

A Longitudinal Perspective on the Social and Economic Characteristics of the U.S. Gulf of Mexico Charter and Party Boat Industry

ROBERT B. DITTON¹, STEPHEN G SUTTON¹, STEPHEN M. HOLLAND²,

JOHN R. STOLL³ and J. WALTER MILON⁴

*¹Department of Wildlife and Fisheries Science
Texas A&M University*

College Station, TX 77843-2258 USA

*²Department of Recreation, Parks and Tourism
University of Florida*

Gainesville, FL 32611-8208 USA

*³Public and Environmental Affairs Department
University of Wisconsin- Green Bay*

Green Bay, WI 54311-7001 USA

*⁴Department of Food and Resource Economics
University of Florida*

Gainesville, FL 32611-0240 USA

ABSTRACT

Three hundred and five charter boat operators were randomly selected and interviewed in the five-state U.S. Gulf of Mexico study area (including the Florida Keys); this constituted 24% of the estimated population (1,275) of charter boats in the region. Interviews were also completed with operators of 43 of the 92 party boats (47%) in the same region. Personal interviews were completed between March and September 1998. Interviews lasted from 30 - 60 minutes and covered a range of topics including: demographics, previous experience, community tenure; boat description and recreational fishing products offered; species dependence; financial operations and economic impact; and their opinions on problems facing the industry and fisheries management in the U.S. Gulf of Mexico. This study sought to replicate two previous studies conducted in 1987 by Ditton et al. (1989) and Holland et al (1989). The paper provides a longitudinal perspective on the charter and party boat industry in the U.S. Gulf of Mexico with regard to increases or decreases in boat fleet size; total annual number of trips made, average number of anglers per trip, and boat-trip base fees in standardized U.S. Dollars. Discussion will focus on understanding the resultant trends, charter and party boat definitional problems, methodological challenges, and usefulness of the data in support of fisheries management.

KEY WORDS: Charter boats, head boats, recreational fisheries

INTRODUCTION

Charter boats are typically defined as vessels for hire that carry six or fewer passengers in addition to the crew, whereas party boats (or head boats as they are referred to in Florida) are for-hire vessels that carry more than six passengers (up to 150). We found charter boats with a capacity of up to 25 and cases where some party boats are operated as charter boats to reduce insurance costs. One of the best discriminators of boat type is the base fee charged per trip and the number of passengers included in the base fee. In our study, charter boats are defined as for-hire vessels operating primarily in Federal or EEZ waters with a base fee charged on a group basis. Party boats also operate in the EEZ on a for-hire basis but with a base fee charged on a per-person basis (hence the term head boat). Accordingly, vessels classified as charter boats are smaller, carry six or fewer passengers, and operate only when the vessel has been chartered. Party boats tend to be larger, carry more passengers, operate on a schedule, require a minimum number of passengers in order to make a trip, and will carry as many passengers as possible to maximize income.

In addition to the aforementioned definitional problems, there is also confusion as to whether the for-hire fleet is part of the recreational or commercial fishery. On the one hand, charter and party boat operators may be viewed as a part of the recreational fishery because they provide a unique opportunity for anglers to fish offshore for recreation and food. Alternatively, these boat operators may be viewed as a part of the commercial fishery because they operate a commercial service through which they earn a living from fishing activity (albeit the fishing activity of others). The Gulf of Mexico Fishery Management Council, for example, considered charter and party boat operators a part of the commercial fishery despite the fact their customers must comply with recreational bag limits—"Those fishermen earning their livelihood from the fishery were considered commercial users" (Gulf of Mexico Fishery Management Council 1989:41). In an environment with increasingly restrictive management regulations, this means uncertainty and difficulty for operators trying to make a living providing recreational anglers with offshore fishing opportunities. Classification is further complicated because some operators also use their boats for commercial fishing purposes when not carrying recreational customers. An alternative perspective would be to view the for-hire fleet and its operators as a separate sector unto themselves with ties to both the recreational and commercial fishing sectors.

