips	18	21	11	24	10
Trip distance (mi)	30	21	24	37	25
Trip duration (hours)	5	1	4	5	5
Vessel fuel consumed (gal)	16	10	12	19	14
Passengers	2.9	0.7	2.6	3.1	3.0
Percent using deck hands	5%	21%	-2%	11%	0%
Deck hands (n=2)	-	-	-	-	-

Table D.12 Primary Vessel and Trip Characteristics of an Average Mississippi and Alabama Guide Boat Operation (n=23)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Vessel Characteristics					
Length (ft)	22.4	2.5	21.3	23.5	22.0
Total horsepower	182	66	153	210	200
Percent outboard	94%	23%	84%	105%	100%
Number of engines	1.0	0.0	-	-	1.0
Age of vessel in 2009	8	5	5	10	6
Age of vessel at time of purchase	2	4	1	4	0
Vessel Operation					
Percent part-time operators	40%	50%	18%	61%	0%
Percent owner-operators	92%	28%	80%	104%	100%
Number of trips	91	60	66	117	75
Per head payment structure	1%	3%	0%	2%	0%
Percent full day	35%	37%	19%	51%	25%
Percent half day	65%	37%	49%	81%	75%
Percent overnight/multiday	0%	0%	-	-	0%
Percent inshore/coastal trips	99%	3%	97%	100%	100%
Percent rig-reef trips	1%	3%	0%	3%	0%
Percent pelagic trips	0%	0%	-	-	0%
Percent in EEZ	1%	3%	0%	2%	0%
Full day trip (n=19)					
Number of full day trips	9	42	17	60	32
Trip distance (mi)	34	20	24	45	30
Trip duration (hours)	8	1	7	9	8
Vessel fuel consumed (gal)	22	14	15	29	15
Passengers	3.1	0.9	2.7	3.6	3.0
Percent using deck hands	0%	0%	-	-	0%
Deck hands (n=0)	0	-	-	-	-
Half day trip (n=20)					
Number of half day trips	72	62	43	101	54
Trip distance (mi)	19	9	15	23	20
Trip duration (hours)	5	1	4	5	4
Vessel fuel consumed (gal)	13	10	8	18	10
Passengers	3.3	0.8	2.9	3.6	3.0
Percent using deck hands	0%	0%	-	-	0%
Deck hands (n=0)	0	-	-	-	-

Table D.13 Primary Vessel and Trip Characteristics of an Average West Florida Guide Boat Operation (n=64)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Vessel Characteristics					
Length (ft)	21.1	3.0	20.3	21.8	22.0
Total horsepower	171	76	151	190	150
Percent outboard	91%	29%	83%	98%	100%
Number of engines	1.1	0.2	1.0	1.1	1.0
Age of vessel in 2009	11	9	9	13	8
Age of vessel at time of purchase	3	5	2	4	1
Vessel Operation					
Percent part-time operators	39%	49%	27%	51%	0%
Percent owner-operators	86%	35%	77%	95%	100%
Number of trips	99	66	82	115	91
Per head payment structure	1%	3%	0%	2%	0%
Percent full day	50%	36%	42%	59%	45%
Percent half day	50%	36%	41%	58%	55%
Percent overnight/multiday	0%	0%	-	-	0%
Percent inshore/coastal trips	97%	10%	95%	99%	100%
Percent rig-reef trips	3%	10%	0%	5%	0%
Percent pelagic trips	0%	2%	0%	1%	0%
Percent in EEZ	3%	8%	1%	5%	0%
Full day trip (n=58)					
Number of full day trips	55	47	42	67	46
Trip distance (mi)	32	17	27	36	30
Trip duration (hours)	8	1	8	8	8
Vessel fuel consumed (gal)	15	7	13	16	13
Passengers	2.6	0.7	2.5	2.8	3.0
Percent using deck hands	3%	18%	-1%	8%	0%
Deck hands (n=2)	-	-	-	-	-
Half day trip (n=56)					
Number of half day trips	56	48	44	69	42
Trip distance (mi)	20	10	18	23	20
Trip duration (hours)	4	1	4	5	4
Vessel fuel consumed (gal)	10	4	9	11	10
Passengers	2.6	0.7	2.4	2.8	3.0
Percent using deck hands	4%	19%	-1%	9%	0%
Deck hands (n=2)	-	-	-	-	-

Table D.14 Firm and Primary Vessel Costs and Earnings of an Average Gulf Head Boat Operation (n=21)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	315,150	229,917	218,240	412,061	275,000
Vessel purchase price	342,641	230,073	245,665	439,617	300,000
Liabilities - Outstanding loan on vessel (n=12)	215,519	130,414	134,299	296,739	180,000
Percent of vessels with loan	59%	54%	36%	82%	100%
Equity - Equity in vessel	205,243	183,462	127,913	282,572	150,000
Percent of vessels with insurance	90%	33%	76%	104%	100%
Percent insurance coverage (n=19)	96%	35%	80%	111%	100%
Vessel Operation					
Full day trip (n=20)					
Trip fee	1,871	687	1,577	2,166	1,850
Tips	250	161	181	318	270
Crew labor	131	96	90	172	105
Fuel and oil	431	213	340	522	450
Bait	52	33	38	67	40
Tackle	32	26	21	43	30
Ice	22	13	16	28	20
Net operating income to owner per trip	1,452	589	1,200	1,705	1,520
Half day trip (n=10)					
Trip fee	1,242	678	834	1,650	1,020
Tips	150	109	85	216	175
Crew labor	74	48	44	103	69
Fuel and oil	224	111	157	290	205
Bait	36	31	18	55	30
Tackle	19	18	8	30	15
Ice	12	9	7	18	13
Net operating income to owner per trip	1,028	620	654	1,401	879
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	229,830	151,086	166,147	293,513	184,184
Outflow - Total	162,740	120,263	112,049	213,431	127,150
Crew labor cost	13,260	12,431	8,021	18,500	11,200
Fuel and oil	44,814	32,649	31,053	58,576	37,557
Cost of other supplies (bait, ice, tackle)	10,949	7,615	7,739	14,158	8,257
Insurance	7,294	5,120	5,136	9,452	6,000
Regular maintenance	9,186	13,885	3,334	15,038	6,659
Overhead	52,395	62,911	25,878	78,912	26,840
Loan payments	21,251	26,396	10,125	32,377	11,532
Annualized investments since vessel acquired	3,590	4,703	1,608	5,572	2,133
Net income to owner (annual)[1]	67,090	90,035	29,140	105,040	36,765
Net income to owner (per average trip)[1]	621	-	-	-	-
Net income to owner (annual)[2]	160,806	109,146	114,801	206,812	122,584
Net income to owner (per average trip)[2]	1,476	681	1,190	1,763	1,547

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.15 Firm and Primary Vessel Costs and Earnings of an Average Texas, Louisiana, Mississippi, and Alabama Head Boat Operation (n=12)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	308,553	208,381	182,504	434,603	325,000
Vessel purchase price	367,404	271,540	203,150	531,658	312,500
Liabilities - Outstanding loan on vessel (n=8)	212,656	152,962	91,616	333,696	135,000
Percent of vessels with loan	67%	51%	36%	99%	100%
Equity - Equity in vessel	165,123	223,022	30,218	300,029	100,000
Percent of vessels with insurance	94%	27%	77%	110%	100%
Percent insurance coverage (n=11)	100%	33%	79%	121%	100%
Vessel Operation					
Full day trip (n=11)					
Trip fee	2,145	705	1,693	2,597	2,000
Tips	274	163	170	378	300
Crew labor	116	93	56	175	120
Fuel and oil	592	245	427	757	550
Bait	51	20	38	65	50
Tackle	30	11	23	37	30
Ice	33	13	24	42	30
Net operating income to owner per trip	1,803	636	1,374	2,231	1,800
Half day trip (n=4)					
Trip fee	1,363	896	35	2,690	1,150
Tips	155	136	-47	357	160
Crew labor	53	41	-8	113	65
Fuel and oil	198	121	18	377	225
Bait	50	37	-5	105	40
Tackle	24	8	12	36	25
Ice	13	7	2	23	13
Net operating income to owner per trip	1,181	927	-192	2,554	988
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	240,052	163,670	141,049	339,056	212,000
Outflow - Total	169,542	103,070	107,195	231,889	175,114
Crew labor cost	10,289	10,427	3,982	16,597	7,392
Fuel and oil	51,031	38,641	27,658	74,405	45,720
Cost of other supplies (bait, ice, tackle)	10,578	6,013	6,940	14,215	9,284
Insurance	7,853	5,526	4,510	11,195	7,050
Regular maintenance	14,952	23,404	795	29,109	5,500
Overhead	47,445	34,252	26,726	68,164	48,650
Loan payments	22,515	26,193	6,671	38,360	16,200
Annualized investments since vessel acquired	4,879	6,402	1,006	8,752	3,615
Net income to owner (annual)[1]	70,510	76,770	24,072	116,948	70,347
Net income to owner (per average trip)[1]	792	-	-	-	-
Net income to owner (annual)[2]	168,154	122,511	94,047	242,260	158,326
Net income to owner (per average trip)[2]	1,765	826	1,265	2,265	1,881

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.16 Firm and Primary Vessel Costs and Earnings of an Average West Florida Head Boat Operation (n=9)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	317,778	227,405	142,979	492,577	275,000
Vessel purchase price	332,778	200,408	178,731	486,825	300,000
Liabilities - Outstanding loan on vessel (n=4)	217,250	131,345	8,250	426,250	190,500
Percent of vessels with loan	56%	53%	15%	96%	100%
Equity - Equity in vessel	221,222	153,985	102,859	339,586	170,000
Percent of vessels with insurance	89%	33%	63%	115%	100%
Percent insurance coverage (n=8)	94%	35%	65%	123%	100%
Vessel Operation					
Full day trip (n=9)					
Trip fee	1,772	605	1,307	2,237	1,850
Tips	241	149	126	355	270
Crew labor	136	90	67	205	105
Fuel and oil	394	169	264	524	450
Bait	54	34	28	80	40
Tackle	33	28	12	55	30
Ice	19	11	10	28	20
Net operating income to owner per trip	1,376	547	956	1,796	1,465
Half day trip (n=6)					
Trip fee	1,217	539	652	1,782	930
Tips	150	89	56	243	175
Crew labor	78	42	34	122	69
Fuel and oil	229	93	131	327	203
Bait	33	24	8	59	30
Tackle	18	17	0	36	14
Ice	12	8	3	21	13
Net operating income to owner per trip	996	457	516	1,476	821
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	225,758	138,871	119,012	332,504	176,162
Outflow - Total	160,030	120,811	67,167	252,894	118,823
Crew labor cost	14,444	12,349	4,951	23,936	11,592
Fuel and oil	42,338	28,094	20,743	63,933	37,557
Cost of other supplies (bait, ice, tackle)	11,097	7,806	5,096	17,097	8,257
Insurance	7,072	4,703	3,457	10,687	6,000
Regular maintenance	6,889	4,786	3,211	10,568	6,659
Overhead	54,366	68,059	2,052	106,681	25,500
Loan payments	20,748	25,271	1,323	40,173	11,532
Annualized investments since vessel acquired	3,077	3,480	402	5,752	2,133
Net income to owner (annual)[1]	65,728	90,619	-3,928	135,384	36,765
Net income to owner (per average trip)[1]	572	-	-	-	-
Net income to owner (annual)[2]	157,880	98,396	82,246	233,513	118,287
Net income to owner (per average trip)[2]	1,362	537	949	1,775	1,540

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.17 Firm and Primary Vessel Costs and Earnings of an Average Gulf Charter Boat Operation (n=87)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	67,341	58,516	55,759	78,922	50,000
Vessel purchase price	91,912	89,188	74,260	109,564	70,000
Liabilities - Outstanding loan on vessel (n=30)	51,606	41,929	37,187	66,025	38,000
Percent of vessels with loan	46%	54%	35%	56%	0%
Equity - Equity in vessel	49,247	61,766	37,023	61,472	37,000
Percent of vessels with insurance	91%	31%	85%	97%	100%
Percent insurance coverage (n=79)	102%	64%	89%	116%	100%
Vessel Operation					
Full day trip (n=85)					
Trip fee	979	314	917	1,042	950
Tips	93	69	80	107	100
Crew labor (n=57)	93	43	83	104	100
Fuel and oil	240	143	211	268	210
Bait	44	25	39	49	40
Tackle	22	14	19	25	20
Ice	19	27	14	25	15
Net operating income to owner per trip	689	254	638	739	674
Half day trip (n=56)					
Trip fee	556	188	509	603	500
Tips	54	49	42	66	50
Crew labor (n=31)	60	25	51	69	60
Fuel and oil	100	67	83	117	85
Bait	23	12	20	26	20
Tackle	12	7	11	14	10
Ice	9	6	7	10	8
Net operating income to owner per trip	435	176	391	479	405
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	75,825	65,059	62,949	88,701	65,436
Outflow - Total	53,405	40,688	45,352	61,458	43,573
Crew labor cost	4,120	6,053	2,922	5,318	1,755
Fuel and oil	15,851	15,965	12,692	19,011	12,540
Cost of other supplies (bait, ice, tackle)	5,971	5,970	4,790	7,153	4,394
Insurance	2,807	2,019	2,407	3,206	3,000
Regular maintenance	3,172	3,712	2,437	3,907	2,000
Overhead	14,924	19,134	11,138	18,711	7,300
Loan payments	4,082	6,712	2,754	5,411	0
Annualized investments since vessel acquired	2,478	4,118	1,663	3,293	1,476
Net income to owner (annual)[1]	22,420	41,496	14,207	30,632	14,549
Net income to owner (per average trip)[1]	273	-	-	-	-
Net income to owner (annual)[2]	49,882	43,858	41,202	58,563	45,465
Net income to owner (per average trip)[2]	630	276	575	685	605

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.18 Firm and Primary Vessel Costs and Earnings of an Average Texas Charter Boat Operation (n=12)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	55,875	43,050	28,523	83,227	47,250
Vessel purchase price	69,000	58,047	32,118	105,882	60,000
Liabilities - Outstanding loan on vessel (n=4)	60,750	49,688	-18,315	139,815	49,000
Percent of vessels with loan	33%	49%	2%	65%	0%
Equity - Equity in vessel	35,625	23,969	20,396	50,854	36,000
Percent of vessels with insurance	100%	0%	-	-	100%
Percent insurance coverage	114%	55%	78%	149%	103%
Vessel Operation					
Full day trip (n=11)					
Trip fee	1,150	322	933	1,367	1,200
Tips	79	57	41	117	75
Crew labor (n=6)	91	65	23	159	88
Fuel and oil	266	151	165	368	220
Bait	47	28	29	66	40
Tackle	15	8	10	21	15
Ice	16	8	11	22	20
Net operating income to owner per trip	834	199	701	968	865
Half day trip (n=5)					
Trip fee	525	200	277	773	450
Tips	54	27	20	88	50
Crew labor (n=1)	-	-	-	-	-
Fuel and oil	58	47	0	116	35
Bait	17	11	3	31	20
Tackle	7	4	1	13	10
Ice	6	6	-1	13	5
Net operating income to owner per trip	476	159	278	673	425
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	52,086	43,748	24,289	79,882	44,024
Outflow - Total	32,561	24,271	17,140	47,983	28,513
Crew labor cost	1,818	2,631	147	3,490	280
Fuel and oil	9,339	6,693	5,087	13,592	11,089
Cost of other supplies (bait, ice, tackle)	2,517	2,061	1,208	3,826	2,155
Insurance	2,134	1,563	1,141	3,127	2,000
Regular maintenance	3,246	4,759	222	6,269	2,000
Overhead	8,350	10,933	1,403	15,297	5,250
Loan payments	3,677	7,088	-827	8,181	0
Annualized investments since vessel acquired	1,480	1,621	450	2,510	990
Net income to owner (annual)[1]	19,524	40,866	-6,441	45,490	8,564
Net income to owner (per average trip)[1]	375	-	-	-	-
Net income to owner (annual)[2]	38,411	37,955	14,296	62,527	28,360
Net income to owner (per average trip)[2]	751	262	584	917	699

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.19 Firm and Primary Vessel Costs and Earnings of an Average Louisiana Charter Boat Operation (n=11)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	56,727	41,437	28,890	84,565	42,000
Vessel purchase price	76,818	38,771	50,771	102,865	85,000
Liabilities - Outstanding loan on vessel (n=7)	38,000	32,711	7,748	68,252	28,000
Percent of vessels with loan	64%	50%	30%	98%	100%
Equity - Equity in vessel	32,545	54,178	-3,852	68,943	15,000
Percent of vessels with insurance	100%	0%	-	-	100%
Percent insurance coverage	99%	43%	70%	128%	100%
Vessel Operation					
Full day trip (n=11)					
Trip fee	1,197	365	952	1,442	1,200
Tips	116	63	74	159	120
Crew labor (n=8)	115	23	96	134	100
Fuel and oil	300	144	203	397	350
Bait	49	28	30	68	50
Tackle	37	17	26	49	40
Ice	30	16	19	41	30
Net operating income to owner per trip	814	278	627	1001	770
Half day trip (n=2)					
Trip fee	-	-	-	-	-
Tips	-	-	-	-	-
Crew labor (n=1)	-	-	-	-	-
Fuel and oil	-	-	-	-	-
Bait	-	-	-	-	-
Tackle	-	-	-	-	-
Ice	-	-	-	-	-
Net operating income to owner per trip	-	-	-	-	-
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	107,581	87,816	48,586	166,577	74,288
Outflow - Total	67,335	32,952	45,198	89,473	65,619
Crew labor cost	6,408	6,353	2,139	10,676	4,032
Fuel and oil	24,884	20,723	10,961	38,806	20,160
Cost of other supplies (bait, ice, tackle)	9,442	6,561	5,034	13,849	9,517
Insurance	2,927	1,630	1,832	4,022	2,800
Regular maintenance	3,091	2,791	1,216	4,966	3,000
Overhead	10,068	8,172	4,578	15,558	6,117
Loan payments	4,431	5,945	438	8,425	2,940
Annualized investments since vessel acquired	6,085	8,995	42	12,128	3,167
Net income to owner (annual)[1]	40,246	61,589	-1,130	81,622	8,669
Net income to owner (per average trip)[1]	537	-	-	-	-
Net income to owner (annual)[2]	66,848	59,465	26,899	106,797	30,030
Net income to owner (per average trip)[2]	855	299	654	1,056	770

