

CHARACTERISTICS OF TEXAS COMMERCIAL NET FISHERMEN

by

Tom Wagner, Steven R. Marwitz,
Gary E. Saul and Gary C. Matlock



MANAGEMENT DATA SERIES

No. 33

1990

**Texas Parks and Wildlife Department
Fisheries Division
4200 Smith School Road
Austin, Texas 78744**

ACKNOWLEDGMENTS

The authors would like to thank C. E. Bryan, Jerry Clark, Tom Heffernan, Ed Hegen, and Larry McEachron for their critical review of this manuscript. Special thanks to William R. Smith for his help in tabulating returns.

ABSTRACT

A mail survey was conducted in spring 1985 and 1986 to obtain information from commercial finfish fishermen concerning their participation in the Texas commercial saltwater net fishery. Information was gathered concerning current licenses possessed, gear description and fishing characteristics of net fishermen, alternate types of primary gear, number of days fished in given years and location where majority of fishing effort occurred. There were an estimated 160 licensed commercial saltwater net fishermen and 80 licensed commercial saltwater trotline fishermen in Texas in 1985 and 1986. Despite a low response rate (12%), results from this survey are consistent with other published reports concerning this user group, and appear useful to fishery managers.

INTRODUCTION

The Wildlife Conservation Act of 1983 gave the Texas Parks and Wildlife Commission authority to regulate the means, manners, methods, times and places for taking fish throughout Texas. Prior to that time these topics were regulated primarily by the Legislature directly, although a transition from statutory to regulatory authority had actually begun in about 1963. After receiving this authority, the Commission directed that a study be conducted on the use of nets in Texas saltwaters. Several pieces of information were readily available, including the number of licensed nets (Texas Parks and Wildlife Department (TPWD) unpublished data), the areas and seasons legally opened to netting (State of Texas 1983), the amount of illegally confiscated nets (TPWD 1983), and the number of licensed commercial finfish fishermen (Hamilton and Saul 1984). However, detailed information on the number of commercial net fishermen and their activity was generally lacking. In addition, most commercial finfish fishermen had historically complained that they had little opportunity to provide input into the regulation development process (Higgins and Lord 1926).

The purpose of this study was to obtain information directly from commercial finfish fishermen on their participation in the Texas commercial saltwater net fishery.

MATERIALS AND METHODS

In March 1985 and April 1986, 440 and 388 questionnaires (Appendix A), respectively, were mailed to all licensed commercial finfish fishermen. Information was requested concerning current commercial fishing licenses held, primary gear used for finfish fishing, description of gear and fishing characteristics, number of days fished in 1984 and 1985, and the locations where the majority of finfish fishing effort occurred. An introductory letter and postage-free return envelope were included with each questionnaire to maximize survey returns.

The estimated number of licensed commercial net and trotline fishermen in Texas in 1985 and 1986 was computed as the product of percentage of finfish fishermen reporting using nets and trotlines from this survey and the number of licensed finfish fishermen in Texas in 1985-86 (Quast et al. 1989). Results are presented as averages of 1985-86 data; data from individual years are presented as Appendix Tables B1-B10.

RESULTS

There were an estimated 160 licensed commercial saltwater net fishermen in Texas in each of 1985 and 1986. Gill and trammel nets were reported as primary gear used by 34% of survey respondents (N = 131) during 1985-86 (Table 1). Forty-three percent of these lived in counties adjacent to the Galveston Bay system, 36% in counties adjacent to the Matagorda Bay and San Antonio Bay systems, and 20% in counties adjacent to the Aransas Bay, Corpus Christi Bay, and Upper Laguna Madre systems (Figure 1). There were an estimated 85 licensed commercial saltwater trotline fishermen in Texas in each

of 1985 and 1986. Fifty percent of trotlines were reported from counties adjacent to the upper and lower Laguna Madre systems. Rod and reel was listed as the primary gear by 12% of respondents.

Net fishermen reported fishing an average of 74 days/year, using about five nets (each about 132 meters long) per fisherman (Table 2). The mean length of trammel nets reported was 54 meters longer than that reported for gill nets; gill net and trotline were nearly equal in length. Trotline fishermen reported fishing an average of 106 days/year, using nine lines averaging 110 meters each. Trotline fishermen reported almost twice as many gear units (lines vs. nets) as did net fishermen, and fished 43% more often than net fishermen. Most net fishermen required use of at least one assistant, as did those fishermen using other gear types.

Of 74 finfish fishermen reporting, the highest percentage of finfish fishing occurred in the Galveston Bay system (35%), whereas the least fishing occurred in the Sabine Lake (1%) and San Antonio Bay (4%) systems (Table 3). Some finfish fishermen reported fishing (other than trotline fishing) in more than one bay area. Five finfish fishermen gave no indication of area fished.