Charter and party boats are an essential component of the marine recreational fishery because they provide access to offshore fishing for those without boats. In other words, they allow anglers to negotiate one of the most critical leisure constraints, a lack of sufficient discretionary income. Without for-hire vessels, the demographics of offshore anglers would be considerably different in that only

Proceedings of the 52nd Gulf and Caribbean Fisheries Institute

those individuals capable of owning offshore vessels and their personal friends would be able to fish in offshore waters. Likewise, in the Gulf and Caribbean region, they provide an important fishing tourism service for visiting anglers who would otherwise lack offshore fishing access. Without a for-hire fleet, anglers would choose to fish elsewhere with local economic impact implications. Federal fishery managers need to do everything possible to maintain for-hire boats and the opportunities they provide from an equity or fairness perspective as well as from a local fishing tourism development perspective.

Nothing stays the same in fisheries; the charter and party boat fleet appears to be growing along with the population and tourism but is in a constant state of flux. For example, studies of the Texas charter boat industry revealed that about 50% of the charter businesses on the Texas coast dropped out or exited the business in two previous five year periods for an average of 10% per year (Ditton and Loomis 1985, Ditton and Vize 1987). New operators and boats entered the industry on a regular basis while others exited. Two possible reasons for this turnover noted by Ditton and Vize (1987) include increasing operating costs for fuel and insurance and regulatory effects of fisheries management. Accordingly, with so much change over time in the industry, it is difficult for fisheries managers to monitor what is happening in the charter and party boat fishery, i.e., harvest, number of trips taken per year, number of anglers carried offshore, etc. The various Gulf of Mexico Fishery Management Council permits that must be held by charter and party boat operators only reveal an intention to fish for the permitted species; little more insight is available without a social survey of the population of charter and party boat operators. Previously, cross-sectional surveys of for-hire boat operators were completed in Texas (Woods 1977, Ditton et al. 1978) and Florida (Browder 1981). These studies provided a foundation for two subsequent social science research efforts focused on charter and party boat operators- one in Florida and the other focusing on the other four Gulf states (Ditton et al. 1989; Holland et al. 1989, Ditton et al. 1992, Gill et al. 1993, Holland et al. 1992). In 1998, we sought to replicate this perspective with another Gulf-wide effort focusing on the industry operating along the coast of Texas, Louisiana, Mississippi, and Alabama (henceforth referred to as the western and central Gulf) (Sutton et al. 1999) and the west coast of Florida including the Florida Keys (Holland et al 1999). Every effort was made to maintain the consistency of questions across the two cross-sectional studies; some new questions were added, however, to understand current management concerns such as the state level of economic impacts associated with the for-hire fleet.

The objectives of this paper are to (1) present an in-depth review of the study methods used to assist others trying to better understand their for-hire fleets

and (2) present a preliminary trends perspective on charter and party operators as well as fleet size, number of trips made, and number of anglers carried offshore. To access the complete study results (Sutton et al. 1999, Holland et al. 1999), please consult the web (<http://lutra.tamu.edu/rbd/charter.htm>).

METHODS

Field personnel between March and September 1998 interviewed a sample of charter and party boat operators in Texas, Louisiana, Mississippi, Alabama, and Florida. Personal interviews were chosen as the data collection technique because a large amount of in-depth information was required on a range of topics. This approach allowed for standardized prompts, probing, and explanations of questions as they were presented to respondents; this resulted in a deeper and more meaningful understanding of problems and attitudes. Most previous studies of charter and party boat operators and their businesses have utilized personal interviews rather than mail questionnaires.