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.20 Firm and Primary Vessel Costs and Earnings of an Average Mississippi and Alabama Charter Boat Operation (n=22)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	77,170	55,061	52,758	101,583	70,000
Vessel purchase price	85,438	57,332	60,018	110,857	80,000
Liabilities - Outstanding loan on vessel (n=6)	61,601	55,922	3,100	120,102	40,000
Percent of vessels with loan	32%	48%	11%	54%	0%
Equity - Equity in vessel	60,264	55,747	35,547	84,981	35,000
Percent of vessels with insurance	87%	35%	71%	102%	100%
Percent insurance coverage (n=19)	115%	44%	94%	136%	105%
Vessel Operation					
Full day trip (n=21)					
Trip fee	975	384	800	1,150	850
Tips	104	94	61	147	80
Crew labor (n=18)	90	58	61	119	85
Fuel and oil	278	206	184	371	250
Bait	33	12	28	39	30
Tackle	24	14	17	30	20
Ice	15	7	12	19	15
Net operating income to owner per trip	652	326	504	800	550
Half day trip (n=17)					
Trip fee	589	196	488	690	650
Tips	52	52	25	79	50
Crew labor (n=12)	61	33	39	82	60
Fuel and oil	122	97	72	172	100
Bait	16	8	12	20	20
Tackle	13	8	9	17	10
Ice	9	5	7	12	8
Net operating income to owner per trip	439	139	367	510	444
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	58,125	59,704	31,570	84,680	27,000
Outflow - Total	43,626	35,756	27,723	59,530	26,475
Crew labor cost	3,545	3,758	1,873	5,216	2,220
Fuel and oil	14,885	19,008	6,431	23,340	4,875
Cost of other supplies (bait, ice, tackle)	3,369	3,020	2,026	4,712	1,800
Insurance	2,995	2,580	1,847	4,142	2,800
Regular maintenance	3,535	4,537	1,517	5,553	2,750
Overhead	11,053	11,590	5,898	16,208	6,150
Loan payments	2,458	4,175	601	4,315	0
Annualized investments since vessel acquired	1,786	1,631	1,061	2,512	1,316
Net income to owner (annual)[1]	14,499	33,426	-368	29,366	5,737
Net income to owner (per average trip)[1]	302	-	-	-	-
Net income to owner (annual)[2]	36,326	38,266	19,306	53,346	19,050
Net income to owner (per average trip)[2]	621	344	468	773	513

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.21 Firm and Primary Vessel Costs and Earnings of an Average West Florida Charter Boat Operation (n=42)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	70,679	59,383	52,173	89,184	50,000
Vessel purchase price	102,369	97,598	71,955	132,783	71,250
Liabilities - Outstanding loan on vessel (n=13)	53,215	36,526	31,143	75,288	50,000
Percent of vessels with loan	48%	51%	32%	63%	0%
Equity - Equity in vessel	54,207	63,930	34,285	74,129	40,000
Percent of vessels with insurance	88%	33%	78%	98%	100%
Percent insurance coverage (n=37)	97%	67%	75%	120%	100%
Vessel Operation					
Full day trip					
Trip fee	893	198	831	955	900
Tips	90	59	72	109	100
Crew labor (n=25)	89	32	76	102	100
Fuel and oil	213	103	182	245	200
Bait	44	23	37	52	40
Tackle	20	11	16	23	20
Ice	19	31	9	28	10
Net operating income to owner per trip	634	191	574	693	623
Half day trip (n=32)					
Trip fee	547	163	488	606	500
Tips	56	47	39	73	50
Crew labor (n=17)	59	22	48	71	60
Fuel and oil	96	50	78	114	89
Bait	24	11	20	28	25
Tackle	13	6	11	15	10
Ice	9	6	7	11	9
Net operating income to owner per trip	429	169	368	490	395
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	78,777	55,249	61,560	95,994	75,050
Outflow - Total	57,826	40,127	45,322	70,331	43,650
Crew labor cost	4,351	6,192	2,422	6,281	1,072
Fuel and oil	15,837	13,315	11,687	19,986	13,724
Cost of other supplies (bait, ice, tackle)	6,650	5,745	4,859	8,440	5,439
Insurance	2,921	1,842	2,347	3,495	3,000
Regular maintenance	3,099	2,998	2,165	4,033	2,100
Overhead	18,428	20,802	11,946	24,910	12,460
Loan payments	4,430	6,500	2,405	6,456	0
Annualized investments since vessel acquired	2,111	2,072	1,465	2,757	1,428
Net income to owner (annual)[1]	20,951	32,411	10,850	31,051	20,313
Net income to owner (per average trip)[1]	214	-	-	-	-
Net income to owner (annual)[2]	51,939	36,498	40,566	63,313	53,480
Net income to owner (per average trip)[2]	553	182	496	609	559

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.22 Firm and Primary Vessel Costs and Earnings of an Average Guide Boat Operation (n=292)

	Mean	Standard Deviation	95% Confidence Interval		Median
			Lower Limit	Upper Limit	
Balance Sheet					
Assets - Vessel market value	23,166	13,802	21,660	24,672	20,000
Vessel purchase price	30,166	17,656	28,240	32,093	29,000
Liabilities - Outstanding loan on vessel (n=98)	19,690	13,350	17,139	22,240	19,000
Percent of vessels with loan	41%	52%	35%	46%	0%
Equity - Equity in vessel	16,637	14,597	15,044	18,229	15,000
Percent of vessels with insurance	92%	29%	89%	95%	100%
Percent insurance coverage (n=266)	112%	161%	94%	131%	100%
Vessel Operation					
Full day trip (n=271)					
Trip fee	518	114	505	531	500
Tips	61	63	54	68	50
Crew labor (n=13)	58	51	28	88	50
Fuel and oil	68	48	62	73	60
Bait	33	29	30	36	30
Tackle	13	17	11	15	10
Ice	8	13	7	9	6
Net operating income to owner per trip	455	129	440	469	440
Half day trip (n=184)					
Trip fee	370	81	359	380	350
Tips	43	45	37	49	40
Crew labor (n=5)	55	102	-59	169	40
Fuel and oil	45	32	40	49	40
Bait	21	18	18	23	20
Tackle	10	9	8	11	8
Ice	7	15	5	9	5
Net operating income to owner per trip	329	96	316	342	328
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	45,495	39,632	41,171	49,819	34,600
Outflow - Total	19,514	16,226	17,744	21,285	15,760
Crew labor cost	85	515	28	141	0
Fuel and oil	5,101	6,043	4,441	5,760	3,640
Cost of other supplies (bait, ice, tackle)	4,137	4,745	3,619	4,654	2,880
Insurance	1,273	3,659	874	1,672	1,050
Regular maintenance	1,038	1,175	910	1,167	750
Overhead	4,988	8,110	4,103	5,872	2,301
Loan payments	1,985	2,963	1,662	2,309	0
Annualized investments since vessel acquired	908	1,373	758	1,058	475
Net income to owner (annual)[1]	25,981	31,615	22,532	29,430	17,486
Net income to owner (per average trip)[1]	302	-	-	-	-
Net income to owner (annual)[2]	36,174	32,687	32,607	39,740	27,650
Net income to owner (per average trip)[2]	409	126	395	423	399

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.23 Firm and Primary Vessel Costs and Earnings of an Average Texas Guide Boat Operation (n=105)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	23,167	11,036	21,031	25,302	25,000
Vessel purchase price	30,288	12,888	27,794	32,782	30,000
Liabilities - Outstanding loan on vessel (n=40)	19,811	12,006	15,971	23,651	20,000
Percent of vessels with loan	49%	50%	39%	58%	0%
Equity - Equity in vessel	15,620	12,115	13,275	17,964	13,000
Percent of vessels with insurance	90%	31%	84%	95%	100%
Percent insurance coverage (n=94)	104%	134%	76%	131%	100%
Vessel Operation					
Full day trip (n=103)					
Trip fee	514	82	498	530	500
Tips	63	64	51	76	50
Crew labor (n=5)	50	36	5	95	50
Fuel and oil	68	34	61	74	60
Bait	44	32	37	50	45
Tackle	13	23	8	17	10
Ice	7	4	6	8	6
Net operating income to owner per trip	445	95	426	463	431
Half day trip (n=65)					
Trip fee	377	56	363	391	400
Tips	52	61	37	67	50
Crew labor (n=1)	-	-	-	-	-
Fuel and oil	44	22	38	49	40
Bait	27	21	22	32	30
Tackle	9	10	7	12	5
Ice	6	3	5	7	5
Net operating income to owner per trip	342	80	322	362	346
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	46,190	35,980	39,227	53,153	35,020
Outflow - Total	20,001	13,653	17,358	22,643	16,625
Crew labor cost	102	557	-6	209	0
Fuel and oil	5,024	4,903	4,075	5,973	4,200
Cost of other supplies (bait, ice, tackle)	4,956	5,056	3,978	5,935	3,360
Insurance	1,605	5,583	524	2,685	950
Regular maintenance	986	919	808	1,164	800
Overhead	3,999	6,836	2,676	5,322	1,965
Loan payments	2,554	3,006	1,972	3,136	0
Annualized investments since vessel acquired	775	1,004	580	969	343
Net income to owner (annual)[1]	26,189	29,390	20,501	31,877	17,486
Net income to owner (per average trip)[1]	308	-	-	-	-
Net income to owner (annual)[2]	36,107	28,228	30,644	41,570	28,480
Net income to owner (per average trip)[2]	415	95	396	433	410

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.24 Firm and Primary Vessel Costs and Earnings of an Average Louisiana Guide Boat Operation (n=100)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	24,036	12,335	21,588	26,483	20,000
Vessel purchase price	31,840	13,986	29,065	34,615	32,000
Liabilities - Outstanding loan on vessel (n=32)	20,747	12,920	16,089	25,405	19,500
Percent of vessels with loan	41%	49%	31%	51%	0%
Equity - Equity in vessel	17,397	14,351	14,549	20,244	16,750
Percent of vessels with insurance	92%	27%	87%	97%	100%
Percent insurance coverage (n=92)	108%	80%	91%	125%	100%
Vessel Operation					
Full day trip (n=93)					
Trip fee	538	129	512	565	550
Tips	69	79	53	85	50
Crew labor (n=6)	73	62	8	139	50
Fuel and oil	76	46	67	86	70
Bait	31	24	26	36	25
Tackle	14	10	12	16	10
Ice	9	7	8	11	10
Net operating income to owner per trip	471	151	440	503	476
Half day trip (n=43)					
Trip fee	410	126	371	449	400
Tips	49	30	40	58	50
Crew labor (n=2)	-	-	-	-	-
Fuel and oil	54	40	42	67	45
Bait	20	18	15	26	20
Tackle	12	9	10	15	10
Ice	10	5	8	11	10
Net operating income to owner per trip	356	132	316	397	370
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	42,268	39,621	34,407	50,130	23,288
Outflow - Total	18,894	19,834	14,958	22,829	12,398
Crew labor cost	122	537	15	228	0
Fuel and oil	5,010	6,498	3,721	6,300	3,040
Cost of other supplies (bait, ice, tackle)	3,782	5,167	2,756	4,807	1,980
Insurance	1,002	617	879	1,124	1,085
Regular maintenance	950	1,098	732	1,168	500
Overhead	4,941	8,887	3,178	6,705	2,125
Loan payments	2,065	2,956	1,479	2,652	0
Annualized investments since vessel acquired	1,022	1,951	635	1,409	536
Net income to owner (annual)[1]	23,375	29,312	17,558	29,191	10,635
Net income to owner (per average trip)[1]	329	-	-	-	-
Net income to owner (annual)[2]	33,355	32,396	26,927	39,783	18,235
Net income to owner (per average trip)[2]	465	162	432	497	463

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.25 Firm and Primary Vessel Costs and Earnings of an Average Mississippi and Alabama Guide Boat Operation (n=23)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	21,810	8,051	18,328	25,292	22,500
Vessel purchase price	25,194	9,915	20,906	29,482	26,000
Liabilities - Outstanding loan on vessel (n=8)	17,775	9,000	10,345	25,204	18,000
Percent of vessels with loan	40%	50%	18%	61%	0%
Equity - Equity in vessel	15,469	8,517	11,786	19,152	15,000
Percent of vessels with insurance	84%	38%	67%	100%	100%
Percent insurance coverage (n=19)	108%	36%	91%	125%	100%
Vessel Operation					
Full day trip (n=17)					
Trip fee	570	164	486	654	500
Tips	53	29	38	67	50
Crew labor (n=0)	-	-	-	-	-
Fuel and oil	96	133	28	164	55
Bait	39	12	33	45	40
Tackle	15	10	10	21	10
Ice	11	8	7	16	10
Net operating income to owner per trip	461	127	396	526	435
Half day trip (n=20)					
Trip fee	374	76	338	409	375
Tips	37	22	27	47	45
Crew labor (n=0)	-	-	-	-	-
Fuel and oil	51	62	22	80	30
Bait	22	10	18	27	20
Tackle	10	7	7	13	8
Ice	7	5	5	10	6
Net operating income to owner per trip	320	84	280	359	333
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	41,098	24,520	29,928	52,268	34,170
Outflow - Total	20,077	11,053	15,042	25,112	16,728
Crew labor cost	0	0	.	.	0
Fuel and oil	4,523	4,374	2,531	6,516	3,420
Cost of other supplies (bait, ice, tackle)	4,481	3,426	2,921	6,042	4,219
Insurance	1,012	650	716	1,309	1,100
Regular maintenance	810	866	415	1,204	500
Overhead	6,744	8,637	2,809	10,678	4,000
Loan payments	1,824	2,743	575	3,074	0
Annualized investments since vessel acquired	682	565	425	940	475
Net income to owner (annual)[1]	21,021	21,048	11,433	30,609	16,913
Net income to owner (per average trip)[1]	231	-	-	-	-
Net income to owner (annual)[2]	32,093	20,980	22,536	41,650	27,200
Net income to owner (per average trip)[2]	357	97	313	401	379

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

Table D.26 Firm and Primary Vessel Costs and Earnings of an Average West Florida Guide Boat Operation (n=64)

	Mean	Standard Deviation	95% Confidence Interval Lower Limit	95% Confidence Interval Upper Limit	Median
Balance Sheet					
Assets - Vessel market value	22,697	16,054	18,687	26,707	20,000
Vessel purchase price	29,427	22,268	23,864	34,989	21,750
Liabilities - Outstanding loan on vessel (n=18)	18,926	14,605	11,663	26,189	13,500
Percent of vessels with loan	31%	47%	20%	43%	0%
Equity - Equity in vessel	17,374	15,767	13,435	21,312	15,000
Percent of vessels with insurance	95%	21%	90%	101%	100%
Percent insurance coverage (n=61)	125%	207%	72%	178%	94%
Vessel Operation					
Full day trip (n=58)					
Trip fee	501	109	473	530	500
Tips	53	34	44	62	50
Crew labor (n=2)	-	-	-	-	-
Fuel and oil	58	39	48	68	50
Bait	20	16	16	25	20
Tackle	12	7	10	14	10
Ice	8	20	3	13	5
Net operating income to owner per trip	454	125	421	487	436
Half day trip (n=56)					
Trip fee	349	52	335	363	350
Tips	35	20	30	41	36
Crew labor (n=2)	-	-	-	-	-
Fuel and oil	41	23	35	47	36
Bait	16	10	13	19	18
Tackle	9	5	7	10	7
Ice	7	20	2	12	4
Net operating income to owner per trip	310	72	291	330	319
Annual Cash Flow					
Inflow - Trip revenue (fees, tips)	47,644	39,220	37,847	57,441	37,892
Outflow - Total	19,351	13,972	15,861	22,841	15,781
Crew labor cost	49	391	-49	146	0
Fuel and oil	5,326	6,162	3,787	6,866	3,676
Cost of other supplies (bait, ice, tackle)	3,428	3,062	2,663	4,193	2,529
Insurance	1,132	651	969	1,294	1,150
Regular maintenance	1,192	1,326	861	1,523	975
Overhead	5,915	7,391	4,069	7,761	3,066
Loan payments	1,305	2,291	733	1,877	0
Annualized investments since vessel acquired	1,004	1,034	745	1,262	729
Net income to owner (annual)[1]	28,293	32,012	20,297	36,289	20,873
Net income to owner (per average trip)[1]	286	-	-	-	-
Net income to owner (annual)[2]	38,841	33,855	30,384	47,297	31,956
Net income to owner (per average trip)[2]	369	90	346	391	354

[1]Accounts for variable and fixed costs
[2]Accounts for only variable costs

APPENDIX E. SUMMARY STATISTICS FOR QUESTION 52

Table E.1 Summary Statistics for Question 52 for Head Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	33	4.81	0.53	11%	0%
Expansion of coastal restoration projects	30	4.47	0.72	16%	6%
State-based fisheries stock assessments	33	4.09	1.29	32%	0%
Expansion of petroleum platforms	33	3.99	1.25	31%	0%
Offshore wind farms	29	3.87	0.79	20%	12%
Limited entry as a tool for fisheries management	32	3.79	1.21	32%	3%
Mandatory log book reporting for charters	33	3.54	1.62	46%	0%
Federal fisheries observers on charters	33	3.35	1.42	42%	0%
Voluntary log book reporting for charters	32	3.23	1.55	48%	0%
Federally-based fisheries stock assessments	33	3.11	1.69	54%	0%
Use of electronic vessel monitoring systems	33	3.00	1.60	53%	0%
Offshore aquaculture	31	2.99	1.13	38%	6%
Catch shares for commercial fisheries	30	2.91	1.45	50%	9%
Regulatory discards based on fish size	30	2.77	1.29	47%	9%
Expansion of marine sanctuaries	33	2.59	1.40	54%	0%
Catch shares for the charter boat sector	29	2.55	1.42	56%	12%
Open-Loop Liquefied Natural Gas (LNG) Terminals	29	2.54	1.29	51%	12%
Sale or transfer of catch shares	27	2.30	1.41	61%	15%
Unlimited accumulation of catch shares through sale or transfer	29	1.74	1.05	60%	12%

Table E.2 Summary Statistics for Question 52 for Texas, Louisiana, Mississippi, and Alabama Head Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	16	4.94	0.21	4%	0%
State-based fisheries stock assessments	16	4.56	0.60	13%	0%
Expansion of coastal restoration projects	15	4.33	0.70	16%	6%
Offshore wind farms	15	3.87	0.72	19%	6%
Expansion of petroleum platforms	16	3.82	1.10	29%	0%
Limited entry as a tool for fisheries management	15	3.47	1.46	42%	6%
Mandatory log book reporting for charters	16	3.38	1.24	37%	0%
Catch shares for the charter boat sector	12	3.10	1.44	46%	25%
Voluntary log book reporting for charters	16	3.00	1.04	35%	0%
Offshore aquaculture	16	2.93	1.22	42%	0%
Regulatory discards based on fish size	14	2.88	1.14	40%	13%
Federal fisheries observers on charters	16	2.87	1.44	50%	0%
Catch shares for commercial fisheries	14	2.85	1.36	48%	13%
Use of electronic vessel monitoring systems	16	2.68	1.27	47%	0%
Sale or transfer of catch shares	11	2.56	1.40	55%	25%
Federally-based fisheries stock assessments	16	2.38	1.27	53%	0%
Expansion of marine sanctuaries	16	2.19	1.28	58%	0%
Open-Loop Liquefied Natural Gas (LNG) Terminals	15	2.07	1.20	58%	6%
Unlimited accumulation of catch shares through sale or transfer	13	1.55	0.70	45%	19%