The majority (77%) of reported trotline fishing occurred in the Galveston Bay and upper Laguna Madre systems (Table 4). Of 22 finfish fishermen reporting the use of trotlines during 1985-86 combined, 50% fished in the Galveston Bay system and 55% fished in the upper Laguna Madre system. Some finfish fishermen reported fishing in more than one bay area. No trotlines were reported from the Corpus Christi Bay or San Antonio Bay systems.

Most commercial finfish fishermen participated in other fisheries. Sixty-two percent of commercial finfish fishermen reported being licensed for other fisheries-related activities in 1985 and 1986 (Table 5). Of those fishermen who reported two or more licenses, 71% were associated with shrimping, 19% with crabbing and 13% with oystering.

Questionnaire response rate was 12%, adjusted for those returned undeliverable (Table 6). Of 828 questionnaires mailed, 7% were returned undeliverable by the postal service. Response rates from counties receiving greater than ten questionnaires ranged from 0% in Hidalgo County to 35% in Wharton County.

DISCUSSION

The response rate obtained during this study (12%) is generally lower than that obtained in most other mail surveys conducted by TPWD (Green et al. 1982). This raises some concern when expanding estimates based on respondents to the population of commercial saltwater finfish fishermen in Texas. However, the concern appears unjustified for most estimates. There were 160 net fishermen in Texas in 1985-86, the same number as reported by Green and Matlock (in press).

Trotline fishing is underestimated from this study. No trotlines were reported from Aransas Bay in 1985, but confiscations by TPWD Law Enforcement

Division and violations filed prove that trotlines were there (TPWD, unpublished data). Trotline fishing has generally decreased from 1974, when the use of artificial bait on trotlines was prohibited, to 1988 (Quast et al. 1989). In Texas, the trotline fishery has been regulated by restricting the number of lines, number of hooks per line, seasons, and bait types (Matlock 1980). McEachron et al. (1986) reported a decreasing trotline fishery in the upper and lower Laguna Madre systems, a pattern supported by this study.

The geographical distribution of finfish fishing reported in this study and by Ferguson (1986) were similar, with generally even distribution coastwide except for the Sabine Lake and San Antonio Bay systems.

Of 31 commercial fishermen surveyed in Louisiana (Pesson 1974), 73% were part-time fishermen. Ferguson (1986) reported that of 2,266 licensed commercial finfish fishermen in Texas from 1979 to 1981, only 16% purchased licenses in all three years, and a small number participated in other commercial fishing activities. Green and Matlock (in press) concluded that the 1988 ban of nets in Texas marine waters would cause commercial finfish fishermen to rely on alternate gear or leave the fishery entirely. Commercial finfish fishermen do not rely on finfish only for their livelihood.

LITERATURE CITED

- Ferguson, M. O. 1986. Characteristics of red drum and spotted seatrout commercial fishermen in Texas. *North American Journal of Fisheries Management*. 6:344-358.
- Green, A. W., L. Z. Barrington, and G. C. Matlock. 1982. An estimation of the total number of Texas fishermen, 1 September 1978-31 August 1979. *Proceedings of the 36th Annual Conference Southeastern Association of Fish and Wildlife Agencies*. 36:241-251.
- Green, L. M and G. C. Matlock. In Press. Seine and trotline tag purchases by licensed commercial saltwater finfish fishermen during September 1984-August 1987. *Management Data Series Number* __. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Austin, Texas.
- Hamilton, C. L. and G. E. Saul. 1984. Texas commercial harvest statistics, 1977-1983. *Management Data Series Number* 64. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Austin, Texas.
- Higgins, E., and R. Lord. 1926. Preliminary report on the marine fisheries of Texas. Pages 167-169. *In*: Report of the United States Commissioner of Fisheries for 1926. United States Government Printing Office. Washington, District of Columbia.
- Matlock, G. C. 1980. History and management of the red drum fishery. Pages 37-53 *In*: Proceedings of the colloquium on the biology and management of red drum and seatrout. Gulf States Marine Fisheries Commission Number 5. Ocean Springs, Mississippi.
- McEachron, L. W., A. W. Green, G. C. Matlock, and G. E. Saul. 1986. Evaluation of the commercial trotline fishery in the Laguna Madre during fall 1984. *Management Data Series Number* 93. Texas Parks and Wildlife Department, Coastal Fisheries Branch. Austin, Texas.
- Pesson, L. L. 1974. The coastal fishermen of Louisiana: their characteristics, attitudes, practices and responsiveness to change. Louisiana State University, Sea Grant Publication 04-3-1518-19. Baton Rouge, Louisiana.
- Quast, W. D., B. G. Dansby, and M. Henderson. 1989. Trends in Texas commercial fishery landings, 1977-1987. *Management Data Series Number* 7. Texas Parks and Wildlife Department, Fisheries Division. Austin, Texas.
- State of Texas. 1983. Texas Parks and Wildlife Laws. West Publishing Company. Saint Paul, Minnesota.
- Texas Parks and Wildlife Department. 1983. Annual report fiscal year 1983-1984. PWD Report 9000-9, Austin, Texas.