A list of charter and party boats operating in the five-state study areawas compiled carefully from lists obtained from various sources (Gulf States Marine Fisheries Commission; National Marine Fisheries ServiceResearch Lab in Beaufort, North Carolina; and Ditton et al. (1995). None of these lists were used without carefully checking to ensure each listing fit our criteria as an offshore charter or party boat given the information contained in the list. We identified additional operators not included in these lists through various contacts with chambers of commerce and visitors' bureaus and use of Internet sites. Privately used charter and party boats were not included in the sample frame because they could not be consistently located for each study. The inability to locate non-public boats would have made replicating a complete listing of for-hire boats in the study area impossible, resulting in a biased sample frame. Follow-up efforts revealed that some boats included in our sample had new operators, or could not be located. Operators with boats no longer in business were deleted from the list of boats in each state. Also, information provided by boat operators upon contact made it necessary to re-classify some charter boats to party boats and vice versa as per the operational definitions we used.

Charter boats were divided into the regions (Table 1) where they were operated. Approximately 20% of the estimated population of charter boats in each region were sampled randomly using the SAS computer package (SAS 1996). All party boats in the western and central Gulf were included due to their limited number; approximately 33% were sampled on the West Coast of Florida including the Florida Keys. Operators of sampled boats were contacted either by mail or telephone to explain the study and establish a date and time for an interview. Replacements to the charter boat sample were sometimes necessary to maintain the required number of interviews in each region. Wherever

Proceedings of the 52nd Gulf and Caribbean Fisheries Institute

possible, replacements were randomly selected from those remaining in the original list using the same procedures used to draw the original sample.

Table 1. Port communities in the study area by region.

State	Region	Port Communities Included
Texas	1	Galveston, Freeport
	2	Port O'Connor, Port Aransas, Aransas Pass, Rockport, Corpus Christi
	3	South Padre Island, Port Isabel, Port Mansfield
Louisiana	4	Grand Isle, Venice, Port Fourchon, Cocodrie, Empire, Cameron City, Intercoastal City, Houma, New Orleans, Grand Isle
Mississippi	5	Biloxi, Gulfport, Long Beach, Ocean Springs
Alabama	6	Orange Beach, Dauphin Island, Fairhope, Mobile, Gulf
Florida	7	Panhandle: Pensacola, Destin, Panama City
	8	West Peninsula: Tampa/ St. Petersburg/ Clearwater, Naples, Ft. Myers, Sarasota
	9	Keys: Key West, Marathon, Islamorada

The interview schedule contained 59 questions and took from 30- 60 minutes to complete. The instrument was based largely on the one used by Ditton et al. (1989) and Holland et al. (1989) with some additions and revisions made in consultation with NMFS personnel. Extensive pre-testing was not necessary because most questions had been tested and used previously. The interview schedule consisted of seven sections including the captain's background, boat description, fishing patterns and activities, operating policies, financial operations, opinions on management regulations, and captain's demographics. All respondents were informed of the purpose of the study and the measures taken to maintain the confidentiality of their responses. The respective versions of the interview schedule and informed consent form used were approved by the Institutional Review Boards at Texas A&M University and the University of Florida.

Taking into account the adjustments made during field interviewing and the difficulties involved in identifying the population of charter boats, we estimate

there were 845 charter boats operating on the Gulf coast of Florida (including all of the Florida Keys) and 430 charter boats operating in the remaining four Gulf states (Texas, Louisiana, Mississippi, and Alabama) (Table 2). We included all of the boats from the Florida Keys here because we were unable to separate Gulf and Atlantic-side charter boat operations. Interviews were completed with 218 (26%) and 87 (20%) of the estimated population of charter boats in Florida and the four other Gulf States, respectively. Of the 23 party boats identified in the western and central Gulf, we sought to interview all boat operators. Interviews were completed with 21 (91%) party boat operators in this area. One party boat business owner with two party boats refused to allow his captains to be interviewed. In Florida, 53 and 16 head boats (the term used in Florida) were identified on the Florida Gulf coast and in the Florida Keys, respectively. Interviews were completed with 17 (32%) and 5 (31%), respectively.

Table 2. Interview completion rates for each region of the study area.