Table E.3 Summary Statistics for Question 52 for West Florida Head Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	13	4.77	0.60	13%	0%
Expansion of coastal restoration projects	12	4.42	0.67	15%	8%
State-based fisheries stock assessments	13	4.08	1.44	35%	0%
Expansion of petroleum platforms	13	4.00	1.22	31%	0%
Limited entry as a tool for fisheries management	13	3.92	0.95	24%	0%
Offshore wind farms	11	3.91	0.70	18%	15%
Federal fisheries observers on charters	13	3.69	0.95	26%	0%
Mandatory log book reporting for charters	13	3.54	1.66	47%	0%
Voluntary log book reporting for charters	12	3.42	1.56	46%	0%
Federally-based fisheries stock assessments	13	3.38	1.76	52%	0%
Offshore aquaculture	11	3.00	1.00	33%	15%
Use of electronic vessel monitoring systems	13	3.00	1.53	51%	0%
Catch shares for commercial fisheries	12	2.92	1.51	52%	8%
Expansion of marine sanctuaries	13	2.69	1.32	49%	0%
Open-Loop Liquefied Natural Gas (LNG) Terminals	10	2.60	1.26	48%	23%
Regulatory discards based on fish size	12	2.58	1.31	51%	8%
Catch shares for the charter boat sector	13	2.31	1.25	54%	0%
Sale or transfer of catch shares	12	2.17	1.34	62%	8%
Unlimited accumulation of catch shares through sale or transfer	12	1.67	1.07	64%	8%

Table E.4 Summary Statistics for Question 52 for Gulf Charter Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	127	4.77	0.73	15%	1%
Expansion of coastal restoration projects	124	4.39	0.93	21%	2%
Offshore wind farms	112	3.73	1.26	34%	12%
State-based fisheries stock assessments	122	3.72	1.47	40%	4%
Expansion of petroleum platforms	125	3.48	1.66	48%	2%
Voluntary log book reporting for charters	126	3.15	1.55	49%	0%
Limited entry as a tool for fisheries management	121	3.07	1.59	52%	5%
Offshore aquaculture	114	3.02	1.46	48%	11%
Expansion of marine sanctuaries	125	2.88	1.49	52%	2%
Open-Loop Liquefied Natural Gas (LNG) Terminals	106	2.88	1.61	56%	17%
Regulatory discards based on fish size	117	2.76	1.39	50%	7%
Federally-based fisheries stock assessments	124	2.72	1.68	62%	3%
Federal fisheries observers on charters	126	2.56	1.52	59%	2%
Catch shares for commercial fisheries	112	2.35	1.57	67%	9%
Mandatory log book reporting for charters	127	2.34	1.46	62%	0%
Catch shares for the charter boat sector	116	2.17	1.57	72%	9%
Sale or transfer of catch shares	116	1.95	1.40	72%	9%
Use of electronic vessel monitoring systems	125	1.84	1.33	72%	2%
Unlimited accumulation of catch shares through sale or transfer	116	1.62	1.05	65%	9%

Table E.5 Summary Statistics for Question 52 for Texas Charter Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	19	4.95	0.23	5%	5%
Expansion of petroleum platforms	19	4.74	0.65	14%	5%
Expansion of coastal restoration projects	19	4.63	0.50	11%	5%
State-based fisheries stock assessments	19	4.42	1.07	24%	5%
Offshore wind farms	19	3.89	1.29	33%	5%
Federally-based fisheries stock assessments	19	3.21	1.81	56%	5%
Limited entry as a tool for fisheries management	19	3.11	1.37	44%	5%
Voluntary log book reporting for charters	20	3.10	1.71	55%	0%
Offshore aquaculture	18	3.00	1.24	41%	10%
Mandatory log book reporting for charters	20	3.00	1.62	54%	0%
Catch shares for commercial fisheries	18	3.00	1.57	52%	10%
Open-Loop Liquefied Natural Gas (LNG) Terminals	18	2.83	1.47	52%	10%
Catch shares for the charter boat sector	18	2.67	1.50	56%	10%
Expansion of marine sanctuaries	20	2.65	1.57	59%	0%
Use of electronic vessel monitoring systems	20	2.55	1.54	60%	0%
Federal fisheries observers on charters	19	2.47	1.61	65%	5%
Regulatory discards based on fish size	19	2.32	1.20	52%	5%
Sale or transfer of catch shares	19	1.89	1.15	61%	5%
Unlimited accumulation of catch shares through sale or transfer	19	1.63	0.83	51%	5%

Table E.6 Summary Statistics for Question 52 for Louisiana Charter Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of coastal restoration projects	31	4.87	0.43	9%	0%
Expansion of artificial reefs	31	4.81	0.54	11%	0%
Expansion of petroleum platforms	31	4.55	0.77	17%	0%
State-based fisheries stock assessments	29	4.17	1.00	24%	3%
Voluntary log book reporting for charters	30	3.57	1.10	31%	0%
Offshore wind farms	26	3.23	1.48	46%	16%
Expansion of marine sanctuaries	30	3.00	1.44	48%	3%
Federal fisheries observers on charters	31	2.97	1.35	45%	0%
Federally-based fisheries stock assessments	31	2.90	1.42	49%	0%
Limited entry as a tool for fisheries management	29	2.86	1.41	49%	3%
Regulatory discards based on fish size	28	2.82	1.25	44%	10%
Catch shares for commercial fisheries	27	2.74	1.13	41%	6%
Mandatory log book reporting for charters	31	2.68	1.22	46%	0%
Catch shares for the charter boat sector	29	2.48	1.24	50%	6%
Offshore aquaculture	28	2.39	1.52	64%	10%
Use of electronic vessel monitoring systems	30	2.27	1.41	62%	3%
Open-Loop Liquefied Natural Gas (LNG) Terminals	25	2.24	1.48	66%	19%
Sale or transfer of catch shares	29	2.24	1.21	54%	6%
Unlimited accumulation of catch shares through sale or transfer	28	2.07	1.27	61%	10%

Table E.7 Summary Statistics for Question 52 for Mississippi and Alabama Charter Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	26	4.95	0.21	4%	0%
Expansion of coastal restoration projects	25	4.59	0.81	18%	4%
State-based fisheries stock assessments	26	4.08	0.92	23%	0%
Offshore wind farms	22	3.88	0.99	26%	15%
Expansion of petroleum platforms	25	3.50	1.19	34%	4%
Expansion of marine sanctuaries	25	3.44	1.53	44%	0%
Voluntary log book reporting for charters	26	3.36	1.15	34%	0%
Limited entry as a tool for fisheries management	25	3.26	1.40	43%	4%
Regulatory discards based on fish size	25	3.19	1.10	34%	4%
Catch shares for the charter boat sector	24	3.18	1.53	48%	8%
Federal fisheries observers on charters	25	2.92	1.09	37%	4%
Federally-based fisheries stock assessments	25	2.90	1.26	43%	4%
Sale or transfer of catch shares	24	2.62	1.36	52%	8%
Offshore aquaculture	23	2.58	1.28	50%	12%
Catch shares for commercial fisheries	23	2.58	1.55	60%	4%
Mandatory log book reporting for charters	26	2.35	1.31	56%	0%
Open-Loop Liquefied Natural Gas (LNG) Terminals	25	2.25	1.45	64%	4%
Use of electronic vessel monitoring systems	24	1.99	1.04	52%	4%
Unlimited accumulation of catch shares through sale or transfer	24	1.87	1.07	57%	8%

Table E.8 Summary Statistics for Question 52 for West Florida Charter Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	51	4.69	0.81	17%	0%
Expansion of coastal restoration projects	49	4.18	0.95	23%	2%
Offshore wind farms	45	3.76	1.05	28%	12%
State-based fisheries stock assessments	48	3.38	1.44	43%	6%
Offshore aquaculture	45	3.24	1.30	40%	12%
Open-Loop Liquefied Natural Gas (LNG) Terminals	38	3.16	1.41	45%	25%
Limited entry as a tool for fisheries management	48	3.06	1.52	50%	6%
Voluntary log book reporting for charters	50	3.04	1.46	48%	0%
Expansion of petroleum platforms	50	2.92	1.56	53%	2%
Expansion of marine sanctuaries	50	2.80	1.26	45%	2%
Regulatory discards based on fish size	45	2.78	1.31	47%	8%
Federally-based fisheries stock assessments	49	2.51	1.53	61%	4%
Federal fisheries observers on charters	51	2.43	1.42	58%	0%
Mandatory log book reporting for charters	50	2.10	1.23	59%	0%
Catch shares for commercial fisheries	44	2.05	1.38	67%	13%
Catch shares for the charter boat sector	45	1.78	1.31	74%	12%
Sale or transfer of catch shares	44	1.77	1.27	72%	13%
Use of electronic vessel monitoring systems	51	1.53	1.03	67%	0%
Unlimited accumulation of catch shares through sale or transfer	45	1.47	0.87	59%	12%

Table E.9 Summary Statistics for Question 52 for Gulf Guide Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	415	4.65	0.67	14%	5%
Expansion of coastal restoration projects	423	4.62	0.82	18%	3%
State-based fisheries stock assessments	396	4.12	0.96	23%	8%
Offshore wind farms	359	3.65	1.18	32%	17%
Regulatory discards based on fish size	363	3.38	1.21	36%	16%
Expansion of marine sanctuaries	412	3.34	1.47	44%	5%
Federally-based fisheries stock assessments	392	3.28	1.42	43%	9%
Expansion of petroleum platforms	416	3.23	1.46	45%	4%
Offshore aquaculture	360	3.19	1.20	38%	17%
Voluntary log book reporting for charters	419	3.09	1.31	42%	3%
Limited entry as a tool for fisheries management	368	2.79	1.38	49%	15%
Catch shares for commercial fisheries	334	2.74	1.35	49%	22%
Open-Loop Liquefied Natural Gas (LNG) Terminals	353	2.61	1.31	50%	18%
Federal fisheries observers on charters	396	2.60	1.32	51%	7%
Catch shares for the charter boat sector	342	2.39	1.29	54%	21%
Sale or transfer of catch shares	331	2.23	1.19	53%	23%
Mandatory log book reporting for charters	420	2.20	1.34	61%	3%
Unlimited accumulation of catch shares through sale or transfer	323	1.96	1.06	54%	25%
Use of electronic vessel monitoring systems	398	1.95	1.23	63%	8%

Table E.10 Summary Statistics for Question 52 for Texas Guide Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	133	4.57	0.70	15%	6%
Expansion of coastal restoration projects	134	4.51	0.77	17%	6%
State-based fisheries stock assessments	128	4.18	1.01	24%	8%
Expansion of petroleum platforms	134	3.45	1.21	35%	6%
Regulatory discards based on fish size	115	3.44	1.24	36%	18%
Offshore wind farms	124	3.43	1.16	34%	12%
Federally-based fisheries stock assessments	128	3.16	1.42	45%	10%
Expansion of marine sanctuaries	135	3.12	1.37	44%	5%
Offshore aquaculture	116	3.02	1.07	35%	18%
Voluntary log book reporting for charters	135	3.00	1.32	44%	4%
Limited entry as a tool for fisheries management	123	2.93	1.28	44%	13%
Catch shares for commercial fisheries	109	2.87	1.33	46%	23%
Open-Loop Liquefied Natural Gas (LNG) Terminals	111	2.73	1.24	45%	21%
Federal fisheries observers on charters	128	2.57	1.30	51%	8%
Catch shares for the charter boat sector	111	2.46	1.28	52%	22%
Sale or transfer of catch shares	103	2.32	1.21	52%	27%
Mandatory log book reporting for charters	136	2.07	1.22	59%	4%
Unlimited accumulation of catch shares through sale or transfer	101	2.03	1.06	52%	28%
Use of electronic vessel monitoring systems	130	1.98	1.23	62%	8%

Table E.11 Summary Statistics for Question 52 for Louisiana Guide Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of coastal restoration projects	175	4.87	0.52	11%	1%
Expansion of artificial reefs	168	4.58	0.69	15%	5%
State-based fisheries stock assessments	161	3.96	0.94	24%	9%
Offshore wind farms	137	3.70	1.04	28%	22%
Expansion of marine sanctuaries	165	3.67	1.45	40%	6%
Expansion of petroleum platforms	169	3.67	1.16	32%	4%
Regulatory discards based on fish size	152	3.47	1.00	29%	13%
Federally-based fisheries stock assessments	158	3.37	1.31	39%	11%
Voluntary log book reporting for charters	171	3.26	1.16	36%	3%
Offshore aquaculture	146	2.95	1.27	43%	17%
Limited entry as a tool for fisheries management	146	2.85	1.31	46%	17%
Catch shares for commercial fisheries	134	2.74	1.22	45%	24%
Federal fisheries observers on charters	160	2.73	1.17	43%	8%
Catch shares for the charter boat sector	137	2.47	1.23	50%	22%
Open-Loop Liquefied Natural Gas (LNG) Terminals	152	2.33	1.28	55%	14%
Sale or transfer of catch shares	135	2.28	1.13	50%	23%
Mandatory log book reporting for charters	171	2.22	1.25	56%	3%
Use of electronic vessel monitoring systems	159	2.11	1.17	55%	10%
Unlimited accumulation of catch shares through sale or transfer	132	2.11	1.03	49%	25%

Table E.12 Summary Statistics for Question 52 for Mississippi and Alabama Guide Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	30	4.87	0.73	15%	3%
Expansion of coastal restoration projects	30	4.66	0.90	19%	3%
Offshore wind farms	25	4.36	1.17	27%	19%
State-based fisheries stock assessments	28	3.99	1.03	26%	10%
Expansion of marine sanctuaries	31	3.65	1.39	38%	0%
Regulatory discards based on fish size	31	3.57	1.30	36%	0%
Voluntary log book reporting for charters	30	3.47	1.36	39%	0%
Expansion of petroleum platforms	30	3.43	1.51	44%	3%
Federal fisheries observers on charters	30	3.06	1.27	42%	0%
Federally-based fisheries stock assessments	29	3.03	1.54	51%	3%
Limited entry as a tool for fisheries management	29	3.00	1.32	44%	6%
Offshore aquaculture	26	2.96	1.24	42%	16%
Mandatory log book reporting for charters	31	2.77	1.45	52%	0%
Catch shares for the charter boat sector	24	2.55	1.40	55%	23%
Catch shares for commercial fisheries	23	2.26	1.33	59%	23%
Sale or transfer of catch shares	26	2.21	1.08	49%	16%
Use of electronic vessel monitoring systems	29	2.10	1.26	60%	6%
Open-Loop Liquefied Natural Gas (LNG) Terminals	29	2.00	1.64	82%	6%
Unlimited accumulation of catch shares through sale or transfer	23	1.75	0.94	54%	26%

Table E.13 Summary Statistics for Question 52 for West Florida Guide Boat Operations

Current or Pending Policy Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "Don't Know"
Expansion of artificial reefs	84	4.76	0.53	11%	1%
Expansion of coastal restoration projects	84	4.54	0.95	21%	1%
State-based fisheries stock assessments	79	4.20	0.94	22%	7%
Offshore wind farms	73	3.77	1.20	32%	14%
Offshore aquaculture	72	3.60	1.22	34%	15%
Federally-based fisheries stock assessments	77	3.40	1.44	42%	8%
Expansion of marine sanctuaries	81	3.31	1.47	44%	2%
Regulatory discards based on fish size	65	3.23	1.23	38%	22%
Voluntary log book reporting for charters	83	3.02	1.32	44%	2%
Open-Loop Liquefied Natural Gas (LNG) Terminals	61	2.74	1.35	49%	28%
Catch shares for commercial fisheries	68	2.66	1.38	52%	17%
Expansion of petroleum platforms	83	2.61	1.61	62%	2%
Limited entry as a tool for fisheries management	70	2.56	1.41	55%	16%
Federal fisheries observers on charters	78	2.47	1.34	54%	7%
Mandatory log book reporting for charters	82	2.28	1.43	63%	2%
Catch shares for the charter boat sector	70	2.24	1.26	56%	17%
Sale or transfer of catch shares	67	2.10	1.12	53%	20%
Unlimited accumulation of catch shares through sale or transfer	67	1.79	1.01	56%	21%
Use of electronic vessel monitoring systems	80	1.78	1.18	66%	6%

APPENDIX F. SUMMARY STATISTICS FOR QUESTION 48

Table F.1 Summary Statistics for Question 48 for Gulf Head Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	33	2.94	0.26	9%	0%
Fuel costs (short term)	32	2.92	0.29	10%	0%
Demand for charter services (short term)	32	2.40	0.89	37%	0%
Demand for charter services (long term)	32	2.37	0.87	37%	0%
Harmful algal blooms/red tides (long term)	31	2.20	0.79	36%	3%
Harmful algal blooms/red tides (short term)	32	2.20	0.77	35%	0%
Recruitment of new anglers (short term)	31	2.20	0.74	34%	0%
Insurance cost/availability (long term)	31	2.18	0.65	30%	3%
Recruitment of new anglers (long term)	30	2.16	0.74	34%	0%
Reductions in fish stocks (short term)	31	2.11	0.92	44%	3%
Hypoxia/dead zones (long term)	30	2.08	0.98	47%	3%
Insurance cost/availability (short term)	31	2.07	0.57	28%	3%
Reductions in fish stocks (long term)	31	2.07	0.87	42%	3%
Fishing permit/license costs (long term)	31	2.00	0.77	39%	3%
Coastal habitat loss and degradation (long term)	30	1.98	0.84	42%	9%
Hypoxia/dead zones (short term)	31	1.95	0.95	49%	3%
Fishing permit/license costs (short term)	31	1.89	0.68	36%	3%
Labor cost/availability (long term)	31	1.88	0.72	38%	3%
Unlicensed charter operators (long term)	31	1.87	0.69	37%	0%
Unlicensed charter operators (short term)	32	1.87	0.65	35%	0%
Labor cost/availability (short term)	31	1.77	0.60	34%	3%
Coastal habitat loss and degradation (short term)	32	1.73	0.80	46%	3%
Climate change/sea level rise (long term)	29	1.52	0.71	47%	12%
Climate change/sea level rise (short term)	32	1.33	0.57	43%	3%