Texas Parks and Wildlife Department. Unpublished data. Coastal Fisheries
Branch. Austin, Texas.

Texas Parks and Wildlife Department. Unpublished data. Law Enforcement
Division. Austin, Texas.

Table 1. Number and Percent (%) of commercial finfish fishermen responding to a mail survey who reported the use of one or more primary gear by county of residence during survey years 1985-1986 combined.

County	Gear Type												No primary gear indicated				
	Nets	Trotline	Shrimp trawl	Oyster dredge	Gig	Ganglion	Rod and reel	Crab trap	Spearline	Longline	Throwline	Mud fish trap		Shortline	Electric reel		
Aransas	4 (3)	1 (1)			4 (3)		1 (1)		1 (1)								
Calhoun	5 (4)				2 (1)		2 (1)										
Camaron	2 (1)													1 (1)			
Chambers	5 (4)	2 (1)	1 (1)	2 (1)			2 (1)									1	
Colorado														1 (1)			
Eastland	1 (1)																
Galveston	12 (9)	3 (2)	4 (3)	4 (3)	1 (1)		2 (1)	3 (2)		1 (1)				1 (1)			
Harris	2 (1)	1 (1)		1 (1)				1 (1)			1 (1)						
Jefferson							1 (1)										
Kimble						2 (1)											
Kleberg	1 (1)	4 (3)	1 (1)					1 (1)	1 (1)								
Matagorda	5 (4)																
Nueces	2 (1)	5 (4)					2 (1)									2	
Orange			1 (1)				1 (1)	1 (1)								1	
Refugio		2 (1)															
San Patricio	2 (1)				1 (1)		3 (2)		1 (1)								
Victoria	1 (1)	1 (1)															
Wharton	5 (4)	1 (1)	1 (1)		1 (1)		1 (1)	1 (1)									
Willacy							1 (1)										
Out of State																	1
Coastwide Total	44 (34)	22 (17)	8 (6)	7 (5)	11 (9)	4 (3)	16 (12)	9 (7)	3 (2)	1 (1)	1 (1)	1 (1)	1 (1)	3 (2)	3 (2)	5	

*Some respondents indicated the use of one or more primary gear, resulting in percentages greater than 100. Percentages based on 72 total reported primary gears.

Table 2. Summary of characteristics of gear and fishing patterns reported by commercial finfish fishermen in a mail survey during 1985-1986 combined.

Gear	Gear length (m)			No. of hooks/line			No. of gear used			No. of assistants			Days fished Feb. 1985 or 1986			Days fished in 1984 or 1985		
	Mean	Range	Responses	Mean	Range	Responses	Mean	Range	Responses	Mean	Range	Responses	Mean	Range	Responses	Mean	Range	Responses
Gill net	103	23-610	21				6	1-15	21	1	1	8	9	0-28	17	79	0-300	20
Trawl net	157	16-457	25				4	1-18	23	1	0-3	22	6	0-21	22	69	1-200	23
Shrimpline	110	6-183	15	78	5-100	14	9	2-50	13	1	1	4	15	0-30	14	106	0-300	14
Oystering	14	12-15	2				1	1	1	1	1	1	2	0-23	11	137	0-275	11
Oig	4	4	1				1	1	7	2	1-3	3	9	0-20	7	23	0-50	8
Saugion	2	2-3	4	15	15	4	1	1	4	1	1	1	8	0-35	6	84	16-240	5
Rod and reel				5	1-10	3	2	1-3	4	1	1	3	2	0-6	4	44	20-65	4
Crab trap							112	20-300	9	2	2	2	4	9-12	5	111	30-240	5
Dug seine							1	1	1	0	0-1	7	14	0-28	7	229	90-365	9
Shagline	168	168	1	900	900	1	8	8	1							150	150	1
Shortline				303	6-600	1	12	12	1	1	1	1	28	28	1	300	300	1
Longline				9	9	1	2	2	1				5	5	1	250	250	1
Thropline							10	10	1				26	26	1	90	90	1
Hand fish trap							24	24	1				8	8	3	105	105	2
Electric reels				7	4-10	2	5	7-8	3	3	1-6	3						

Table 3. Number and percent (%) of commercial finfish fishermen responding to a mail survey who reported fishing for finfish by area fished and county of residence during 1985-86 combined.