Region	Charter Boats			Party Boats/ Headboats		
	Estimated Population	Sample Size	%	Estimated Population	Sample Size	%
1	80	15	19	5	3	60
2	70	14	20	9	9	100
3	35	8	23	4	4	100
4	50	12	22	0	0	-
5	85	16	19	1	1	100
6	110	22	20	4	4	100
7	183	50	27	18	1	6
8	432	105	24	35	16	46
9	230	63	27	16	5	31
Total	1,275	305	24	92	43	47

RESULTS

Overall, there were few differences observed in charter and party boat captains' personal characteristics (years of education, marital status, number of people in their household, and income) between the two studies (1987 and 1997). The average age of Florida charter boat captains increased from 42 in 1987 to 46 in 1997; there was a similar aging pattern for head boat captains in Florida. In the western and central Gulf, the percentage of household income derived from the charter business has decreased substantially since 1987. Here, the percentage of household income derived from charter fishing was 69% in 1987 but only

Proceedings of the 52nd Gulf and Caribbean Fisheries Institute

50% in 1997. The pattern was reversed along the West Coast of Florida where percentage of household income from the charter boat business increased from 60% in 1987 to 75% in 1997. In the western and central Gulf, the percentage of household income derived from the party boat business increased from 88% in 1987 to 98% in 1997. In Florida, the percent of household income from their head boat business increased from 85% in 1987 to 93% in 1997; 92% indicated that 100% of household income was from head boats.

The overall population of charter and party boats in the U.S. Gulf of Mexico has increased in size over the past ten years. Since 1987, the number of charter boats in the western and central Gulf has more than doubled (from 210 to 430). The largest percentage increases in charter boats were in Mississippi (300%), Alabama (189%), and Texas (65%) with virtually no growth in charter boats in Louisiana. On the Gulf coast of Florida (excluding the Florida Keys), the number of charter boats has increased by 16% (from 530 to 615). The Panhandle charter boat population decreased 8% from 198 to 183; while the Gulf Peninsula charter boat population increased 30% from 332 to 432. For the Florida Keys, the number of charter boats increased by 17% (from 206 to 241). Growth in the party boat or head boat industry has been less dramatic. On the Gulf coast of Florida (excluding the Florida Keys), the number of head boats has increased by 20% (from 44 to 53) over the past ten years. This is roughly the same percentage growth as seen for charter boats. For the Florida Keys, the number of head boats has decreased by 12% over the same time period (from 18 to 16). Since 1987, the number of party boats in the western and central Gulf has also decreased (from 26 to 23).

Whereas the number of charter boats has increased 104% in the western and central Gulf over the period from 1987 to 1997, the annual number of passenger trips has increased 235% (from 95,000 to 318,716). For the Florida Gulf coast (including the Florida Keys), where the number of charter boats increased 16%, the number of passenger trips has increased from 472,897 to 589,410 (25%). Despite decreasing numbers of party boats in the western and central Gulf and fewer head boats in the Florida Keys, the annual number of passenger trips has increased from 37,148 to 117,990 (217%) between 1987 and 1997 in the western and central Gulf and from 320,587 to 614,888 (92%) for the Florida Gulf Coast (including the Florida Keys) during the same time period.

The increases in annual numbers of passenger trips taken offshore cannot be attributed to increased trip frequency because the average annual number of trips taken (in the Western Gulf) has not increased substantially between 1987 and 1997. Charter boats operating in 1997 in the western and central Gulf made 109 trips on average with a mean of 6.8 passengers per trip (Sutton et al. 1999); in 1987, they made 103 trips on average with an estimated mean of 4 passengers per trip (Holland et al. 1992). Party boats operating in 1997 in the same area