Table F.2 Summary Statistics for Question 48 for Texas, Louisiana, Mississippi, and Alabama Head Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	16	2.94	0.21	7%	0%
Fuel costs (short term)	16	2.88	0.28	10%	0%
Demand for charter services (long term)	16	2.75	0.48	17%	0%
Demand for charter services (short term)	15	2.66	0.61	23%	0%
Insurance cost/availability (long term)	16	2.63	0.41	16%	0%
Insurance cost/availability (short term)	16	2.63	0.41	16%	0%
Recruitment of new anglers (long term)	15	2.54	0.58	23%	0%
Recruitment of new anglers (short term)	16	2.50	0.55	22%	0%
Harmful algal blooms/red tides (long term)	15	2.27	0.59	26%	0%
Harmful algal blooms/red tides (short term)	15	2.27	0.59	26%	0%
Unlicensed charter operators (long term)	15	2.26	0.50	22%	0%
Unlicensed charter operators (short term)	16	2.25	0.37	16%	0%
Reductions in fish stocks (long term)	16	2.19	0.74	34%	0%
Hypoxia/dead zones (long term)	15	2.13	0.77	36%	0%
Reductions in fish stocks (short term)	15	2.13	0.84	39%	0%
Labor cost/availability (long term)	15	2.07	0.50	24%	6%
Labor cost/availability (short term)	15	2.00	0.45	23%	6%
Coastal habitat loss and degradation (long term)	16	1.94	0.64	33%	0%
Hypoxia/dead zones (short term)	16	1.94	0.77	40%	0%
Fishing permit/license costs (long term)	15	1.93	0.50	26%	6%
Fishing permit/license costs (short term)	15	1.93	0.50	26%	6%
Coastal habitat loss and degradation (short term)	16	1.81	0.62	34%	0%
Climate change/sea level rise (long term)	15	1.31	0.47	36%	6%
Climate change/sea level rise (short term)	15	1.19	0.32	27%	6%

Table F.3 Summary Statistics for Question 48 for West Florida Head Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	13	2.92	0.28	10%	0%
Fuel costs (short term)	12	2.92	0.29	10%	0%
Demand for charter services (short term)	13	2.23	0.93	42%	0%
Hypoxia/dead zones (long term)	11	2.18	0.98	45%	8%
Harmful algal blooms/red tides (long term)	12	2.17	0.83	38%	8%
Recruitment of new anglers (short term)	12	2.17	0.72	33%	0%
Reductions in fish stocks (short term)	12	2.17	0.83	38%	8%
Harmful algal blooms/red tides (short term)	13	2.15	0.80	37%	0%
Hypoxia/dead zones (short term)	11	2.09	0.94	45%	8%
Demand for charter services (long term)	12	2.08	0.90	43%	0%
Recruitment of new anglers (long term)	12	2.08	0.67	32%	0%
Insurance cost/availability (long term)	11	2.00	0.63	32%	8%
Reductions in fish stocks (long term)	12	2.00	0.85	43%	8%
Fishing permit/license costs (long term)	12	1.92	0.79	41%	0%
Coastal habitat loss and degradation (long term)	10	1.90	0.88	46%	23%
Insurance cost/availability (short term)	11	1.82	0.40	22%	8%
Fishing permit/license costs (short term)	12	1.75	0.62	35%	0%
Labor cost/availability (long term)	12	1.67	0.65	39%	0%
Coastal habitat loss and degradation (short term)	12	1.58	0.79	50%	8%
Labor cost/availability (short term)	12	1.58	0.51	32%	0%
Unlicensed charter operators (long term)	12	1.58	0.51	32%	0%
Unlicensed charter operators (short term)	12	1.58	0.51	32%	0%
Climate change/sea level rise (long term)	10	1.50	0.71	47%	23%
Climate change/sea level rise (short term)	13	1.31	0.63	48%	0%

Table F.4 Summary Statistics for Question 48 for Gulf Charter Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	124	2.93	0.30	10%	3%
Fuel costs (short term)	127	2.87	0.38	13%	1%
Demand for charter services (long term)	114	2.44	0.79	32%	9%
Insurance cost/availability (long term)	118	2.42	0.78	32%	8%
Demand for charter services (short term)	122	2.37	0.77	32%	4%
Unlicensed charter operators (long term)	113	2.37	0.79	33%	11%
Unlicensed charter operators (short term)	119	2.35	0.77	33%	7%
Insurance cost/availability (short term)	124	2.34	0.73	31%	3%
Coastal habitat loss and degradation (long term)	119	2.33	0.88	38%	4%
Harmful algal blooms/red tides (long term)	113	2.19	0.76	35%	11%
Recruitment of new anglers (long term)	117	2.19	0.87	40%	8%
Fishing permit/license costs (long term)	119	2.16	0.71	33%	5%
Reductions in fish stocks (long term)	121	2.16	0.92	43%	4%
Recruitment of new anglers (short term)	122	2.10	0.86	41%	4%
Harmful algal blooms/red tides (short term)	125	2.09	0.78	37%	2%
Hypoxia/dead zones (long term)	100	2.07	0.90	43%	21%
Coastal habitat loss and degradation (short term)	121	2.05	0.81	40%	2%
Fishing permit/license costs (short term)	125	2.05	0.70	34%	1%
Reductions in fish stocks (short term)	125	1.96	0.88	45%	1%
Hypoxia/dead zones (short term)	108	1.85	0.84	45%	15%
Labor cost/availability (long term)	111	1.75	0.80	46%	13%
Labor cost/availability (short term)	114	1.69	0.74	44%	10%
Climate change/sea level rise (long term)	113	1.63	0.86	53%	9%
Climate change/sea level rise (short term)	119	1.26	0.48	38%	5%

Table F.5 Summary Statistics for Question 48 for Texas Charter Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	20	2.85	0.37	13%	0%
Fuel costs (short term)	20	2.75	0.44	16%	0%
Unlicensed charter operators (long term)	20	2.50	0.69	28%	0%
Unlicensed charter operators (short term)	20	2.50	0.69	28%	0%
Demand for charter services (short term)	20	2.30	0.86	37%	0%
Insurance cost/availability (long term)	20	2.30	0.80	35%	0%
Demand for charter services (long term)	19	2.26	0.87	38%	5%
Insurance cost/availability (short term)	20	2.25	0.79	35%	0%
Fishing permit/license costs (long term)	19	2.21	0.63	29%	0%
Harmful algal blooms/red tides (long term)	19	2.16	0.69	32%	5%
Recruitment of new anglers (long term)	19	2.16	0.83	38%	5%
Recruitment of new anglers (short term)	19	2.16	0.83	38%	5%
Harmful algal blooms/red tides (short term)	20	2.15	0.67	31%	0%
Coastal habitat loss and degradation (long term)	20	2.10	0.85	40%	0%
Hypoxia/dead zones (long term)	17	2.06	0.75	36%	15%
Fishing permit/license costs (short term)	19	2.05	0.71	35%	0%
Coastal habitat loss and degradation (short term)	20	1.95	0.76	39%	0%
Reductions in fish stocks (long term)	19	1.95	0.91	47%	5%
Hypoxia/dead zones (short term)	17	1.88	0.70	37%	15%
Reductions in fish stocks (short term)	20	1.85	0.88	48%	0%
Labor cost/availability (long term)	19	1.53	0.61	40%	5%
Labor cost/availability (short term)	19	1.47	0.61	41%	5%
Climate change/sea level rise (long term)	19	1.26	0.45	36%	5%
Climate change/sea level rise (short term)	19	1.05	0.23	22%	5%

Table F.6 Summary Statistics for Question 48 for Louisiana Charter Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	31	2.84	0.37	13%	0%
Fuel costs (short term)	31	2.71	0.46	17%	0%
Coastal habitat loss and degradation (long term)	30	2.63	0.67	25%	0%
Insurance cost/availability (long term)	29	2.41	0.57	24%	6%
Coastal habitat loss and degradation (short term)	30	2.37	0.72	30%	0%
Insurance cost/availability (short term)	30	2.33	0.55	24%	3%
Demand for charter services (long term)	29	2.24	0.74	33%	6%
Fishing permit/license costs (long term)	31	2.16	0.64	30%	0%
Unlicensed charter operators (long term)	26	2.15	0.67	31%	16%
Unlicensed charter operators (short term)	27	2.11	0.70	33%	13%
Demand for charter services (short term)	29	2.10	0.67	32%	6%
Hypoxia/dead zones (long term)	26	2.08	0.84	40%	16%
Recruitment of new anglers (long term)	29	2.07	0.84	41%	6%
Reductions in fish stocks (long term)	31	2.06	0.96	47%	0%
Fishing permit/license costs (short term)	31	2.00	0.63	32%	0%
Recruitment of new anglers (short term)	30	2.00	0.79	40%	3%
Harmful algal blooms/red tides (long term)	27	1.96	0.71	36%	13%
Hypoxia/dead zones (short term)	29	1.90	0.82	43%	6%
Reductions in fish stocks (short term)	31	1.84	0.78	42%	0%
Climate change/sea level rise (long term)	28	1.82	0.82	45%	3%
Labor cost/availability (long term)	28	1.79	0.83	46%	10%
Harmful algal blooms/red tides (short term)	30	1.67	0.66	40%	3%
Labor cost/availability (short term)	27	1.67	0.73	44%	10%
Climate change/sea level rise (short term)	29	1.24	0.44	35%	0%

Table F.7 Summary Statistics for Question 48 for Mississippi and Alabama Charter Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (short term)	26	2.86	0.43	15%	0%
Fuel costs (long term)	25	2.85	0.43	15%	4%
Demand for charter services (short term)	25	2.63	0.55	21%	4%
Coastal habitat loss and degradation (long term)	24	2.55	0.76	30%	8%
Demand for charter services (long term)	23	2.53	0.63	25%	12%
Recruitment of new anglers (long term)	24	2.35	0.68	29%	8%
Coastal habitat loss and degradation (short term)	25	2.34	0.72	31%	4%
Recruitment of new anglers (short term)	25	2.29	0.65	28%	4%
Unlicensed charter operators (short term)	23	2.22	0.64	29%	12%
Insurance cost/availability (long term)	25	2.21	0.80	36%	4%
Unlicensed charter operators (long term)	21	2.21	0.66	30%	15%
Insurance cost/availability (short term)	26	2.18	0.77	35%	0%
Hypoxia/dead zones (long term)	20	2.16	0.81	38%	23%
Reductions in fish stocks (long term)	24	2.14	0.82	38%	8%
Harmful algal blooms/red tides (long term)	23	2.10	0.68	32%	12%
Reductions in fish stocks (short term)	25	1.92	0.78	41%	0%
Hypoxia/dead zones (short term)	21	1.89	0.79	42%	19%
Harmful algal blooms/red tides (short term)	25	1.88	0.63	34%	4%
Fishing permit/license costs (long term)	25	1.77	0.67	38%	4%
Fishing permit/license costs (short term)	26	1.73	0.60	35%	0%
Labor cost/availability (long term)	23	1.71	0.57	33%	12%
Labor cost/availability (short term)	24	1.66	0.52	31%	8%
Climate change/sea level rise (long term)	22	1.55	0.67	43%	15%
Climate change/sea level rise (short term)	25	1.30	0.46	35%	0%

Table F.8 Summary Statistics for Question 48 for West Florida Charter Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	48	2.98	0.14	5%	6%
Fuel costs (short term)	50	2.94	0.24	8%	2%
Demand for charter services (long term)	43	2.51	0.70	28%	12%
Insurance cost/availability (long term)	44	2.50	0.70	28%	13%
Unlicensed charter operators (long term)	46	2.41	0.75	31%	10%
Demand for charter services (short term)	48	2.40	0.68	28%	4%
Insurance cost/availability (short term)	48	2.40	0.64	27%	6%
Unlicensed charter operators (short term)	49	2.39	0.73	31%	4%
Coastal habitat loss and degradation (long term)	45	2.29	0.82	36%	6%
Harmful algal blooms/red tides (long term)	44	2.27	0.69	30%	12%
Fishing permit/license costs (long term)	44	2.23	0.64	29%	10%
Reductions in fish stocks (long term)	47	2.23	0.81	36%	4%
Harmful algal blooms/red tides (short term)	50	2.20	0.73	33%	0%
Recruitment of new anglers (long term)	45	2.20	0.81	37%	10%
Fishing permit/license costs (short term)	49	2.12	0.63	30%	2%
Recruitment of new anglers (short term)	48	2.06	0.81	39%	4%
Hypoxia/dead zones (long term)	37	2.05	0.88	43%	25%
Reductions in fish stocks (short term)	49	2.02	0.80	40%	2%
Coastal habitat loss and degradation (short term)	46	1.96	0.73	37%	4%
Hypoxia/dead zones (short term)	41	1.83	0.80	44%	17%
Labor cost/availability (long term)	41	1.80	0.78	43%	19%
Labor cost/availability (short term)	44	1.75	0.72	41%	13%
Climate change/sea level rise (long term)	44	1.70	0.85	50%	10%
Climate change/sea level rise (short term)	46	1.30	0.47	36%	10%

Table F.9 Summary Statistics for Question 48 for Gulf Guide Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	415	2.77	0.46	17%	2%
Fuel costs (short term)	429	2.65	0.55	21%	0%
Coastal habitat loss and degradation (long term)	414	2.56	0.68	27%	3%
Coastal habitat loss and degradation (short term)	425	2.33	0.73	31%	2%
Unlicensed charter operators (long term)	401	2.32	0.74	32%	5%
Reductions in fish stocks (long term)	407	2.29	0.80	35%	3%
Harmful algal blooms/red tides (long term)	397	2.27	0.76	33%	6%
Unlicensed charter operators (short term)	412	2.26	0.73	32%	4%
Insurance cost/availability (long term)	393	2.24	0.72	32%	7%
Harmful algal blooms/red tides (short term)	411	2.14	0.76	36%	5%
Reductions in fish stocks (short term)	424	2.14	0.80	37%	2%
Insurance cost/availability (short term)	415	2.13	0.72	34%	4%
Fishing permit/license costs (long term)	411	2.07	0.71	34%	3%
Demand for charter services (long term)	392	2.03	0.81	40%	6%
Demand for charter services (short term)	408	2.01	0.81	40%	5%
Recruitment of new anglers (long term)	389	2.00	0.80	40%	8%
Hypoxia/dead zones (long term)	348	1.99	0.90	45%	17%
Fishing permit/license costs (short term)	427	1.91	0.67	35%	1%
Recruitment of new anglers (short term)	402	1.89	0.75	40%	6%
Hypoxia/dead zones (short term)	359	1.80	0.83	46%	16%
Climate change/sea level rise (long term)	382	1.78	0.78	44%	10%
Labor cost/availability (long term)	315	1.52	0.76	50%	24%
Labor cost/availability (short term)	333	1.48	0.72	49%	22%
Climate change/sea level rise (short term)	399	1.45	0.58	40%	7%

Table F.10 Summary Statistics for Question 48 for Texas Guide Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	136	2.72	0.50	18%	1%
Fuel costs (short term)	140	2.61	0.56	21%	0%
Coastal habitat loss and degradation (long term)	133	2.35	0.75	32%	3%
Unlicensed charter operators (long term)	130	2.35	0.72	31%	6%
Reductions in fish stocks (long term)	131	2.33	0.75	32%	4%
Unlicensed charter operators (short term)	134	2.31	0.72	31%	4%
Harmful algal blooms/red tides (long term)	130	2.26	0.71	31%	6%
Fishing permit/license costs (long term)	135	2.24	0.66	29%	2%
Insurance cost/availability (long term)	121	2.21	0.71	32%	9%
Harmful algal blooms/red tides (short term)	137	2.18	0.67	31%	3%
Reductions in fish stocks (short term)	137	2.15	0.77	36%	2%
Insurance cost/availability (short term)	133	2.11	0.71	34%	4%
Coastal habitat loss and degradation (short term)	139	2.09	0.75	36%	1%
Fishing permit/license costs (short term)	141	2.09	0.64	31%	0%
Demand for charter services (short term)	136	1.96	0.77	39%	3%
Demand for charter services (long term)	128	1.95	0.76	39%	5%
Recruitment of new anglers (long term)	126	1.95	0.76	39%	8%
Recruitment of new anglers (short term)	132	1.87	0.69	37%	5%
Hypoxia/dead zones (long term)	102	1.86	0.87	47%	24%
Hypoxia/dead zones (short term)	108	1.73	0.80	46%	20%
Climate change/sea level rise (long term)	122	1.65	0.70	42%	11%
Labor cost/availability (long term)	98	1.50	0.79	53%	27%
Labor cost/availability (short term)	104	1.47	0.78	53%	25%
Climate change/sea level rise (short term)	129	1.41	0.54	38%	8%

Table F.11 Summary Statistics for Question 48 for Louisiana Guide Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Coastal habitat loss and degradation (long term)	168	2.89	0.39	13%	3%
Coastal habitat loss and degradation (short term)	170	2.75	0.50	18%	3%
Fuel costs (long term)	166	2.69	0.52	19%	3%
Fuel costs (short term)	172	2.62	0.59	23%	1%
Unlicensed charter operators (long term)	161	2.31	0.73	32%	6%
Insurance cost/availability (long term)	166	2.28	0.70	31%	4%
Unlicensed charter operators (short term)	166	2.24	0.72	32%	5%
Insurance cost/availability (short term)	172	2.17	0.71	33%	2%
Hypoxia/dead zones (long term)	149	2.11	0.85	40%	12%
Reductions in fish stocks (long term)	165	2.09	0.83	40%	3%
Harmful algal blooms/red tides (long term)	155	1.97	0.81	41%	10%
Climate change/sea level rise (long term)	158	1.96	0.79	40%	8%
Hypoxia/dead zones (short term)	151	1.91	0.80	42%	12%
Reductions in fish stocks (short term)	171	1.91	0.80	42%	2%
Demand for charter services (long term)	155	1.88	0.71	38%	8%
Recruitment of new anglers (long term)	160	1.87	0.80	43%	7%
Fishing permit/license costs (long term)	166	1.81	0.72	40%	3%
Demand for charter services (short term)	160	1.79	0.71	40%	7%
Harmful algal blooms/red tides (short term)	159	1.77	0.76	43%	9%
Recruitment of new anglers (short term)	164	1.75	0.74	42%	6%
Fishing permit/license costs (short term)	172	1.66	0.65	39%	1%
Labor cost/availability (long term)	133	1.65	0.74	45%	22%
Labor cost/availability (short term)	140	1.61	0.72	45%	19%
Climate change/sea level rise (short term)	160	1.56	0.66	42%	7%