Bay system	County of residence											Out of of state	All counties									
	Minor bay	Aransas	Calhoun	Cameron	Chambers	Colorado	Eastland	Galveston	Harris	Jefferson	Kimble			Kleberg	Matagorda	Nueces	Orange	Patricio	Victoria	Wharton	Willacy	
Sabine Lake																				1 (1)	1 (1)	
Galveston																					10 (14)	10 (14)
Trinity																					7 (9)	7 (9)
E. Galveston																					3 (4)	3 (4)
W. Galveston																					4 (5)	4 (5)
Christmas																					2 (3)	2 (3)
East Matagorda																						
East Matagorda																						
Matagorda																						
Trees Palacios																						
Turtle																						
San Antonio																						
San Antonio																						
Rynes																						
Espiritu Santo																						
Aransas																						
Aransas																						
Copano																						
Redfish																						
Corpus Christi																						
Corpus Christi																						
Redfish																						
Redfish																						
Upper Laguna Madre																						
Upper Laguna Madre																						
Baffin																						
Lower Laguna Madre																						
Lower Laguna Madre																						
Gulf																						
No Bay Indicated																						
Coastwide Total	7 (9)	11 (15) ^a	4 (5)	7 (9)	1 (1)	1 (1)	18 (24)	3 (4)	1 (1)	2 (3)	3 (4)	9 (12)	9 (12)	1 (1)	9 (12)	3 (4)	8 (11)	2 (3)	1 (1)	100		

^aSome respondents indicated more than one area fished, resulting in percentages greater than 100. Percentages based on 74 respondents.
^bRounding may result in percentages other than expected.

Table 4. Number and percent (%) of commercial finfish fishermen responding to a mail survey who reported the use of trotlines by area fished and county of residence during survey years 1985-1986 combined.

Bay system	County of residence										All counties	
	Minor Bay	Aransas	Calhoun	Cameron	Chambers	Galveston	Harris	Kleberg	Nueces	Refugio		Victoria
Galveston						2 (9)						2 (9)
Trinity					2 (9)		1 (5)					3 (14)
E. Galveston					2 (9)	2 (9)						4 (18)
W. Galveston									2 (9)			2 (9)
Matagorda												1 (5)
Aransas												1 (5)
Copano									1 (5)			1 (5)
Upper Laguna Madre												1 (5)
Upper Laguna Madre					1 (5)					1 (5)	1 (5)	3 (14)
Baffin					1 (5)				3 (14)	3 (14)	1 (5)	8 (36)
Alazan									1 (5)			1 (5)
Lower Laguna Madre												1 (5)
Lower Laguna Madre						1 (5)				1 (5)	1 (5)	4 (18)
South												1 (5)
Coastwide Total		1 (5)	1 (5)	3 (14)	4 (18)	4 (18)	1 (5)	5 (23)	5 (23)	2 (9)	2 (9)	30

*Some respondents indicated more than one area fished, resulting in percentages greater than 100. Percentages based on 22 respondents.

Table 5. Number and percent (%)^a of commercial finfish fishermen responding to a mail survey who reported being licensed for other saltwater related activities during survey years 1985-1986.

Year	License Type											
	Gulf shrimp	Bay shrimp	Bait shrimp	Oyster	Crab	Wholesale fish dealer	Wholesale fish truck dealer	Retail fish dealer	Retail fish truck dealer	Shrimp house operator	Fish import	None other indicated
1985	5 (11)	10 (21)	17 (36)	4 (9)	6 (13)	4 (9)	1 (2)	2 (4)	2 (4)	2 (4)	0	24 (51)
1986	4 (11)	10 (26)	14 (37)	7 (18)	10 (26)	8 (21)	1 (3)	6 (16)	3 (8)	2 (5)	2 (5)	9 (24)
Average	5 (11)	10 (24)	16 (35)	6 (13)	8 (19)	6 (14)	1 (2)	4 (9)	2 (6)	2 (5)	1 (2)	16 (38)