made 135 trips on average with a mean of 38 passengers per trip (Sutton et al. 1999); in 1987, they made 131 trips on average with an estimated mean of 19 passengers per trip (Ditton et al. 1992). A different pattern is revealed in Florida where there has been a 14% decrease in charter boat trips and a 42% increase in head boat trips between 1987 and 1997. Charter boats operating in 1997 off the Gulf coast of Florida made 134 trips on average with an average of 5.1 passengers per trip, and those operating in the Keys made 171 trips on average with an average of 4.3 passengers per trip; in 1987, charter boats operating from the Gulf and Keys (combined) made 166 trips on average and average of passengers per trip was not asked but an estimated mean of 4 passengers was used (Holland et al. 1989). Party boats operating in 1997 off the Florida Gulf made 280 trips on average with an average of 25.4 passengers per trip and those operating in 1997 in the Florida Keys made 676 trips on average with an average of 22.0 passengers per trip; in 1987, they made 280 trips on average. For Florida Gulf charter boats, there has been about an 8% increase in the proportion of full-day, compared to half-day trips since 1987, while for Florida Keys' charter boats, there has been about a 16% increase in the proportion of full-day, compared to half-day trips since 1987. The most impressive change since 1987, is a more than three-fold increase in the number of half-day trips by head boats and about a 45% reduction in the number of full day trips by head boats, with most of the growth of half-day trips occurring in the Florida Keys. Weather and the length of the vacation season are generally seen as constraints to the number of trips that can be taken on an annual basis. Since the Florida Keys has the longest warm weather season in the U.S. Gulf, this is a possible explanation for the increasing average number of head boat trips. Capital improvements would allow operators to take an increasing number of customers offshore without increasing the number of trips taken on an annual basis.

In the western Gulf, where the average number of trips per boat has remained much the same, our preliminary results indicate charter and party boat operators are using pricing to be able to remain in what has become a very competitive business. Since 1987, charter boat operators have increased their average trip fees by about 40% (in standardized 1987 U.S. Dollars) in the western and central Gulf of Mexico; they have decreased their charter fees by 11% for the Florida Gulf coast (including the Florida Keys). In the former case, they have probably done this to cover the higher costs of operating their larger boats and have made it more palatable to customers by generally increasing the number of passengers included in the base fee. In the case of Florida, the large number of boats provides a competitive barrier to increasing prices. Party boat base fees on average for half- and full day trips in the western and central Gulf are 40% lower than 1987 prices (Ditton et al. 1989); this loss of revenue has been offset by the three-fold increase in passenger trips since party boat fees are charged on a

Proceedings of the 52nd Gulf and Caribbean Fisheries Institute

per-head basis. Head boat fees on the Florida Gulf coast (including the Florida Keys) have increased 18% and the additional number of half-day trips has increased the revenue of Florida headboats.

DISCUSSION

An integrated perspective on marine fisheries management including social and economic understanding is still relatively new for many of us. This just wasn't the way prospective fisheries managers were trained in the past. But as our colleagues have come to appreciate the broader definition of the term "fishery", one that includes fish stocks, harvesters, the overall business infrastructure of the fisheries business (whether it be recreational or commercial), and all others with a stake in fishery resources, they begin to see the need for an integrated perspective. If managers are to manage fisheries today, they will require more data and understanding than they have at present because their proposed actions to restore or maintain fish populations are likely to affect a variety of relevant stakeholders. Without the support of the latter for any proposed management actions, it is likely nothing will be implemented. This is because fisheries management takes place in a political environment like all other types of decision making in a democracy. Thus, it is imperative that managers have up-to-date social and economic understandings of their various stakeholder groups and how they are likely to respond to proposed regulations and rulemaking and why if they are to anticipate problems, overcome opposition, and build constituent support. Unfortunately, due to a lack of constituency support for and confidence in the fisheries management process, there have been insufficient funds and little overall investment to date in human dimensions research in order to obtain such needed perspectives. But this may be changing as managers conclude that relying on the best available biological research doesn't necessarily guarantee needed management actions are implemented.