Table F.12 Summary Statistics for Question 48 for Mississippi and Alabama Guide Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	29	2.86	0.34	12%	3%
Fuel costs (short term)	31	2.71	0.46	17%	0%
Coastal habitat loss and degradation (long term)	28	2.61	0.69	26%	6%
Insurance cost/availability (long term)	29	2.41	0.69	29%	3%
Unlicensed charter operators (long term)	29	2.38	0.73	31%	3%
Unlicensed charter operators (short term)	30	2.30	0.69	30%	3%
Coastal habitat loss and degradation (short term)	30	2.27	0.73	32%	3%
Insurance cost/availability (short term)	30	2.27	0.69	30%	3%
Hypoxia/dead zones (long term)	24	2.25	0.83	37%	19%
Reductions in fish stocks (long term)	28	2.25	0.85	38%	3%
Demand for charter services (long term)	27	2.22	0.85	38%	6%
Demand for charter services (short term)	29	2.21	0.83	38%	3%
Recruitment of new anglers (long term)	27	2.11	0.90	43%	10%
Harmful algal blooms/red tides (long term)	29	2.10	0.67	32%	3%
Reductions in fish stocks (short term)	31	2.10	0.84	40%	0%
Recruitment of new anglers (short term)	28	2.04	0.88	43%	10%
Climate change/sea level rise (long term)	24	2.00	0.81	41%	19%
Fishing permit/license costs (long term)	28	2.00	0.83	42%	3%
Harmful algal blooms/red tides (short term)	30	1.90	0.60	32%	3%
Hypoxia/dead zones (short term)	25	1.88	0.87	46%	19%
Fishing permit/license costs (short term)	31	1.81	0.79	44%	0%
Labor cost/availability (long term)	23	1.70	0.83	49%	23%
Labor cost/availability (short term)	25	1.56	0.77	49%	19%
Climate change/sea level rise (short term)	26	1.54	0.64	42%	16%

Table F.13 Summary Statistics for Question 48 for West Florida Guide Boat Operations

Issue	n	Mean	Standard Deviation	Coefficient of Variation	Responses of "No Opinion"
Fuel costs (long term)	84	2.86	0.35	12%	1%
Fuel costs (short term)	86	2.72	0.48	18%	0%
Coastal habitat loss and degradation (long term)	85	2.55	0.65	25%	0%
Harmful algal blooms/red tides (long term)	83	2.53	0.63	25%	1%
Harmful algal blooms/red tides (short term)	85	2.41	0.70	29%	1%
Reductions in fish stocks (long term)	83	2.41	0.75	31%	2%
Coastal habitat loss and degradation (short term)	86	2.31	0.69	30%	0%
Reductions in fish stocks (short term)	85	2.31	0.74	32%	1%
Unlicensed charter operators (long term)	81	2.27	0.72	32%	5%
Insurance cost/availability (long term)	77	2.23	0.72	32%	9%
Demand for charter services (long term)	82	2.20	0.82	37%	3%
Unlicensed charter operators (short term)	82	2.20	0.71	32%	5%
Demand for charter services (short term)	83	2.19	0.82	37%	3%
Recruitment of new anglers (long term)	76	2.13	0.77	36%	10%
Insurance cost/availability (short term)	80	2.09	0.72	34%	7%
Fishing permit/license costs (long term)	82	2.06	0.65	32%	3%
Hypoxia/dead zones (long term)	73	2.01	0.89	44%	14%
Recruitment of new anglers (short term)	78	1.99	0.75	38%	9%
Fishing permit/license costs (short term)	83	1.89	0.61	32%	3%
Hypoxia/dead zones (short term)	75	1.79	0.81	45%	13%
Climate change/sea level rise (long term)	78	1.78	0.86	48%	8%
Labor cost/availability (long term)	61	1.43	0.64	45%	24%
Climate change/sea level rise (short term)	84	1.42	0.59	42%	2%
Labor cost/availability (short term)	64	1.39	0.58	42%	24%

APPENDIX G. RESPONSES TO QUESTION 62 BY OPERATION CLASS AND STATE

TEXAS HEAD BOAT OPERATORS

- The head boat industry needs the Red Snapper fishery opened. We have a very strong fishery here in the coastal bend of TX. If it could just open the first 10 days of every month, that's (Fed) 120 days a year (some will be lost in winter months due to weather) the fishery would remain strong I believe, and the owners/operators would still be able to keep their doors open for maintaining their business and employees.

LOUISIANA HEAD BOAT OPERATORS

- It seems to me that the more fish that shows up off our coast here in Louisiana, the less the feds let us keep. We built our business on meat hauls and I know that these days are gone forever - but they should let us at least fish 10 months out of the year, not 2 months.

MISSISSIPPI HEAD BOAT OPERATORS

- I took delivery of a [identifying information removed] sport fishing catamaran in November of 2008. I had signed a contract the week before Katrina, then put construction on hold for a couple of years. I was fortunate enough to follow my father's coat tail into this business in 1973. My two sons have helped me in this adventure for the past 15 to 20 years. In spite of the setbacks we have endured with our industry, we are still plugging along. Many of the captains in our industry are "throwing in the towel," but I have to believe the glass is half full. P.S. My father and one of my sons spent some time at LSU.

ALABAMA HEAD BOAT OPERATORS

- After 33 years of charter fishing, due to the fisheries closures, cuts, and reductions always aimed at recreational fisheries, my once thriving fishing business has all but collapsed. My charter bookings are down at least 50%. Now as I fill out this report there is the BP oil spill that will finish me off. Have a nice day.
- Gulf Council shows a lack of concern during public testimony and doesn't use a common sense approach to managing fish stocks to the recreational sector vs. commercial sector. How can a 51/49% split of red snapper be a fair split with less than 100 commercial boats and more than 3,300 charter boats and thousands of recreational anglers?
- I believe that with the Snapper population stronger than ever these regulations that are about to put us out of business should be relaxed according to the stock of the fish. I also think that with all the money that is wasted by our government that there should be independent stock assessments done with some of this money. I also believe that a law (Mag-Stev Act) that is hurting so many people, that was written basically by an unethical politician from Alaska should have way less credibility. I hope some of these businesses you've polled will still be in business for your next poll.
- I can not stress enough how strongly I feel that the NMFS is miss managing the Gulf fisheries. By putting exessive regulations on one species it is having long lasting negative effects on many other species. As well as putting undue burden on the charter industry. I would have to say that excessive fishing regulations far exceed the negative effects of all the hurricanes named in this survey combined on the charter industry.

- I have fished in the Gulf of Mexico all of my life and I can fully attest that there are more Snapper in the Gulf today than I have ever seen. That is a good thing but I still feel that having a 2 fish limit and a 6 month season would not hurt the fishery as it stands.
- NOAA has no idea what or how many fish are in the Gulf of Mexico. The way the data is collected is ****! There are so many American Red Snapper off the coast of Alabama, they are now eating each other.
- Obviously, the oil spill, More fishery independent data, and more frequent stock assessments, better data collection
- Top topic: income while we wait on the Red Snapper stock to improve!
- We have more Red Snapper in the Gulf of Mexico than ever because of our reef building programs. NMFS has not considered the reefs we have put out in years past. Our Snapper are larger in weight than ever before - they continue to get greater in number and will "eat" the Gulf up if our seasons are shortened. The Snapper are eating the other catchable fish and when we release them, they die or draw porpoise to the surface and the will not leave area around the boat.
- You need a new survey AFTER oil incident - Deepwater Horizon

WEST FLORIDA HEAD BOAT OPERATORS

- Government sector closures have affected our financial bottom line to the extent of near bankruptcy.Through surveys like this, maybe someone can get the point across to the government that the recreation for hire business is not the enemy! They seriously need to remember what happen when they commercially hunted the buffalo to extinction and the mallard ducks on the Chesapeake Bay. The recreational for hire industry around the gulf coast is a multi billion dollar business and major tax revenue generator which must be saved. Store purchased fish for consumption should all be aquaculture grown and leave wild fish for recreational revenue generation. With respect for your time [contact information removed]
- I highly disagree the way NOAA (NMFS) gets its data for the Red Snapper openings and closings. They admit their data is flawed but still don't listen to the people in the fishery.
- In a recent question concerning the Gulf Council and NMFS. I think the majority thinks the council does an excellent job, but it seems to be driven by dollars from enviro-groups such as EDF and PEW. Because of this, the recreational industry is suffering from over regulation. We too are all for conservation, if we were not we would be out of a job tomorrow. There is just not enough common sense used in the regulatory process and the throw massive dollars in the pin from the enviro's and the recreational side loses. I don't think I any like myself that has been in the business for 30 years or more can't legally fish for Red Snapper more than 50 days a year. We need more days not fish. The system has made the commercial sector with a basic license to steal while we sit on the sidelines and watch. Much needed is more accurate data and flexibility in fisheries management.
- It seems there are more opinions than fish but I have seen stock recover through conservative efforts, however more people on fewer resources can't be good. Keep trying.

- NMFS uses flawed erroneous data and data collection to place undue regulations on our industry. My business used to run 90+ trips per year. Because of regulations, our trip count is down by over 30%. Terrible for a business that should be growing. When an angler reels up a fish that by regulation say must be thrown back, and the angler observes that fish being eaten by marine mammal, the angler really questions the actions of the regulators. We also question the NMFS's stance that charter operators with NMFS permits should not harvest fish in state waters even though state water harvest is legal and that the charter operator holds a state issued license. Nuts!
- Stock assessments flawed from beginning. Need bigger assessments - more sampling. Strongly oppose consolidation of IFQ fishermen. Strongly oppose IFQ in charter business.
- The issue of the need for the limited entry CFH sector to establish its own sector, allocations, accountability measures as a sub sector of the recreational sector. The no growth limited entry federal permit holder is in direct competition with the unlimited growth unaccountable private boat sector. We are losing historical access for our recreational fishermen due to sheer numbers and poor economic conditions. As the CFH fleet is overwhelmed to general public will lose their historical access levels. Then if you can't own a boat you can no longer fish in the GOM.
- The way NOAA seems to be quick to make bad decisions concerning fish limits, and slow to give back, what they have taken: Example: The Red Snapper stock is rebuilding but the fish are getting bigger, so even though we're giving more tonage to the C.F.H. sector. Your season is shorter. So long story into a short one, bad economy tougher fishing laws, more regulations on C.F.H. high fuel cost. Put another nail in my coffin NOAA. P.S. Thank you Dr. Crabtree!!!

TEXAS CHARTER BOAT OPERATORS

- *Enforcement* We have party boats that carry Federal Reef Fish permits that fish in state waters and are following the state guidelines (size/bag limit) instead of the federal ones. The local game wardens do not know enough about the rules to enforce. Three party boats in Port Mansfield have been doing this for the past 2 winter seasons, November through April.
- 1) License to fish in federal waters is bad. All licenses given away. Cost to purchase now 5,000 to 10,000! Ridiculous. This policy cuts my business in half. Limits me to state waters only. What gives anyone in U.S. right to regulate international water?
  2) Policy changes license information etc should be sent by Coast Guard or someone to all captains. I found out about above by accident. No one communicates any information to captains, even though regulations are made for them. WRONG.
- 1) Current economic downturn has had a significant impact on business. 2009 operations at 30-35% of previous years. Partly due to economy and hurricane Ike. 2) Current Gulf oil spill, although not a factor in survey at time of publishing has also affected business in Texas even though not affecting Texas waters. The perception is that fishing may have been affected or is closed by federal government. 3) Red Snapper season in federal water is significantly shorter and federal permit holders are not allowed to fish in accordance with Texas state regulations.

- 1. Red Snapper stocks cannot be managed with one size fits all -- Port Mansfield, TX is not the same as Destin, FL 2. How can the Feds control Red Snapper fishing in state waters? I hold a Federal Reef Permit for fishing reef fish in federal waters, but the Feds violate the 10th Amendment by telling me I cannot fish Red Snapper in Texas waters if I hold a Federal Reef Fish Permit and federal season is closed -- not enough space here to write what I think about NOAA. Charter fishing in South Texas is NOT inter-state commerce.
- Biggest problem is the short Snapper season. Snapper are over-populated not over-fished. From what I see off the Texas coast, stocks need to be thinned. I would be all for a short season if stocks were low, but that just is not the case.
- due to the present short Red snapper season my Gross for 2009 dropped by 40% for 2009 in my aera red snapper is the primary target species and plentiful. Offshore platforms should be left in place or cutoff above the bottom so the habitat once created is not destroyed and fish are not killed when they blow up the piles holding them to the bottom we have had alot of platforms removed and habitat destroyed in the last 20 years.
- I support a real stock assessment in the western Gulf of Mexico separated by a line near Venice, LA - west. It is abundantly clear from my observations the fishing in the western GOM is significantly less pressured than the east. I have zero interest in assessments from the east GOM except as an informational statistic. All the CFH folks I work around with obey the rules, regulations and have a vested interest in preserving the fishery. We cannot continue to reduce effort days and sustain even less than full time business. My personal plan is to become full time but current seasons, limits prevent my doing so. Thank you.
- I welcome these types of surveys. I just hope agencies like NMFS listens and applies the results. I do support VMS and real time reporting in the CFH sector and support sector separation.
- It seems that NMFS is dead set on eliminating all recreation for-hire boats in South Atlantic Gulf of Mexico
- Just do a good job
- Polling the recreational charter captains on the effects of the economy, gas prices, state regulations (size limits), weather, commercial fishing pressure, PCB's , etc… on fishing businesses is missing. How can the state help recreational charter captains generate more taxable income for the state would be a good question as well. What about lodging income?
- Red Snapper fishing is the best it has been since I've been working offshore (22 years), yet it is closed! So I am filling this out for $100 instead of fishing! Most clients want to wait until June when it opens again... for 7 weeks -- the "Feds" are killing us!!
- thank you
- The snapper fishery is the best I have ever seen it and my clients are starting to book their fishing trips over seas (mexico, panama, costa rica, etc.) rather than here because they are so upset that everytime we fish we are catching trophy snapper and have to release them. I am not even fishing for snapper I have been getting them drifting and even trolling. That is just insane we are sending money over seas over this junk!!
- Too much federal regulation for the recreational and charter fishermen, and not enough on the head boat and commercial industry.

LOUISIANA CHARTER BOAT OPERATORS

- 1. Disagree with catch limits and restrictions set by NMFS. 2. Disagree with the periods that we are restricted from catching certain species as Red Snapper. They are more plentiful now that any time in my 50 years of charter fishing. 3. Strongly disagree not being allowed to keep a limit of fish as I also like to eat fish. Also pay for license. 4. I had hoped to fish until August 2011 when my Coast Guard License needs to be renewed but I believe the oil spill will prevent this from happening.
- Drop the Speckle Trout limit to 15 and like Calcause Lake limit 1 Trout over 25 inches with the loss of habitat in the coastal estuaries. This would help ensure fishing for future generations.
- Federal fisheries management is a total failure. The current oil spill in the Gulf emphasizes the need to split the Gulf into zones and explore state management. Federal policies and science is flawed and too slow to respond to changing conditions and fish stocks.
- I believe that more of the research done about our industry needs to be taken out of the hands of the federal government and dispersed to local agencies that can truly monitor the extent of our local fisheries.
- I think that we need to better assess our fisheries and also manage the gulf as an eastern and western zone
- In the last 12 years lost of early and late season customers charters because of snapper regulations, narrowed season to trout and red fishing - plus fuel and economy impact. I lost most of the 2009 season because of health, had ruptured colon in June 2009.
- Increased fisheries regulation for bottom fish species (closures) increased insurance, operational costs, and scumbag bankers at First Bank & Trust made it an unfavorable business to stay in. After 10 years full time, I called it quits and sold my boat on eBay for $20,000, got $3500 for my reef and HMS permits, sold the business to my #2 man, and walked away.
- I've tried to complete this survey to the best of my ability while not taking into consideration the current climate created by the Gulf oil spill. I greatly fear that the oil spill will be the end of a career I've built lovingly and cherish. Yet, as a charter captain and offshore fisherman, I know the fish I harvest will continue to exist and pray that we can return to our way of life sooner than expected. I have no interest in making a forced career change and would look forward to completing this survey again next year.
- More meeting open to all charter boat affiliates and more awareness of when and where meetings will take place.
- Regulations are slowly choking out the fishing industry. Fish stocks are healthy including red snapper and amberjack. Red snapper are so plentiful they are becoming a nuisance. You can't put bait in the water long enough to catch anyting because snapper eat it instantly.

- The [vessel name removed] was my vessel. I sold it in 2007 and continued to operate on a part time basis. That may account for some of the "screwy" answers. Right now there are too many young captains trying to slice the "pie" too thin. Many see it as a cash cow which it is not. Many are operating without licenses and permits. This should be investigated closer by USCG and LDWF. A captain that is operating legally doesn't mind showing his permits and papers. NOW, do the same with the commercial sector as well. I don't mind talking to anyone that wants input on this industry. [contact information removed]
- The lack of real scientific date organizations are using in establishing fishing seasons and limits. No faith or trust in these organizations. Also, I along with many other captains and outdoorsman are very concerned with the direction our country is headed with respect to fisheries management. Its obvious, Obama and his associates would like to end open fishing as we know it. Thanks for the opportunity to complete this survey.
- Took 8 months to renew captain license.
- we need to get a handle on the limits it seem like they are tring to put the charter capt. out of busness.
- I strongly agree on monitoring commercial vessels and set quotas. The impact that it had on reef fish such as snapper definitely helped; however, longliners often seen in the same tuna grounds mostly in summer is another concern. I've personally seen three one night this past July all within 30 mile radius of one another. The figure might seem big, but in Green Canyon rigs are far apart and there's not many too close to one another for recreational tuna fishermen. I do believe snapper season should be extended longer by a few weeks.
- Please note that Red Snapper were not a target species during 1st qtr, system would not let me change. In addition, on trips taken matrix, some of the Rodeo/Tournament trips were not "paid" trips due to owner using boat for them. Compensation for those was provided by team sponsorships. My concerns have changed quite a bit since the oil spill. I pray the low stock assessments in the GOM on grouper, amberjacks and red snapper don't come back to bite NMFS on the rear. Having spoke with their represenatives on several occasions about their flawed data and sampling methods, I was basically told I don't understand their methods. My reply is usually "you don't either" maybe not phrased that nicely though. FYI-I had 21 trips booked from Memorial Day thru Labor Day of this year, I have only made 1 trip with client from my full time job I didn't have scheduled, the balance have cancelled. It will be a long road to recovery for the state of Louisiana.

MISSISSIPPI CHARTER BOAT OPERATORS

- 1)Poor response by government in assisting efforts to clean up waterways and channels after Hurricanes. We still have imbedded debris and reduced water draft due to Katrina. 2) NOAA and Fishery Councils have acted poorly in the interests of ALL charter boats. AKA florida and Texas keeping their Red Snapper seasons open after Feds have closed theirs. This negatively impacted the recreational quota system and NOAA, being the "kneejerk" typical govt entity, elected to cut the season for everyone, instead of punishing the guily parties. The resulting reduced season cut my available season by over half and thus revenues. In addition, with hurricanes affecting the coast during the open season no allowances were made for the states affected.