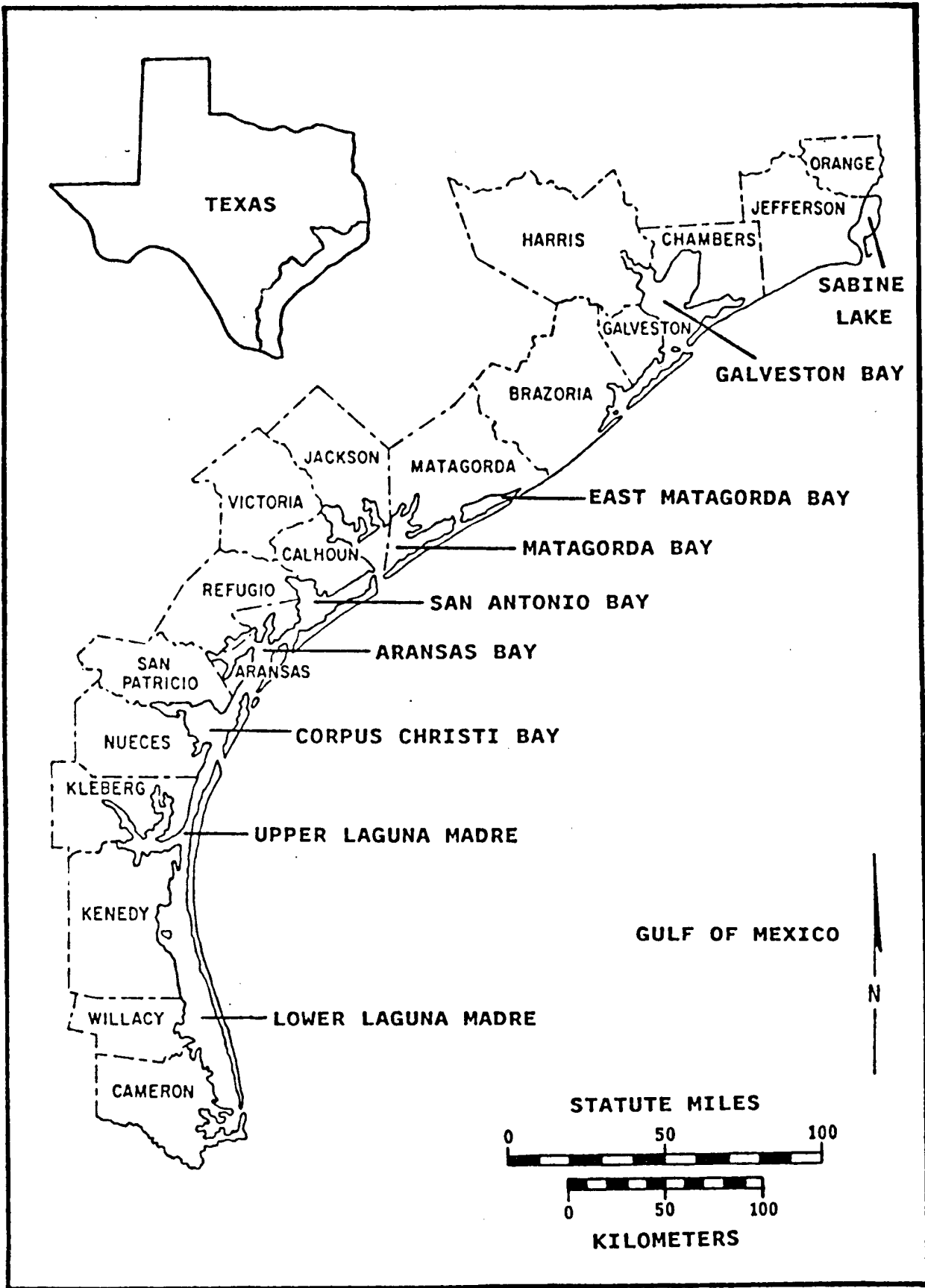
^aSome respondents indicated more than one area fished, resulting in percentages greater than 100. Percentages based on 22 respondents.

Table 6. Summary of responses^a obtained from mail survey of commercial finfish fishermen during survey years 1985-1986 combined.

County of residence	Coastal counties	Questionnaires mailed	Questionnaires returned		Questionnaires undeliverable		% response within county
			No.	% of total returned	No.	% of total undeliverable	
Angelina		2					
Aransas	x	45	7	8	2	4	16
Bastrop		1			1	2	
Bexar		5			1	2	
Brazoria	x	9					
Brown		2	1	1			50
Calhoun	x	24	8	9	1	2	35
Cameron	x	74	6	7	10	19	9
Chambers	x	81	6	7	1	2	8
Colorado		2	1	1			50
Eastland		1	1	1			100
Falls		1					
Fort Bend		2	1	1			50
Freestone		1					
Galveston	x	162	17	18	19	35	12
Guadalupe		1					
Harris	x	46	4	4	4	7	10
Hidalgo		11			1	2	
Jackson	x	2					
Jefferson	x	5	1	1			20
Kerr		1					
Kimble		2	2	2			100
Kleberg	x	2	5	5			14
Liberty		35					
Liberty		8					
Matagorda	x	26	7	8	2	4	29
Montgomery		2					
Nueces	x	112	8	9	5	9	7
Orange	x	4	1	1			25
Orange	x	4	2	2	1	2	67
Refugio		4	4	4			6
San Patricio	x	73	4	4	2	4	
San Saba		1					
Tarrant		3					
Travis		1					
Tyler		1					
Victoria	x	2	1	1			50
Wharton		20	7	8			35
Willacy	x	52	1	1	4	7	2
Willacy		4	1	1			25
Out of State							
Total		828	92	54			12

^aBlank indicates no responses.

Figure 1. Coastal counties and bay systems of Texas.



Appendix A. Introductory letter and commercial finfish fishermen
questionnaire.



TEXAS
PARKS AND WILDLIFE DEPARTMENT
4200 Smith School Road Austin, Texas 78744

COMMISSIONERS

EDWIN L. COX, JR.
Chairman, Athens

WILLIAM M. WHELESS, III
Vice-Chairman, Houston

CHARLES D. TRAVIS
Executive Director

BOB ARMSTRONG
Austin

GEORGE R. BOLIN
Houston

WM. O. BRAECKLEIN
Dallas

WM. L. GRAHAM
Amarillo

RICHARD R. MORRISON, III
Clear Lake City

A.R. (TONY) SANCHEZ, JR.
Laredo

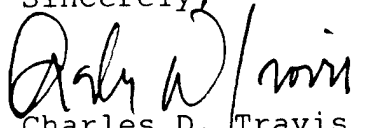
DR. RAY E. SANTOS
Lubbock

Dear Commercial Fisherman:

The Texas Parks and Wildlife Department is conducting a study of the commercial finfish fishery in Texas to determine the areas most heavily fished, the types of gear used, and the number of days fished last year. Your cooperation in completing and returning the attached questionnaire would be greatly appreciated. You may return your completed questionnaire to me in the enclosed postage-free envelope.