The charter and party boat industry in the U.S. Gulf of Mexico may be an exception to some extent. Not only are harvest levels and number of trips routinely monitored, but studies have been completed to better understand the social and economic structure of the for-hire industry as well as to profile the customers who use charter and party boat services and their experience and management preferences (Ditton et al. 1978, Roehl et al. 1993). Managers have also apparently seen the need for a longitudinal perspective on this group of boat operators and their business activities instead of relying on "snapshot" perspectives afforded by a study completed nearly ten years ago. This replication has yielded understandings of operators and their businesses not available for most other recreational or commercial fisheries issues. Having the types of insights provided by human dimensions research is one thing; using them

effectively to propose responsive management directions in the Gulf of Mexico is another. It remains to be seen whether management personnel with primarily biological backgrounds can make wise use of human dimensions data and understandings in support of their statutory responsibilities for fisheries management. While charter and party boat operators have been involved in the fisheries management process as members of various committees over the years, the industry to date has typically played an opposition role to government management proposals rather than one of finding positions to support. Hopefully, human dimensions research results will lead to new management proposals that the industry will be able to support. We have collected a wealth of data on the Gulf of Mexico charter and party boat fishery and only present preliminary results in this paper; much more will be disseminated in the future from this recently completed project.

It was not surprising that individuals with similar social and economic characteristics continue to be involved in this industry. Increases in fleet size and number of anglers taken offshore, on the other hand, are probably due to increases in population and tourism activity (an overall increase in demand for offshore recreational fishing) Gulfwide and in the western Gulf, greater boat size and efficiency. The question remains whether or not this type of growth can continue or even be sustained at present levels given the status of the fish stocks upon which the charter and party boat industry depend and more restrictive harvest regulations. That the number of vessels has increased in this increasingly restrictive management environment is surprising. Since the Gulf of Mexico Fishery Management Council first implemented management plans for coastal pelagic and reef fish fisheries, nearly all Gulf of Mexico species targeted by the for-hire fleet have come under increased management with greater harvest restrictions and uncertainty from year to year on bag and size limits. A recent example of this uncertainty is the current 18 inch length limit for red snapper imposed this past June; whereas all anglers were impacted to some degree by the sharp increase in minimum size from 14 inches, the prospect of zero catch has particularly hurt the business of party boat operators who target primarily snapper and grouper in the western Gulf of Mexico. For only if boat operators are able to provide their current customers with fishing trips that meets their experience preferences will they be able to maintain their annual number of trips offshore. To remain in business, they will need some stability in fishing rules and regulations so as to maintain their current customers or they will need to find new customers willing to accept constantly changing size and bag limits, lower catches (or perhaps even catch and release fishing-only with appropriate target species).

Proceedings of the 52nd Gulf and Caribbean Fisheries Institute

The longitudinal study design helped us to understand the extent of change in parameters of interest for the charter and party boat fleet, for example, between two points in time. However, it did not provide a complete record of the change that has occurred. There has likely been extensive turnover among charter fishing operators between 1987 and 1997 based on previous research on this topic (Ditton and Loomis 1985, Ditton and Vize 1987). Because managers are interested mainly in net numbers of boats in the fleet, the number of boats targeting particular fishery resources, and overall harvest by this user segment, this turnover may have little meaning to them. But this turnover may be an indicator that these small-business operators are being impacted by government regulations seeking to maintain fish populations as well as the uncertainty of a distant and often unresponsive regulatory process. Fishery managers in the U.S. are required by law to carefully evaluate and take into account regulatory impacts on businesses and organizations. One of the best ways for accomplishing this is to devote much more effort to maintaining an updated database of charter and party boat operators in the Gulf of Mexico than is currently the case. Besides name and address, basic social and economic descriptive information could be collected to provide a current-status look at this group of fishery stakeholders. The key would be the development and maintenance of an up-to-date database of boat operators. With an understanding of the number of years they have been operating their boats, for example, management staff would have a useful means for tracking operator turnover, possible regulatory impacts, and the implications for service delivery. What has happened in the charter and party boat industry in the intervening years should be just as important to managers as our study results for 1987 and 1997.