- Creation of fishing zones in the Gulf of Mexico to monitor/set recreational and commercial catch limits.
- I think you asked some very important questions. I hope you use the answers wisely.
- It seems to me with the bad economy, Hurricane Katrina and now the Deep Horizon disaster that the charter boat industry is on the brink of disaster also. Over the last 9 years, we have had a major decline in business. Ever since 9/11 the business has declined. I have 3 Federal permits and would gladly sell the boat.
- Questions do not seem too relevant to me. I am confused on what you are trying to discover.
- The federal government needs to leave the recreational side alone, i.e., Red Snapper - fishermen with rod and reels are not what is depleting this stock. There are plenty of Snapper in the Gulf - without man made reefs there would be no Snapper in our area. I feel strongly that they have over-stepped their boundaries as the real intent of the Magnuson Stevenson Act was not intended to be used against recreational rod and reel fishermen. The NMFS is in bed with the commercial side!
- We are the last of a dying industry. Every year the expenses go up and the government makes more rules that are getting harder and harder to follow. We now have to be athletes and pass a cardio stress test just to renew our captain license with the Coast Guard. We have to be ready to take a drug test at any time. You almost have to be crazy to do this. There is always another setback around the corner. Now it will be the oil spill that will set us back a few more years. Thank God my wife has a good job! Ha.

ALABAMA CHARTER BOAT OPERATORS

- Answers on questions 48 and 55 should be supported by "Why?" Examples: First - oil spill impact on question 48 Second - on question 55, NOAANMFS have determined total allowable catch based on inaccurate data. Alabama mariners / charter fishermen have been building stock through artificial reefs for over 20 years, and until artificial reefs, sunken ships, planes, barges, oil rigs, etc. are included in TAC, seasons and limits will not support our fisheries off the Alabama coast to 40 miles. We farmed our fisheries to accommodate a 6 fish limit. One must realize that the Red Snapper is so abundant and over-populated that our fisheries are in serious danger because massive Snapper populations are consuming bait populations and we are witnessing today, our other fish, Groupers, Triggers, Vermillion, Amberjacks, etc. are rapidly declining because the Red Snapper is so aggressive and dominates the foundation of bait fish. Just this week I harvested 2 Grouper that were clearly in poor condition at a location (private) that has always produced good Grouper and a few Snapper. At this location now, we released approximately 50 Red Snapper.
- I think stock assessments are way off with Red Snapper, and I don't have any confidence in our agents doing what's best for everyone. Fifteen years ago I was put out of a commercial fishing business by state of AL, and I fear what might happen in the future on any level.
- My deepest sympathies for the state of Louisiana and its coastal impact with oil migrations! I just wish marine fisheries would be open-minded to hear for hire charter and personal recreational fisher person's. The meetings are a joke! It is the same [illegible] over and over with no response!

- NMFS has failed in their attempt to manage the Gulf's fisheries by the simple fact that one has to manage all species at the same time that one is managed.
- thank you for your efforts
- The currently ongoing BP oil spill could be devastating to our industry.

WEST FLORIDA CHARTER BOAT OPERATORS

- 2009 was a very poor year, money was tough. Red Snapper regulations are hurting business.
- Am concerned what the oil spill will do to the future of the gulf fisheries.
- Each year the cost of having quality gear, new boats, gas, gear, etc. has skyrocketed to the point it's almost impossible to support yourself let alone a family. In our area overfishing, too many captains that charter are straining to stocks. One bad red tide could destroy the local charter industry.
- how long before all fishing will be closed to recreational anglers?
- I am required to have bolt cutters, hook removal tool, blocks of wood, and a net that $150 four years ago. No telling how all this stuff cost now but when I bought it all, I spent around $300 for everything. Now I have been a captain for 35 years and fished all of my life. Had the boat I own now for 11 years and have never caught the first turtle. But I'm sure that I have to carry all this equipment to release a turtle if I do as a direct result of a fisheries observer riding around on a long line fishing boat, and they soak their baits for 12 hours or longer. My whole trip only last that long coming and going, fish and all. Now information is probably a good thing, and I'm sure long line fishermen catch turtles and maybe they need these tools on their boat. Information can be bad if not used to the fullest extent. Besides, anyone who does hook a turtle, unless they happen to have an observer on board at the time, will probably just cut the line. It would be the safest thing for the crew and the turtle.
- I live in the big bend area of the Gulf of Mexico. It is shallow 30 miles = 60-70 ft derth. We have an excellent Grouper fishery and in the last 10 years have a decent Red Snapper fishery. The federal regulations in my opinion in our area are ridiculous and with today's economy have basically put me out of business. The commercial guys have a longer season with less restrictive size limits. I have no problem with rules and regulations and believe they are needed but I don't believe you can adopt one rule for the entire Gulf of Mexico as one area to another there are many differences including population and fishing pressure as well as species differences.
- I think NMFS policy of closed seasons are a sign of mis-management not management. Closed seasons continue to put us out of business. Size limits, slot limits, bay limits we can work with, but closed seasons drive our customers away in the offshore business. Just let our customers have advance of keeping something for their money spent. Also I think there should be a moratorium on recreational anglers. We have it, the commercial fleet has it. Our numbers have not grown in 15 years. But the recreational angler number grows annually, taking away more and more quota!

- I would suggest a few extra questions on how weather other than hurricanes can affect bookings and the ability to fish year round. Otherwise, the survey was potent and noteworthy with the exception of question #52 under the heading of Policy and Management. Soliciting opinions concerning the use of log books, VMS, and catch shares is problematic. Many for-hire operators and most recreational fishermen have only a peripheral knowledge of these issues. The Gulf Council has only recently entertained log book reporting, VMS, and catch shares as future management strategies for the charter operator. There are many competing and legitimate interest involved in the future management of the for-hire industry. To garner opinions concerning that management without those involved having a clear and thorough understanding of the issues is untimely. Unfortunately, your data will have a level of uncertainty that will be difficult to reconcile.
- I'm against catch shares without accurate data! Congress mandated NOAA and NMFS to have in place a new data collection system in place by 1-9-09. They continue to make amendments using old flawed data system. The charter for hire and recreational fishermen are accountable! The environmentalist Pew, Ocean Conservancy, EDF are all to blame for their input to the RMSA.
- I'm not sure what to state! With the Deep water Horizion mess I'm wondering if any of this will even be nessicary. We're already in trouble with a terrible weather year, 50% off charters. Also people that call about chartering have all asked if the oil is there! All I can say is WE ARE IN TROUBLE!
- It seems that all rules in the past decade have been to negatively impact the charter, industry while not adressing the commercial fishing industrys abuse of the system.
- Limits set in the gulf on grouper and snapper need to be looked at again for recreational fisherman. Currently the quote for commercial far exceeds the recreational fisherman in a whole because the experts feel that the recreational fisherman are catching all the fish. I can asure you that due to the price of fuel, weather conditions, distance required to travel to catch these species, and average knowledge of the rec. fisherman where these fish are. The rec. fisherman is not taking the majority of the catch. Stricter guidelines have taken place for rec. fisherman with only minor changes to commercial fisherman who haul in thousands of pounds of fish that they report as well as thousands of pounds of fish that they sell to small local resturants and locals that go unreported every year.
- Marine fisheries don't have the correct information on the number of fishes in the Gulf area. They're using old data from years past. Longline boasts and trap boat kills a larger number of fish. The oil spill has hurt all of us no. People are cancelling charters, and they think the oil is in our area. Marine fisheries needs to fish with the a charter captain or an commercial fisherman to get the correct information for the fish stocks. We know where the fish are and moving to.
- Need to make more precise decesions on the allocations of fish and the closing of fish species due to bad data
- NOAA and NMFS limiting the landing of certain types of fish without valid information as to availability and making rules as to size of species that cause too many to be destroyed in the process. The natural forces of nature does not appear to be a point of consideration by NMFS or NOAA in deciding the amount of stock available.

- Snapper season for Red Snapper should start in April. IFQ has put small fishermen out of business. Charters are down because people can't keep Red Snapper until June. Fuel prices, license, VMS, life raft, EPIRB all add up to price of charters. I don't have to rely on charter fishing for my living, mainly just to help with upkeep dockage, repair, and maintenance. I don't advertise for business, mainly just a hobby. Captain should be able to keep a share of fish on a charter, if I want a Snapper or Grouper for my dinner. I think all captains want to help maintain fish stocks. Help keep commercial fish - charter fishing, recreational fishing going strong, but it seems some people that want IFQ and all the other regulations want something else. It feels like every time I go fishing I might get arrested.
- So many misguided "feel good" state, local, and federal fisheries policies with "good intentions" are not based on thorough scientific research that result in detrimental unintended consequences. A recent example: Captain with charter/headboat licenses and without commercial licenses can no longer sell bag limits of fish to licensed wholesalers. Intention was to kill fewer fish. Actual results: -Customers still keep limits of fish (which are "low"). –Captains/mates do not have "extra" income to contribute to local economies. -Fish are usually given to friends and neighbors so less money is spent at local fish markets. *Another well-intended government regulation detrimentally impacting economies. So many government policies remind me of people who are disappointed in how dirty their white cars get so they must purchase black cars!
- Sorry I took so long to finish, but honestly I forgot with the crisis in the Gulf. I have not been myself lately. Thanks, Capt. [name removed] P.S. You are in our prayers with the oil spill affecting your shores. God bless.
- Thanks for this opportunity. Things are really tough. It's sure said that things are so "complicated" in America now. America has weathered many storms in her history and I hope she makes it through these trying times. We could be a lot worse. Lastly in my humble opinion, the good Gulf is really tired and as bad as I hate to say it, it needs a rest. (Remember the buffalo's out west.) Hopefully the NMFS will do the right thing. Sea life should come first. To hell with commercial and recreational fishing if that's what it takes.
- The bad economy has almost ruined my charter business. Recent reductions in allowable catch from shortened seasons is making it even worse. The oil spill is adding more cancellations from worried customers. We are getting kicked when we are already on the ground! When fish like red snapper recover to amounts I have never seen in my life, (58 years) the feds still won't open up the fishery! HELP!!!
- The impact of federal and state regulations are [illegible]. Fishery is not showing us the agency's claim that the fisheries are in trouble. The fish are still there! Subject of fish share is do [illegible], that we will re-direct our market to inshore -- in 2010 and beyond. The economic impact has reduced the $ to the recreational market.
- The problem that exists in fishery management is that the Federal Fishery Councils no longer consider the economic impacts of their actions. A socioeconomic community impact study is required by the Magnuson Act but is seldom done. Somewhere along this process, fishermen and fishing communities' livelihoods and opinions have come to be disregarded. The fishery managers are so intent on the fish that the original idea of saving fishermen's livelihoods and healthy fishing communities is not even considered. The process needs a new focus so that more emphasis is placed on what the actions will have on the very industries they are supposed to help.

- The state (FL) and federal government do not seem to have a clue as to what is really going on in fisheries management. The arbitrary decisions being made by representatives of both governments are being made by bureaucrats and computers sitting in cubicles somewhere and have no practical knowledge of the real situations impacting fishermen!
- This new IFQ program is putting us out of business. The people in control have stolen my financial investment of my commercial license and equipment. I now understand they are going to make charter fishing the same way. I'm very worried that they will steal that away from me too. Why can't you help us little people? Why can't the big fishing companies share the waters equally with us? These fish belong to the people of the United States, but they have been stolen by the people who have abused their power. If only.
- Tried to do my best on survey - some I am not sure and hate to think about it more. I just love doing what I am doing. Been born and raised on water. Love to take people out and have a good time, teach their kids how to fish, and get to know them through 20 years. They feel safe with me. And no I am not a wannabe captain. I just want to make a living and do what I do best. I am not getting rich and barely making it with high expenses. I just want to make enough to get by to live. Get my son through college. Hope this will help you.
- We cannot stay in this line of work without Red Snapper and King Mackerel. In the last couple of years, our Snapper season has been shortened so much everyone is slowly going out of business! I have charter fished all of my life, and Snapper limits of 2 per person for 6 months of the year worked fine for many years. Now almost all of mine and my fellow captains' charters are in June and July. SNAPPERS ARE EVERYWHERE!!! If you want to save the fishermen, listen to them. If you don't believe the Snapper are doing fine, go fishing. Plus current regulations are hurting everything else (Groupers, Amberjacks)!
- We have a big problem in that this is a huge industry -- and the general concept that "one size fits all" will soon do irreparable damage -- i.e., here we have a large Red Snapper population -- the Groupers' habitats are over run by the Snappers -- hence on an already threatened group is being further damaged by "weak data" regulations. Regulations need to be "local - one size really doesn't fit all".
- When it comes to our overfishing, the only thing proven to work are: Slot limits They need to close the spawning grounds during the spawning season. For instance when it comes to the Mutton Snapper when they spawn during the full moon, they need to shut off all fishing three days before, during and three days after the full moon.

TEXAS GUIDE BOAT OPERATORS

- *Ethanol in fuel is causing problems with outboard motors, burning up rings, etc, having to buy additives to combat it. *Fisheries should be managed on a state level, then region by region within the state. Keep the feds out of inshore fisheries management. Those guys could screw up a rock fight! Keep politics out of management. *Feds need to focus on global fisheries issues, i.e., Bluefin Tuna stocks, etc. *State level enforcement of guide certification and requiring guides to have commercial insurance. *Instead of dropping limits impose seasons like FL does with Snook. *Impact of tournaments on bay systems.

- *On Question #34 (Average Trip Operating Costs) - The cost for insurance should really be considered when estimating this cost. The wear-and-tear and maintenance should also be considered. *In your questions regarding the increase and/or reduction of customers, you might want to consider categorizing types of clients (e.g., corporate, small business, etc.). I have personally seen a huge decrease in corporate group bookings. *The fisheries in our area (lower Laguna Madre) have really improved due to new limits for Sea Trout and an effective stocking program for Red Drum, thanks to Texas Parks and Wildlife.
- 1) Fee charged TPW for guides license - why? 2) Too many game wardens checking me while I'm on the water while trying to make a living. 3) Coast Guard requiring TWIC card - what purpose for me? 4) Too many rules issued by TPW on amount of limits on different species.
- 1. If Red Snapper are an indication of NOAA's/NMFS ability to assess fish stocks - we have a long way to go. 2. I agree/support fish shares but we must be sure to regulate to support individual fisherman and not the big pockets. 3. How can you ask this group - if we support limited entry - and expect a fair answer.
- After Texas "great Trout debates" a decade ago, I will not share any information with dockside biologists or let them look at our fish. Be careful with the information we give you, we do not like to see it on overhead projectors and then be beat over the head with it as "justification" for messing with our livelihoods. The Texas bay fishery is a partial "disaster" in management practices in my opinion. With a 15" minimum on Trout, we have been killing all our females for nearly 10 years and it's going to be the death of our Trout fishing. We need a "first 10" and let these recs catch the male biomass that is currently "untouched" and get off the water. Cedar Bayou restoration is still bogged down in bearocratic non-sense, I'm liable to die in this business before any proactive movements are made on environmental enhancements.
- All areas are different. Your questions are as per the whole Gulf. Storms, regulations, licenses, permits, catch, etc. Feel free to call me to clarify anything in here. I have made my living from the ocean for almost 30 years. I've commercial fished, longlined, nets, shrimped, charter, sportfished (TX, FL, Mexico, Bahamas, Australia), commercial Flounder boat. Now Bay guide. It's the last way to make a living on the water fishing! Everything else has been taken away in one form or another!
- Bag limits are too high per day. Over fishing is killing our bays.
- Everything was covered adequately!
- For the area of Rockport, TX! Strong consideration to the opening of Cedar Bayou. With Cedar Bayou being closed, it has altered fish movements and drastically changed the San Antonio, Mesquite, Carlos, and Aransas Bay fishing. This topic is currently being investigated by the Corps of Engineers. It will be a long fought political battle. Let's hope that, in the end, the fishery wins. Thank you for putting together such a detailed survey.
- Glad to participate in this survey. I think there should be more surveys like this and even more detailed. We as people in the industry should have our opinions heard and taken seriously. I think it can only help and benefit our industry. Thanks
- Good survey

- I am a shallow water fly and light tackle fisherman. I am concerned with the increased number of shallow water running boats, and the lack of concern of fishermen who run in very shallow water seemingly to show off how shallow their boats will run. This does two things: 1. Causes the fish to become very spooky and ruin the fishing for the rest of the day and 2. Chop up seagrass and degrade the flats. I would be for some type regulation that prohibits operation of a gas motor within 100 yards of the shoreline of a bay.
- I am concerned over water quality conditions in bays and Gulf of Mexico. Wanton dumping of large ships in Gulf of Mexico. Increase of wind generators in fishing areas.
- I hope this survey information is helpful. Thank you for including me.
- I hope this survey is helpful to your target audience
- I primarily fish in the Rockport area. Our Trout population has decreased in the last few years. I would be in favor of changing daily bag limit to 5 and reducing size to 14". Too many small Trout are killed trying to catch a bag limit.
- I think states should be in charge of regulating their own fish catches inshore and offshore, even outside state waters, Snapper especially! I have read and seen articles showing that there is more Snapper than ever, but yet the federal fisheries have the smallest limit in history.
- I think that for Speckled Trout over 25 inches, anglers should be allowed only to keep two per year. Tags should come on the fishing license and any trout over 25 inches must be tagged. Similar to the way Texas does with the Red Fish management.
- I think that with the Redfish and Flounder stocking program it will hands down benefit our fisheries. Great survey, I hope you get good participation. [contact information removed] P.S. Come on down and let's go fishing and duck hunting.
- I think they need to leave trout limits at 10 per person. There is no shortage of trout, and do away with the one fish over 25". Lower the Red Fish to 18" instead of 20" and give you 4 per person. That would make it better for all fishermen.
- I think you should look into how charter boat captains could get a better rate for health and commercial insurance. I do realize that most charter captains do not have commercial insurance but I feel it should be a must to protect ourselves and customers. Also, health insurance is very expensive, there has to be a program or group that could help us with that.
- I would like to see our natural passes to Gulf of Mexico reopened with a way to close them off in case of oil spills or red tides.
- I would like to see some sort of regulation on the number of fishing tournaments, particularly bay fishing tournaments. Anybody who wants to raise money for a cause can throw a tournament, and there is no incentive to catch-and-release fish in a tournament. The lure of cash prizes brings out a lot of fishermen who keep everything in hopes of making some prize money. This is hurting the fishery stock and should be restricted.
- If we reduce limits on fish, do it moderately. Ex: 10 fish limit, reduce to 7, not 5.
- If you will concentrate on less pollution of our bays and estuaries the future will be great fishing for our children and grandchildren.