Your assistance will lead to a better understanding of the commercial finfish fishery in Texas. Thank you for your help.

Sincerely,


Charles D. Travis
Executive Director

CDT:GES:ph

Attachment

Please check those items for which you are currently licensed.

Gulf Shrimp	___	Wholesale Fish Dealer	___	Shrimp House Operator	___
Bay Shrimp	___	Wholesale Fish Truck Dealer	___	Fish Farm	___
Bait Shrimp	___	Retail Fish Dealer	___	Finfish Import	___
Oysters	___	Retail Fish Truck Dealer	___		___
Crabs	___				

FINFISH FISHING

What is the primary gear you use: Nets ___ Trotlines ___
 Other (please specify) _____

Gear	Average length (ft)	Number of hooks	Number used	Number of assistants	Number of days fished in Feb 86	Number of days fished in 1985
Gill Net		////				
Trammel Net		////				
Trotline						
Crab Trap	////	////				
Shrimping	////	////	////			
Oystering	////	////	////			
Other (specify)						

In which bays do you do most of your trotline fishing? _____

In which other bays do you fish for finfish? _____

Appendix B. Figures B1-B10, summarized returns from individual years 1985 and 1986.

Table B1. Number and percent ()^a of commercial finfish fishermen responding to a mail survey who reported the use of one or more primary gear by county of residence during 1985.

County	Gear type										No primary gear indicated	
	Nets	Trotline	Shrimp trawl	Gig	Gangion	Rod and reel	Crab trap	Snagline	Shortline			
Aransas	1 (2)			3 (5)			1 (2)					
Calhoun	2 (3)											
Cameron				2 (3)								
Chambers	2 (3)	1 (2)										1 (2)
Eastland								1 (2)				
Galveston	6 (10)	1 (2)	1 (2)		2 (3)	1 (2)						
Harris	1 (2)	1 (2)									1 (2)	
Jefferson						1 (2)						
Kimble				1 (2)								
Kleberg	1 (2)	4 (7)	1 (2)				1 (2)	1 (2)				
Matagorda	2 (3)											1 (2)
Nueces	1 (2)	3 (5)				2 (3)						
Orange			1 (2)			1 (2)	1 (2)					
Refugio		2 (3)										
San Patricio	1 (2)					1 (2)						
Wharton	4 (7)	1 (2)				1 (2)						
Willacy						1 (2)						
Out of State												1 (2)
Coastwide Total	21 (36)	13 (22)	2 (3)	5 (8)	2 (3)	10 (17)	3 (5)	2 (3)	1 (2)	1 (2)	3 (5)	

^aSome respondents indicated the use of one or more primary gear, resulting in percentages greater than 100. Percentages based on 59 total reported primary gears.

Table B2. Number and percent (%) of commercial finfish fishermen responding to a mail survey who reported the use of one or more primary gear by county of residence during 1986.

County	Gear type													
	Nets	Trotlines	Shrimp trawl	Oyster dredge	Gig	Gangion	Rod and reel	Crab trap	Snagline	Longline	Throwline	Mud fish trap	Electric reel	No primary gear indicated
Arkansas	3 (4)	1 (1)			1 (1)				1 (1)				1 (1)	
Calhoun	3 (4)				2 (3)		2 (3)							
Cameron		2 (3)				2 (3)	2 (3)							
Chambers	3 (4)	1 (1)	1 (1)	2 (3)				2 (3)						
Colorado													1 (1)	
Galveston	6 (8)	2 (3)	4 (6)	4 (6)				2 (3)		1 (1)			1 (1)	
Harris	1 (1)			1 (1)				1 (1)			1 (1)			
Kimble					1 (1)									
Matagorda	3 (4)													1 (1)
Mueces	1 (1)	2 (3)												1 (1)
San Patricio	1 (1)				1 (1)		2 (3)			1 (1)				
Victoria	1 (1)	1 (1)												
Wharton	1 (1)		1 (1)					1 (1)						
Coastwide Total	23 (32)	9 (13)	6 (8)	7 (10)	6 (8)	2 (3)	6 (8)	6 (8)	1 (1)	1 (1)	1 (1)	1 (1)	3 (4)	2 (3)

*Some respondents indicated the use of one or more primary gear, resulting in percentages greater than 100. Percentages based on 72 total reported primary gears.

Table BA. Summary of characteristics of gear and fishing patterns reported by commercial finfish fishermen in a mail survey during 1986.