ACKNOWLEDGMENTS

This research was supported by the MARFIN Program, National Marine Fisheries Service through research grants to Texas A&M University (Grant Number NA77FF0551) and the University of Florida (Grant Number NA77FF0553)

REFERENCES

- Browder, J.A., J.C. Davis, and E. Sullivan. 1981. Paying-passenger recreational fisheries of the Florida Gulf Coast and Keys. *Marine Fisheries Review* 43(8):12- 20.
- Ditton, R.B., L.D. Finkelstein, and J. Wilemon. 1995. Use of offshore artificial reefs by Texas charter fishing and diving boats. Technical Report #HD-604. Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station. 38 pp.

- Ditton, R.B., S.M. Holland, and D.A. Gill. 1992. The U.S. Gulf of Mexico party boat industry: activity centers, species targeted, and fisheries management opinions. *Marine Fisheries Review* 47(1):43- 47.
- Ditton, R.B., R.N. Jarmen, and S.A. Woods. 1978. An analysis of the charter boat fishing industry on the Texas Gulf Coast. *Marine Fisheries Review* 40(8):1-7.
- Ditton, R.B. and D.K. Loomis. 1985. Examining business turnover in the Texas charter boat industry: 1975- 1980. *Marine Fisheries Review* 47(1):43-47.
- Ditton, R.B., T.J. Mertens, and M.P. Schwartz. 1978. Characteristics, participation, and motivations of Texas charter boat fishermen. *Marine Fisheries Review* 40(8):1-7.
- Ditton, R.B., J.R. Stoll, and D.A. Gill. 1989. The social structure and economics of the charter and party boat fishing fleets in Texas, Louisiana, Mississippi, and Alabama. Final Report to U.S. Department of Commerce, NOAA, National Marine Fisheries Service, Contract 5617000, St. Petersburg, FL. 259 pp.
- Ditton, R.B. and J.D. Vize. 1987. Business turnover in the Texas charter fishing industry, 1975 - 1985. *Marine Fisheries Review* 49(2):162-165.
- Gill, D.A., R.B. Ditton, and S.M. Holland. 1993. Charter and party boat operators in the U.S. Gulf of Mexico: A social structure perspective. *Marine Fisheries Review* 55(3)16- 20.
- Gulf of Mexico Fishery Management Council. 1989. Amendment Number 1 to the Reef Fish Fishery Management Plan. Gulf of Mexico Fishery Management Council, Tampa, FL.
- Holland, S.M., R.B. Ditton, and D.A. Gill. 1992. The U.S. Gulf of Mexico charter boat industry: activity centers, species targeted, and fisheries management opinions. *Marine Fisheries Review* 54(2):21- 27.
- Holland, S.M., A.J. Fedler, and J.W. Milon. 1999. The operations and economics of the charter and head boat fleets of the eastern Gulf of Mexico and South Atlantic coasts. Report to U.S. Department of Commerce, NOAA, National Marine Fisheries Service, Grant Number NA77FF0553, St. Petersburg, FL.
- Holland, S.M. and J.W. Milon. 1989. The structure and economics of the charter and party boat fishing fleet of the Gulf coast of Florida. Final Report to U.S. Department of Commerce, NOAA, National Marine Fisheries Service, Contract NA87WC-H-06141, St. Petersburg, FL. 278 pp.

Proceedings of the 52nd Gulf and Caribbean Fisheries Institute

- Roehl, W.S., R.B. Ditton, S.M. Holland, and R.R. Perdue. 1993. Developing new tourism products: sport fishing in the southeast United States. *Tourism Management* (August):278-288.
- Sutton, S.G., R.B. Ditton, J.R. Stoll, 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. Human Dimensions of Recreational Fisheries Research Laboratory #HD-612. Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX. 198 pp.
- Woods, S.A. Woods. 1977. A business analysis of the party boat industry on the Texas Gulf Coast. Master of Science Thesis, Department of Management, Texas A&M University College Station TX. 103 pp.