- In my opinion, the greatest impact on bay fishing industry throughout the last five years was the seismographing or oil gas exploration of lower Laguna Madre Bay. This is a shallow delicate bay, and in my opinion the exploration had great impacts on the Speckled Sea Trout. Our limits were decreased by five fish and this has also had an impact on the charter business in this area. Thank you for the opportunity to participate in the survey.
- Inshore fisheries need tighter restrictions in TX. Limits are too liberal, and stocks being depleted due to more people on the water, technology, etc. TXPWD thinks they are doing a great job, but have not changed regulations since 1984, while license sales have been 3 fold. I have watched the quality of the fishery do a nose dive since 2000.
- Keep the federal government out of state waters. The federal government are too [illegible] and the states know what's best for their eco. The federal government is not concerned about the "we the people" of the state.
- Keep up the good work. God Bless your state and other states during this crisis regarding BP.
- Limited entry is a good idea for bay systems in Texas is it can be practically applied.
- Lower fish limits per person per day
- My first charter was in 1955 - I was 15 years old. We have gone from under fishing to over fishing to an extreme extent. In Aransas City, we have over 200 guides. Our limited resource cannot take this amount of overfishing. We have limited entry on shrimpers, crabbers, and commercial fishermen to control the resource but no limit on charter captains. Our resource is not unlimited. We are catching fish at an unsustainable rate. With the oil spill in LA, MS, and FL, we must act now to protect our resource! We must limit charters and charter captains so we may share our resource and save it for the future.
- NMFS limited entry program is mistake and totally unfair to captains and rec. fishing customers. NMFS is wrong to enforce limited entry to enhance profits of permited boats. NMFS is supposed to enhance the fishery and encourage fishing in renewable manner. why does Noaa protect permited boats and enhance value of permits that Noaa discontinued selling 10 years ago?
- Non migrating dolphin in inland bays multiplying like rabbits, eat a lot of fish
- One of my major concerns is government regulation of fisheries. It is my opinion that most of the people that make decisions and policies have no understanding of fisheries. Another of my concerns is future policies that may limit access to waterways.
- Open Cedar Bayou
- Open up Cedar Bayou!!!
- Regarding Question #27 on targeting species. Numbers of Spotted Sea Trout have declined in my opinion over the last 5 years or so. Redfish population is good. Trout receive major pressure in our area. Currently our Trout catch limit per day is 10. I strongly support reducing the daily bag limit to 5 fish.

- State and federal agencies do no solicit local charter captains for ongoing info often enough... even though they are on the water continuously. USCG regulations are completely "without a clue" concerning small boat operators as opposed to offshore charters or commercial fisheries, along the middle coast of TX. Info gathered by state field officers in the form of "creel surveys" are inaccurate and misleading. Daily bag limit catches and size limit catches are having a significant impact on our fishery but more from having to release to many fish that will not survive. Purely poor regulation, TPWD. In Port Aransas, TX, the large dolphin population is decimating the Trout fishery as well as every sport angler who fishes those waters, they are reaching a dangerous level of aggression toward anglers who are trying to land fish or are carrying a stringer of fish. Someone is going to get hurt or killed as a result of this. Education about everything concerning our Gulf coast fishery should be the #1 priority.
- Thank you for your fine work Fair winds and following seas
- The amount we all have to pay to fish offshore, we need a little less requirements for us to do our jobs. Commercial fishermen as well. The fishing industry on the Texas coast is its worst in 30 years, the amounts of licenses and upkeep on boats doesn't give you a reasonable income. So less laws and more fishing!
- THE GULF COAST MARINE FISHERIES COUNCIL PEOPLE ARE FULL OF CRAP. THE RED SNAPPER STOCK INFORMATION REGARDING CLOSURES IN THE GULF OF MEXICO ARE NOT BASED ON SOUND SCIENCE. THE TEXAS COASTAL REGION OF THE GULF OF MEXICO HAS SNAPPER SIZEPOPULATION THAT IS IN THE BEST CONDITION SEEN IN OVER 15 YEARS. THE TEXAS PARKS AND WILDLIFE DEPARTMENT CONTINUES TO IMPLEMENT REGULATIONS IN STATE WATERS BASED ON REALITY AND NOT A ONE SIZE FITS ALL APPROACH THAT THE FEDS TAKE. NOW THEY WANT TO PUNISH EVERYONE IN THE GULF BECAUSE THE STATE STANDS ITS GROUND. THE FEDS CAN GO SCREW THEMSELVES. THEY HAVE KILLED THE COMMERCIAL AND CHARTER INDUSTRY OFFSHORE. FIVE YEARS AGO THEIR WERE FIVE HEAD BOATS IN MY AREA AND NOW THERE IS ONE WHO IS EAKING OUT A BUSINESS FISHING IN STATE WATERS. THE STATE IS THE ONLY THING KEEPING THINGS AFLOAT. ALSO THE OVERSEAS FARM RAISED AND IMPORTED SEAFOOD INDUSTRY HAS RUINED COMMERCIAL FISHING IN TEXAS.
- The limit of fish regulations on certain species.
- The Lower Laguna Madre is very shallow and has an east side and a west side of the IBC Waterway. There are too many fishermen in these small water ways. Many of these fishermen spend more time running their boats instead of fishing. The west side should be designated as a no motor area. Pole in, wade in, trolling motor, but no combustion engines. Give the fish a chance to settle down. There is way too much pressure on our fish. Also, make Flounder a game fish. We have no Flounder to speak of anymore. Gigging should be done away with. The commercial people are taking the few we have had. I know new laws have come in, but it isn't going to help.
- The State of Texas does a great job of gathering information on catches and catch ratios. However, they seem to not act fast enough.
- The state of Texas NEEDS to lower the 10 Speckled Trout limit. The demand on the fishery (ULM) is great and the stocks are hurting.

- The weather patterns genarated through global warming or the storms. Climbing fuel prices and a really tough economy make chartering a tough industry.
- There is a lack of cooperation between TX and LA state agencies concerning fisheries management and limits.
- There or several agencies that are doing an excellent job on hatcheries But, more needs to be done on fresh water inflows to be sure it continues to flow and more importantly to be sure the passes to the gulf remain open such as Cedar Bayou. These issues continue to effect are fish habitat and sustainability for future fish stocks. [contact information removed]
- These are additional questions that may be considered for future: -Personal beliefs of too many required permits to remain a law abiding fishing guide -Desire for a program that supports college students that guide during summer to pay for college tuition -Personal means of access to a boat to use for charters -Amount of fish kept during each charter andor average catch -Additional locations that are guided in -Amount of trips that contain clients that are interested in having fun no matter the catch and those that desire the best catch possible and will fish as hard as possible to achieve the result -If I believe there are too many other fishing guides -If I believe there are too many fishermen -If I believe there are enough fish to sustain the current amount of fishermen -If I believe the sea grass is in harm's way -If I believe there should be more passes in the bays I fish
- Too much fishing pressure from too many charter guides (should be limited entry... 20 years of previous experience and full time, 100% of annual salary or no license issue from state nor USCG); no others will be allowed!!! Way too many sports fishermen and newer technologies being used... too many sports fish (game fish) being taken with limited supplies in our bay systems (game fish are over-harvested by such large numbers of sports fishermen...there should be limited entry on them...they take more than guides by a huge margin. Sports fishermen should be regulated via lotto system...to allow only so many per year to fish in certain bay systems. "No exceptions!" "Natural passes from the Gulf into our bay systems:" should be mandatory by state and federal law... that all natural passes should be kept open and maintained to maximum flow rate at all times. Such passes flush out bay systems, allow more game fish population to enter and exit our bay systems. Such passes and their water flow help all aquatic life that are essential to maintaining a healthy bay system. Politics, bureaucrats, and payoffs have kept many passes closed; the $450 million fishing industry suffers as a result of a few political crooks... this should not be allowed at any level. Fish stocking programs should be increased via 10 fold from state and federal levels to keep our bay systems stocked every year!
- Way too much government and councils. [illegible] limits and enforcement are a necessary evil. Government makes laws they know nothing about so they are influenced by the $ lobby.
- We need closer watch on non-licensed operators and those who choose not to obey bag limits and size laws.

LOUISIANA GUIDE BOAT OPERATORS

- 1) Keeping undersize fish (big problem in the Cocodrie area)
- 1) lower speckled trout limit to 15 fish 1) minimum trout 14" 3) raise redfish to 18"

- 1) We need to stop bow hunting of Red Fish in Louisiana. 2) Also, all boat operators should have to take boaters safety classes! 3) More needs to be done about coastal erosion in Louisiana! Not just talk!
- 1. Limits on Spotted Sea Trout need to be reduced.
- A positive comment - it is so nice that charter customers can get fishing licenses over the phone 24 hours a day.
- As a guy who has been on the water so many days year after year, it is sad to see our marshes going away. Month after month it seems as though something in the contour of the grass lines and islands are changing. Is there nothing that can be done?
- Ban bow fishing for red drum!
- Because I am a charter boat captain, own my own boat, take customers fishing for a fee, I am required to be USCG licensed and maintain a commercial license through the LDWF ($250). Yet we are considered by the state and federal agencies as recreational for hire. Because we are classified as recreational, we don't qualify for federal and state grants and loans. I don't understand.
- Bow fishing by charter captains at night. This should be outlawed. This is in the LA legislature now. I think they should pass a bill to do away with this sort of thing.
- Coastal land is disappearing by the minute in our region. PLEASE HELP. We have a river full of sediment that can rebuild our land. We just need the equipment and someone to say yes before it is all gone.
- Coastal Restoration efforts need to be taken seriously by our government officials.
- Fish limits - Reds and Specks - should be changed: Reds - 8 per person, 26" to 16"; Specks - 20 per person, 13" to no size limit
- Fishing is a tough way to make a living..
- I also fish offshore on non charter trips. The limit on Red snapper is crazy. I spoke to some bioligist for the wildlife and fisheries of louisiana and there is not much reserch done on the amount of Red snapper in the Gulf of Mexico. The limits seem to be political for the commercial fishing of Red snapper. With all the new regulations and rules alot of commercial fisherman are quitting.
- I am surprised at the amount of money spent by the people who come to fish with me per year. I only get a small part of what they spend on any given trip. Many of my customers fly in and spend one or two nights in New Orleans eating, drinking, and gambling at the casino. Many of my new customers tour the old homes and just enjoy the Big Easy. My business is just a conduit for tourism. I hope my info is helpful and spend the $200 on the program expenses.
- I believe the biggest factor in our whole fishing industry is coastal restoration, without the marshes we have nothing. Commercial and recreation. Inshore and offshore.

- I currently am a charter boat captain on Calcasieu Lake. Since netting has been stopped in 1996, the amount of recreational and/or charter boats have increased significantly. The amount of Speckled Trout taken out of the lake is greater now than ever. While divided up by lots of boats and wharfs with lights, the total amount is greater. We just don't have the amount of water to fish that the east part of the state has. Business is greater for us and we continue to prosper from the coverage our lake receives from TV shows, papers, internet. My concern is long-term for mainly Redfish here. We have weirs to stop erosion and they do. The Reds stack up here for several months at a time and are very easy to catch on a daily basis by all. Restrictions on how close you can fish are in place, but need to be revised. The future of this species is my concern and I am out there almost every day seeing it happen.
- I didn't understand question 52 clearly, the 4 to the last?
- I do not approve of landing closures-reers. The state of Louisiana needs to stock fisheries in the Sabine Lake area. As far as I know Texas is the only state that stocks Sabine Lake.
- I do not want to see the present federal government or administration getting involved in the state run fishing regulations or anything involving the recreational outdoor industry in LA or any other state. I would also like to see the state of LA enforce that charter captains carry commercial insurance. There are many of us who tow the line and maintain a professional and respectable industry. There are however many charter captains operating without insurance. Also, I would like to see any new applicants for guide licenses have to go through a full 14 day Coast Guard course. Many people are obtaining licenses off of 3 day courses, and the industry is getting flooded with inexperienced captains, both from a fishing ability and more so from a safety stand point. This really needs to be addressed. At this point, anybody who wants a license gets one!
- I don't agree with NMFS setting limits of fish for the whole nation as a whole and not by regions. I don't agree with the banning of airboats on management areas, especially by licensed captains with state charter licenses. I don't agree with the "elite" rod and reel fishermen trying to outlaw bow fishing to suit themselves. I do think the LDWF does a very good job.
- I enjoy chartering but could not make enough money to support my family. As in one of the many questions, I am part time as a guide. In 2009 was the fewest trips for hirer that I have made in 9 years. The economy was not great in 2009 and a lot of annual customers did not book trips.
- I have no problem following all of the rules and regulations set forth by both state and federal agencies. I do have a big problem with discussions of MPA's. We cannot allow our government to mandate specific areas of no fishing without a vote from the people that it affects. Creel limits and size limits are much more effective in conserving a resource as long as there is scientific (and not the global warming type) evidence to support any decision made.
- I hold a coast guard license and a LA state license for charter fishing. I'm a retired state trooper. I work part time with oilfield company. I only help other charter captain when needed. 98% of my fishing is recreational (2 to 3 days a week).
- I would like to be more involved with fish limits creels and sizes. Also like to see the state step in on the water way blockages for the public to be able to fish our resouces

- I would travel offshore to the close rigs that I know have snapper but will not go for only 2 fish per person. This is ridiculous for anglers in Louisiana with obvious stock of snapper at these rigs. All anyone has to do is to fish these locations to know that a method has to be determined to size this resource and compare to the potential revenue benefit for the state(s) that charter business operates. I also strongly suggest 12" size length for red fish to be included in the 5 fish limit. This allows keeping any gut hooked fish that may die if released.
- If the state and feds don't atleast try to solve the coastal erosion problem they don't have to worry about sending anymore survey's because we are all going to go out of business.
- In light of recent setbacks in the commercial fishing and charter boat industries, hurricanes, economy, and now a major oil spill, I find myself having to rely on other means of income. Thank God for state and federal assistance! Programs like this one are paramount to the survival of the industry. Keep up the good work and thanks for caring!
- Love to see a moratorium on charter licenses so we can have a value placed on our abilities/ability to run a successful business. Rates, values, outreach, and industry support would all benefit from this. Also allow charter boats / charter "guides" the ability to be commercial fisherman. We are always left out when it comes to government support, even though we have to purchase a "commercial license" each year.
- Lowering Spotted Sea Trout to 15 limits per customer, 12" slot okay Red Drum 15" slot, 5 fish limit per person
- More stocking programs needed More fish tracking and tagging study needed Increase game operation officers
- Night bow-fishing on airboats with lights in LA is a disgrace! It disturbs the "nocturnal rest" of fish for miles around the loud airboat thus causing the game fish to be spooky or jumpy for days after. There's no "catch and release" with arrows plus undersize and many over the limit fish are killed. A few people are trying to bring back the destructive practice of "netting" for game fish. Back in the 1970s and 1980s we fought such practice (when the fish populations had drastically declined) and got all netting outlawed. This fish population in our marsh ponds has dramatically increased since the ban. Please help us keep netting against the law! This BP oil disaster points out the importance of much stronger safety measures with offshore drilling.
- Number of fish for limits of certain species
- Our charter boat association is a joke. They need to look at what other states are doing and offer some value and real help to our industry.
- Our opinion of limiting the amount of guides entering the business. There should be a limit on the amount of inshore guides or fishing charter operators. Thanks.
- Protecting Red Drum from bow fishing! Make it a game fish!!
- Save our coast. Without our coastal marsh there will be no need for a survey.
- State of Louisiana needs to spend more money promoting our saltwater fisheries!
- Thank you for your payment.
- The Gulf of Mexico Fishery Management Council is putting me out of charter fishing. The red snapper limits have cut my customers in half.

- The state needs to control its own resources and keep the feds out. The state needs to build a west and east delta below empire and use the silt to rebuild the Barrier Islands. Also raise the level in Bayou Lafourche 1 ft. and wash Dulac, Cocodrie, and Montegut in freshwater as well as Bayou Lafourche.
- There should be more questions regarding the actual catch of trips. More could be done on regulating offshore limits and its impact on charter fishing.
- This oil spill will devastate our fishing for years to come, I hope that we stop the spilling soon.. I am glad that I was given an oppurtunity to take this survey.
- This was a good survey! I think there should be a limit on out of state charter captains allowed to work in our state.
- Very concerned about the oil spill in the Gulf of Mexico and the future of charter boat fishing in Louisiana.
- We "in south Louisiana" are losing our coastline at an enormous rate. The state and/or federal government need to realize just how much land is being lost. Coastal erosion is a big problem because our spawning grounds are slowly eroding away. We need a solution to this problem. No spawn = no fish to catch.
- West side of Louisiana has a 15 fish Trout limit. With fishing pressure across the Gulf coast, I think a 15 fish limit should be put into effect statewide (Louisiana).
- WHATS UP WITH THE OIL SPILL! That can/will drastically change/close our industry in south Louisiana.
- God help us all.
- I have two major concerns about my location in which I operate my charter business. The first is that the freshwater deversion such as the canarvan and violet canal diversions are destroying our saltwater marsh. I have watched this marsh for 17 years slowly but surley disappear. The fresh water that is being pumped in from the MS river is killing the saltwater marsh and the government officials all think they that the freshwater will rebuild the marsh when infact it is doing the exact opposite. I have fished this area for over twenty years, and I have personally watched this destruction take place. I am also concerned about the large influx of charter captains that have arrived in the hopedale, delacroix area in the last two years. Our area is nationally known as the redfish capital of the world and an area where an abundance of speckled trout can easily be harvested. With the chance of easy limits of redfish and speckled trout many charter captains from our neighboring states such as Texas, MS, and Florida have started to base there charter businesses in this area. I have great concern that this will create a major impact not only on our local economy, but I also see this as a decreasing impact on our fisheries in the next few years to come. Thanks, [captain name removed]
- Offshore stock assessments are woefully inadequate. NOAA and the Gulf Council are controlled by commercial fishing interest and do a terrible job.
- Please allow the science to dominate the decision making process for future fisheries regulation and do away with the NMFS and any political influence of our resources... and always allow catch and release.... even after BP destroys our gulf's biomass for all species.. from plankton to marlin. And make them BP pay.... forever.
- Shut down bow fishing. I have personally seen its destruction of fish populations in Cocodrie. Keep working on restoring the coast.