Gear	Gear length (m)		No. of hooks/line		No. of gear used		No. of assistants		Days fished in Feb. 1986		Days fished in 1986	
	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range
Gill net	146	24-610	14		7	1-15	1	1	10	0-28	12	88
Trawl net	168	46-457	12		5	1-18	1	1-3	6	0-16	9	85
Trotline	122	91-183	5		7	4-12	1	1	12	0-30	5	34
Shrimping	12	10-15	1		1		1	1	3	0-23	9	128
Oystering	4	4	1		1	1	1	1-3	9	0-20	7	23
Gig	2	203	2		2	2	1	1	16	0-35	3	123
Gangion	2	203	2		2	2	1	1	3	0-6	2	45
Rod and reel					136	30-300	7	1	8	0-28	5	224
Crab trap								0-1				90-365
Snagline								1				
Longline								1				
Mud fish trap								1				90
Throwline	9	9	1						26	26	1	250
Electric reels								3	8	0-21	3	180
								1-6				30-180

Table B5. Number and percent (%) of commercial finfish fishermen responding to a mail survey who reported fishing for finfish by area fished and county of residence during 1985.

Bay system	County of residence											Out of state counties					
	Minor Bay	Aransas	Calhoun	Cameron	Chambers	Eastland	Galveston	Harris	Jefferson	Kimble	Kleberg		Matagorda	Nueces	Orange	Patricio	Wharton
Sabine Lake																	
Galveston																	
Trinity																	
E. Galveston																	
W. Galveston																	
Christmas																	
East Matagorda																	
East Matagorda																	
Matagorda																	
San Antonio																	
Tres Palacios																	
San Antonio																	
Hynes																	
Aransas																	
Aransas																	
Copano																	
Redfish																	
Corpus Christi																	
Corpus Christi																	
Redfish																	
Upper Laguna Madre																	
Upper Laguna Madre																	
Baffin																	
Lower Laguna Madre																	
Lower Laguna Madre																	
Gulf																	
No Bay Indicated																	
Coastwide total																	

^aSome respondents indicated more than one area fished, resulting in percentages greater than 100. Percentages based on 39 respondents.

^bRounding may result in percentages other than expected.

Table B6. Number and percent (%) of commercial finfish fishermen responding to a mail survey who reported fishing for finfish by area fished and county of residence during 1986.

Bay System	County of residence											All San Wharton counties	
	Aransas	Calhoun	Cameron	Chambers	Colorado	Galveston	Harris	Kimble	Matagorda	Nueces	Patricio		Victoria
Minor Bay													
Galveston			1 (3)			6 (17)							7 (20)
Trinity			3 (9)				1 (3)						4 (11)
E. Galveston						1 (3)							1 (3)
W. Galveston						2 (6)							2 (6)
East Matagorda									3 (9)			1 (3)	4 (11)
East Matagorda													1 (3)
Matagorda									3 (9)				7 (20)
Matagorda													1 (3)
Turtle													1 (3)
San Antonio													1 (3)
Espiritu Santo													1 (3)
Aransas										1 (3)			3 (9)
Aransas	2 (6)												1 (3)
Copano								1 (3)					2 (6)
Redfish													2 (6)
Corpus Christi									1 (3)	1 (3)			4 (11)
Corpus Christi											1 (3)		1 (3)
Redfish													1 (3)
Upper Laguna Madre										1 (3)			1 (3)
Upper Laguna Madre											1 (3)		1 (3)
Baffin													1 (3)
Lower Laguna Madre													1 (3)
Lower Laguna Madre	?												1 (3)
Gulf													5 (14)
No Bay indicated	1 (3)	1 (3)											2 (6)
Coastwide total	3 (9)	8 (23) ^b	2 (6)	4 (11)	1 (3)	10 (29)	1 (3)	1 (3)	6 (17)	3 (9)	3 (9)	3 (9)	48

^aSome respondents indicated more than one area fished, resulting in percentages greater than 100. Percentages based on 35 respondents.
^bRounding may result in percentages other than expected.

Table B7. Number and percent ()^a of commercial finfish fishermen responding to a mail survey who reported the use of trotlines by area fished and county of residence during 1985.

Bay system	County of residence						
	Chambers	Galveston	Harris	Kleberg	Nueces	Refugio	All Willacy counties
Minor bay							
Galveston							
Galveston		1 (7)					1 (7)
Trinity	1 (7)		1 (7)				2 (15)
E. Galveston	1 (7)	1 (7)					2 (15)
W. Galveston					2 (15)		2 (15)
Aransas							
Copano					1 (7)		1 (7)
Upper Laguna Madre							
Upper Laguna Madre						1 (7)	1 (7)
Baffin				3 (20)	1 (7)	1 (7)	5 (38)
Alazan				1 (7)			1 (7)
Lower Laguna Madre							
Lower Laguna Madre				1 (7)			1 (7)
Coastwide Total	2 (15)	2 (15)	1 (7)	5 (38)	3 (20)	2 (15)	17

Table B8. Number and percent (%) of commercial finfish fishermen responding to a mail survey who reported the use of trotlines by area fished and county of residence during 1986.

Bay system	County of residence					All counties	
	Aransas	Calhoun	Cameron	Chambers	Galveston		Nueces
Galveston							
Galveston					1 (11)		1 (11)
Trinity				1 (11)			1 (11)
E. Galveston				1 (11)	1 (11)		2 (22)
Matagorda							
Matagorda					1 (11)		1 (11)
Upper Laguna Madre							
Upper Laguna Madre			1 (11)			1 (11)	2 (22)
Baffin						2 (22)	3 (33)
Lower Laguna Madre							
Lower Laguna Madre							
Lower Laguna Madre			1 (11)				1 (11)
South							
South			1 (11)				1 (11)
Coastwide Total	1 (11)	1 (11)	3 (33)	2 (22)	2 (22)	2 (22)	13

*Some respondents indicated more than one area fished, resulting in percentages greater than 100. Percentages based on 9 respondents.

Table B9. Summary of responses^a obtained from mail survey of commercial finfish fishermen during 1985.

County of Residence	Coastal counties	Questionnaires mailed	Questionnaires returned		Questionnaires undeliverable		% response within county
			No.	% of total returned	No.	% of total undeliverable	
Angelina		2					
Aranzas	x	22	4	8	2	6	16
Bastrop		1			1	3	
Bexar		3			1	3	
Brazoria	x	3					
Brown		1	1	2			50
Calhoun	x	10	2	4			35
Cameron	x	35	2	4	4	12	6
Chambers	x	29	3	6			10
Colorado		1					
Eastland		1	1	2			100
Falls		1					
Fort Bend		2	1	2			50
Freestone		1					
Galveston	x	81	8	15	11	34	10
Guadalupe		1					
Harris	x	26	3	6	3	9	12
Hidalgo		6			1	3	
Jefferson	x	3	1	2			67
Kerr		1					
Kimble		1	1	2			100
Kieberg		29	5	9			17
Liberty		3					
Matagorda	x	17	4	8	1	3	24
Nueces	x	66	5	9	3	9	8
Orange	x	3	1	2			33
Refugio	x	3	2	4	1	3	67
San Patricio	x	40	2	4	1	3	5
San Saba		1					
Tarrant		1					
Travis		1					
Victoria		1					
Wharton	x	11	5	9			45
Willacy	x	29	1	2	3	9	3
Out of State		4	1	2			25
Total		440	53		32		12

^aBlank indicates no responses.

Table B10. Summary of responses^a obtained from mail survey of commercial finfish fishermen during 1986.

County of Residence	Coastal counties	Questionnaires mailed	Questionnaires returned		Questionnaires undeliverable		% response within county
			No.	% of total returned	No.	% of total undeliverable	
Aranzas	x	23	3	8		13	
Bexas		2					
Brazoria	x	6					
Brown		1					
Calhoun	x	14	6	15	1	5	43
Cameron	x	39	4	10	6	27	10
Chambers	x	52	3	8	1	5	6
Colorado		1	1	3			100
Galveston	x	81	9	23	8	36	11
Harris	x	20	1	3	1	5	5
Hidalgo		5					
Jackson	x	2					
Jefferson	x	2					
Kimble		1	1	3			100
Kleberg	x	6					
Liberty		5					
Matagorda	x	9	3	8	1	5	33
Montgomery		2					
Nueces	x	46	3	8	2	9	7
Orange	x	1					
Refugio	x	1					
San Patricio	x	33	2	5	1	5	6
Tarrant		2					
Tyler		1					
Victoria	x	1	1	3			100
Wharton		9	2	5			22
Willacy	x	23			1	5	
Total		388	39		22		10

^aBlank indicates no responses.

ERRATA

for

MANAGEMENT DATA SERIES NO. 33

entitled

CHARACTERISTICS OF TEXAS COMMERCIAL NET FISHERMEN

Page 2. DISCUSSION, 1st paragraph, 7th sentence. Should read:
There were 160 net fishermen in Texas in 1985-'86, the same number as reported by Green and Matlock 1990.

Page 3. DISCUSSION, 4th paragraph, 5th sentence. Should read:
Green and Matlock 1990 concluded that the 1988 ban of nets on alternate gear of leave the fishery entirely.

Page 4. LITERATURE CITED, 3rd paragraph. Should read:
Green, L. M. and G.C. Matlock. 1990. Seine and trotline tag purchases by licensed commercial saltwater finfish fishermen during September 1984-August 1987. Management Data Series Number 21. Texas Parks and Wildlife Department, Fisheries Division. Austin, Texas.

PWD-RP-3400-331-6/90

Dispersal of this publication conforms with Texas State Documents
Depository Law, and it is available at Texas State Publications
Clearinghouse and Texas Depository Libraries.