- There needs to be more studies on the freshwater diversion projects. Between charter fishing and personal trips, I am on the water about 150 days a year. I am seeing more bad than good from these projects. They are actually causing more erosion than building. Please look at the damage that is happening.
- We need limits and regulations on Triple Tails in the Lake Borne area

MISSISSIPPI GUIDE BOAT OPERATORS

- Federal permits for reef fish should be available to charter boats who operate as their primary source of income or who had a charter license prior to moratorium.
- I am concerned about the long term effects of the B.P. spill. I am not against offshore drilling. NMFS need to find a new fish stock assessment program. I would like to see more state and federal law enforcement.
- Lower the cost of non-resident guide licenses. Say $1000 to $500.
- The Gulf fisheries is a fragile environment as is our tourist industry. My first concern is always the fishries but I do understand it is largely due to monies from tourism that supports out efforts. Oil spill The doom and gloom we see today in all of our media is destroying this industry. Yet, most of the misinformation, rumors and histeria is being propagated by "LOCALS". We on the coast need to ban together and expose as unoformed, those looking for a quick spot on CNN

ALABAMA GUIDE BOAT OPERATORS

- A freshwater license needs to be issued or use the current Alabama party boat license for saltwater species while fishing in freshwater or issue a freshwater license that covers salt and fresh water species. Outlaw gill nets - nationwide. They devastate our Spotted Sea Trout, Red Fish, and Flounder population TREMENDOUSLY!!
- I am a volunteer for the Alabama Water Watch and Share the Beach (turtle program). I am constantly seeing trash on our beaches and in our waterways. I am very concerned about it. I write articles and bring it up at city council meetings. While I said I was neutral on oil rigs in the survey, I am very concerned about oil spills. I will be volunteering for oil cleanup on our Orange Beach, beaches in Alabama. I will probably be suing BP for lost revenue. People are already canceling their vacation plans to our area.
- It was covered well.
- Oil platforms great, but have regulations for a shut off
- Our main concern is netters. AL is the only Gulf coast state allowing them. Difficult to even find Spanish Mackerel near shore. Also Mullet.
- Red Snapper size and total number (2) customers can catch. NMFS is not correct in setting up the number you can keep! A lot of charter boats are going out of business. Also, the season is only 12 weeks long!
- Survey appears to be very thorough. Glad to be a part of this and hope the information is helpful to the charter industry.

- Thank you for the opportunity to provide my comments. Please feel free to contact me again for future information. I'd be very interested in seeing a new survey dealing with the effects on fishing and in general marine life in the Gulf since the BP oil spill. Best of luck in your research. Sincerely [captain name removed]
- watching the oil spill!

WEST FLORIDA GUIDE BOAT OPERATORS

- 1) More protection to grass flats in Charlotte and Lee Counties of FL. 2) Need "no combustion engine" areas.
- 1. My business is based on "recreation". When the economy is tough my business suffers; i.e., fuel prices, food, restaurant prices. People quit recreating when times are tough. 2. Harvest limits in the Gulf coast states shows too much disparity on the "inshore" species. 3. The trend is now moving more towards to "catch and keep a few for dinner" not fill the box with everything you can legally keep. 4. Real fish data, population dynamics is an expensive challenge - way too many variables Good luck
- Beginning in 2010, I now operate as a full-time guide. My concern is the methods being used to determine fishery closures and seasons for certain species (ex: red snapper)! Also of concern is the "no-fishing zones" which seem to be selected in an arbitrary fashion and of a design to simply stop all fishing. Just does not seem right.
- Charter guides should be able to run in manatee zones in all counties in a safe manner with a special permit.
- Down here in Charlotte Harbor our Redfish are about all depleted. We fish the Bulls Bay / Turtle Bay area which was abundant with Reds until the tournaments started. They catch the fish there and haul them to the other side of the harbor for weigh in. Then they are released THERE with a dinner party of porpoise eating just about all of them. The tournament anglers have no respect for our fisheries. We have a Snook problem also -- the freeze this past winter has killed about half, all figures are not in yet. Our future in this industry is not bright. :-(
- Enforcement by state and federal authority is severely lacking, not enough man power. Slot limits and catch limits seem to be regulated by people or organizations that don't research fully before setting new regulations. Once regulations are set, reviews are slow in coming or never do. Research results of a small area or "hear-say" become regulation for an immense area and Charter Captains are not interviewed. Results seem to be based on recreational fisherman interviews or one person's opinion within an agency that can set such regulations
- Excellent survey and some questions were of interest. Just my opinion, and maybe others have the same but it seems that the Federal government is progressing towards a systematic termination of the charter/headboat industry and will eventually close the commercial fleet. Its hard to even trust NOAA's knowledge in the fishing industry when they are inaccurate and incomplete in their findings to support area closures and season closures of certain species of fish (i.e. Red Snapper and Grouper). I have little faith in NOAA's capability to manage the fishing resources of the United States!
- Get the state of Florida to get on board with the other Gulf states to help all!
- Good idea!
- How do I feel about Fed response to the oil disaster in the Gulf.

- How is this survey going to help or hurt my business
- I am against drilling for oil off the FL coast.
- I APPRECIATE THESE KIND OF SURVEYS AND AGENCIES CONCERNED ABOUT THE RESOURCE. HOWEVER I AND MANY OTHERS ARE VERY AFRAID OF THE WAY BUSINESS IS CURRENTLY BEING CONDUCTED BY OUR FEDERAL REPRESENTATIVES AND THE CURRENT ADMINISTRATION. BE IT RIGHT OR WRONG THEY APPEAR TO BE IGNORING THE MAJORITY OF THE CITIZENS ON MOST EVERY ISSUE. THAT IS NOT THE PROMISE Or PLATFORM PRESENTED PRIOR TO THE LAST ELECTION AND MANY ARE TAKING NOTE. I HOPE THE INFORMATION I HAVE PROVIDED WILL BE USED IN A POSITIVE NON INTRUSIVE WAY TO PRESERVE OUR RESOURCE AND ABILITY TO STAY IN BUSINESS. THANK YOU FOR THE OPPORTUNITY TO PARTICIPATE. [captain name removed]
- I hope I have helped the industry
- I know this survey is not about law enforcement, but it should be noted that fisheries management seems keen on passing un-enforceable rules recently (i.e., circle hooks). A major concern in my area is a lack of enforcement of the Federal Charter Headboat Permits. There are many captains operating illegally in federal waters without their permits. The FWC is aware of the problem but has not taken action. As far as the survey -- illegal operators have a negative economic impact on those who hold the proper permits.
- I wish there was some thought about the Snook and things we can do to a restocking plan in FL Bay.
- Impact of commercial shrimp harvest on fishery, i.e. bycatch. Impact of longline fishing on all GOM Reef Fish as well as on sea turtles.
- In this day and time we live, I do not understand the flights about the science used to determine health of fisheries. It seems as though the disagreements are motivated by power grabs and greed between commercial and recreational user groups. I am thankful I only have to deal with my states regulatory agency (as an inshore captain, I do not fish in federal waters). My fellow captains that do, do not know what to expect from one year to the next.
- It's a good one!
- liability insurance should be a legal requirement for any charter service fishing regulations should be more strict - back bay too many fish killed for eating limit the number of guides in an area way too many fish harvested
- My charter business has grown from nothing in 2004 to a steady 175 trips per year business. Most of my business is from out of state, and the great majority of my trips are return clients. It was a rock-solid business until the current BP oil spill. The spill has the potential to shut me down. Very sad state of affairs. [website information removed]
- Need to close Snook season for a few years, more fish stocking on Red Fish and Snook

- One major problem I see on the Gulf coast is limits states other than FL have higher limits and it cost me customers every year. Minimum size limits cause me to have to toss dead fish and cull through small fish to keep the larger spawning fish in Speckled Trout. I have been charter fishing all my life, I did not know about the Reef and Pelagic permits because I had a few years I stopped chartering, when I started back I was too late to get one is what I was told.
- The biggest problem we have is South Florida water management and Army Corps draining the lake (Ochechobee) into the Gulf! It has always had a negative impact on the ecosystem, and the migration of fish species, Tarpon, Permit, etc. Also almost without fail it is followed by a red tide! This is the first time I can remember it being drained this time of the year, and it is also the first time in 40 years the Tarpon have not arrived by now! Also the baitfish (Thread Herring) have not shown up inside of 10 miles.
- The disparity between catch limits and closed seasons and minimum sizes is hopelessly lobbied for and slanted towards the commercial fisheries. Charter operations such as mine are a very minor percentage of overall annual catches and should be considered differently. If the agencies want to truly protect fish stocks and populations they need to limit commercial takes. Consider opening a limited season with a tag ($50) to keep (1) Goliath Grouper. (They have recovered well and are eating a large amount of the smaller species.)
- The main area of concern in Sarasota, FL, is red tide. We must absolutely find a way to prevent this menace. Also keeping the federal government out of our industry is a must! They have no clue!
- The need for eradification of cormorants.
- The oil spill in the Gulf of Mexico is an underestimated disaster. If we do not get this thing stoped soon our livelyhood could be at risk. If the government doesn't get more involved they to will come under great scrutiny. What are all of us that make our living on the water supposed to do for a living nowwwwwwwwwwwwwwww.....
- There is not enough concern regarding water quality in Tampa Bay. Fisheries will be strong if water quality is maintained. Too much emphasis on harvest regulations for fishermen - it would be a moot point if the water quality was the focus - there would be plenty of fish for all.
- This area of FL is very concerned about the damage to the coast from the BP oil spill. I can only imagine what it's like in your area. This entire state will be damaged beyond compare. We as fishermen will all be searching for employment.
- Too many charter captains on Tampa Bay.
- We need to protect the Sand Sea Trout and Whiting. People are keeping them at six and eight inches by the hundreds. Please protect them with numbers and minimum size limits. They are being targeted by the "cheap" guides and abused.
- While you have not made available all expenses for a charter business...you named quite a few. Specifically, I use fishing rods that cost anywhere from $250-to $1000 each, and not only is there breakage but also repair and replacement costs. Same goes for reels.

UNCLASSIFIED TEXAS OPERATORS

- Both state and federal agencies need to act proactively and protect our resource while it is still sustainable rather than reactively and try to bring it back from the brink of disaster. Also, private entities, no matter how wealthy or how much lobbying they do, should not be permitting to interfere with conservation and environmental management issues.
- Guide permits number allowed in a given area and most all boat owners certification. Boat buyers should complete a course just like hunter education. New novice boat owners are the greatest threat to our ecosystem.
- I feel that the NMFS is doing an inadequate job of accurately assessing the Red Snapper stocks in the GOM. I have no faith in their methodology, constantly changing models, lack of real time data input, unwillingness to give any credence to anecdotal information by professional fishermen who are out on the water a lot more than they are. I also think that they draw the incorrect conclusions when we do readily catch fish because of the tremendous abundance of Red Snapper in the GOM (western Gulf for sure). Obviously assessing the total biomass of fisheries stocks is difficult, but I believe they are in the dark on this issue.
- My topic to be discussed is the fisheries management imposed on commercial fisherman. Because certain species of fish see a slight decline, they go "gung-ho" on limiting for recreational fisherman, but enforcing heavier fines for the commercial fisherman. My sister-in-law has seen more offshore boats dump icechests full of red snapper before they reach the dock and not one game warden stops them in Surfside, Tx, but in Matagorda, a shrimper can't be within a certain milage of the harbor without calling in his catch for the day, being picked over with a fine tooth comb for anything illegal, and if he happens to be slightly over the bag limit for the day (because SO many bay shrimpers have room for scales on their boats) the entire catch can be confiscated and he won't even get paid. That's the […] that is letting the recreational fisherman get away with so much and the commercial fisherman getting hammered throught the seasons. We are not even sure the season will be adequate this summer due to the oil spill, but our TP&W wouldn't let up shrimp a few weeks longer to keep an extra paycheck in case it wipes out the harvest. Not to mention that because the laws on shark harvesting, West Matagorda Bay is seeing record high shark sitings. There is enough room in this Gulf for both parties involved, and there needs to be a more effective conservation technique, because overpopulation has begun on many coasts. Find a way to be smarter, and economical sound for all those involved with the ecosystems!
- Sorry!! I retired on December 31, 2008. I think you are doing excellent work with this survey. Keep up the good work.
- State management of fisheries is highly inadequate in Texas. Need to have qualified representation on state board which is politically appointed. At this moment, the total board members are "tree huggers". Not a fisherman or hunter in the group.

UNCLASSIFIED LOUISIANA OPERATORS

- Being a fisherman all my life I think more should be done for coastal restoration. I think we study to much and don't have enough actually done, example the western shoreline from Red Pass to Grand Bayou out of Empire La. As a child I can remember high leveries on the beach at Shell Island and now there is nothing. Also with all the land lost and the OIL SPILL it looks like the future for my Grand childern is pretty bleak. TOO MUCH STUDING AND NOT ENOUGH RESULTS.
- I do charter my own boat but only on days off and weekends and only run overflow for other charter fishing operations (don't have own customers). Prior to Rita and economic slowdown it was worth doing however charter fishing business has unbelievably slowed down last two years and just hard to find customers especially the out of state customers we had coming in when first started.
- I have a 25 ton captain license. Fished commercial for a while and thought I would like to start a charter boat business. Made many scouting trips with friends and guest (no charge) to see if I was cut out for this. Well that was the end of charter captain. Did not like the demand and the weather condition to make and plan trips. I retired and fish on my own. Thanks, [captain name removed]
- I originally got my charter license in preparation for retirement. I still hope to offer charter services when I do retire; however, in recent years I have chosen not to charter as there are full-time captains in my area who need the work and I refer charters to them.
- I think Louisiana(where I reside and work) is one of the best managed areas for recreational fishing. It size and limits along with the posibility of reaching those limits often make our MS delta possibly the most attractive fishing destination in the world. Recently the BP oil spill occurred and is still active which in my estimation is going to stop fishing in the brackish water of the MS delta completely.
- I wish that everyone could see the amoumt of erosion that the last 4 major hurricanes caused. If it continues at this rate the fish will have very little estuaries for the fish to grow.The only thing that i see that works is big rocks.
- I would personally like to see the Red Snapper limits become reasonable to maybe get our business up since the limits have been cut. We aren't getting offshore trips like we used to. I understand wanting and needing to help our fish populations but there are so many Red Snapper in the areas I fish, it is almost impossible to target other species, and the amount of pressure on the inside fish have probably more than doubled in recent years yet nothing is being done to help these species mainly Trout and Redfish. Personally the limit of Speckled Trout in my opinion is too high - 25 fish a person is just a waste. There is no way these fish are all being eaten. If a group of 6 fishermen hit the right day 175 Speckled Trout are brought in - that's a lot of fish to try to eat before becoming freezer burned and probably thrown in the garbage. I would really like to see the limits brought down to maybe 15 or 20 and not allow captains limit. I personally do not pick up a fishing pole on a charter and fish but I have to say there are a lot of Trout but for how long with so many people now fishing inside instead of some offshore trips.
- I'm glad someone cares about this industry. Thanks

- Reduced limits and shortened season forced me to sell my 47' boat in 2008. Increased fuel and insurance cost were a minor factor. Red Snapper were my primary target species. In 40 years in the Gulf I have never seen as many fish as there are now. NMFS is a complete failure for the recreational fisheries. Those of us who followed the law (permits and compliance with regulations) are hurt by NMFS almost complete lack of enforcement on outlaw operations by unlicensed vessels and operators. Reduced limits have actually resulted in an increase in fish kill (culling and filleting offshore).
- Should crack down on boats that have been busted taking fish out of season, [captain name removed]. Should also ask how many red snapper each boat kills in a summer that we have to let float dead in the water.
- The biggest problem the industry faces is the loss of the wetlands.
- The headboat type charters have been regulated out of business. Only 1 boat left in Plaquemines and he is struggling. Data being used to assess fish stocks is false and soon will put even the 6-pack charters out of business. Some of these questions were general and I felt could have been better answered with actual comments instead of check marks.
- We need to do everything in our power to keep the charter boats running in the state of Louisiana. We have something that no one else has. We have to clean up this oil spill and go back to work. We are strong and we love what we are doing. If I can be of help with my fleet of offshore yachts that are at Cypress Cove Marina in Venice, LA. Just let me know. Willing to help. [contact information removed] Over 21 years in the charter business in Louisiana
- I have seen the fishing habitat in my area diminish so much in the last 5 years that at this rate, I won't be able to continue this profession much longer. When the habitat is gone, the fish are gone, and when the fish are gone, the clientele is gone, which means for us in this industry, find another job. I also believe that unlicensed charter operations are having a bigger impact on the industry than we know. I hope we can get it together for future generations, and may God help us all.

UNCLASSIFIED MISSISSIPPI OPERATORS

- Nobody knows what will happen with the oil spill in Gulf of Mexico. It will affect me and many others as far as income and fishing and wildlife refuge and estuaries 2010 thru ?. Unknown. It's up to BP and state and fishermen to help all affected areas for our future. Thank you.

UNCLASSIFIED ALABAMA OPERATORS

- I think the inshore AL fish limits are about right. The Gulf of Mexico Fishery Management Council members need to get off their air conditioned butts and come catch some of these Snapper. They are here plentiful, of all sizes everywhere.
- The lack of knowledge and lack of application of information about what is going on in the Gulf as far as stock assessment. Bad regulations and management!

UNCLASSIFIED WEST FLORIDA OPERATORS

- 1 & 2 may be misleading. I own the head boat and am a captain who occasionally operates that vessel. I have a full-time (as much as possible) captain who operates the vessel and this is his only source of income.
- Continued moratorium on federal permits for charter/headboats
- Here's an idea (not that you will use it). Let charter boats catch fish year-round -- it helps stimulate the economy - tackle, hotels, airfare, etc. - instead of closing it (the fishery) off to all. If someone really wants to put Grouper in the freezer - let them charter or go on a headboat. This keeps the charter boats booked so we can feed out families. Let us sell recreational amounts of fish. Stop treating us like we've done something wrong. We work hard to catch fish for our customers - let us do our jobs! The captains that are lazy will not make it anyways. NOAA is the enemy to us all!
- I would like to see updated data on fish stocks from someone outside the realm of fishing and then see what they come up with.
- Looks like y'all covered everything
- We have more Red Snapper than we have ever had in the thirty years I have finished in the panhandle of FL. In my opinion, the absence of shrimp trawlers is why we have experienced a population boom. The decline in fishing pressure due to the economy is the next factor and lastly fishing regulations. I feel we should be allowed to catch Red Snapper to some extent to reduce pressure on fishing for Grouper and to be able to continue making a living in the charter fishing business. Thank you for choosing me.

VITA

Michelle Savolainen was born in Whittier, California, and has been fortunate enough to live in several cities across the United States and Canada during her lifetime. Her longest period of residency was in Texas where she graduated from Coppell High School in 2004 and went on to earn a Bachelor of Business Administration in Business Management from Texas Woman's University in 2007. Her interest in natural resource economics led her to the Department of Agricultural Economics and Agribusiness at Louisiana State University in 2009 to earn a Master of Science.